European Union Network for the Implementation and Enforcement of Environmental Law

SUPPORTING IMPLEMENTATION OF THE INDUSTRIAL EMISSIONS DIRECTIVE (2010/75/EU) & DOING THE RIGHT THINGS (PERMITTING)

2017 Projects

Date of final report: 3 January 2018

Report number: 2017/01 combined with 2017/21

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

Report summary

Title of the report: **SUPPORTING IMPLEMENTATION OF THE INDUSTRIAL EMISSIONS DIRECTIVE (2010/75/EU)** **AND DOING THE RIGHT THINGS (PERMITTING)**	**Number report:** 2017/01
Project Manager/Authors: Horst Büther (Project Manager - IED Implementation project) Toni Liebregts (Project Manager – DTRT Permitting) Terence Shears (Author of the report) Rob Kramers (Author of Guidance) John Seager (Author of Guidance)	**Report adopted at IMPEL General Assembly Meeting**: 6 and 7 December 2017 Tallinn, Estonia **Total number of pages: 451** Report: 10 Annexes: 441

Executive Summary

Initially there were two separate projects on IED Implementation and Doing the Right Things Permitting. Given the clear links between the projects and the fact that both were intending to produce a Guidance Book as their principal outcome, it was agreed that the projects would remain separate but that they would work closely together and hold joint project meetings and a joint workshop. They would also produce a Combined Guidance Book.

The projects had four main components:

i. An IED Project Team meeting in Milan, Italy, on 23 and 24 March 2017, at which work was continued on five topics: Inspection tools; definitions; horizontal aspects of permitting; joint inspections; and BAT in Industrial Waste Water. The meeting noted that work had been completed in five working groups, namely: levels of non-compliance; reporting to the public/public participation surveys; dealing with installations closing down/bankruptcy; BREFs/application of BAT; and Self-monitoring and operator reporting. The Guidance Book would be amended and possibly merged with the guidance from the project on permitting: training material would be developed, which was another priority of the Commission. Comments had been received from the Commission on the Guidance Book including a request that it should be useable as training material. It was agreed to combine the guidance with that from the project on DTRT Permitting.

ii. A DTRT Permitting Project Team meeting in Dublin, Ireland, on 9 May 2017. The meeting agreed on further amendments and modifications for the guidance on DTRT Permitting. The meeting also agreed that that DTRT-P would be responsible for the framework and content of the guidance.

iii. DTRT Permitting Meeting on 21 and 22 June and IED Project Team Meeting on 22 and 23 June in Ljubljana, Slovenia, on 22 and 23 June 2017 where it was agreed that the Guidance Book (but not the projects) would be combined. Ongoing working groups that reported to this meeting included Joint Inspections, Industrial Waste Water, Going beyond BAT, Tools and Horizontal Aspects of Permitting. Work would continue on the guidance book jointly with DTRT-P who would take on editorial responsibility. Horst gave a brief presentation on the paper on risk assessment.

iv. A joint DTRT Permitting/IED workshop in Lisbon, Portugal on 27 and 28 September 2017. At the workshop there were nine working groups covering the following topics:

- Definitions
- Mutual Joint Visits
- Priorities for Permitting
- Strategies for Permitting
- 'Other than normal' operating conditions
- Compliance assurance
- Permitting procedure
- Evaluation and feedback (Permitting)
- Eco-innovation

The meetings in Milan, Ljubljana and Lisbon were each preceded by Joint Inspections, one each in Milan and Ljubljana and three in Lisbon.

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Disclaimer

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1. Purpose of the projects

The IED project is intended to help achieve better implementation of the IED. It has particular regard to permitting, participation of the public, and increasing the efficiency and effectiveness of environmental inspections and surveillance through:

- application of risk criteria in a strategic way with a view to assessing, evaluating and mitigating the most serious types of non-compliance with the IED;
- development of best practice examples in the application of BAT conclusions and the compilation of baseline report on soil and ground water contamination;
- optimising the communication with and active dissemination to the public of the results of inspection and surveillance work;
- fostering cooperation and coordination between different inspection and surveillance bodies with a view to streamlining and optimising the use of inspection and surveillance resources;
- development of reaction methods after serious environmental complaints;
- creation and use of electronic records of inspection and surveillance work with a view to enabling the efficiency and effectiveness of such work to be more easily measured and evaluated.

The project on Doing the right things for ENV Permitting is a three year project. In the beginning it sought to compare Environmental permitting procedures and to develop guidance that describes the best practice in Environmental permitting. This guidance has been combined with the guidance produced for IED Implementation.

Although there is much experience in Europe in environmental permitting (first with IPPC and later IED), the permitting procedure has never been described in a step-by-step guidance. As a result, there is no level playing field for the procedures of environmental permitting, there is no guidance for new permitting officers and there is less cohesion between the IMPEL initiatives on permitting.

Doing the right things for ENV permitting will look closely at the relation between permitting and inspection, identify interesting case studies and best practices in Europe and identify and describe the steps that could be used in permitting procedures.

2. Background to the projects

Industrial production processes account for a considerable share of the overall pollution in Europe due to emissions of air pollutants, discharges of waste water and the generation of waste.

The Industrial Emissions Directive 2010/75/EU of the European Parliament and the Council (IED) is the main EU instrument regulating pollutant emissions from industrial installations. The IED was adopted on 24 November 2010 and entered into force on 6 January 2011.

The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT). Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate in accordance with a permit (granted by the authorities in the Member States). This permit should contain conditions set in accordance with the principles and provisions of the IED.

2. The IED allows competent authorities some **flexibility** to set less strict emission limit values. This is possible only in specific cases where an assessment shows that achieving the emission levels associated with BAT described in the BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to the geographical location or the local environmental conditions or the technical characteristics of the installation. The competent authority is required to document its justification for granting such derogations.

Furthermore, Chapter III of the IED on large combustion plants includes certain flexibility instruments (Transitional National Plan, limited lifetime derogation, etc.).

4. The IED contains mandatory requirements on **environmental inspections**. Member States shall set up a system of environmental inspections and draw up inspection plans accordingly. The IED requires a site visit to take place at least every 1 to 3 years, using risk-based criteria.

5. The IED ensures that the **public has a right to participate** in the decision-making process, and to be informed of its consequences, by having access to permit applications, permits and the results of the monitoring of releases.

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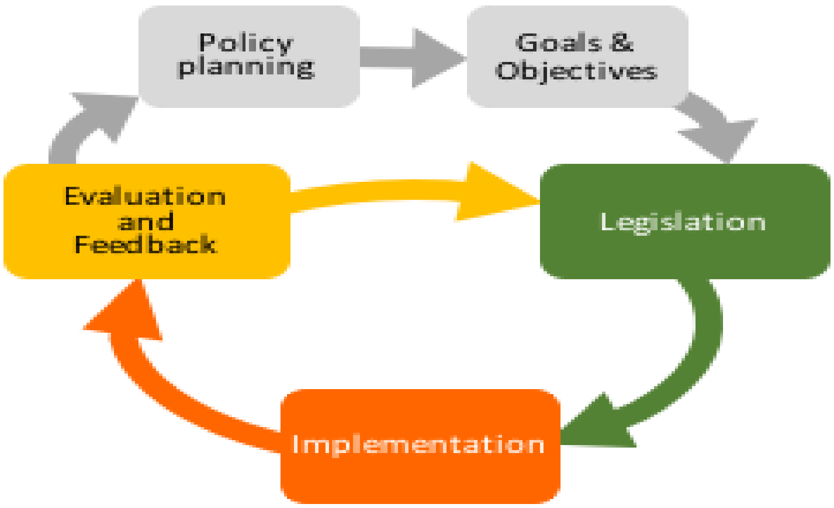
An initial IED project was carried out in 2015 and a subsequent project was carried out in 2016. This subsequent project sought to build on and develop the outcome of the previous project by identifying further areas of the IED where there were challenges for those seeking to implement the directive and by seeking to establish good practice in those areas. This work has been incorporated into a draft guidance book and has been continued into the project in 2017.

The project on Doing the Right Things (Permitting) arose from the fact that although there is a lot of experience in Europe in environmental permitting (first IPPC and later IED), the permitting procedure has never been described in a step-by-step guidance. As a result, there is no level playing field for the procedures of environmental permitting, there is no guidance for new permitting officers and there is less cohesion between the IMPEL initiatives on permitting.

Combined Guidance (see Annex 3)

Work on developing combined guidance for IED implementation has been carried over the last few months following an agreement at earlier meetings in Ljubljana, Slovenia on 21 and 22 June 2017 that the projects on DTRT Permitting and IED Implementation should bring together relevant aspects of their work. The combined guidance builds on the IED Implementation Guidance Book that had been built up through contributions from IMPEL's IED Implementation Project and the work carried out by the 'Doing the Right Things' for Permitting Project.

The guidance is structured around the regulatory cycle:



The main structure of this guidance consists of four main parts:

1. ***Legislation:*** the general obligations from the Industrial Emissions Directive, written mainly for policy makers;

2. ***The permitting process:*** strategic, general and operational steps, written for the permit officer and management;

3. ***The inspection process:*** strategic, general and operational steps, written for the inspector and management;

4. ***Evaluation and feedback:*** on the legislative process and its implementation, written for all target groups.

The main structure of the Combined Guidance is supported by technical 'Factsheets' that address specific areas of IED implementation.

The Combined Guidance is already a substantial body of work. The intention is that it will continue to be developed and updated with further outputs from both projects and also other relevant IMPEL projects, for example, IED Baseline Reports. It will be fully cross-referenced to specific articles in the IED legislation. An interactive web-based version is also planned.

Annexes

Annex I

Terms of Reference IED Implementation

TOR Reference No.: 2017-01

Author(s): Horst Büther / Florin Homorean

Version: 1.5

Date: December 2016

TERMS OF REFERENCE FOR WORK UNDER THE AUSPICES OF IMPEL

1. Work type and title

1.1 Identify which Expert Team this needs to go to for initial consideration

Industry	☑
Waste and TFS	☐
Water and land	☐
Nature protection	☐
Cross-cutting – tools and approaches -	☐

1.2 Type of work you need funding for

Exchange visits	☑
Peer reviews (e.g. IRI)	☑
Conference	☑
Development of tools/guidance	☑
Comparison studies	☑
Assessing legislation (checklist)	☐
Other (please describe):	☐

1.3 Full name of work (enough to fully describe what the work area is)
Mutual joint visits of industry inspectors and regulators to achieve a level playing field implementation of the IED 2017

1.4 Abbreviated name of work or project
Supporting IED Implementation 2017

2. Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist (name the Directive, Regulation, etc.)

Industrial Emissions Directive (IED)

BAT Reference Documents and BAT Conclusions

Air Quality Directive

Seveso III Directive

2.2 Link to IMPEL MASP priority work areas

1. Assist members to implement new legislation	☑
2. Build capacity in member organisations through the IMPEL Review Initiatives	☑
3. Work on 'problem areas' of implementation identified by IMPEL and the European Commission	☑

2.3 Why is this work needed? (Background, motivations, aims, etc.)

Industrial production processes account for a considerable share of the overall pollution in Europe due to their emissions of air pollutants, discharges of waste water and the generation of waste. The Industrial Emissions Directive 2010/75/EU of the European Parliament and the Council (IED) is the main EU instrument regulating emissions from industrial installations. The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT). Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate in accordance with a permit (granted by the authorities in the Member States). This permit should contain conditions set in accordance with the principles and provisions of the IED. The 2014/2015 Implementation Challenge project of IMPEL and consultations with the European Commission identified a lot of unresolved problems in the implementation of industrial regulation.

2017 is the third year in a row of the IMPEL IED Implementation project. It has become a very successful IMPEL activity attracting a lot of environmental officers from numerous European countries. In the last two years, IMPEL has had to raise the budget of the project in order to accommodate this increased interest. This is a clear indicator that there is need for exchange on IED topics between the European competent authorities with responsibility for IED implementation. The IED Implementation project has established itself meanwhile as one of the main long running activities of the IMPEL network.

In the last two years, the project team has developed a lot of good practice examples that were put into a specially designed guidance book. This book not only contains guidance from the running project but also from previous and related IMPEL projects dealing with issues of industrial regulation. The IED project itself developed in sub-groups good practice examples for the following topics:

- Translation of BAT Associated Emission Levels (AELs) into Emission Limit Values
- Levels of non-compliance; publication of inspection reports
- Bankruptcy and temporary or definitive cessation of activity in IED installations
- Self-monitoring and reporting obligations of the operators
- Tools for regulating IED installations
- Joint inspections
- Definitions [in legislation]
- Horizontal aspects of permitting
- Minimum content of IED inspections
- Feedback from the inspector in the BREF-cycle
- How to check industrial waste water BAT
- Going beyond BAT (application of Article 18).

The project team started with these topics because they were regarded as the highest priority issues by the project members. Some of these topics will not be finished in 2016 and shall be developed further in this 2017 project. There are also a lot of other issues that shall be developed to good practice during the 2017 project and in the future (see 2.4).

The advantage of a large project group is that the ideas coming from a working group are immediately discussed by environmental officers of different implementation cultures and backgrounds. According to the demands of the member countries and the European Commission, joint inspections have been carried out and will continue to going forward. The results of these inspections will also be included in the guidance book.

2.4 Desired outcome of the work (what do you want to achieve? What will be better / done differently as a result of this project?)

A lot of good practice has already been developed by the projects in 2015 and 2016 and put into the guidance book on IED implementation. There are still a lot of issues identified by the Implementation Challenge project, IMPEL member countries, the European Commission, and the project and workshop participants. The identified topics for further developing good practice are:

- Emission limit values (ELVs) – ambient air quality

- Implementation of new BREFs
- Application of BAT within 4 years after publication of BAT conclusions (timetable)
- Making changes to permits – what is significant change
- Integrated permits (one stop shop); how to deal with other than normal operating conditions
- Concentration vs. mass emission limits
- Non-routine inspections
- Charging regimes
- Public participation.

At every project meeting and during the workshop the IED implementation of the host country/authority is presented and discussed by the project members. This gives a fast and good overview on the approaches in different European countries and is a good addition to the IMPEL IRIs.

A general goal of the project is to establish the project team as a core group of the Industry and Air Expert Team and a sustainable cooperation of European enforcement authorities. This includes:

improvement of the IED implementation in Europe; raising the percentage of BAT application through common understanding and expert exchange, fast exchange of solutions concerning implementation problems; facilitating implementation; joint inspections; web applications and tools; invited speakers of related projects and activities outside IMPEL; feedback to the COM on implementation of the IED; new ways of identifying implementation gaps.

2.5 Does this project link to any previous or current IMPEL projects? (state which projects and how they are related)

Projects dealing with the IED in a broader sense but also the IRIs and the DTRT and easyTools projects are linked to this activity. The results and good practices of former projects dealing with industrial issues are already included in the IED Implementation Guidance Book. The project managers of related projects were invited to the IED workshop in 2015 to give a presentation and discuss how their results could be included into the guidance book.

These projects are:

- Derogations from BAT in IED permits
- IED baseline report on soil and ground water contamination

- IED and Habitat Directive
- Doing the right things in (IED) permitting
- IPPC and Water Framework Directive
- Air quality and industrial emissions

In addition a representative of the Technical Working Group on Inspections of the Seveso Expert Group was also invited to exchange the experiences of these related approaches.

3. Structure of the proposed activity

3.1 Describe the activities of the proposal (what are you going to do and how?)

Guidance and best practice examples that have already been developed in the first 2 years of the project and from other projects will be put into a form that is useful for the guidance book (if that not has already been done).

Priority topics from the issues described in 2.4 will be chosen by the project group for the development of solutions and guidance by sub-groups of the project. These topics will also be discussed and developed further during a workshop of the project. Coming from that guidance and best practice examples will be prepared for the IED implementation guidance book.

During the project meetings and the workshop the host countries will give a presentation of the IED implementation in their countries. Back to back with the workshop and the project meetings a joint inspection of a small sub-group of the project team will be performed at an industrial installation of the host country. The results of these activities will also be used for the guidance book.

Project managers of related projects will also be invited to the workshop to present and discuss the results of their projects. In addition members of the Commission will also be invited to discuss the results of the projects and priority topics of further investigations.

3.2 Describe the products of the proposal (what are you going to produce in terms of output / outcome?)

Outputs:

- Guidance book for better implementation of the IED
- Combination of the results with other related projects
- Results from joint inspections
- IMPEL member examples for IED implementation
- Inspection tools
- Minimum extent and resources for IED inspections
- Results from a technical workshop on implementation of EU industrial law.

Outcome:

Reduction of the IED implementation gap and a level playing field within IMPEL member countries (see also 2.4)

3.3 Describe the milestones of this proposal (how will you know if you are on track to complete the work on time?)

- Development of the work program 2017: January/February 2017
- Work of the sub-groups on not jet finished topics of the 2016 project: Jan/Feb 2017
- Finalising work program at the first project group meeting: March 2017
- Work of the sub-groups on new topics of the 2017 project: April/May 2017
- New project groups on further topics at the second project group meeting: June 2017
- Preparation of the workshop at the second project group meeting: June 2017
- Joint inspection: back to back with the project group meetings and the workshop
- Workshop: country approach / good practices / related projects: September 2017
- Development of guidance and good practice examples: until October 2017

3.4 Risks (what are the potential risks for this project and what actions will be put in place to mitigate these?)

The first risk is that only a few countries collaborate within this activity. The new IMPEL strategic approach for actively encourage and support passive members was used to mitigate this risk. The big interest in the project in 2015 and 2016 shows that this is no real risk.

The second risk is that only inspectors will be members of the project team and that there will not be enough attention on topics related to permitting. In the 2015 and 2016 IED Implementation project first working groups on BREF application were launched to work on permitting related aspects. The results will invite more permitters to participate in the project

The third risk is that outputs of the project are only recognized by a small group of active project members. The new strategic IMPEL approach on communication of IMPEL results shall be used to mitigate this risk (see item 8).

4. Organisation of the work

4.1 Lead (who will lead the work: name, organisation and country) – this must be confirmed prior to submission of the TOR to the General Assembly)

Horst Büther, Regional Government Cologne, Germany,

Florin Homorean, National Environmental Guard, Romania

4.2 Project team (who will take part: name, organisation and country)	
Austria	Robert Gross, robert.gross@salzburg.gv.at
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	Manuel Salgado Blanco manuel.salgado.blanco@xunta.es
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Turkey	Şenay Aslan, senay.aslan@csb.gov.tr
UK	Richard Chase, Richard.Chase@environment-agency.gov.uk
NN	Project members with permitting experience

4.3 Other IMPEL participants (name, organisation and country)

Further environmental officers of different national competent IED authorities to participate in the technical workshop and the conference, especially members of the Industry Expert Team. Invited speaker of related projects at the workshop.

4.4. Other non-IMPEL participants (name, organisation and country)

Close contact with desk officers of the EU Commission dealing with industrial environmental law

5. **High level budget projection of the proposal. In case this is a multi-year project, identify future requirements as much as possible**

	Year 1 (exact)	Year 2	Year 3	Year 4
How much money do you require from IMPEL?	52,000 €	ditto	ditto	ditto
How much money is to be co-financed	15,000 €	ditto	ditto	ditto
Total budget	67,000 €	ditto	ditto	ditto

6. **Detailed event costs of the work for <u>year 1</u>**

	Travel € (max €360 per return journey)	Hotel € (max €90 per night)	Catering € (max €25 per day)	Total costs €
Event 1 *<Project group meeting>* *<March 2017>* *<tbd>* *<25>* *<2/2>*	9000 € (25 travelling participants)	4500 € (for 25 participants)	1300 € (for 26 participants)	14,800 €
Event 2 *< Project group meeting >* *<June 2017>* *<tbd>* *<25>* *<2/2>*	9000 € (25 travelling participants)	4500 € (for 25 participants)	1300 € (for 26 participants)	14,800 €
Event 3 *< Conference/workshop >* *<September 2017>*	10,440 € (29 travelling participants including	7830 € (for 29 participants)	2250 € (for 30 participants)	20,520 €

<tbd> *<29>* *<3/3>*	invited speakers)			
Event 4 *<Joint inspections>* *<March, June, September 2017>* *<tbd->* *<4 each>* *<1/1>*	0 € (back to back with events 1, 2 and 3)	1080€ (for 4 participants each time)	525 € (for 7 participants each time)	1605 €
Total costs for all events	28,440 €	17,910 €	5375 €	51,725 €

7. Detailed other costs of the work for year 1

7.1 Are you using a consultant?	☑ Yes ☐ No
7.2 What are the total costs for the consultant?	15,000 €
7.3 Who is paying for the consultant?	Germany (if budget will be confirmed)
7.4. What will the consultant do?	Organising the meetings, supporting the working groups, transformation of the project outputs into a format that can be used by all competent IED authorities and preparation of material that can be used for IMPEL communication purposes.
7.5 Are there any additional costs?	☑ Yes ☐ No Namely: Transport of inspectors, web based tools
7.6 What are the additional costs for?	1. Transport of inspectors to industry sites during the joint inspections

	2. Development of web based tools for inspections
7.7 Who is paying for the additional costs?	1. IMPEL: 275 € 2. Not in this year
7.8. Are you seeking other funding sources?	☐ Yes ☑ No
7.9 Do you need budget for communications around the project? If so, describe what type of activities and the related costs	☐ Yes ☑ No

8. Communication and follow-up (checklist)

	What		By when
8.1 Indicate which communication materials will be developed throughout the project and when *(all to be sent to the communications officer at the IMPEL secretariat)*	TOR ✓ *	☑	August 2016
	Interim report ✓ *	☑	June 2017
	Project report ✓ *	☑	October 2017
	Progress report(s) ✓	☑	March/June/Sept. 2017
	Press releases	☑	Workshop
	News items for the website ✓ *	☑	June 2017
	News items for the e-newsletter	☑	After 1st meeting
	Project abstract ✓ *	☑	After 3rd meeting
	IMPEL at a Glance ✓	☑	October 2017
	Other, (give details): PPP for project presentation	☑ ☑	After 1st meeting
8.2 Milestones / Scheduled meetings (for the website diary)	See 6.		
8.3 Images for the IMPEL image bank	☑ Yes ☐ No		
8.4 Indicate which materials will be translated and into which languages	Project abstract / IMPEL at a glance: languages of the participating countries of the technical workshop		
8.5 Indicate if web-based tools will be developed and if hosting by IMPEL is required	This is not foreseen for this year		
8.6 Identify which groups/institutions will be targeted and how	The main target group consists of competent authorities for IED implementation and Industry and Air Experts. They will be targeted by the means under 8.1 and by discussion at other IMPEL events.		

8.7 Identify parallel developments / events by other organisations, where the project can be promoted	CCA TG 2 meetings, IRIs, meetings with COM, TFS technical workshops, national IMPEL meetings, international conferences, TAIEX workshops, Twinning projects

*✓) Templates are available and should be used. *) Obligatory*

9. Remarks

Is there anything else you would like to add to the Terms of Reference that has not been covered above?

In case of doubts or questions please contact the IMPEL Secretariat.

Draft and final versions need to be sent to the IMPEL Secretariat in word format, not in PDF.

Thank you.

Annex II

Terms of Reference Doing the Right Things Permitting

TOR Reference No.: 2017/	Author(s): Tony Liebregts / Rob Kramers
Version: 01	Date: April 2016

TERMS OF REFERENCE FOR DOING THE RIGHT THINGS FOR PERMITTING

10. Work type and title:

Doing the right things for permitting (second year)

1.1 Identify which Expert Team this needs to go to for initial consideration	
Industry	☑
Waste and TFS	☑
Water and land	☐
Nature protection	☐
Cross-cutting – tools and approaches -	☑
1.2 Type of work you need funding for	
Exchange visits	☐
Peer reviews (e.g. IRI)	☐
Conference	☐
Development of tools/guidance	☑
Comparison studies	☑
Assessing legislation (checklist)	☐

Other (please describe): training	☑

1.3 Full name of work (enough to fully describe what the work area is)
A project to compare Environmental permitting procedures (1st year), to develop guidance that describes the best practise in Environmental permitting (2nd year), and to train member countries how to use the guidance (3rd year). Focus is on a more general framework using IED permitting as example.

1.4 Abbreviated name of work or project
DTRT for ENV permitting

11.Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist (name the Directive, Regulation, etc.)	
Industrial Emission Directive (IED) and Environmental Impact Assessment (EIA)	
2.2 Link to IMPEL MASP priority work areas	
4. Assist members to implement new legislation	☑
5. Build capacity in member organisations through the IMPEL Review Initiatives	☑
6. Work on 'problem areas' of implementation identified by IMPEL and the European Commission	☑
2.3 Why is this work needed? (background, motivations, aims, etc.)	

The Environmental Inspection Cycle is well known within IMPEL. It describes step by step how Environmental inspections should be planned and what to consider when executing the inspections. The Environmental Inspection Cycle is also used by IMPEL as a framework where other IMPEL inspection initiatives can hook up on to create a better cohesion between the tools that are developed.

Although there is a lot of experience in Europe in environmental permitting (first IPPC and later IED), the permitting procedure has never been described in a step by step guidance. As a result there is no level playing field for the procedures of environmental permitting, there is no guidance for new permitting officers and there is less cohesion between the IMPEL initiatives on permitting.

The proposal of this 3 year project is to: 1) collect and compare the procedures that are used within Europe at this moment and clarify the needs, **2) based on this information, a project team will develop a guidance that is flexible enough to accommodate the authorities in Europe while issuing permits for the IED**, 3) organize training sessions on IED permitting and identify the gaps in tools and methodologies for issuing permits so new IMPEL projects can be initiated.

Doing the right things for ENV permitting will look closely at the relation between permitting and inspection, identify interesting case studies and best practices in Europe and identify and

describe the steps that could be used in permitting procedures. This document is the Terms of Reference for the second year.
2.4 Desired outcome of the work (what do you want to achieve? What will be better / done differently as a result of this project?)
The final outcome of the work is a step by step guidance for permitting, well trained permitting officers and an identification of new IMPEL initiatives for projects on permitting.
2.5 Does this project link to any previous or current IMPEL projects? (state which projects and how they are related)
This project links to the Doing the right things project for Environmental Inspections.

12.Structure of the proposed activity

3.1 Describe the activities of the proposal (what are you going to do and how?)
Second year (development of step-by-step guidance on ENV permitting) • Drafting of project plan and the structure and scope of the step-by step guidance; • 1st project team meeting to agree on the project plan and to discuss the structure and the scope of the step-by-step guidance; • Development of the first draft of the step-by-step guidance; • 2nd project team meeting to discuss the first draft; • Development of the second draft of the step-by-step guidance, based on the discussion within the project team; • 3rd project team meeting to discuss the second draft and discuss the organisation of the workshop; • Development of the third draft (workshop version) of the step-by-step guidance, based on the discussion within the project team; • Organisation of the workshop; • Drafting the workshop minutes;

- 4th project team meeting to discuss the changes necessary in the step-by-step guidance, based on the outcome of workshop;
- Final version of the step-by step guidance (month 10).

3.2 Describe the products of the proposal (what are you going to produce in terms of output / outcome?)

First year (2016): Comparison report on ENV permitting

Second year(2017): Step by step guidance on IED permitting

Third year (2018): Training of permitting officers and identification of new IMPEL initiatives on permitting

3.3 Describe the milestones of this proposal (how will you know if you are on track to complete the work on time?)

- First project team meeting (month 2)
- First draft of Step-by-step guidance (month 4)
- Second project team meeting (month 5)
- Second draft of Step-by-step guidance (month 4)
- Third project team meeting (month 7)
- Third draft of Step-by-step guidance / workshop version (month 4)
- Workshop to test the step-by step guidance (month 9)
- Fourth project team meeting (month 10)
- Final version of the step-by step guidance (month 10)

3.4 Risks (what are the potential risks for this project and what actions will be put in place to mitigate these?)

The step-by-step guidance will not reflect the permit procedure in the individual IMPEL Member countries and officials may feel uncomfortable using the guidance. To prevent this the guidance will be practical but also flexible enough to accommodate all IMPEL Member Countries.

13.Organisation of the work

4.1 Lead (who will lead the work: name, organisation and country) – this must be confirmed prior to submission of the TOR to the General Assembly)

Tony Liebregts, Human Environment and Transport Inspectorate (Netherlands)
4.2 Project team (who will take part: name, organisation and country)
Tony Liebregts (Team leader) Rob Kramers (InfoMil) 5 other countries (possibly; Ireland, Iceland, Czech Republic, Slovenia, country tbd)
4.3 Other IMPEL participants (name, organisation and country)
Various at comparison workshop (20 to 25 persons)
4.4. Other non-IMPEL participants (name, organisation and country)
Non applicable

14. High level budget projection of the proposal. In case this is a multi-year project, identify future requirements as much as possible

	Year 1 (2016)	Year 2 (2017)	Year 3 (2018)	Year 4
How much money do you require from IMPEL?	*22.500*	27.685	28.800	NA
How much money is to be co-financed	*10.000*	10.000	?	
Total budget				

15. Detailed event costs of the work for <u>year 2</u>

	Travel € **(max €360 per return journey)**	**Hotel €** **(max €90 per night)**	**Catering €** **(max €25 per day)**	**Total costs €**
Event 1	2.160 (6*360)	1080 (6*2*90)	150 (6*25)	3.390
Project team Meeting				
February 2017				
TBC				
7				
1,5 day/2 nights accommodation				
Event 2	2.160 (6*360)	1080 (6*2*90)	150 (6*25)	3.390
Project team Meeting				
May 2017				
TBC				
7				
1,5 day/2 nights accommodation				
Event 3	2.160 (6*360)	1080 (6*2*90)	150 (6*25)	3.390
Project team meeting				
July 2017				
TBC				
7				
1,5 day/2 nights accommodation				
Event 4	9.000 (25*360)	4.500 (20*2*90)	625 (*25)	14.125
Workshop				
September 2017				

TBC *25* *1,5 day/2 nights accommodation*				
Event 5 *Project team Meeting* *October 2017* *TBC* *7* *1,5 day/2 nights accommodation*	2.160 (6*360)	1080 (6*2*90)	150 (6*25)	3.390
Total costs for all events	17.640	8.820	1.225	27.685

16.Detailed other costs of the work for year 1

7.1 Are you using a consultant?	☑ Yes ☐ No
7.2 What are the total costs for the consultant?	20.000
7.3 Who is paying for the consultant?	IMPEL (10.000) NL Inspectorate (10.000)
7.4. What will the consultant do?	Support in the organisation of the meetings and draft the reports
7.5 Are there any additional costs?	☐ Yes ☑ No Namely:

7.6 What are the additional costs for?	
7.7 Who is paying for the additional costs?	
7.8. Are you seeking other funding sources?	☐ Yes ☑ No Namely:
7.9 Do you need budget for communications around the project? If so, describe what type of activities and the related costs	☐ Yes ☑ No Namely:

17.Communication and follow-up (checklist)

	What		By when
8.1 Indicate which communication materials will be developed throughout the project and when ***(all to be sent to the communications officer at the IMPEL secretariat)***	TOR ✓ * Interim report ✓ * Project report ✓ * Progress report(s) ✓ Press releases News items for the website ✓ * News items for the e-newsletter Project abstract ✓ * IMPEL at a Glance ✓ Other, (give details):	☑ ☐ ☑ ☐ ☐ ☑ ☑ ☑ ☑ ☐	01/01/17 - 31/10/17 - - 31/10/17 March 2017 & 31/10/17 31/10/17 31/10/17 -

8.2 Milestones / Scheduled meetings (for the website diary)	Project Meeting Workshop		
8.3 Images for the IMPEL image bank	☐ Yes ☑ No		
8.4 Indicate which materials will be translated and into which languages	Project abstract (dependent on project team members)		
8.5 Indicate if web-based tools will be developed and if hosting by IMPEL is required	No		
8.6 Identify which groups/institutions will be targeted and how	All IMPEL members and members of NEEPA. OECD, INECE, ALERT members		
8.7 Identify parallel developments / events by other organisations, where the project can be promoted			

*✓) Templates are available and should be used. *) Obligatory*

18. Remarks

Is there anything else you would like to add to the Terms of Reference that has not been covered above?

In case of doubts or questions please contact the IMPEL Secretariat.

Draft and final versions need to be sent to the IMPEL Secretariat in word format, not in PDF.

Thank you.

Annex III

Guidance Book (IED and DTRT Permitting)

European Union Network for
the Implementation and Enforcement
of Environmental Law

Doing The Right Things (IED)

Combined guidance

2017/20

A Step by step guidance for permitting and inspection

Workshop version

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 Bruxelles, 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 6th 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.

Table of contents

Introduction

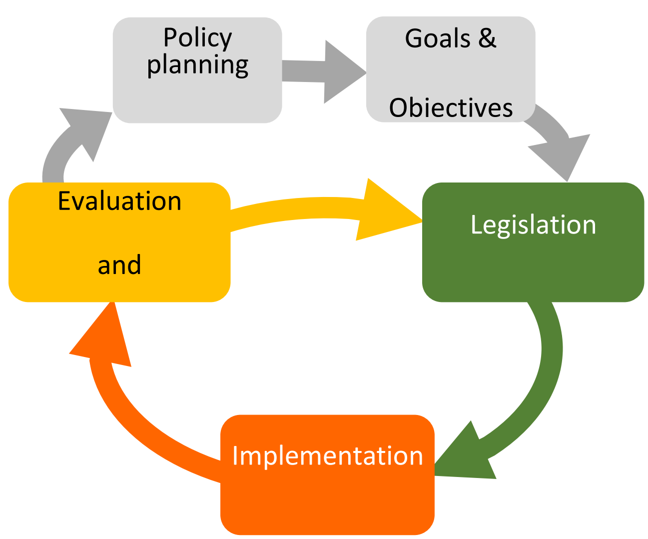
The Environmental Inspection Cycle is well known within IMPEL. It describes step by step how Environmental inspections should be planned and what to consider when undertaking inspections. The Environmental Inspection Cycle is also used by IMPEL as a framework for integrating other IMPEL inspection initiatives, creating better cohesion between the tools that are developed.

Although there is a lot of experience in Europe in environmental permitting (first IPPC and later IED), the permitting procedure has never been described in a step-by-step guidance. As a result there is no level playing field for the procedures of environmental permitting, there is no guidance for new permitting officers and there is less cohesion between the IMPEL initiatives on permitting.

The document that is now in front of you is a combined guidance for permitting and inspection.

Scope and purpose of the guidance

Although we strongly believe that this guidance can be used broadly we do focus on permitting and inspection in relation to the implementation of the Industrial Emission Directive (IED). To explain this we use the regulatory cycle as shown in fig 1. The Regulatory Cycle is used to assist government agencies in charge of regulating the impact to the environment and to develop strategies. It helps them, to work systematically towards a permitting, compliance and enforcement programme that will include structured feedback. Figure 1 shows the sequential steps. Activities within these steps are interrelated, and a missing or underdeveloped step immediately affects the step that follow. For example, inadequate permitting affects inspection and enforcement actions. Inspections are only effective if permitting can be used as a proper starting mechanism. Compliance checking and monitoring are only effective if an inspection system is in place and the consequences of non-compliance can be adequately addressed in the follow-up activities. When there are non-enforceable regulations or permit conditions in place, feedback may lead to adjustments in the legal framework or in the permit conditions to make them more enforceable.



In this guidance we will only cover the steps: Legislation; Implementation; and Evaluation and feedback. The implementation step represents Permitting and Inspection.

The guidance should be used in combination with the technical guidance from the European Commission that are already in place (and the formal/ informal Expert Groups), and the guidance already in place/ under development in your country. The guidance is written for inspectors, permit writers, their management but also for policy makers.

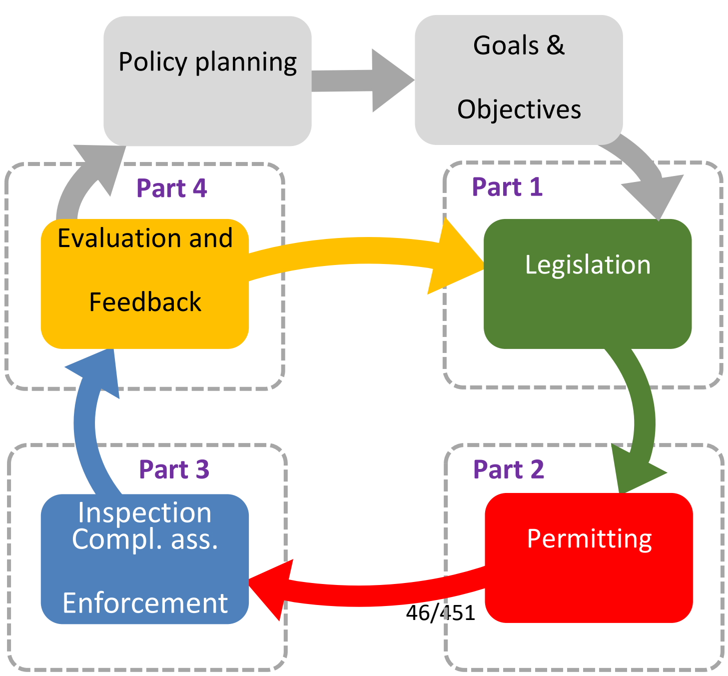
Main structure

The main structure of this guidance consists of the following 4 parts.

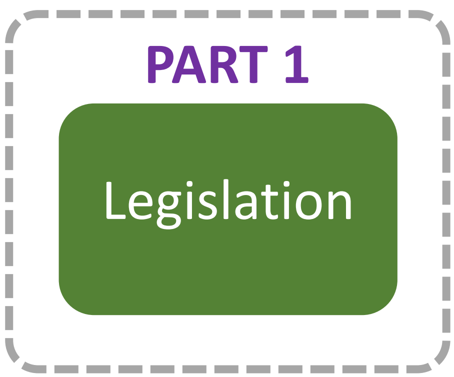
1. The first part is about legislation, it contains the general obligations from the Industrial Emissions Directive and is written for the policy makers;
2. The second part is about the permitting process, it contains a strategic, general and operational steps and is written for the permit officer and his or her management;
3. The third part is about the inspection process, this also contains a strategic, general and operational steps and is written for the inspector and his or her management;
4. The fourth part is about evaluation and feedback on the legislative process and its implementation and is written for the all target groups mentioned above.

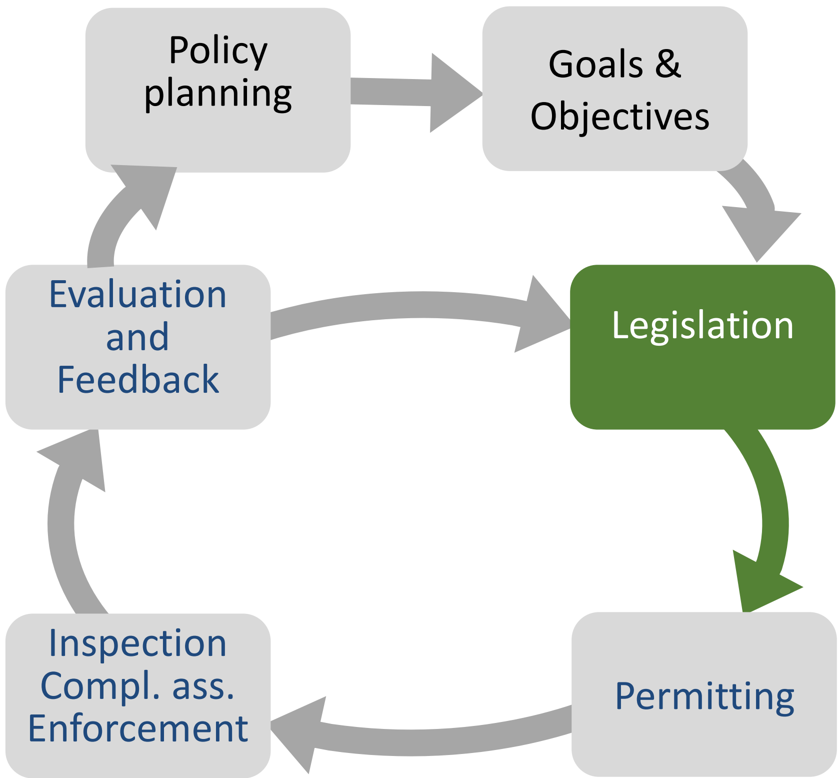
The 4 parts present the main body of this guidance. They can be seen as stepping stones to direct you to more detailed information that can be found in the linked factsheets, best practices and related IMPEL reports. Within part 2 and 3 you will also find operational and strategic cycles and corresponding steps. To keep the guidance readable we did our best to keep the mail body of this guidance as short as possible.

Enjoy reading !



PART 1. Legislation




Policy planning
Goals & Objectives
Evaluation and Feedback
Legislation
Inspection Compl. ass. Enforcement
Permitting

1. Industrial Emissions Directive 2010/75/EU

The Industrial Emissions Directive 2010/75/EU of the European Parliament and the Council (IED) is the main EU instrument regulating pollutant emissions from industrial installations. The IED was adopted on 24 November 2010 and entered into force on 6 January 2011.

1.1. Introduction

The IED aims to achieve a high level of protection of human health and the environment taken as a whole by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT). Around 50,000 installations undertaking the industrial activities listed in Annex I of the IED are required to operate in accordance with a permit (granted by the authorities in the Member States). This permit should contain conditions set in accordance with the principles and provisions of the IED. The IED is the successor of the Integrated Pollution Prevention and Control (IPPC) Directive.

1.2. IED principles

The IED is based on the following principles:

- ***An integrated approach:*** in which the regulation of installations takes into account environmental impacts as a whole including emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, and restoration of the site upon closure.
- ***Best available techniques (BAT):*** where the permitting of installations and emission limit values are based on agreed BAT Conclusions and BAT Reference Documents (known as BREFs) published by the European Commission.
- ***Flexibility:*** by allowing the licensing authorities to set less strict emission limit values in specific cases where an assessment shows that the achievement of emission levels associated with BAT as described in the BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to geographical location or the local environmental conditions or the technical characteristics of the installation.
- ***A system for environmental inspections***: where Member States must set up a system of environmental inspections and draw up inspection plans. Site visits have to take place at least every 1 to 3 years, using risk-based criteria.
- ***Public participation:*** in decision-making and being informed of its consequences by having access to permit applications, the issued permits, the results of the monitoring of releases and the inspection actions that have been executed

1.3. IED implementation arrangements

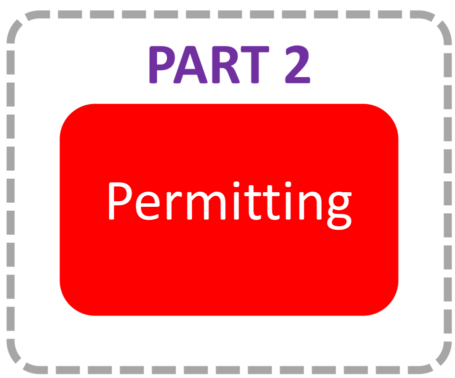
The IED makes provisions for the establishment of two groups involving representatives from Member States to support the implementation of the IED. These are:

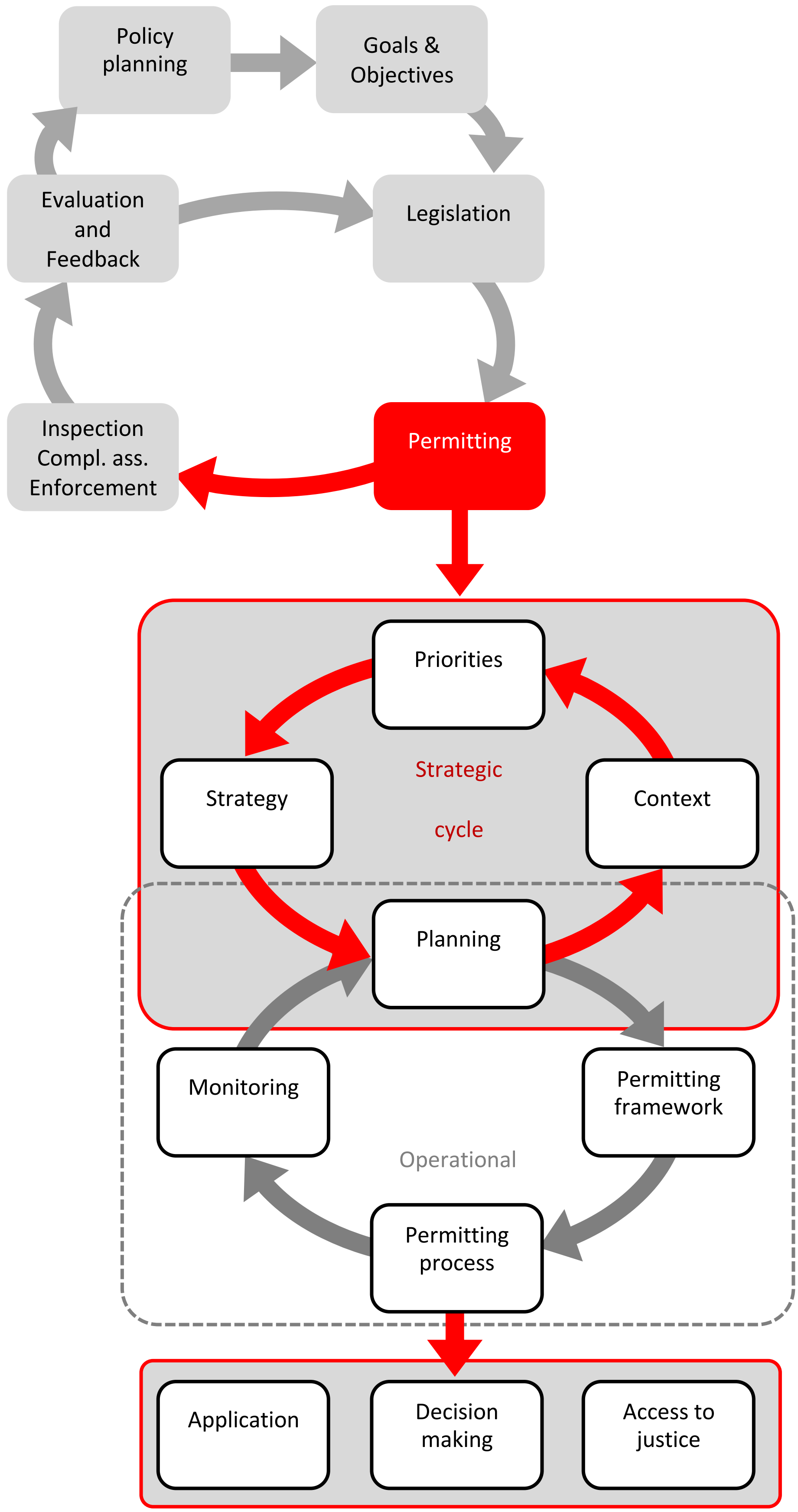
- ***The IED Article 13 Forum:*** a formal expert group set up to exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission. The focus of this group is to review and form an opinion on the proposed content of the BAT reference documents.
- ***The IED Article 75 Committee:*** a formal Committee set up to assist the Commission by delivering opinions on implementing acts, including guidance on the collection of data and on the drawing up of BAT reference documents and on their quality assurance, BAT conclusions, implementing rules for large combustion plants and the type, format and frequency of reporting by Member States.
- ***The Industrial Emissions Expert Group (IEEG):*** An informal group established to facilitate the exchange of experiences and good practices concerning interpretation, transposition and implementation of the IED, and to advise the Commission during the preparation of delegated acts.

1.4. IED : article by article

To be decided

PART 2. Permitting

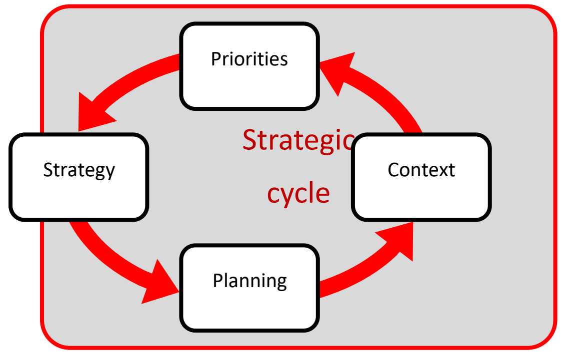


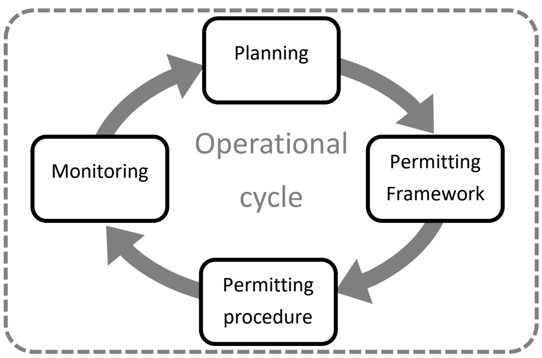


Policy planning
Goals & Objectives
Legislation
Permitting
Inspection Compl. ass. Enforcement
Evaluation and Feedback
Priorities
Strategy
Strategic
cycle
Context
Planning
Monitoring
Permitting framework
Operational
Permitting process
Application
Decision making
Access to justice

2. Permitting cycle

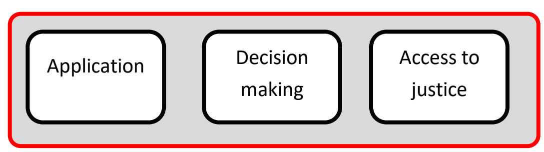
The structure can best be explained by first focussing on the Strategic cycle. The strategic cycle is for the managers. The first step here is the Context. In the Context we identify and describe the information that is needed to set the policy and the right priorities (step 2) and define our strategies (step 3). Based on these 3 steps we can prepare a well-balanced workload plan for the permit writer.





The operational cycle is based on Plan Do Check Act Cycle (PDCA). First step is preparing a plan for the workload of the permit writer (see strategic cycle above). Based on this plan we make sure all conditions are met to execute this work (Permitting Framework). Next step is the execution of this work (Permitting procedure, see next paragraph). Last step is the monitoring. Here we check if targets in the plan are met and if we need to make changes in the Planning step.

In the Permitting procedure the actual permitting takes place. Although the steps in this part are presented linear (with a clear beginning and an end) in most cases (especially with the IED) when the permit is granted there will be a moment in time the permit needs to be reviewed and possibly revised.

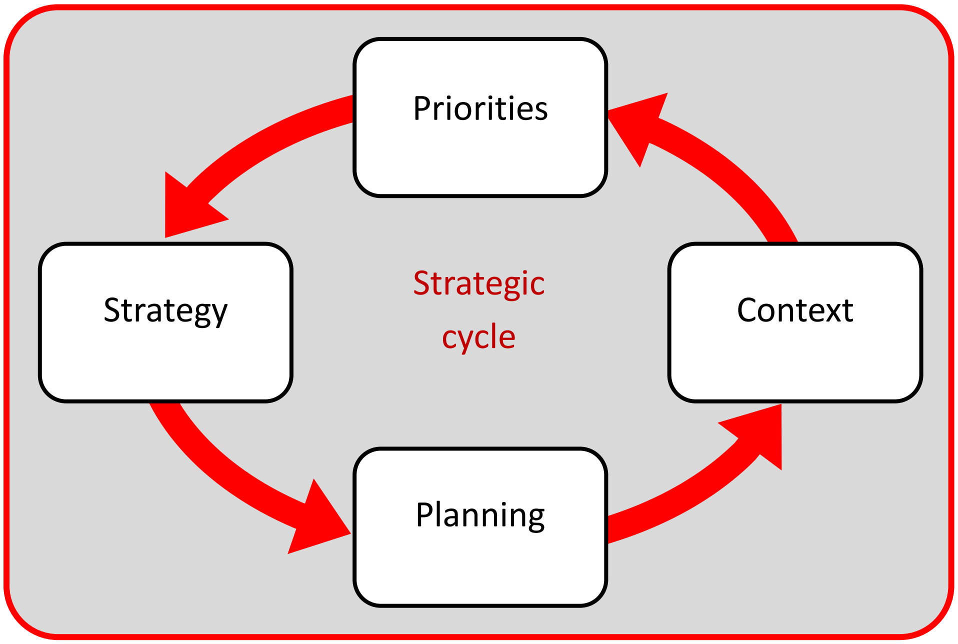


The target groups we address are:

- Strategic cycle: managers
- Operational cycle: permit writers
- Permitting procedure: Permit writers and inspectors

It's good practise that a permit writer and the inspector understands what is happening in the strategic part.

3. Strategic (permitting) cycle



Describing the context is a first step of the systematic approach for developing a work plan for permitting and a necessary input for setting policies, priorities and strategies. An inventory of the context within which the authority has to operate is vital to define its activities and sets the scope of the work plan. See chapter 3.1.

The second step is "Priorities". Setting priorities is necessary when first in, first out is not an option and to make best use of resources available. See chapter 3.2.

The third step is "Strategies". Strategy should be seen a method or plan chosen to achieve the desired goals and objectives that have been set by either national level or your own organisation. It will contain all kinds of actions that will contribute to these achievements. See chapter 3.3.

The fourth step is "Planning". In this step the work plan for permitting is developed and will include the priorities, the strategies and the activities that will be carried out within the defined time period. In contrast to inspection plans, the work plan for permitting is not mandatory by the IED. It's therefor also not mandatory to actively publish the plan. However we do encourage authorities to develop such a plan and make this publically available. See chapter 3.4.

3.1. Context

Describing the context is a first step of the systematic approach for developing a work plan for permitting and a necessary input for setting policies, priorities and strategies. An inventory of the context within which the authority has to operate is vital to define its activities and sets the scope of the work plan. This scope is normally identified by elements such as the general mission and objectives of the authority and in particular its statutory tasks and competences. It is important to keep in mind that the authority is also bound to national, regional or local policies, which are established by others. Furthermore the authority may want to take into consideration particular opinions expressed by the general public, NGO's, industry or other stakeholders. On a more detailed level, information about companies and installations that fall under the competence of the authority concerned can be gathered, including data on their environmental impact; permit situation, compliance behaviour etc. Part of this information is collected through the execution of inspection activities. This data is also assessed in the process of monitoring. The data that is gathered in this step is used for setting policies and priorities as outlined in the next step.

For inspectors this first step is almost identical. It's therefor strongly advised to exchange information and look for cooperation between permit writers and inspectors.

3.1.1. Identifying the scope

This element is about identifying the areas and activities that should be looked at in the further stages of the planning process and sets the scope of the working plan. Together with the element "information gathering" (section 3.1.2) it provides the input for setting priorities. Issues that are relevant here are for example: the geographic area; goals and objectives of the authority; and the statutory tasks and competences. For a full list of all relevant issues see fact sheet 2.01.

See Factsheet 2.01

3.1.2. Information gathering

This element is about collecting more detailed information on the areas that are identified in section 3.1.1 and are needed to prioritise the work load and develop a work plan for permitting. Issues that are relevant here are for example: data on the (local) environment; technical data on the IED installations in the controlled area; the permit situation of these installations; and upcoming changes in legislations and BAT conclusions. For a full list of all the relevant issues see fact sheet 2.01.

See Factsheet 2.01

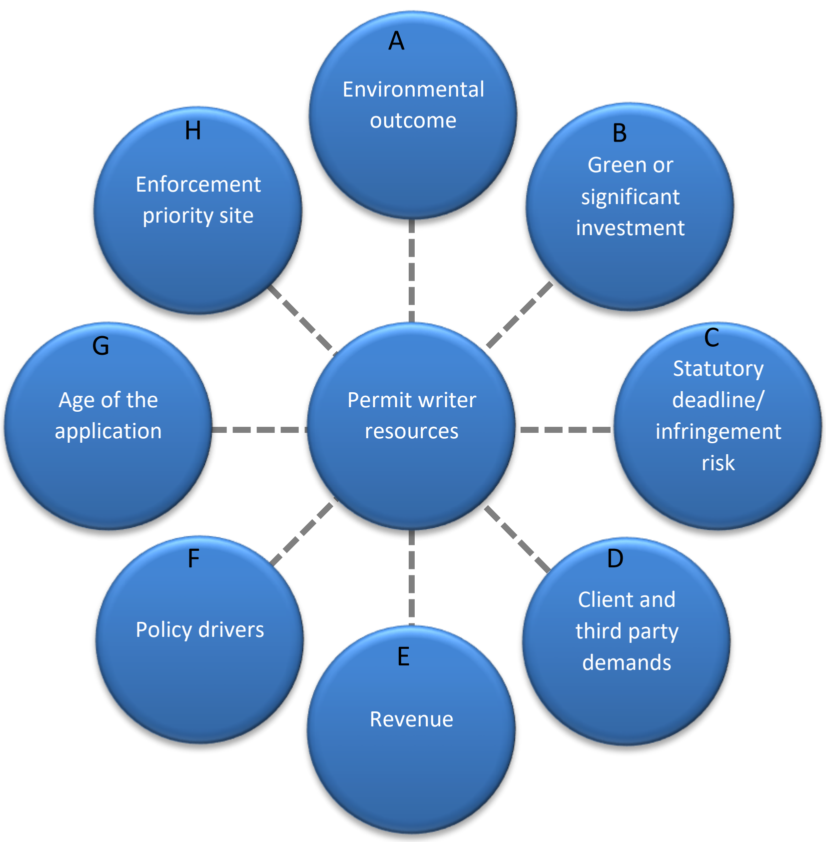
3.2. Priorities

In this step we look at priorities. Setting priorities is necessary in case we do not have enough resources and first in, first out is not an option for different kind of reasons.

Permitting Departments are responsible for a range of tasks which directly or indirectly relate to permitting. Available staff do not always provide for the operation of a first in first out application completion method. Where a first in first out method is not feasible a prioritisation model is required.

The aim of a prioritisation model is to identify the factors which influence the prioritisation of permit applications. These factors can then be used to rank permit applications received and those due to be received within the upcoming year.

The figure below is an example of a working set of prioritisation factors for permit applications. This model can be used as a starting point, however, due to variations across IMPEL Member countries these factors should be tailored to ensure relevance.



In random order:

a) Environmental Outcome: In some cases installations may be negatively impacting the environment due to e.g. historic contamination or current emissions. Inspection authorities bodies may wish to regulate activities at an installation that may be causing issues locally or perhaps the installation needs to be closed in a regulated manner.
b) Green or significant Investments: There may be a requirement nationally for a particular economic sector or emerging industry type to be given a priority where investments have been made in order to get these industries operational.
c) Statutory deadline/infringement risk: Applications may need to be prioritised where they have links to statutory deadlines (e.g. implementation of Commission Implementing Decisions relating to BAT conclusions), known infringements, any complaints being made to the Commission, petitions from the European Parliament, queries from MEPS or reports being submitted to the Commission which point to infringements of Community environmental law. Applications should be prioritised to ensure the risk of infringement is reduced.
d) Client and third party demand: Regulatory bodies may have a history of on-going communication with various clients and third parties. As a means of optimising stakeholder focus specific applications may need to be prioritised.
e) Revenue: It may be the case that applications which have higher fees are a priority depending on the financial climate of the regulatory body.
f) Policy drivers: Overall organisation policies require consideration in addition to local enforcement and permitting policies. National policies should also be considered e.g. circular economy, climate, greenhouse gases and national emission ceilings.
g) Age of the Application: If for any reason a permit application has not been progressed for an extended period of time it may need to be prioritised in order to ensure the information within the application remains relevant. Abandonment procedures may need to be progressed in some instances.
h) Enforcement Priority Sites: the Permitting Department should formalise a means of communication with the Permit Enforcement Department. This should ensure that enforcement staff relay their priorities with regard to specific installations and the justification for their prioritisation requirement.

Once the prioritisation model has been decided and agreed by management it can used to assess the current staffing level versus the permit applications which have been submitted and applications due to be submitted in the following year. This will enable permitting managers to allocate permit applications to permit writers with a justified priority ranking as part of the annual working plan for permitting.

It is important to note that this approach requires a certain degree of flexibility as factors which influence prioritisation of permit applications may change over the course of the year.

3.3. Strategy

In this step we look at strategy. Strategy should be seen a method or plan chosen to achieve the desired goals and objectives that have been set by either national level or your own organisation. It will contain all kinds of actions that will contribute to these achievements. The issues addressed in this section are not limited and more issues could be added

Applying BAT

The way permit conditions are set is by referencing the BAT conclusions, national guidelines, or by following national legislation. However the competent authority has the power to deviate from BAT conclusions as long as the performance levels i.e. the BAT AELs are met Derogations (setting less stricter ELV's than BAT AEL) are open to appeal in court and competent authorities should be able to defend this. The submitted EIA can also play an important role when defining the permit conditions. See fact sheet 2.02.

See Factsheet 2.02

Reviewing existing permits:

According to article 21 of the IED the competent authority has to reconsider or review all permit conditions, and where necessary to update these permit conditions. When reconsidering permit conditions, the competent authority shall use any information resulting from monitoring or inspections. The IED also sets a timeframe of 4 years after the publication of BAT conclusions. See fact sheet 03 reviewing existing permits for answers to questions about reviewing of permits.

See Factsheet 2.03

Objectives or targets for certain companies or industrial sectors

These objectives and targets that need to be reached are laid down in national legislation or in regional plans (e.g. air quality plan, action plans for noise reduction). Typical objectives or targets are set for air quality, risk reduction, odour, storm water runoff, waste management, reduction of greenhouse gases and energy efficiency. These objectives or targets should be translated in strategies within the permitting procedure.

Some examples are:

- The special requirements from legislation;
- The use of the EIA;
- According to the annual licensing plan;
- Control plan Air Quality;

- Industrial plans;
- Special guidelines that have to be followed. Deviation is possible in some circumstances;
- Regional programs for improving Air quality. There is an annual permitting plan which set priorities.

Encouraging and facilitating eco-innovations

Eco-innovations in terms of development and implementation of completely new processes and techniques leading to significantly improved monitoring, control or reduction of waste or emissions are key to achieving environmental goals and ambitions of Member States. Authorities can within the framework of IED permitting develop strategies and take various (organisational) measures aimed at proactively encouraging and facilitating operators who want to carry through eco-innovations.

See Factsheet 2.04

Relationship permitting and inspection

Establishing and encouraging a good level of communication, information exchange and relationship between permit writers and inspectors/enforcers is very important. Not only the quality of the permits will benefit from this, also work can be done more effective and more efficient. There are a number of opportunities the inspector can have a positive involvement in the permitting procedure.

See Factsheet 2.05

Transparency and visibility

Public visibility of the application, draft report and permit, submissions, objections and final report and permit. The permit procedure must be fully transparent and allow for public participation. This requirement is stated explicitly in the Industrial Emissions Directive and comes from the Aarhus Convention.

See Factsheet 2.06

Internal and external communication

- Some good practices for internal and external communication are:
- Communication plan that ensures the involvement of various stakeholders in the process;
- Protocols that describes how letters are formally stored and how communication through internet can take place;
- A customer charter, which is published on the website of the competent authority and includes all applicable documents, correspondence and decisions by the competent authority;
- An annual internal communication plan, that includes: media relations, website and intranet, publications, internal communications, internal newsletters, exhibitions, environmental surveys, education etc);
- A national web based communication system for all communication between competent authority and applicants.

3.4. Planning

In this last step of the strategic cycle we look at "Planning". In this step the work plan for permitting is developed and will include the priorities, the strategies and the activities that will be carried out within the defined time period. In contrast to inspection plans, the work plan for permitting is not mandatory by the IED. It's therefor also not mandatory to actively publish the plan. However we do encourage authorities to develop such a plan and make this publically available.

Annual work plan for permitting

Benefits and opportunities of an annual work plan are:

- It is a management tool for the organisation. It gives guidance for the desk officers (it is important for them to know the amount of work that is planned, time pressure);
- It presents de the priorities (dividing time between important and less important issues);
- Annual plan can be internal (practical) and external (communication tool);
- Annual plan can help implement the national environmental action plan;
- Input from inspection colleagues can present opportunities to identify priorities and outcomes;
- Factors that will influence the annual plan are: priorities from inspection colleagues;
- Age of application; economics.

Issues of importance:

A working plan needs some form of flexibility.

- Changing of plan because of changing priorities
- Influence of political priorities
- Changing legislation;
- The way objectives on environmental outcomes play a role in setting priorities is difficult;
- Focussing on environmental outcomes might be too high level for day to day work of permit writer;
- Environmental outcomes already have their place in specific policy and legislation, The way objectives on environmental outcomes play a role in setting priorities is difficult;
- Focussing on environmental outcomes might be too high level for day to day work of permit writer;
- Environmental outcomes already have their place in specific policy and legislation.

Data needed for planning could be collected through:

- pre-consultation (or pre-application discussion);
- number of permits with expired period;
- revision needed because of adoption BAT conclusions;
- based on permitting statistics in the past and inspection data.

Working plans could contain the following information:

- Multi-annual IED evaluations, taking into account the publication of the BAT conclusions;
- Permits on hand and permits that can be expected which will be progressed and finalised during the year. Reviews of existing permits;
- The plan also contains other work commitments assigned to permitting staff;
- The human, financial and other resources that are necessary and need to allocated;
- Priorities that have been set;
- Key data on time spend on the different types of applications.

Estimations on how much time is needed could be based on the average number of applications in the last 5 years, the knowledge of new applications that can be expected and, the knowledge of changes in legislation that can occur. Further we need to address that an annual working plan for new installations is sometimes difficult or not possible.

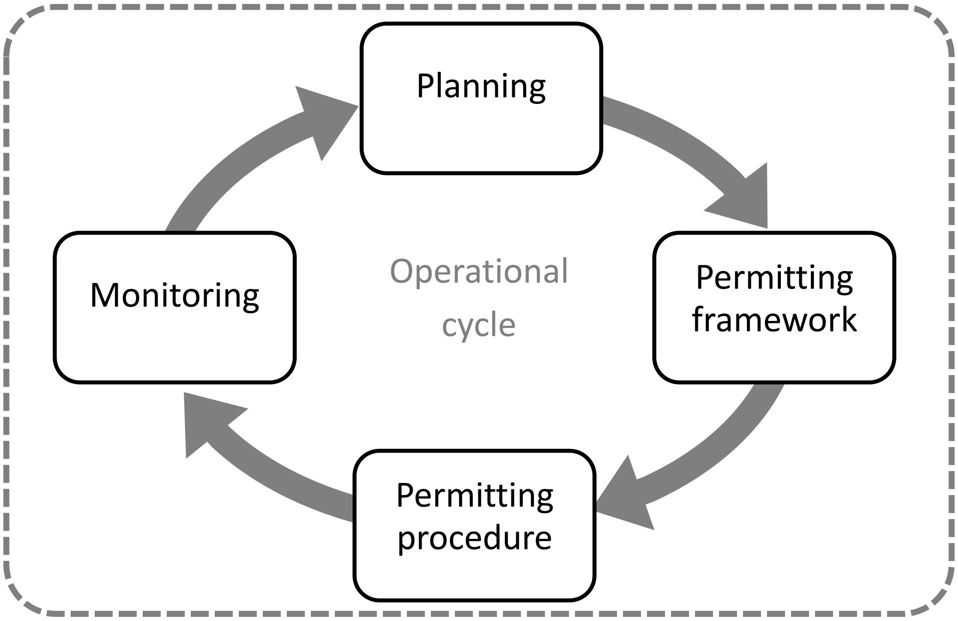
The annual work plan is to ensure that we reach our targets. There is not always a relation between budget and targets to be reached. Allocation of staff can be a solution.
Input from lawyers and specialist should be part of the work plan. In case lawyers and specialist are not part of the same organisation a Service Level agreement could be helpful. A work plan for permitting is not (yet) mandatory and are often set up based on the planning of the revision of the BREFs. Publication of the work plan is also an issue we need to address)

<u>Time allocation</u>

Time required for the procedures and the maintenance of permits. Time spend depends on the quality of the application, the complexity of the activity, the need for further information from the applicant and the possible effect of public participation. In most cases the time frames are set by law and need to be respected.

Flexibility in a plan is necessary. You have to be sure the organisation can adapt to changes

4. Operational (permitting) cycle



In this step the work plan for permitting is developed and will include the priorities, the strategies and the activities that will be carried out within the defined time period. In contrast to inspection plans, the work plan for permitting is not mandatory by the IED. It's therefor also not mandatory to actively publish the plan. However we do encourage authorities to develop such a plan and make this publically available.

The second step is "Permitting Framework". In this step we make sure all necessary conditions are met so the permitting officers can do their work in an efficient and effective way. Conditions that are of importance are: education, training, competences, IT solutions, procedures and protocols, manuals and agreements for advise etc. See chapter 4.2.

The third step is "Permitting procedure". In this step the actual permitting work is done. This step includes the submission of the application, decision making and access to justice. See chapter 4.3.

The fourth step is "Monitoring". To make sure we meet the objectives we set in our work plan we have to monitor the *output* (did we carry out the planned activities?) and the *outcome* (what were the effects of our activities?). This information will be used for reviewing the plans and for reporting to different stakeholders, for instance the minister responsible, parliament, the general public, the European Commission etc.

From the "Monitoring" step we return to the "Planning" step. Based upon the monitoring results but also because of other influences (e.g. changes in the context) the working plan be reviewed and possibly be revised. See chapter 4.4.

4.1. Planning

In this first step the work plan for permitting is developed and will include the priorities, the strategies and the activities that will be carried out within the defined time period. In contrast to inspection plans, the work plan for permitting is not mandatory by the IED. It’s therefor also not mandatory to actively publish the plan. However we do encourage authorities to develop such a plan and make this publically available.

This step is already described in chapter 3.4.

4.2. Permitting framework

The second step is "Permitting Framework". In this step we make sure all necessary conditions are met so the permitting officers can do their work in an efficient and effective way.

The following conditions should be in place:

- Adequate education and training
- Good guidance
- Agreements on coordination and internal and external advice
- Clear procedures
- Protocols for communication, information management and information exchange
- Clear instructions
- Checklists
- Technical literature
- IT systems for:
    - Planning
    - Monitoring procedures
    - Preparation of permits
    - Registration of applications, decisions (permits) and appeals
- Means of transport and communication
- Personal safety equipment

Ensuring good quality of the work can be done by:

- Making sure national legislation is not hindering the developments in Best Available Techniques;
- The development of national studies on BAT;
- Organising seminars for the permitting division;
- Enhancing the expertise of staff by participation in experts working groups;
- By combining the opinion of other advisory bodies into a joint opinion;
- Working with an authorised person;
- Cooperation with other governmental authorities;
- Improving the skills of the officers by specialisation in a specific part of industry;
- Peer reviewing of the permits, e.g. by a senior member;
- By training permitting officers and inspectors;
- Cooperation between colleagues, e.g. setting up a team with lawyers and different specialists and inspector that have input during the permitting procedure; Following clear procedures while issuing or refusing permits;
- Use of templates and standard text blocks for permit conditions that are maintained and up to date for use;
- Good communication and information exchange between departments and staff; By certification of the permitting procedure;
- Pre-consultation between the competent authority and the operator.

4.3. Permitting procedure

In this step we look at the "Permitting procedure". Here the actual permitting work is done. This step includes the submission of the application, decision making and access to justice.

4.3.1. Application

Main steps in this phase are:

Application	Decision making	Access to justice

Step	Description	Factsheet
Initiative	The operator takes the initiative because of a new installation or a change of installation. The competent authority can take the initiative in case the permit needs to be changed because BAT conclusions, expired period of permit or changing a legislation.	
Pre-application discussion	This meeting can be organised or held before the official submission of the application takes place. The legal status of this step differs from country to country. See fact sheet 2.06 on pre-application discussions.	Factsheet 2.07
Application form	It's advised to make use of standard application forms. These forms can either be mandatory or voluntary for the applicant to be used. In the forms all compulsory information and annexes should be marked. The forms could be made available on website of the competent authorities and could include a guidance how to fill in the form. There are good practices with electronic portals to apply for a permit (provided by the authority). Good practice for application forms is also to ensure that they are asking the right questions. We have to make sure that the information asked for is in fact required to make an application determination. Boundaries of installation !!	
Annexes	One of the annexes to the application form is the Base-line report on soil and ground water contamination. The report provides the basis for a comparison with the state of contamination upon definitive cessation of activities. See factsheet 2.07 for base-line report	Factsheet 2.08
Submission and intake	Submission of the application can be done by either registered mail (with a number of hard-copies or CD-ROM) or electronically by email or by a dedicated website or online tool. Optional, the application can first be checked by the competent authority before it is formally submitted).	
Checking of application	This can be divided in 2 checks, an administrative check (completeness) and a technical check (assessment on quality of the application). Sometimes these are 2 separate steps, sometimes this is part of the same overall assessment. This will help to speed up the assessment of the application, if permit writers are alert to potential weaknesses in applications. See factsheet 2.07 for checking application.	Factsheet 2.09

Notification

in case the application is declared complete and admissible the applicant is notified by registered letter, by email or by a notification from a dedicated online tool, within a dedicated timeframe. After this the application (either all documents including the annexes or only an abstract) could be published on the website of the CA. The notification could contain the following information:

- the statement that application was complete and admissible;
- type of permit and procedure; date procedure starts;
- information about public participation.
- All forms of communication, formal or informal need to be recorded as they influence the evolution of the permit;

Public partici-pation

Public and other stakeholders can be informed about the application through official panels, newspapers, (dedicated) website of the competent authority and/or official electronic gazette. In some cases it's good practice to send letters to citizens that live within a certain radius of the installation. Other ways of public participation are public hearing or information meeting can also be organised by the competent authority (or the applicant) after the application is considered complete and admissible. Often the application and the annexes will be available for insight by public and interested parties for a dedicated time.

Type of procedure

The type of procedure is always given by legislation. The following types can be distinguished:

- Procedure for a minor change;
- Procedure for change of installation;
- Procedure for a new installation;
- Regular procedure;
- Extended procedure.

Fees

This can be a fixed amount, an amount depending on the scale of the activity or the amount of hours spend on the permit. Fees can be paid in advance (before submitting the application or after it has been declared complete and admissible), or paid afterwards

4.3.2. Decision making

There are legal timeframes between the date the application was submitted and declared complete and admissible and the moment the decision is made. In some cases the permit is considered to be refused in case the timeframe is not met.

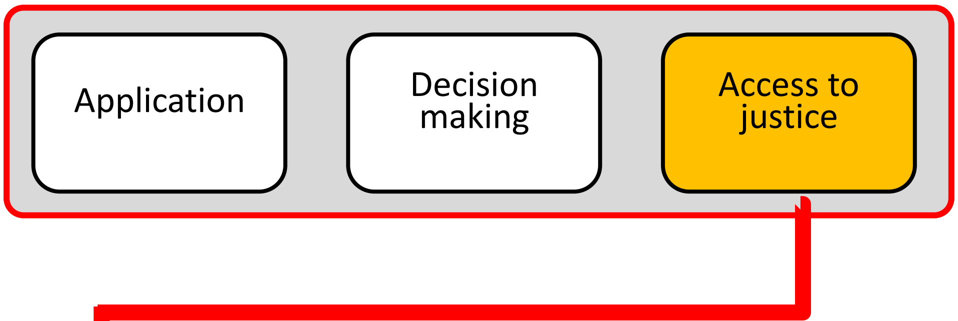
The main steps in this phase are:

Application | **Decision making** | Access to justice

Environmental Impact Assessment	In case the installation is classified as an IEA installation an IEA report has to be submitted. In some countries the report has to be written by an authorised person. Screening can be done by the competent authority or by a special authorities. The same is for the scoping and the evaluation of the report. In some countries the EIA is an integrated part of the application, for some it's a mandatory step that has to be finished before submitting an application, for others the conditions in the EIA will be part of the permit. In some countries EIA and AA can be joint together in one procedure, in other countries this is not possible.	
Appropriate assessment	It's advised to make use of standard application forms. These forms can either be mandatory or voluntary for the applicant to be used. In the forms all compulsory information and annexes should be marked. The forms could be made available on website of the competent authorities and could include a guidance how to fill in the form. There are good practices with electronic portals to apply for a permit (provided by the authority). Good practice for application forms is also to ensure that they are asking the	
Advise and consultancy	Advise and consultation: Advise could be explained as information that is needed to continue the process, while consultation is more an exchange of information and opinions. In some cases advise can be given by certain staff that is assigned with specialist responsibilities (e.g. EIA, AA, Baseline reports, BREF's, water, waste, safety, air) and can assist colleagues. For external knowledge and expertise special meetings could be attended that are organised by national or federal level. Consultation starts after the application is sent to the (legal) advisers or to experts (some internal some external, some compulsory) opinions are submitted within a certain timeframe to a commission, case manager, coordinator or permit officer. The following information can be used: Record of complains; incidents and accidents; Inspection reports; Emission data; Previous activities; and for waste installations criminal records could also be acquired.	
Boundaries of installation	There are two strands in defining the boundary of an Installation. This is defining the technical unit (TU) and identifying any directly associated activities (DAA). Together these two aspects will allow the boundary of an installation to be determined. See factsheet 2.09	Factsheet 2.10
Cost-benefit	A key component of Article 15(4) of the IED is the need to undertake an assessment that shows that the achievement of BAT-AELs would lead to disproportionately higher costs compared to the environmental benefits as a result of the criteria laid down in Article 15(4)(a) and (b).	Factsheet 2.11

Step	Description	Reference
Derogations	The IED allows competent authorities some flexibility to set less strict emission limit values. This is possible only in specific cases where an assessment shows that achieving the emission levels associated with BAT described in the BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to the geographical location or the local environmental conditions or the technical characteristics of the installation. The competent authority is required to document its justification for granting such derogations. The provisions for derogation in the IED can be found in factsheet 2.11.	Factsheet 2.12
BAT assessment & Setting conditions	Setting conditions: Key list of conditions are: See factsheet 2.12 • Permissible values of emissions into water, air or soil; • Environmental protection measures and other conditions for the operation of installation; • Operator's obligations concerning the implementation of monitoring and reporting to the ministry; • Measures to ensure the maximum level of protection of the environment as a whole	Factsheet 2.13
Use of General Binding Rules	Use of General Binding Rules: Use of General Binding Rules : GBR apply to all installations and should be resulting from BAT conclusions. GBR should be regularly updated and needs to be BAT proof. In addition to GBR installation local and specific conditions need to be set.	
Draft decision	An authority should use a standard format for a decision. It should at least include: • A reference to the opinions and the motivation why they are followed or not followed; • The conditions for operation; • The considerations of the competent authority about the conditions; • The expiration data in case the permit is limited in time. Reasons to refuse or end the permit are: • When the building permit is refused (only when there is a direct link the environmental permit); • In case the operation of the establishment (or part of the establishment) has not been taken into use within a certain timeframe (e.g. 3 years); • In case the installation has been destroyed by fire or explosion	
Enforceability	An enforceability check is done on the draft permit by the inspector. In case standard conditions are used, the enforceability has already been checked on front. In case of non-standard conditions the enforceability check is done afterwards.	
Notification	The (draft) decision is send to the operator by mail, email or can be downloaded from a dedicated online tool. All involved persons will be informed. The notification can be send by letter, email or notification.	
Public partici-pation	The IED ensures that the public has a right to participate in the decision-making process, and to be informed of its consequences, by having access to permit applications, permits and the results of the monitoring of releases. A (draft) decision will be published for a certain timeframe at the regular locations (official boards, newspapers, websites). For more sensitive activities the CA can organise public meetings. There are a lot differences between the countries in the procedures for public participation; Some countries publish the application on the website but do not organise meetings. Some publish applications and will organise meetings on request; Some countries also publish the draft decision. Also here some countries do not organise meetings and some only do this on request.	
Fees	See application phase	

4.3.1. Access to justice



Main steps in this phase are:

Views	This is only relevant when the competent authority prepares a draft decision. Reasons to prepare a draft decision are: • it will help in the negotiation; • it gives the operator the chance to express his comments and remarks on the draft permit. In some cases only the operator and other governmental organisations are involved in this step. When this step is taken the permitting authority can use the views while writing the final decision.
Objection	In principle it should be possible to object against decisions. A special commission could be assigned to give advises if the decision should be reconsidered. In principle everybody can object (also public, NGO's and neighbours). The form an objection needs to be given could be different per country. There are also differences how to act on an objection. E.g. when the objections comes from an authority the competent authority must come with a solution.
Appeal	When objection is turned down, appeal in court is possible for those that have a direct concern with the activities to which the permit is issued. Appeal is possible for the (Administrative) court and the higher (administrative) court or State court. In most countries all involved parties can appeal (operator, other authorities, directly involved persons, NGO's). In some cases the appeal suspends the disputed decision, in other cases it doesn't. Against a decision in appeal in court can be appealed again for the higher court.
Judging	Judging is done by either the (administrative) court or the higher (administrative) court. Outcome of judging is: • Rejection of the decision and ask for a new decision by the component authority; Confirm the decision made by the competent authority; • Court comes with his own decision.

4.4. Monitoring

In this step we look at "Monitoring". To make sure we meet the objectives we set in our work plan we have to monitor the *output* (did we issue, review and revise the permits that was planned and we reach good quality) and the *outcome* (what were the effects of our activities?).

Output

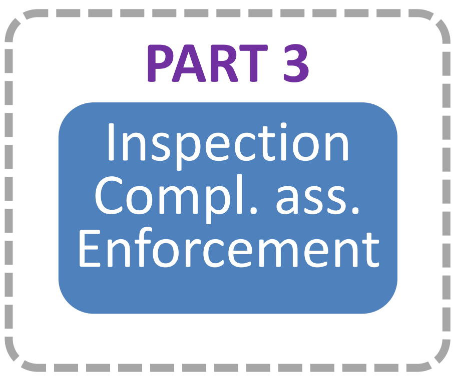
Execution of (personal) work plan can be checked in house on regular basis and on annual basis by the ministry:

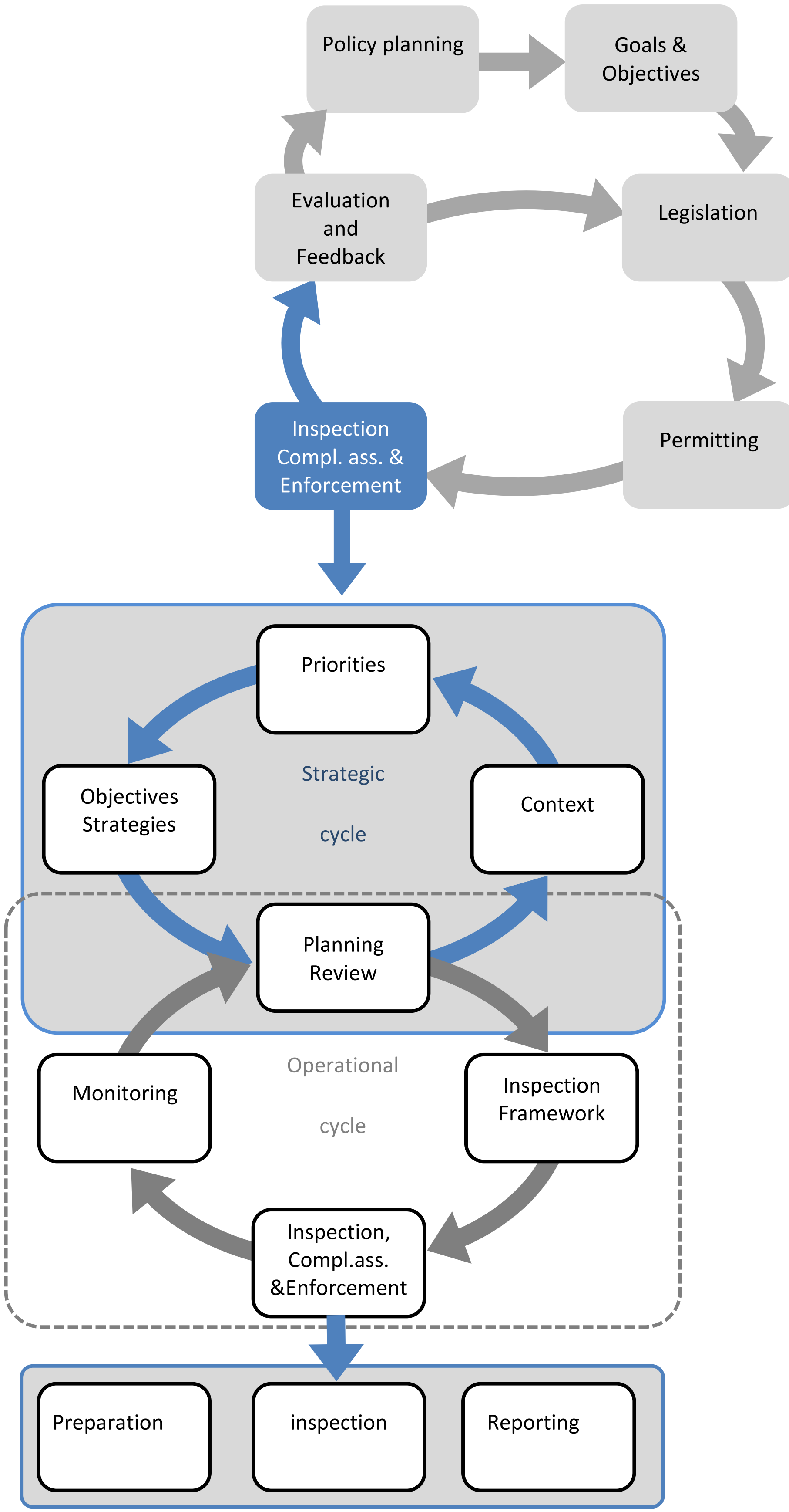
- Elements that can be monitored are:
- Timeframe of the permitting process
- Number of permits issued

Outcome

Here we should make a relation to monitoring and reporting of environmental quality.

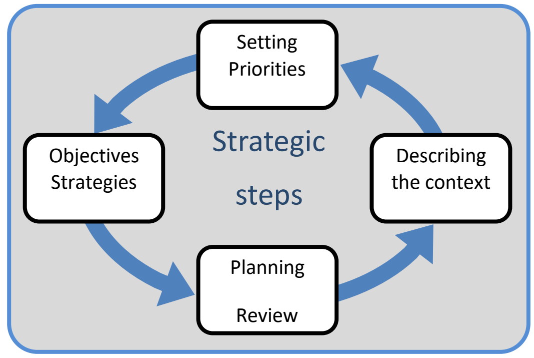
PART 3. Inspection cycle

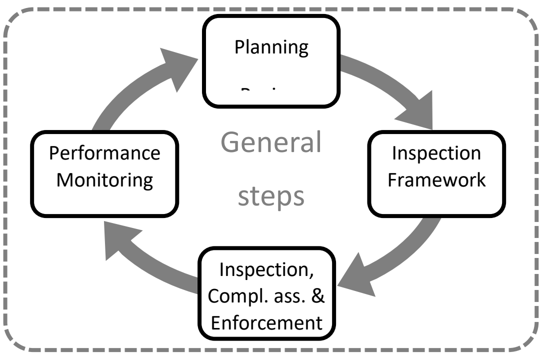



Policy planning
Goals & Objectives
Evaluation and Feedback
Legislation
Inspection Compl. ass. & Enforcement
Permitting
Priorities
Objectives Strategies
Strategic
cycle
Context
Planning Review
Monitoring
Operational
cycle
Inspection Framework
Inspection, Compl.ass. &Enforcement
Preparation
inspection
Reporting

5. Inspection cycle

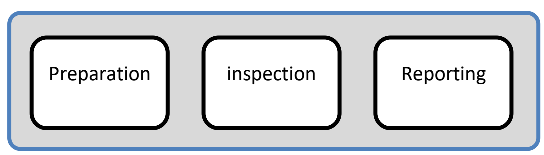
The structure can best be explained by first focussing on the Strategic cycle. The strategic cycle are for the managers. The first step here is Describing the context. Here we identify and describe the information that is needed to set the right priorities (step 2) and define our objectives and strategies (step 3). Based on these 3 steps we can prepare the inspection plan.





In the operational cycle we see a Plan Do Check Act Cycle (PDCA). First step is preparing an inspection plan (see strategic cycle above). Based on this plan we make sure all conditions are met to execute this work (Execution Framework). Next step is the execution of the inspection, compliance assessment or enforcement. Last step is performance monitoring. Here we check if the inspection targets that are formulated in the plan are met and if we need to make changes in the Planning step.

In the step Inspection, compliance assessment and Enforcement the actual work is executed ()actual inspection work (preparation, executions and reporting). Although the steps in this part could be linear (with a clear beginning and an end) in many cases inspection work for a certain object will never stop. This can be because a non-compliance is identified but also because the IED prescribes a certain frequency (based on risk) after which the object needs to be inspected again.

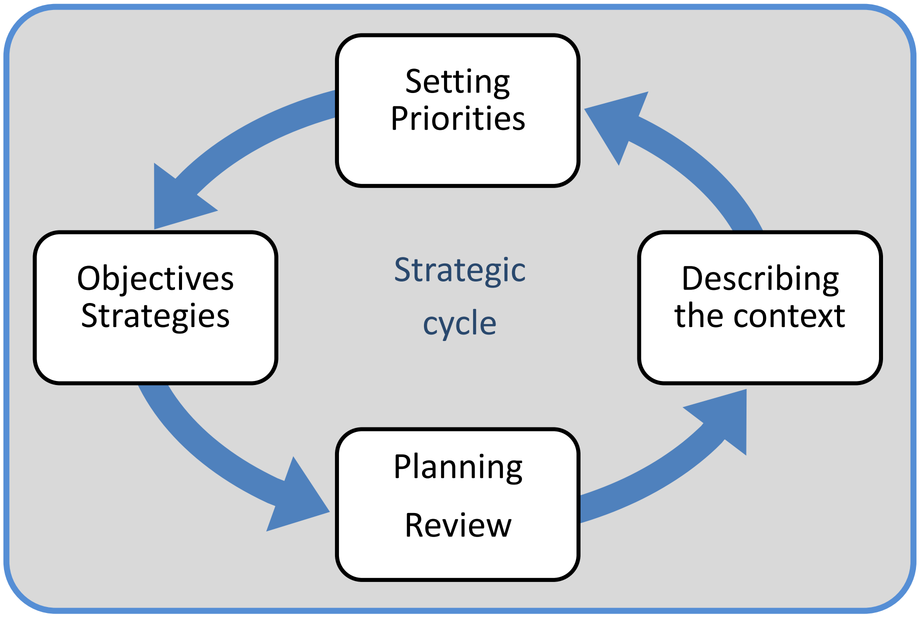


The target groups we address in part 3 are:

- Strategic inspection cycle: Managers
- Operational inspection cycle: Inspector and managers
- Inspection, Compliance Assessment and Enforcement: Inspectors

It's of course expected from an inspector to understand what is happening in the strategic part.

6. Strategic (inspection) cycle



The first step in this cyclic process is "Describing the context". Here the inspecting authority looks amongst others at its statutory tasks. This part sets the scope of the inspection plan. In addition to the identification of the scope it is necessary to gather information for performing the risk assessment.

The second step is "Setting priorities". This step starts with an assessment of selected environmental or other risks. The risk assessment will result in a list of installations or activities that are ranked and classified. In this step the priorities are also set. In other words, what installations or activities will get the necessary attention (and how much) and what will not. The output of this step, the listed priorities (for the specified period), is then the input for the next step.

The third step is "Defining objectives and strategies". Within this step the inspecting authority identifies inspection objectives and targets. These objectives and targets can be presented quantitatively and/or qualitatively. When it is clear what we want to achieve we can define or modify the inspection strategies in order to meet these objectives and targets. The output of this step, the objectives, measurable targets and the inspection strategies, will be part of the input of the next step.

The fourth step is "Planning and review". In this step the inspection plan is developed. The inspection plan covers a defined time period and describes and explains the steps taken in box 1a, 1b and 1c. Part of the inspection plan is the inspection programme. The inspection programme may stand as a working annex to the inspection plan, or as a separate document referenced within the inspection plan.

6.1. Describing the context

Describing the context is a first step of the systematic approach for planning of inspections and a necessary input for identifying and analysing the risks. A full inventory of the context within which the authority has to operate is vital to define its activities and sets the scope of the inspection plan. This scope is normally identified by elements such as the general mission and objectives of the authority and in particular its statutory tasks and competences. It is important to keep in mind that the inspecting authority is also bound to national, regional or local policies, which are established by others. Furthermore an inspectorate may want to take into consideration particular opinions expressed by the general public, NGO's, industry or other stakeholders. On a more detailed level, information about companies and installations that fall under the competence of the authority concerned can be gathered, including data on their environmental impact; permit situation, compliance behaviour etc. Part of this information is collected through the execution of inspection activities. This data is also assessed in the process of performance monitoring. The data that is gathered in this step is used for carrying out the risk assessment process as outlined in the step priorities.

6.1.1. Identifying the scope

This element is about identifying the areas and activities that should be looked at in the further stages of the planning process and sets the scope of the inspection plan. Together with the element "information gathering" (section 6.1.2) it provides the input for the risk assessment. The table in Factsheet 3.01 gives a list of all the relevant factors that the inspecting authority may have to consider when making the inventory.

See Factsheet 3.01

6.1.2. Information gathering

This element is about collecting more detailed information that is needed to carry out the risk assessment on the areas and controlled activities/installations that were identified in Section 6.1.1. It provides the input for the risk assessment. In other words information which enables the authority to estimate and weigh the different risks connected to these areas and activities in order to assign priorities to certain areas and activities. See factsheet 3.01 to find the issues that may be relevant to gather information of.

See Factsheet 3.01

Input:	Relevant legislation and regulations, legal obligations to inspect, environmental and other governmental policies, environmental and other assessments, management reports, inspection reports, complaints, data from performance monitoring (box 4), operational complexity and location .
Output:	Data for the risk assessment.

6.2. Setting Priorities

Setting priorities starts with a risk assessment. The method used for risk assessment should be objective in nature, simple to apply and can differ between inspecting authorities. The information gathered in the previous step will be used as input. The output of the risk assessment are assigned priorities that can be defined as objectives.

The main goal of a risk assessment is to prioritize the workload of an inspecting authority. The result of an assessment within the framework of the IED will result in an inspection frequency of site visits of inspection objects. The reason for prioritizing our workload is that inspecting authorities have limited resources (inspectors and finance), which should be distributed among the inspection objects in an accountable way. In a risk-based approach, most inspection effort should be expended on the objects with the highest risks (highest risk first).

Limited resources on the one hand and a multitude and variety of statutory tasks, for which they are responsible, on the other, make it necessary to set clear priorities. Priorities are set using the outcome of the risk assessment, which could be a list or an overview of all the identified/selected installations and activities and their respective risks. These installations and activities can on the basis of their assessed risks be classified, for example, in 'high risk', 'medium risk' and 'low risk'.

In addition the inspection approach for each level can differ: the higher the risk level, the more attention it will get from the inspecting authority.

The inspection approach will as a consequence also determine the claim on the available resources, and is therefore equally relevant for the inspection plan and in the inspection schedule.

6.2.1. Risk assessment

There are many definitions for the concept "Risk". For assessing risks of industrial activities we use the following definition: *The Risk of an activity in inspection planning is defined as the (potential) impact of the activity on the environment or the human health during periods of non-compliance with the regulations by law or permit conditions.*

To begin, it is necessary to make some basic assumptions and to define concepts:

Risk is a function of the severity of the consequence (the effect) and the probability this consequence will happen: Risk = f (effect, probability)

In this guidebook, Risk is defined as:

Risk = **Effect** * **Probability**

Effect depends on the source (how powerful is it?) and on the receptor (how vulnerable is it?); What is the impact of the source on the receptor? In this guidebook, effect is represented by **Impact Criteria**[1]**.**

Probability is considered to be a function of the level of management, the level of compliance with laws, regulations, permits, attitude, the age of the installation, *etc.* In this guidebook, probability is represented by **Operator Performance Criteria.**

In this section Impact criteria, Operator Performance Criteria and the methods to determine the risk will be further explained. Because not all the criteria will have an equal importance we also address the topic weighting here.

Impact Criteria (IC)

Risk = **Effect** * **Probability**

To assess the effect, the object is rated against impact criteria. The impact criteria can differ between inspecting authorities and tasks. When assessing the risk for IPPC (IED) installations examples of appropriate impact criteria include for example: Quantity/quality of air pollution; Quantity/quality of water pollution; (Potential) pollution of soil and ground water; Waste production or waste management; Amount of dangerous substances released or present; Local nuisance (noise, odour). See factsheet 3.02 for a full list of Impact criteria.

See Factsheet 3.02

Please note that in order to account for both the magnitude of the emission and the sensitivity of

[1] *We realize that in this concept, Impact criteria can also include some probability.*

the receptor, you must use 2 impact criteria for that item, e.g. Air:

IC1 = amount of the substance that is emitted

IC2 = the distance and vulnerability of the surroundings or receptor.

Operator Performance Criteria (OPC)

Risk = **Effect** * **Probability**

Probability is considered to be influenced by the quality of management, the level of compliance with laws, regulations, permits etc., the attitude of the operator, the age of the installation, etc. To take this into account, the object can be scored against operator performance criteria, for example: Attitude; Compliance record; The implementation of an environmental management system e.g. EMAS; Age of the installation.

Operator performance criteria can influence the risk in a positive way (good compliance) or in a negative way (age of the installation). See factsheet x for a full list of Operator performance criteria.

See Factsheet 3.03

Determination of the risk category

Different methods for risk based approach are being used across Europe. These methods can be classified in four groups: Linear Mean Value; Mean Value of Risk and; Maximum Value and the Rule based method.

Types first 3 groups work as follow:

- Linear Mean Value: $Risk = (C1W1 + C2W2 + \ldots + CnWn)/n$
- Mean Value of Risk: $Risk = (C1W1 + C2W2 + \ldots + CnWn)/n * P$
- Maximum value : Inspection frequency = $Max(IT1, IT2, \ldots, ITn)$

Where:
C = impact criterion
W = weighting factor
P = probability of occurrence
Max = maximum of
IT = inspection task with fixed frequency

All systems work either with a database or a spreadsheet within a network or in a stand-alone system. Although most methods and tools are a copy from systems used in other organizations or Member states they all have been tailor made to fit the exact needs of the inspecting authority. There are no good or bad systems. They come with their own advantages and disadvantages.

Rule based method (IRAM)

The fourth group is the Rule based method, IRAM (Integrated Risk Assessment Method). This method was developed by the IMPEL easyTools project team by combining the advantages of the three methods, while limiting the disadvantages.

IRAM also differentiates between impact criteria, probability criteria and risk categories. The scores of the impact criteria are directly linked to the risk categories and therefore to the inspection frequencies, similar to the maximum value method. In the maximum value method a specific inspection task - such as Seveso inspections - induce the highest inspection frequency, but in IRAM the inspection coordinator decides before the start of the assessment how many highest scores of an inspection task are needed to induce the highest inspection frequency. Within IRAM this is called “The Rule”. The more impact criteria are used for the assessment the higher the number of highest scores that is “necessary” to induce the highest inspection frequency. This is a clear difference to the mean value methods; the highest scores cannot be levelled out by low scores of other criteria.

IRAM Principles

- The inspection frequency is determined by value of the highest score;
- The inspection frequency is reduced by one step, if the set minimum number of highest scores (called “the Rule”) is not met;
- The inspection frequency can be changed by only one step up or down based on operator performance;
- The higher the sum of scores, the longer the inspection time.

See factsheet 3.04 for more details on IRAM.

See Factsheet 3.04

Input:	Data for the risk assessment.
Output:	Assigned priorities.

6.3. Defining objectives and strategies

Based upon the (assigned) priorities, the inspecting authority sets targets and objectives. In order to establish whether these objectives and targets can be and will be met, the output and the outcome must be monitored. This is generally done by using performance indicators. Examples of performance indicators on outcome that may be useful are:

- The amount of incidents or complaints occurring;
- The level of compliance;
- The actual achievement of reduction targets for certain pollutants or certain risks at the sites that are directly regulated or enforced by the inspection authority;
- Improvement of air, land and water quality through the actions of the inspectorate to improve compliance.

The inspecting authority may want to link its objectives with certain inspection strategies to ensure that these objectives can be met in both an effective and efficient manner, causing minimal burdens for the company and the authority. It may furthermore want to adopt and use certain communication strategies for exchanging information internally and with other competent authorities.

Subjects that can be addressed are:

- co-operation and information exchange between inspecting organisations and other authorities;
- the character and form of inspection;
- the effect of the operator’s behaviour on the inspection frequency;
- the path of administrative and/or criminal follow-up upon non-compliance, which must be firm, fair and unambiguous in case of non-compliance.

The term strategy in this document refers to the way objectives are to be reached.

6.3.1. Objectives and measurable targets

The priorities that we have set in the previous chapter tell us what activities/installations need our attention. Having set these priorities it is now time to define the objectives and targets.

The objectives that we define here should not be confused with the overall goals that inspecting authorities have to take into account as part of the context and that are input for the risk assessment.

6.3.2. Setting targets on inputs and outputs

Over recent years inspectorates have become increasingly interested in steering and assessing their performance.

At its most straightforward, an inspectorate can assess its performance against targets on inputs and outputs. Targets on inputs could for example relate to a certain amount of staff time to be allocated to specific supervision activities. Targets on outputs could, for example, relate to the number of site inspections to be carried out, or the number of emission reports to be validated within a certain time period. These indicators help to steer the timely delivery of the planned activities without exceeding the allocated resources. These targets can be periodically adjusted to increase the amount of activity for a set level of resource or to maintain the level of activity against a reduction in available resource. Managing performance against input and output targets in this way encourages an inspectorate to carry out its work in a planned and efficient way. However, that's not to say that the activities that the inspectorate has chosen to undertake and measure will necessarily be the most effective in terms of achieving Policy or environmental outcomes. Using appropriate input and output targets can be useful but inspection authorities need to recognise the risks and limitations of over-reliance on them. If used without any reference to outcomes they can simply lead to an inspectorate doing ineffective activity more efficiently. See factsheet 3.05 on how targets on outcome should be set.

See Factsheet 3.05

6.3.3. Strategies

Inspection strategies to ensure compliance

In order to actually achieve a certain target we need to determine what inspection activities in that particular case have the greatest positive effect on compliance. By doing so we can further determine the resources needed and use our resources in the most effective and efficient way. In many cases a mix of activities is the most appropriate strategy. In some cases however an inspecting authority may be limited in its choices because it is obliged to perform specific inspection activities, based on national legislation.

An inspection strategy to help ensure compliance may include:

- specific ways of compliance checking (e.g. certain routine and non-routine inspections, in-depth investigations, verification of self monitoring data),
- specific compliance promotion activities,
- specific approaches and ways to remedy and sanction (repeated) non-compliances.

See factsheet 3.06 on how to determine the best inspection strategy.

See Factsheet 3.06

Input:	Assigned priorities.
Output:	Objectives and measurable targets and inspection and communication strategies.

6.4. Planning and review

Based upon the previous steps (describing the context, setting priorities and defining objectives and strategies), the inspecting authority should then develop its inspection plan and inspection programme. The inspection plan can be seen as a strategic plan and does not contain operational information (e.g. does not include the planned and type/dates of inspections). The review and revision of the inspection plan is also part of this step. When we continue the process, after step "Performance monitoring", we return to this step. Based upon the monitoring and evaluation of the inspection plan (including the inspection programme), it will be reviewed and possibly be revised.

6.4.1. Inspection plan

An inspection plan describes:

- The objectives that the Inspecting authority, given its mission and tasks, wants to achieve;
- The policy, environmental, legal, organizational, financial and other relevant conditions under which the inspecting authority has to perform its inspection activities;
- The strategies which the inspecting authority has adopted for performing its inspection activities;
- How priorities with regard to inspection activities are set, taking into account these objectives, conditions and strategies;
- The priorities themselves;
- And the additional items described in Article 23 of the IED.

The general public has the right to know what the inspecting authority has planned for the defined period (it should be transparent) and the plan should therefore be available to the public. However the inspecting authority may choose to withhold part of the plan (e.g. the Inspection Schedule). This could be typically due to the inclusion of unannounced Inspections or other unannounced enforcement actions which must be without warning in order to be effective.

The inspection plan will be used to compile the inspection programme. This programme should include information such as names of installations, dates, type of inspections, inspectors assigned, etc.

When developing the inspection plan and inspection programme it is necessary to consider the organisational, human and financial circumstances. Most importantly the inspection plan and the inspection programme should be in balance with the available resources and budgets and should be in line with the organizational structure.

See factsheet 3.07 to find the required element for an inspection plan.

See Factsheet 3.07

6.4.2. Review and revision

The inspection plan should be reviewed and if necessary revised periodically. In evaluating the success of the inspection plan the inspecting authority should determine the extent to which it achieved the objectives and targets set out in the plan. Where they have not been met the inspecting authority should determine the factors that have impacted on the completion of the tasks. As the inspection plan is a more strategic document it is envisaged that revision may only be required in response to significant changes to policies, significant changing activity in given industrial/work sectors, or other changing situations. However, changes to the plan may also be made as a result of performance monitoring.

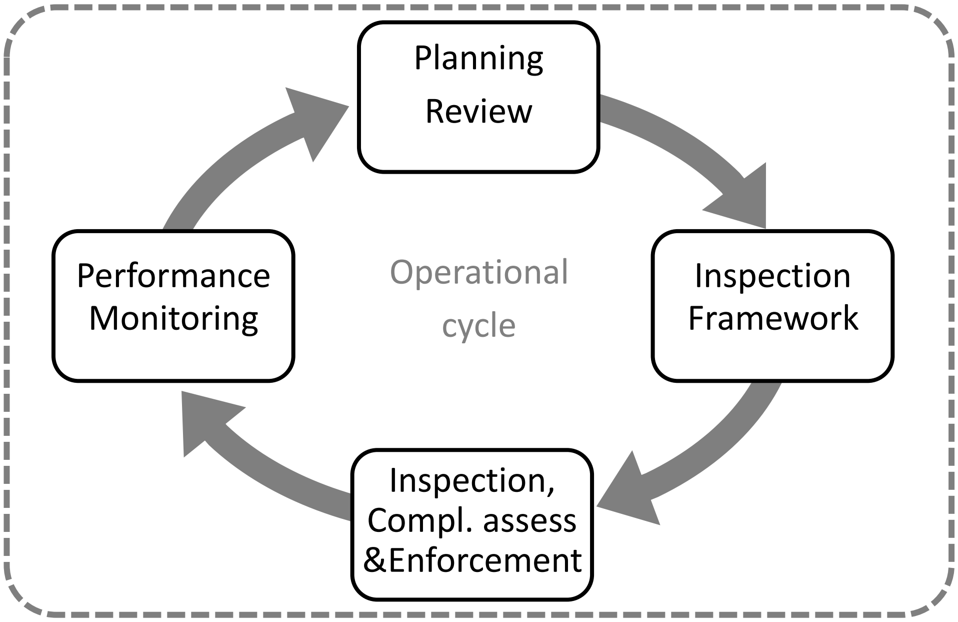
Where performance targets set are met (or not met), or where efforts expended through the inspection plan have not resulted in the expected improvements to the state of the environment, the authority may also wish to change the inspection plan (e.g. to change the strategy to be employed, the resources to be assigned, or the objectives/targets set).

For the revision of the inspection plan the authority should go through the steps in the strategic cycle. When only the inspection programme has to be revised, revision of the entire plan may not be necessary (e.g. where the only change is to the number of planned inspections to be carried out – i.e. changes in desired output). The inspection programme however will normally change on an annual basis.

The requirement to revise and evaluate the implementation of previous plans in order to develop the plan for the coming period is the application of a management systems approach. In defining the priorities and targets within the inspection plan, the inspecting authority should put in place the means to track and evaluate their performance with respect to the plan. The inspection plan should contain the targets to be achieved during the year to allow for ongoing evaluation of activities during the execution of the plan. In addition to the numerical targets inspecting authorities should also consider how they are going to evaluate performance in relation to the priorities that they set in their plans so that the environmental outcome of their activities is checked in addition to the activities themselves.

Input:	The context, risk assessment, priorities, objectives and measurable targets, inspection and communication strategies and the results of performance monitoring.
Output:	Inspection plan and inspection programme

7. Operational (inspection) cycle



The first step is "Planning and review". In this step the inspection plan is developed. The inspection plan covers a defined time period and describes how and when the inspection tasks will be executed. Part of the inspection plan is the inspection programme. The inspection programme may stand as a working annex to the inspection plan, or as a separate document referenced within the inspection plan.

The second step is "Inspection framework". Before inspections can be executed we have to make sure that all necessary conditions are met. The appropriate working procedures and instructions, powers and competences and equipment should be in place.

The third step is "Inspection and enforcement". In this step the inspection work is done. Here the routine and non-routine inspections are executed and reports of findings are written. Data on the inspections that are carried out and their outcomes and follow-up have to be stored in a good accessible database. See operational steps (chapter 8 for more information).

The fourth step of the process is "Performance monitoring". To make sure we meet our objectives and targets we have to monitor the *output* (did we carry out the planned activities?) and the *outcome* (what were the effects of our activities?). This information will be used for reviewing the plans and for reporting to different stakeholders, for instance the minister responsible, parliament, the general public, the European Commission etc.

From the "Performance monitoring" step we return to the "Planning and review" step (box 1d). Based upon the monitoring results but also possible changes in box 1a (describing the context) the inspection plan (including the inspection schedule) will be reviewed and possibly be revised.

7.1. Planning and review

In this step the inspection plan is developed. The inspection plan covers a defined time period and describes how and when the inspection tasks will be executed. Part of the inspection plan is the inspection programme. The inspection programme may stand as a working annex to the inspection plan, or as a separate document referenced within the inspection plan. See section 6.4

7.2. Inspection Framework

The execution framework serves to facilitate the different inspection activities, e.g. compliance checking through site visits, enforcement actions like imposing sanctions, compliance assistance through organising information campaigns etc. Within this step, training, protocols and working instructions are developed and conditions for realisation. This step is necessary to make sure that inspection activities can be executed effectively, efficiently, professionally and consistently.

The execution framework should at least cover (in no order of preference):

- Training programme(s) for the inspectors (staff), based on a training needs assessment ;
- Protocols and working instructions for routine inspections;
- Protocols and working instructions for non-routine inspections (how to react to incidents and accidents);
- Procedures for imposing sanctions;
- Development of inspection and enforcement handbooks;
- Protocols for communication with the public (access to information) and with Industry;
- Information management (e.g. information systems) and information exchange (within the organization and with partner organizations);
- Provisions and memorandum of understandings for cooperation with relevant partners (other inspecting authorities);
- Conditions for realisation;
- Clear authorisations and competencies (e.g. legal right of access to site and information);
- All necessary assistance from the operators to carry out any site visits, to take samples and to gather information necessary for the performance of their duties (legalised in legislation);
- System for planning, programming and monitoring;
- Facilities and materials needed (e.g. computers, transport, means of communication);
- Maintenance and calibration of equipment.

See factsheet 3.08 on training programme

See Factsheet 3.08

Input:	Inspection plan (containing information of step 1a, 1b and 1c) including the inspection programme.
Output:	Conditions to execute inspections.

7.3. Inspection, compliance assessment and enforcement

Preparation | Inspection | Reporting

In these steps the inspections, compliance assessment and or enforcement are actually carried out: the various inspection activities (aimed at compliance checking and compliance assistance) are prepared, executed and reported.

7.3.1. Preparation

Type of inspection, staff and (safety) equipment

The decision on the type of inspection and staff and equipment needed can either be decided on forehand, during the planning stage, or during the preparation of the inspections. Although the first option is recommended (the time needed for an inspection is very much connected to the type of inspection) the latter could also be necessary because of changing circumstances. In both cases the type of inspection will often be decided by the head of inspectors. He or she should also have an overview of the available and needed resources (human and equipment). See factsheet 3.09 on preparation inspection for the considerations that could be taken into account when deciding on the type of inspection, the staff and equipment needed.

See Factsheet 3.09

Gathering information and data

The inspection team should be fully prepared for the inspection. It should therefore gather all the relevant information and data that is available. The preliminary analysis of the collected documentation must enable a better understanding of the production cycle of the plant and its past and current critical points. Furthermore, the analysis of the technical data acquired during the desk study allows to better prepare the checklist and Inspection Agenda that will be used during the site visit. See factsheet 3.09 on preparation inspection for the type of information sources that can help you to prepare your inspection.

See Factsheet 3.09

Inspection tools

Now a days we see more and more electronic tools that can help the inspector to perform a good inspection. It will reduce the time necessary for preparation and make sure we will not forget important aspects to inspect. Although we strongly believe this is the way forward we still need to understand how a good checklist and/or questionnaire is composed. In factsheet 3.09 on preparation of inspection you can find some issues you can take into account.

See Factsheet 3.09

Announce an inspection?

In some cases, from a practical point of view, it is worth announcing inspections shortly beforehand it is conducted. These cases are:

- when an inspector has to interview a specific person. This way they are sure the proper person will be available at their convenience;
- when an inspector wants to inspect the (technical) installation. Changes to technical installation will probably not be made that short in advance (because of the investment);
- while inspecting a single-person company;
- when there is a need to have some documentation be prepared for the inspector and this will result in a more efficient inspection.

In all other cases it could be argued that (if national legislation allows) unannounced inspections could be preferred.

7.3.2. Inspection

Issues to inspect

Traditional inspection activities are the (physical) routine (site) inspections, non-routine (site) inspections and investigations of incidents. Many of these activities can and should be executed according to standard protocols and working instructions (that have been developed in the previous step). The cooperation and information exchange with partner organisations is also part of this step. See factsheet 3.10 on inspections that lists the issues that have to be taken into account while executing the inspection.

See Factsheet 3.10

Checking Operator self-monitoring report

The IED sets requirements and provisions concerning operator self-monitoring and how this is reported to competent authorities as part of the inspection process. The analyse of the report by the inspector is essential for assessing environmental performance and compliance with the conditions set out in environmental permits. See factsheet 3.11 on operator self-monitoring.

See Factsheet 3.11

Level of non-compliance

It goes without saying that non-compliances identified during inspections need to be followed up. However in the case of a serious non-compliance an additional inspection has to be executed within 6 months. See factsheet 3.12 on levels of non-compliances.

See Factsheet 3.12

Cessation of operations, bankruptcy and site closure

Inspection work isn't limited to installations that are in operation. In the case of cessation of operation, bankruptcy and site closure the inspector needs to check if actions have been taken to avoid any risk and pollution and to make sure the site of operation is returned to satisfactory state. In factsheet 3.13 guidance is given on the requirements and provisions mentioned in the IED.

See Factsheet 3.13

Information on the inspection activities carried out, their results and their follow up (imposed sanctions) should be stored in an accessible database.

7.3.1. Reporting

Reporting should at least cover (in no order of preference)

- Reporting
    - After a site visit;
    - Process/ store inspection data;
    - Evaluation for further actions;
    - Finalised a.s.a.p.
    - Keep record of reports;

    - Accessible database;
    - Notified to the operator (within 2 months after an inspection is completed);
    - Publicly available (within 4 months after an inspection is completed).
- Exchange information with partner organisations

The audience of the inspection reports can be broad. Besides the inspectorate and the operator, also other competent authorities, ministries, public and the European Commission could be interested in the results of the inspection.

A report should therefore be written in plain language and not too technical. Commercial confidentiality and National security are also issues to take into account before publishing the report. Because of this, it may be considered appropriate to make specific reports excluding these issues available for external use (public). These summary reports could then be used without prejudice if non-compliance leads to a possible court case. Otherwise, the requirement to make a report publicly available within 4 months could easily be passed before while the outcome is being investigated by the inspectorate.

See factsheet 3.14 for a further explanation on reporting on inspection findings.

See Factsheet 3.14

Input:	Inspection schedule and execution frame work.
Output:	Inspection activities and the results.

7.4. Performance monitoring

The inspecting authority should act on the basis of systematic monitoring of the inspection and enforcement process and its result and effects.

Performance monitoring is necessary so the inspecting authority can report internally or at national or EU-level and check if objectives and targets have been met. It is important to use meaningful performance indicators to assess the effectiveness of the inspection plan. Insight into their effectiveness can help to determine which tools and strategies are working best to ensure compliance and to allow the public and stakeholders to examine whether the inspecting authority is meeting its responsibilities. This monitoring can take place on different levels.

On the inspection schedule level, regular monitoring of progress should be carried out in relation to performance indicators (e.g. planned number of inspections vs. actual inspections carried out). This should inform execution of the schedule and may be carried out for example on a six-monthly or quarterly basis. This should also include monitoring of actions taken as result of inspections or complaints e.g. legal notices issued.

Performance monitoring should also take place at a higher level in relation to the success of the plan. This could include measurement against plan outcomes, against the objectives and measurable targets (e.g. general environmental improvements, increase in compliance rate), and external reporting of plan outputs/outcomes to national or EU level etc.

Performance monitoring should at least cover (in no order of preferences):

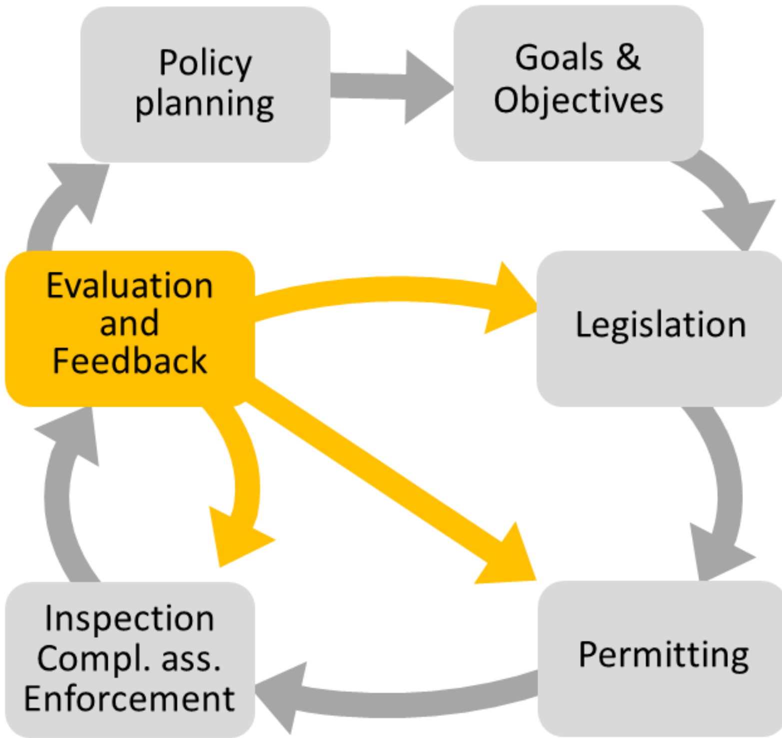
- Monitoring
    - Performance of staff (output)
    - Monitoring of the results (outcome)
- Accounting for effort, performance results
    - Annual reports
    - Report on agreements with other inspecting organisations
    - Input in the regulatory cycle
    - Feedback on the results and recommendations
- Comparing and auditing
- External reporting
    - Available to public
    - Region and local level to public and National level
    - National authority to Commission,
    - Data about staffing and resources
    - Role and performance in relation to inspection targets
    - Summary of the inspections carried out
    - Degree of compliance
    - Actions taken as result of complaints, accidents and incidents
    - Actions taken as result of occurrence of non-compliance

Input:	Information on inspection activities and their results.
Output:	Information for the review of the inspection plan (the outcome) and the inspection schedule (output) and reports for external use.

PART 4. Evaluation and feedback

PART 4

Evaluation and Feedback


Policy planning
Goals & Objectives
Evaluation and Feedback
Legislation
Inspection Compl. ass. Enforcement
Permitting

8. Evaluation and feedback

Part 4 of this guidance is about the evaluation and feedback given from practitioners of the (national) authorities competent for the implementation and enforcement to actors and stakeholders in the legislative process. It also concerns the evaluation and exchange of feedback between colleagues. In this last case it can be the inspector giving feedback to the permit writer and the other way around.

8.1. Purpose and aim Feedback mechanism

Evaluation and feedback is given on the practicability and enforceability of new and existing legislation. The overall aim is improving the implementation of environmental law. Feedback can also be used to contribute in achieving EU and national ambitions, e.g. on establishing a resource efficient economy (circular economy) and reaching climate goals. For effective evaluation and feedback, planning and organisation of the legislative process at European and national level must provide adequate opportunities to gather and assess this evaluation and feedback properly from practitioners. Also the involvement of practitioners needs to be organised. This can be achieved by using the feedback and evaluation mechanism.

8.1.1. Practicability and enforceability

Problems of practicability arise when competent authorities for the implementation and enforcement encounter difficulties in the practical application of legislation, inspection and enforcement and permitting. These issues can arise because insufficient attention has been paid to the need for proper transposition into national law and application through individual administrative decisions, or to the need for adequate infrastructure and resources. Also problems of practicability may be faced by the regulated target group when their obligations, as defined by the legislator, are unclear or unrealistic.

8.1.2. Feedback mechanism

As shown in the presentation of the Regulatory Cycle, a systematic compliance and enforcement programme triggers a feedback mechanism. The information derived from enforcement response, compliance-promotion efforts and compliance checking need to be assessed so that the appropriate elements in the cycle can consider and improve the process. This could mean, in practice, reconsidering a law or its parts (returned to policy-makers and parliament), and changing the formulation of conditions in permits so that they become clearer and more enforceable (regulations applied by permitting bodies and agencies). This will ensure that the continuous process shown in the Regulatory Cycle will work to improve laws and regulations for the environment and will be able to achieve the goals set in these same laws. Actors are national policy makers and legislators, national authorities competent for the implementation and enforcement, IMPEL and other Implementation and Enforcement networks and regulated target groups (businesses).

8.1.3. Checklist on evaluation of regulatory activities

To assess short comings in the enforceability and practicability of regulatory activities and to give effective feedback to policy makers or between inspectors and permit writers, a set of questions relating to the enforceability and practicability can be used. The questions e.g. relate to the quality of the legislation (e.g. the used definitions and terms) and on the practicability of compliance by the targeted group (e.g. are the obligations easily achievable/realistic).

8.1.4. Checklist on evaluation of regulatory activities on eco-innovation

Since ambitions at both EU and at Member State level on developing a circular economy are far-reaching. Also the implementation of the Paris Climate agreement requires increasing efforts of the EU member states to reach the agreed targets. Therefore, more business are carrying out eco-innovations. Eco-innovations are vital for helping to solve persistent environmental problems in the EU, for combatting climate change and in particular to act as a catalyst and scale-up in the transition to a circular economy. Also the implementation of the Paris Climate agreement requires increasing efforts of the EU member states to reach the agreed targets.

Eco-innovation refers to any innovation that aims to reduce the use of natural resources and/or to decrease the release of harmful substances across the whole life-cycle.

When carry through eco-innovations, barriers can be encountered in the current European environmental legislation, which may be not fit for purpose to enable eco-innovations. To assess these short comings or bottlenecks in the legislation and give feedback to adapt legislation (e.g. relating to different waste processing and recovering) a checklist can be used. The questions e.g. relate to short comings in used definitions (e.g. waste definition) or those relating to emerging techniques.

8.1.5. Organisation of feedback on short comings in regulatory activities

This can be done by:

- Direct feedback to the ministry because of close engagement but also by formal letters;
- Through conferences organised by national level;
- Periodic evaluation groups (4 to 5 times a year) that are established for this issue;
- Special activities upon request of national level. This was considered as one of the weakest links within the cycle

8.1.6. Support from MS in the IED Implementation

The IED makes provisions for the establishment of two groups involving representatives from Member States to support the implementation of the IED. These are:

- The IED Article 13 Forum: a formal expert group set up to exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission. The focus of this group is to review and form an opinion on the proposed content of the BAT reference documents.
- The IED Article 75 Committee: a formal Committee set up to assist the Commission by delivering opinions on implementing acts, including guidance on the collection of data and on the drawing up of BAT reference documents and on their quality assurance, BAT conclusions, implementing rules for large combustion plants and the type, format and frequency of reporting by Member States.
- The Industrial Emissions Expert Group (IEEG: An informal group established to facilitate the exchange of experiences and good practices concerning interpretation, transposition and implementation of the IED)

FACT SHEETS

Part 2

- Factsheet 2.01 – Describing the context for permitting
- Factsheet 2.02 – Applying BAT
- Factsheet 2.03 – Review of existing permits
- Factsheet 2.04 - Eco-innovations
- Factsheet 2.05 – Relationship permitting and inspector
- Factsheet 2.06 – Transparency and visibility
- Factsheet 2.07 – pre-application discussion
- Factsheet 2.08 - Baseline reports
- Factsheet 2.09 – Checking of application
- Factsheet 2.10 – Boundaries of installation
- Factsheet 2.11 – Cost benefit
- Factsheet 2.12 – Derogations
- Factsheet 2.13 – Translating AEL's to ELV's

Part 3

- Factsheet 3.01 – Describing the context for inspections
- Factsheet 3.02 – Impact criteria
- Factsheet 3.03 – Operator performance criteria
- Factsheet 3.04 – Risk assessment - IRAM
- Factsheet 3.05 – Defining objectives
- Factsheet 3.06 – Defining inspection strategies
- Factsheet 3.07 – Inspection plan
- Factsheet 3.08 – Training programme
- Factsheet 3.09 – Preparation of inspections
- Factsheet 3.10 – Execution of inspections
- Factsheet 3.11 – Operator Self-monitoring
- Factsheet 3.12 – Level of non-compliance
- Factsheet 3.13 – Cessation of operations
- Factsheet 3.14 – Reporting of inspections

Factsheet 2.01 - Describing the context for permitting

Describing the context is the first step of the systematic approach for developing a work plan for permitting. In this fact sheet we list the issues that could be of interest while identifying the scope and on information that should be gathered.

Identifying the scope are (in random order):

- Geographical area for which the authority is competent
- Mission and (national) goals of the authority, It's important to define goals as environmental outcome. Goals can be set on either national level (e.g. ministry, national environmental institutes) or regional level (e.g. competent authorities themselves). Goals on environmental outcome are:
    - Laid down in special legislation through environmental quality standards;
    - Laid down in policy documents (e.g. programs to improve air quality, waste management);
    - Laid down in (strategic) plan (e.g. CO_2 reduction plan);
    - Specific environmental goals for single parameters relevant to a pollution problem within a certain area (e.g. NOx, PM10).We should define the term Environmental outcome in the guidance and give more examples
- The environmental outcome the authority is trying to achieve
- Statutory tasks and competences
- Applicable legislation, either originated from a EU-, national- or regional level, against which the authority has to issue permits
- Established environmental (national) policy and priorities. Some of the policy may come from EU or national level but the authority should also set her own policy. Issues that could be addressed are:
    - To set priorities on permitting tasks;
    - To make sure that all permits will comply to BAT and will be timely updated;
    - To establish and encourage a good level of cooperation between permitting and inspection and enforcement (e.g. exchange of information, joint inspections, collaboration within the permitting procedures)
    - To ensure all staff will have the appropriate skills and knowledge
    - Transparency and visibility towards public about the permitting procedure
    - To stimulate industry to go further then BAT requires
    - There where possible to have flexibility in the permit so industry can innovate (either in emerging techniques or products)
    - Applications will be of good quality
- Interests of stakeholders (e.g. NGO's, branches of industries)
- Public opinions
- Register of activities and installations for which the authority is the competent
- Sectors of industries
- Types and sizes
- Numbers and geographical distribution of installations

- Relevant environmental issues (water, air, safety, etc)

Gathering information are (in random order):

Environment

- Environmental issues (environment, safety, public health, nature) particularly relevant for the area concerned
- Information on the state of and trends in the (ambient) environment (e.g. data from national or regional networks of pollution control sampling stations or monitoring devices)

Installations

- Sector-specific issues/needs, e.g. expertise, attitude, culture, compliance behaviour and economics of (industrial) target groups
- Information on the numbers, location and the branches of small and medium sized enterprises in the area that are regulated and falling under the competences of the authority
- Information on individual controlled activities/installations, such as information on:
    - Legal requirements and permit situation
    - Emissions/discharges (results from emission monitoring), environmental impact, risk, accidents/incidents
    - Complexity of installation
    - Location of installation
    - Compliance record / behaviour (inspection history)
    - Performance record (e.g. Environmental management systems, self monitoring and reporting, safety management systems, audits, experiences of inspection authorities)
    - Relevant complaints
- New applications for permits that can be expected in a certain time period. Although the number of new installations could be low, the authority can get insight in the new applications for permits that can be expected in a certain time period by or through:
    - The EIA reports that have been submitted;
    - Holding regular meetings with permit holders or representatives of Association of enterprises;
    - Inspections, changes of installation that are detected during an inspection;
    - Executing periodic surveys of the industrial sector;
    - Getting in contacts with trade associations;
    - Having extensive communication through authority's website;
    - Encouraging prospective applicants or existing permit holders to seek pre-application meetings. This can be done by the inspectors, through the website or consultants;
    - Agreements made with local authorities. In some cases permits for spatial planning issues are required with the local authority. They will either suggest the applicant to announce the plans to the competent authority or communicate this directly.

- (Significant) changes in installations that can be expected in a certain time period;
- Revisions of permits (this often happen because of changes in BAT conclusions).
- Expiring dates of permits. Depending on the legislation (and policy) some permits are issued for an unlimited time and some are issued for a limited time. For the latter permits could be limited for 5 years and others for 10 years. The difference in time could depend on the fact if a company is ISO-14001 (12 years) or EMAS (14 years) certificated. Sometimes permits are granted for a limited time due to special reasons (to test an operation). Unlimited time is as long as the installation is not changed or there's new BAT Conclusions for the main activity of the installation.

General

- Possible changes in BREF's or BAT conclusions. The authority can get insight in possible changes in BREF's or BAT conclusions by through:
    - Following new developments through newsletters and seminars;
    - The communications about new developments through national knowledge Centres, ministries or national technical working groups;
    - The website of the European IPPC Bureau and following BATIS news;
    - Participating in BREF review process;
    - Participating in national technical working groups;
    - Communication with trade associations or relevant sectors;
    - Appointing a staff member in the role of national BREF coordinator.
- New or changes in EU or national legislation that need to be implemented. The authority can get insight in possible changes in EU or national legislation by or through:
    - Special divisions within the organisation that monitor changes and are involved in relevant networks;
    - News feeds from EU, e.g. EU journals;
    - Following internal and external communication through email and websites;
    - Nationally collected and disseminated information within regular meetings;
    - News feeds from external companies;
    - News feeds from the ministry or knowledge centre;
    - Being engaged in drafting of new legislation by giving technical and practical input;
    - Follow up on Public debates or seminars;
    - Internal procedures that make sure all staff are informed.
- Quality and enforceability of the requirements in legislation or permits
- Research on types of industry, objects and spatial planning done by third parties (e.g. Universities, Statistical boards or other Inspectorates)
- Coordination and cooperation with other (inspection) authorities

Factsheet 2.02 – Applying BAT

BAT assessment and BAT reconsideration (the installation is BAT)

This can be done for new permits by:

- BAT appraisal is performed and the relevant BAT conclusions are referenced for the installation;
- Applicants are required to submit an assessment against relevant BAT conclusions as part of their permit application (operator provides evidence that the installation operates in a way that can meet any environmental objectives or performance levels (i.e. BAT-AELs) contained within the relevant BAT conclusions). Competent authorities carry out a BAT assessment on site before the permit is granted
- Local and installation specific conditions will be taken into account with adding special conditions; Internal quality procedures, e.g. before issuing, permits will be peer reviewed;

This can be done for existing permits by:

- In case general binding rules are used, they will be regularly updated on national level so they will stay BAT;
- When new BAT conclusions are published, existing permits must be reviewed within the required timeline (i.e . within 4 years from the date of publication of the BAT conclusion from the main activity of the installation) and if necessary updated
- Permits are regularly reviewed and if necessary updated based on a special program;
- Use of a special IED tool of app)

Further we need to address the definition of "BAT". E.g. if you deviate from BAT-conclusion (with good motivation) is the permit considered to be BAT?

Factsheet 2.03 - Review of existing permits

Review should be done:

- Within 4 years from the publication date of the BAT Conclusions for the main activity of the installation. In order to allow the operator to make changes to the installation in order to adapt to the BAT Conclusions it is good practice to commence any review as soon as possible and at least within 1-2 years from the publication date.
- When there is a legislative change;
- When there is a request from the operator because of a change of installations (good practice to develop a detailed guidance for the permit holder so they can check if a technical amendment of their permit is possible or if a complete review of the permit is necessary);
- When local environmental situation requires an update of the permit;
- Based on annual environmental reports from the operator; based on inspections Sometimes it's an environmental NGO that initiates the process;
- The pollution caused by the installation is of such significance that the existing emission limit values need to be revised or new emission limit values need to be included in the permit;
- Operational safety requires other techniques to be used; or
- It's necessary to comply with a new or revised environmental quality standard.

Important questions that needs to be answered here are: what is the main activity of the company and which BAT-conclusions are leading with regard to 4-years term for amendment?

The BAT conclusions (BATc) for the main activity alone trigger the 4 year permit review period. The main activity at an installation should almost always be judged in the context of vertical BATc documents only, as horizontal BATc by definition cannot ordinarily cover the main activity at an installation.

While the trigger for the review period will be the publication of the BAT conclusions document for the main activity of the installation, this does not mean that this review is limited to just those BAT conclusions – it is possible that other BATc will also be applicable.

It is likely that the BATc covering the main activity of the installation will be within the scope of a vertical BATc where at least one vertical BATc document applies to the activities at the installation. Vertical BATc are those apply only to a discrete activity, group of activities, or an industrial sector.

Horizontal BATc (such as those addressing energy efficiency, industrial cooling systems etc.) cannot cover the main activity at an installation and consequently any review may also need to consider one or more horizontal BATc document, but publication of horizontal BATc will not be the trigger for a permit review at the installation.

Many installations will involve activities that are covered by just a single vertical BATc document, in which case there is no need to determine which activity is the main activity at the installation; the activity that is covered by the single relevant BATc document is considered to be the main activity.

However, at a relatively small number of installations, two or more vertical BATc apply, and the ‘main activity’ must be determined. Consideration should be made of the “primary activity” of the installation – for example, at an installation for the manufacture of chemicals with steam raising boilers and a waste water treatment plant, the main activity is the manufacture of chemicals rather, than the combustion of fuels or waste water treatment. This approach is fully consistent with one of the European Commission’s suggestions in its FAQs.

Factsheet 2.04 – Eco-innovation

Introduction

Eco-Innovation can be defined as the introduction of a new or significantly improved product (good or service), process, organisational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and/or decreases the release of harmful substances across the whole life-cycle. Eco-innovations are vital for helping to solve persistent environmental problems in the EU, for combatting climate change and in particular to act as a catalyst and scale-up in the transition to a circular economy. Product eco-innovation in particular concerns the introduction of less polluting, less resource-intensive products, including the substitution of dangerous substances by 'greener' ones, or the substitution of materials by less resource-intensive materials. Process eco-innovation is about introducing new technology for improved monitoring and reduction/ minimisation/control of waste and emissions, both from industry and other sources. Finally, particularly important for circular economy, are eco-innovations regarding the production of new secondary materials from waste.

Perceived challenges in permitting, inspection and enforcement

Between the environmental ambitions and the day to day practice where businesses and authorities try to carry through eco-innovations there is a significant gap. Competent authorities in the Member States face challenges when applying and enforcing current EU environmental legislation. This may cause uncertainty and delays in decision-making. Possible barriers include:

- Rules which are unnecessarily inflexible, detailed, complex or which change very frequently.
- The absence of rules or standards.
- Rules which in practice are misinterpreted easily or rules stetting very general criteria the application of which requires from authorities considerable technical and legal expertise and experience.
- The interface between different directives and regulations, for instance those regarding products, chemicals and waste. In practice these directives and regulations may not be well attuned or there may be gaps.
- Obstacles in case of cross border activities (f.i. marketing products and secondary materials across MS borders), because authorities from different MS interpret and or implement the EU legislation differently.
- Lack of responsiveness (insufficient alertness to eco-innovations, lack of cooperative attitude, lack of understanding of the needs of innovators)
- Lacking capability to properly handle risks related to innovations including weighing different environmental interests and getting timely political backing
- Lack of cooperation between different competent authorities. Unclear allocation of responsibilities to different layers of government and lack of feedback and evaluation from practice to policy makers and vice versa

Possible adjustments in the permitting, inspection and enforcement process to facilitate eco-innovations

Possible adjustments in the permitting, inspection and enforcement processes may include:

- Learn, train and secure in the organisation to recognize eco-innovation and, when necessary scale up towards policy makers timely;
- At an early stage, a standard preliminary consultation involving all relevant competent authorities and stakeholders;
- A coordinator at the competent authority to facilitate and support those who have to deal with an eco-innovation;
- Address eco-innovation explicitly in how permitting, inspections and enforcement are organized and carried out (in work processes and procedures).
    - For permitting: appoint for each major eco-innovation a case manager/single point of contact; engage all relevant competent authorities from the start; share all information between these authorities; escalate timely; seek timely guidance or decision at higher level.
    - For inspections and enforcement: attune inspections and enforcement to the sort of risks foreseen or experiments or pilots authorized; in particular clarify upfront what compliance is expected (possibly what non-compliances under what conditions may be condoned) and how authorities will respond to non-compliances;
- Active feedback and evaluation between practitioners and policy makers on practicability and enforceability of legislation;
- Use of existing room for controlled experimentation;
- Embed in the authority's organization and make accessible for others knowledge on eco-innovations
- Establishing partnerships between authorities and businesses in order to facilitate innovation process.
- Other arrangements on organizational level to facilitate innovations. E.g. to establish a Rapid Response Team: It can be valuable to create a team of experts on a green innovative cases. Such a 'rapid response team' can be used in cases where a) is to be decided quickly; b) vital knowledge is missing from the relevant parties and c) mediation is required.

Factsheet 2.05 - Relationship permitting and inspection

The following issues could be helpful while establishing and encouraging a good level of cooperation between permit writers and inspectors:

- Inspection reports, documents and risk priorities can be used in the application phase;
- Complains received by the inspector about existing installation can be reported to the permit writer and be taken into account while defining the conditions;
- In case of a new installation the involvement of the inspector could be common site visit by the inspector and the permitting officer;
- A shared databases for permitting and inspections where information and inspection history can be found would be helpful;
- The enforceability check of the permit conditions by the inspectors should be mandatory action. This could also be done by other authorities. A library of standard set of conditions (standard requirements) would be very helpful in this;
- Inspectors can be the eyes and ears of the permit officers;
- Inspectors can use the information from the permitting officers to shift their priorities or focus of their inspection work.

Although we believe that all actions above will have a positive influence in the relationship and the work, for some of them it will mean additional work. The lack of resources could form a risk in this cooperation.

Sharing the same objectives, targets and priorities will not always be easy or possible. However knowing these objectives, targets and priorities from each other could be very useful especially for the work of the inspector.

Involvement and good communication between inspection and permitting is very important and this can have different forms and structures. In general it’s not good practice to have the same person for permitting and inspection. Although this might be seen as a very effective way of working, it can also be seen as a potential cause of loss of sight, since details non addressed in the permitting procedure could also be undervalued in the inspection.

A rotation system in where the roles (permitting officer or inspector) change at a certain moment could also help in the understanding of each others work. Of course this can only be done if both persons work for the same organisations and there are no legal constrains.

Factsheet 2.06 – Transparency and Visibility

Public visibility of the application, draft report and permit, submissions, objections and final report and permit. The permit procedure must be fully transparent and allow for public participation. This requirement is stated explicitly in the Industrial Emissions Directive and comes from the Aarhus Convention. Relevant documentation should be made available online throughout the entire permitting process. This includes the following elements:

- Permit application
- Environmental Impact Statement, where relevant
- Natura Impact Statement, where relevant
- All correspondence between the regulator and other relevant statutory bodies.
- All correspondence with, and submissions and objections received from, third parties, including interested members of the public
- All further information received from the applicant
- Draft Permit
- Report of the permit writer
- Technical report considering any objections
- Final Permit

Applicants should be made aware that all information is made publicly available; therefore confidential information should not be generally submitted. In the event that an applicant requires information to be kept confidential, it must be strongly justified. If is it not necessary for the consideration of the permit application, it is returned to the applicant.

It is also possible to interact with the permitting process online, using a facility to make online submissions and objections at the appropriate parts of the process.

Internal and external communication

Some good practices for internal and external communication are:

- Communication plan that ensures the involvement of various stakeholders in the process;
- Protocols that describes how letters are formally stored and how communication through internet can take place;
- A customer charter, which is published on the website of the competent authority and includes all applicable documents, correspondence and decisions by the competent authority;

- An annual internal communication plan, that includes: media relations, website and intranet, publications, internal communications, internal newsletters, exhibitions, environmental surveys, education etc);
- A national web based communication system for all communication between competent authority and applicants.

Factsheet 2.07 - Pre-application discussion

Pre-application discussions or pre-consultations:

- should be an informal step (advised but not mandatory) in case of new installations. The advantages: better applications and to explain the specific procedure to the operator.
- should be a formal step in case of changes in existing installation. Here it's necessary to decide by the authority if it's major or minor change and if an application is necessary or not.

Especially in the first case (informal step) the permit writer should stay in his or her role as regulator and not step in the role as a private consultant (companies will use this as free advice on their application).

Issues to discuss during the pre-consultation discussions are:

- to explain how to fill in the application form;
- to discuss the information that is required;
- to explain the (type) permitting process;
- to discuss the main environmental issues;
- to discuss the future plans and the requirements with respect to the IED, EIA (scoping) and AA;
- to discuss if any data is confidential; to ensure the application is of high quality;
- to visit of the site.

Factsheet 2.08 – Base-line report on soil and groundwater contamination

This Factsheet provides guidance on the requirements for Baseline Reports on soil and groundwater contamination under the Industrial Emissions Directive. The main requirements are set out in Article 22 of the IED where activities that involve the production or release of hazardous substances that may lead to the possibility soil or groundwater contamination should be subject to the submission of a report by the operator before starting operation of an installation or before a permit for an installation is updated for the first time. The report provides the basis for a comparison with the state of contamination upon definitive cessation of activities.

Article 22 (2) states that: where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the competent authority a baseline report before starting operation of an installation or before a permit for an installation is updated for the first time after 7 January 2013.

The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for under paragraph 3.

The baseline report shall contain at least the following information:

(a) information on the present use and, where available, on past uses of the site;
(b) where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.

Article 22 contains provisions for the definitive cessation of activities involving the use, production or release of relevant hazardous substances. A key tool in this respect is the establishment of the Baseline Report. Where the installation has caused significant pollution of soil or groundwater by relevant hazardous substances compared to the state established in the Baseline Report, the operator must take the necessary measures to address this pollution so as to return the site to that state.

Article 22 (3) states that: Upon definitive cessation of the activities, the operator shall assess the state of soil and groundwater contamination by relevant hazardous substances used, produced or released by the installation. Where the installation has caused significant pollution of soil or groundwater by relevant hazardous substances compared to the state established in the baseline report referred to in paragraph 2, the operator shall take the necessary measures to address that pollution so as to return the site to that state. For that purpose, the technical feasibility of such measures may be taken into account.

Without prejudice to the first subparagraph, upon definitive cessation of the activities, and where the contamination of soil and groundwater at the site poses a significant risk to human health or the environment as a result of the permitted activities carried out by the operator before the permit for the installation is updated for the first time after 7 January 2013 and taking into account the conditions of the site of the installation established in accordance with Article 12(1)(d), the operator shall take the necessary actions aimed at the removal, control, containment or reduction of relevant hazardous substances, so that the site, taking into account its current or approved future use, ceases to pose such a risk.

European Commission guidance on baseline reports

According to the last subparagraph of Article 22(2) of the IED, 'the Commission shall establish guidance on the content of the baseline report.'

Accordingly, the Commission has published a Communication on European Commission Guidance concerning baseline reports[2]. This guidance provides information on the legal provisions concerning a baseline report and covers the following elements of Article 22 of the IED that should be addressed in the baseline report:

- Determining whether a baseline report is required to be produced;
- Designing baseline investigations;
- Designing a sampling strategy;
- Developing the baseline report.

The guidance sets out 8 key stages in the development of the report:

[2] European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions. 2014/C 136/03.

Stage 1: Identifying the hazardous substances that are currently used, produced or released at the installation – to determine whether or not hazardous substances are used, produced or released in view of deciding on the need to prepare and submit a baseline report.

Stage 2: Identifying the relevant hazardous substances - to restrict further consideration to only the relevant hazardous substances in view of deciding on the need to prepare and submit a baseline report.

Stage 3: Assessment of the site-specific pollution possibility - to identify which of the relevant hazardous substances represent a potential pollution risk at the site based on the likelihood of releases of such substances occurring. For these substances, information must be included in the baseline report.

Stage 4: Site history – to identify potential sources which may have resulted in the hazardous substances identified in Stage 3 being already present on the site of the installation.

Stage 5: Environmental setting – to determine where hazardous substances may go if released and where to look for them. Also, to identify the environmental media and receptors that are potentially at risk and where there are other activities in the area which release the same hazardous substances and may cause them to migrate onto the site.

Stage 6: Site characterisation- to identify the location, nature and extent of existing pollution on the site and to determine which strata and groundwater might be affected by such pollution. Compare with potential future emissions to see if areas are coincident.

Stage 7: Site investigation – to collect additional information as necessary to allow a quantified assessment of soil and groundwater pollution by relevant hazardous substances.

Stage 8: Production of the baseline report

IMPEL project on baseline reports

An IMPEL project[3] is in progress to assess the procedures that are already being implemented in countries in relation to the production of baseline reports and to identify good practice. <add summary of IMPEL project>

[3] IMPEL Project: IED Baseline Report. Number 2015/24 - 2016/10 - 2017/11.

Factsheet 2.09 – Checking of application

<Not finished>

Completeness and admissible: After submission the first check is to see if the application form is complete (all mandatory fields are filled in). Based on this the application will be further assessed or the applicant will be notified about information missing. After the check for completeness the application will be further assessed if it's admissible. In case it's not admissible the operator is requested for additional information. In most cases there is a dedicated (legal) time to check if the application is complete and admissible. When the application is declared complete and admissible the permit procedure starts. This step can also be used by the competent authority to carry out a screening for appropriate assessment under the habitat directive and a screening under the IEA.

- What is the minimum required information?
- What is the quality standard (when is application good enough?
- Should we advise that a site visit should take place in the this step?
- What are the weaknesses in an application and what are the pitfalls

Factsheet 2.10 - Boundaries of an installation

The technical unit consists of the plant or machinery where one or more activities listed in Annex 1 of the IED is undertaken. Machinery includes equipment for monitoring for releases, control rooms, and equipment needed to run the plant and move materials around the Installation. Plant may include static items such as tanks concrete pads and lagoons. The technical unit must include enough plant and machinery to allow the Activity to take place in a controlled manner for a sufficient period of time for the operation to reach its designed or intended output.

Therefore the “technical unit” can be taken to mean something which is functionally self-contained in the sense that the unit – which may consist of one component or a number of components functioning together – can carry out the Annex 1 activity or activities on its own.’

If there are two or more technical units on the same site they will be treated as a single TU if they are technically connected and one of the following criteria is met:
(a) They carry out successive steps in an integrated activity;
(b) One of the listed activities is a Directly Associated Activity (DAA) of the other; or
(c) Both units are served by the same DAA.

Directly associated activities

Directly associated activities are activities are those being carried out in conjunction with the Annex 1 IED activity. DAAs should also be included within the installation. The following 3 criteria must all be met before an activity will be regarded as a DAA of the TU:

a) The activity must be directly associated with the stationary technical unit;
b) The activity must have a technical connection with the listed activities carried out in or by the stationary technical unit; and
c) The activity must be capable of having an effect on emissions.

In addition to meeting criteria (a), (b) and (c) the activity must also take place on the same site as the TU. Two parcels of land do not need to touch physically to form the same site, provided that the parcels are technically connected, so a site would not become two sites merely because two parcels of land were separated by a barrier such as a stream or a road.

Factsheet 2.11 – Cost-benefit methodologies

The quantitative analysis of costs and benefits will usually require that a range of possible information sources are considered to draw relevant data. In assigning values to environmental harm, useful references may exist in national publications.

Article 15(4) places an obligation on the competent authority to make a judgement about what constitutes disproportionately higher costs compared to the environmental benefits. This has close links to the issue of cost-benefit analysis. However, the results of any cost-benefit analysis will not necessarily provide an answer as to what is disproportionate for a particular installation.

Factors that could be considered in deciding on disproportionality:

- Payback periods for investments to be made to comply with BAT-AELs;
- The impact of compliance with the BAT-AELs on product prices;
- Cross-media impacts of compliance with the BAT-AELs including energy costs and resource consumption;
- Cost-effectiveness of the measures proposed to be implemented;
- Disproportionality may vary by installation and by sector given the wide variety of activities covered by the IED.

Factsheet 2.12 – Derogation from BAT-AELs

Article 15(3) of the IED provides for a specific role for BAT conclusions and BAT-AELs when setting emission limit values in permits. The expectation is that, in general, emission limit values will be set in permits so that emissions from the installation do not exceed the BAT-AELs. However, Article 15(4) of the IED provides the possibility to derogate from the requirements of Article 15(3) and, thereby, to allow emissions to be higher than the BAT-AELs where an assessment shows that the achievement of BAT-AELs would lead to disproportionately higher costs compared to the environmental benefits due to:

a) the geographical location or the local environmental conditions of the installation concerned; or
b) the technical characteristics of the installation concerned.

Under Article 21(3) of the IED, within 4 years of publication of decisions on BAT conclusions competent authorities must reconsider and, if necessary, update the permit to ensure compliance with the Directive and in particular Article 15(3) and 15(4) and that the installation complies with its permit. The first two sets of BAT conclusions for the manufacture of glass and iron and steel production were published on 08 March 2012 and competent authorities are now under pressure to reconsider and update permits for these sectors by the 2016 deadline.

Finally, Article 15(5) of the IED provides for temporary derogations for the testing and use of emerging techniques for a total period of time not exceeding 9 months, after which either the technique is stopped or the activity achieves at least the BAT-AEL. The IED does not stipulate any technical criteria for the using this derogation provision.

Technical characteristics, local environment and geographic factors

Article 15(4) of the IED makes clear that derogations can only be justified where one or more of the following factors would mean that the achievement of the emissions levels associated with the best available techniques would lead to disproportionately higher costs compared to the environmental benefits:

I. The geographical location of the installation concerned;
II. The local environment of the installation concerned;
III. The technical characteristics of the installation concerned.

Participants in the IMPEL project provided examples where derogations might be applied with respect to these factors.

With regard to technical characteristics, examples given were:

- production of specialist products that are not adequately covered by the BAT conclusions,
- configuration of a plant on a given site and lack of space to fit equipment,
- practicability of installing equipment within four years,
- intended operational lifetime of parts of an installation,
- application of BAT to short-run / batch activities,
- specificity of process gases,

- failure of the application of the BAT concerned to achieve the BAT-AELs and
- plants designed to use specific local raw materials.

With regard to geographic characteristics, examples given were:

- remote locations (such as islands) involving high transport costs for waste treatment,
- availability of process water, and
- size, type and flow of surface water were given as examples.

With regard to local environment examples given were:

- The availability of water and quality of the surrounding environment including location of sensitive receptors.

Factsheet 2.13 – BAT assessment and setting conditions

BAT Conclusions (BATc) have a key role in the permitting process as they must be the reference for setting permit conditions. In basic terms the BATc will describe the issues to be considered and the expected performance levels of an installation. It is then for the operator to demonstrate and ensure that the installation can meet these performance levels.

Despite this, it is important to note that the BATc include a statement declaring that they are not prescriptive regarding the particular techniques that should be used, and that other techniques can also be used. This means that they are not exhaustive in describing techniques but rather provide the focus on the areas to pay attention to and performance expectations to reference when determining a permit application or reviewing a permit – and not the means of achieving those outcomes.

BAT is the Best Available Techniques and is defined as the most effective and advanced stage in the development of activities and their methods of operation that indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent, and where that is not practicable, reduce emissions and the impact on the environment as a whole.

There is a misconception that BAT is all about having the right types of technologies, kit and abatement plant at an installation. This is not the case. BAT is all about the optimisation of site-specific performance. It may be the case that an installation has all the most modern technologies and abatement equipment, but if it is not operated or maintained correctly, the performance of this equipment is not optimised, and it may not be BAT. Similarly an installation could use older technologies, but is operated in such a way that their performance is optimised and is BAT for that installation.

The BATc do not define which techniques or technologies should be used by an installation. The practical suitability of particular techniques will vary on a case by case basis and will be site specific – dependent upon the technical characteristics of the installation, operational limitations, local conditions and any environmental outcomes that are merited necessary to minimise impact and protect the environment as a whole.

The BATc will contain BAT - associated emission levels (BAT-AELs). Typically BAT-AELs will be presented as a range. It should be noted that due to the principle of optimisation where the BATc present a range of emission limits it is not appropriate to simply set the ELV at the top of the BAT-AEL range. The appropriate ELV from the BAT-AEL range is what protects the environment and can be achieved by the normal optimised performance of the installation.

This means that as part of our BAT assessment we must assess and ensure that site specific performance is optimised and can achieve the performance levels within the range of the BAT- AELs. If we conclude as part of our assessment that site-specific performance is optimised, then BAT for that installation will be reflected by the emission levels associated with this optimised performance.

BAT Assessment

While the BATc do not specify that a particular technology or technique is utilised by an installation, it lists various technologies and techniques that may be applicable. This is not an exhaustive list and just because a technique has not been identified by the BATc this does not mean that it is not BAT.

Where a technology or technique has been listed in the BATc, BAT associated emission levels or BAT associated performance levels may also be included. These will present what is considered to be the normal operating range for BAT techniques or technologies and should be the reference for setting the permit conditions. These are also a useful reference for determining whether the performance of a particular installation is optimised and should form the basis of any discussions with the operator. It should be noted that the BATc may prohibit the use of certain technologies or techniques, however this will be unusual.

Just because a technique or technology is not mentioned in the BATc it does not mean that it is not BAT. Permit conditions can be set on the basis of techniques that are not described in any of the relevant BATc – however we must be satisfied that the proposed approach represents BAT.

Where an alternative technique is proposed, you should utilise Annex III of the IED which contains criteria for determining Best Available Techniques. You should consider these criteria and assess whether the proposed alternative technique satisfies these criteria, based on sufficient justification from the operator and can be considered to be BAT.

These criteria include:

1. the use of low-waste technology;
2. the use of less hazardous substances;
3. the furthering of recovery and recycling of substances and used in the process and of waste, where appropriate;
4. comparable processes, facilities or methods of operation which have been tried with success on an industrial scale;
5. technological advances and changes in scientific knowledge and understanding;
6. the nature, effects and volume of the emissions concerned;
7. the commissioning dates for new or existing installations;
8. the length of time needed to introduce the best available technique;
9. the consumption and nature of raw materials (including water) used in the process and energy efficiency;
10. the need to prevent or reduce to minimum the overall impact of the emissions on the environment and the risks to it;
11. the need to prevent accidents and to minimise the consequences for the environment; and
12. information published by public international organisations.

If we consider that an alternative technique satisfies these criteria, and is BAT, you must also set emission limit values that ensure that under normal operating conditions the emissions do not exceed the BAT-AELs which are described in the BATc.

Where it is assessed that an installation is not currently BAT, the operator must undertake an assessment of the options to minimise the emissions and specify the steps that will be taken to employ BAT at the installation by the end of the BATC review period. This process is called optioneering.

Considering a Range of Options

It is likely that in most cases that the options for achieving BAT can be addressed in a number of ways – BAT will vary on a site by site basis. A basic principle of BAT assessment is to consider a range of options to address BAT and to carry out an options appraisal – optioneering. Without considering a range of options it is not possible to determine if the chosen approach represents the most suitable option, and therefore represents BAT.

Optioneering should always include at least one option for reducing the emissions to within the BAT-AEL range within the BATc review deadline (where this is technically feasible). Where appropriate the operator may also need to consider options that would allow the installation to achieve the BAT-AELs after the BATc review deadline – these options should be assessed on the basis of other options resulting in disproportionate costs of dis-benefits to the environment. Under these circumstances the "do nothing – status quo" option may also be considered as an appropriate alternative approach.

Crucially any options that are being considered must be considered to represent the Best Available Techniques (BAT).

Optioneering, Costs and Benefits

The consideration of costs and benefits of credible options is an important aspect of optioneering. The operator should ensure that an analysis of costs and benefits is made available for the range of credible options considered. It is acknowledged that there may be challenges in producing accurate costs and, more particularly monetising net benefits. As a consequence it may not always be possible to conduct an assessment that relies fully on a quantitative analysis.

Where a cost benefit analysis is required to justify derogation, the operator should provide a CBA for both the selected upgrade option **and** for the option that would allow the installation to achieve emissions within the BAT-AEL ranges within the BATc review deadline. This is required in order to demonstrate disproportionate costs. See further factsheet 9.

Justification for Preferred Option

The operator will have a preferred option and should indicate the reason(s) the proposed option has been selected.

As part of this justification the operator should state the reason that an option is being selected and where necessary give details of any benefits and risks associated with the option, and why they are preferred over other options, including why other possible options are not selected and are therefore not the best options for the site specific circumstances.

The operator should as part of its justification provide evidence to support understanding of underlying cause as to why a particular option has been selected. This could take the form of technical assessments, monitoring data, photographs, historic maps or survey data.

The operator should demonstrate that the proposed upgrades will provide the intended benefits e.g. these benefits may include the protection of important infrastructure and buildings, valuable land resource, or renewable energy production – but most importantly why the preferred option is BAT and will achieve emissions within the BAT-AEL range.

Derogation (and deviation from the BAT-AELs) can only be considered after the site specific BAT assessment has been concluded, and if the BAT assessment and optioneering does not demonstrate any BAT option that will achieve emissions within the BAT-AEL range.

The need to consider derogation will arise only if it is concluded that an operator's BAT Assessment adequately demonstrates that BAT in those operators specific circumstances might be defined by an ELV that exceeds the upper end of the applicable BAT-AEL range. This can be either on an ongoing basis, or on a time limited basis in order to allow the investment necessary to eventually reduce emissions to an appropriate point within the BAT-AEL range.

It is a common misconception that derogation is from both BAT, the BAT Conclusions and the full requirements of the IED – this is not the case.

<u>Types of Derogation</u>

The IED specifies only 2 types of derogation.

- Article 15(4) derogation - allows the setting of less strict ELVs that exceed the BAT-AEL range. This derogation can be granted only if on-site operations are considered to be BAT (an article 15(4) derogation is not derogation from BAT). Furthermore this should ordinarily not be considered to be an indefinite derogation from the BAT-AELs, but rather a temporary relaxation of the ELVs.
  The operator must justify any derogation with firm plans to bring operations to within the BAT-AEL range (within an appropriate timescale) and cease the requirement for derogation. This type of derogation would need to be reappraised again at any future BATc review, and the status of BAT at these future reviews is uncertain. As a consequence the operator may ultimately be faced with greater upgrade requirements in the future.
- Article 15(5) derogation – allows for the testing and use of emerging techniques. This derogation can be granted if site operations are not BAT – however this derogation can only be granted for a period of 9 months. It is considered unlikely that this type of derogation will be appropriate for BATc reviews.

<u>Circumstances in which Derogation may be Justified</u>

If BAT may be represented by an ELV that exceeds a BAT-AEL range in the case of a specific installation, competent authorities it can set an ELV that exceeds the upper end of the BAT-AEL range. Competent authorities can only set such an ELV if it can be demonstrated that reducing the comparable emissions to within the BAT-AEL range would lead to disproportionately higher cost compared to the environmental benefits for the installation concerned due to:

- the geographical location or the local environmental conditions of the installation, and/or
- the technical characteristics of the installation.

The reasons that could justify derogation to be considered on the grounds of the geographical location or the local environmental conditions might include:

- higher construction and/or energy costs due to remote location;
- the installation uses a locally available raw material that affects the emissions, and importing the raw material upon which compliance with BAT-AEL depends would require substantial infrastructure investment and increased transport costs;
- the uses of alternative techniques at the installation would require additional infrastructure locally (e.g. remote locations without interconnector for power supply);
- the built up nature of the local area may result in higher costs (e.g. because of higher land prices);
- local planning restrictions limit the nature of developments or their costs; or
- the installation is located where there are fewer people or environmental receptors, resulting in lower impacts (and damage costs) than would apply to a typical installation.

The reasons that might justify derogation to be considered on the grounds of the technical characteristics of the installation might include:

- atypical cross media impacts would arise whereby reducing the emissions of one pollutant increase the emissions of another;
- the configuration of the plant within the site results in practical difficulties and increased costs, including lack of space for the construction of additional plant;
- the history of recent investment in techniques designed to reduce emissions;
- the remaining operational life of the plant;
- the product must be produced to meet a specific and atypical specification that necessitates e.g. additional purification steps, different reaction chemistry etc.; or
- the characteristics of the gaseous or liquid effluents are atypical.

In order for competent authorities to entertain the possibility of derogation the optioneering BAT assessment should include at least one option for reducing the emissions to within the BAT-AEL range and meet BAT within the BATc review deadline. This assessment will need to demonstrate that the reason such an option was rejected as BAT, or whose introduction is delayed, can be linked to at least one of the relevant qualification criteria mentioned above. If this is not the case then competent authorities cannot consider the possibility of derogation and would therefore have no option but to set the ELV within the BAT-AEL range.

Translating BAT Associated Emission Levels (AELs) into Emission Limit Values (ELVs)

This part provides guidance on how to translate the BAT Associated Emission Levels (AELs) published at EU-level into Emission Limit Values (ELVs) that are specific to the permitting of individual installations.

The IED requires that Emission Limit Values (ELVs) are set for polluting substances likely to be emitted in significant quantities (Article 14, para 1). The ELVs must reflect the principle that that Best Available Techniques (BAT) is applied in the operation of the installation (Article 11). The BAT conclusions agreed at EU-level provide the reference for setting ELVs, including the requirements for the monitoring of emissions (Article 14, para 3). In particular, the BAT-AELs provide the basis for setting the ELVs for individual installations (Article 15, para 3).

Article 3

Definitions

(5) 'emission limit value' means the mass, expressed in terms of certain specific parameters, concentration and/or level of an emission, which may not be exceeded during one or more periods of time;

(10) 'best available techniques' means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole […]

Article 11

General principles governing the basic obligations of the operator

Member States shall take the necessary measures to provide that installations are operated in accordance with the following principles:

[…]

(b) the best available techniques are applied;

Article 15

Emission limit values, equivalent parameters and technical measures

[…]

3. The competent authority shall set emission limit values that ensure that, under normal operating conditions, emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions referred to in Article 13(5) through either of the following:

(a) setting emission limit values that do not exceed the emission levels associated with the best available techniques. Those emission limit values shall be expressed for the same or shorter periods of time and under the same reference conditions as those emission levels associated with the best available techniques; or

(b) setting different emission limit values than those referred to under point (a) in terms of values, periods of time and reference conditions.

Where point (b) is applied, the competent authority shall, at least annually, assess the results of emission monitoring in order to ensure that emissions under normal operating conditions have not exceeded the emission levels associated with the best available techniques.

To put the IED requirements into practice it is necessary to derive a mass or concentration limit (single value) from the BAT-AEL range (level A to level X). This single value should not exceed the range under normal operating conditions. In order to comply with the basic obligation to apply BAT, this mass or concentration limit needs to reflect the best technically and economically viable option to protect the environment.

If the ELV is expressed for another time period or under reference conditions other than those stated in the BAT-AELs, an additional calculation by the operator is required to prove that the level of protection is equivalent.

The implementation of BAT-AELs can be split into three steps:

- Translating BAT-AELs into a single ELV (from a range to a number) or several ELVs for different operational conditions.
- Setting monitoring requirements, and in case of other reference conditions, setting additional monitoring/reporting requirements.
- Setting compliance rules, like reference periods and conditions and allowed exceedances during other than normal operating conditions.

Under certain limited conditions, Article 15, para 4, allows an ELV to exceed the upper value of a BAT-AEL range. See factsheet2.11 for further information on derogations

Conditions in permits, general binding rules, national/regional Brefs

The IED provides the options to implement BAT-AELs in individual permit conditions or in general binding rules. In the permitting option, BAT-AELs are translated into ELVs for an individual installation. In the general binding rules option, BAT-AELs are translated into ELVs for a sector. Examples from Member States show that general binding rules are prepared by working groups with experts from competent authorities and the member state. Operators and trade associations are consulted.

Article 6

General binding rules

Without prejudice to the obligation to hold a permit, Member States may include requirements for certain categories of installations, combustion plants, waste incineration plants or waste co-incineration plants in general binding rules.

Where general binding rules are adopted, the permit may simply include a reference to such rules.

Article 17

General binding rules for activities listed in Annex I

1.When adopting general binding rules, Member States shall ensure an integrated approach and a high level of environmental protection equivalent to that achievable with individual permit conditions.

2. General binding rules shall be based on the best available techniques, without prescribing the use of any technique or specific technology in order to ensure compliance with Articles 14and 15.

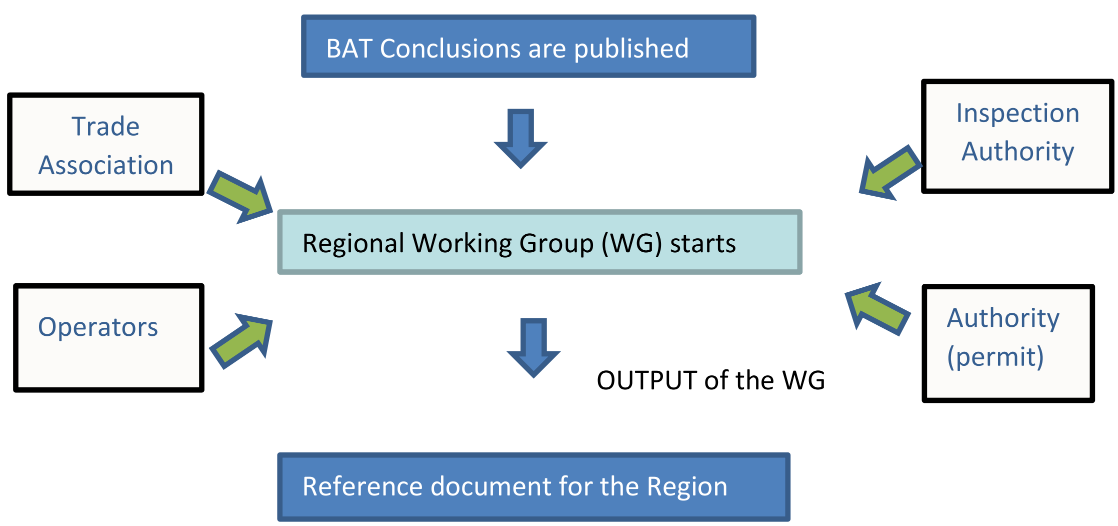
3. Member States shall ensure that general binding rules are updated to take into account developments in best available techniques and in order to ensure compliance with Article 21.

4.General binding rules adopted in accordance with paragraphs 1 to 3 shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication.

Examples in Member States show two approaches, combining permits and general binding rules:

The general binding rules set ELVs that are considered to reflect best available techniques for the majority of the installations. In the permits of individual installation these ELVs are checked and if deemed necessary amended in permit conditions. The ELVs in the general binding rules are sometimes at the upper level of the BAT-AEL and sometimes at a more stringent level depending on the performance of the installations and environmental circumstances in the area covered by the general binding rules.

An option in between (not mentioned in the IED) are national/regional Brefs which provide guidance to set ELVs for a specific sector or region. Like general binding rules national/regional Brefs are developed by working groups consisting of experts from competent authorities and the member state and in co-operation / consultation with industry.



Step 1: Translating BAT-AELs into an ELV

To set ELVs based on BAT-AELs the emission performance of a whole sector needs to be compared with the performance level of an individual installation or, in the case of general binding rules, of the group of installations covered under the scope of the general binding rules. For this analysis, detailed and good quality information is needed. The IED provides the legal basis to require the operator to submit the necessary information:

- Permit application (Article 12)
- Monitoring plan and data (Article 14)
- Possibility to require operator information for reconsidering permit conditions (Article 21)
- Inspection reports (Article 23).

To carry out the analysis, the information needs to include in particular:

- Technical details on the installation (existing/new, continuous / non-continuous operations).
- Substances emitted, including information on quantities of individual and categories of substances and monitoring methods and reference conditions.
- Nature of the emissions, like fluctuations, point / diffuse source, normal / other than normal operating conditions.
- Emission reduction techniques (to be) implemented.

Practical examples in Member States show that requiring the operator to draw up a plan, including on implementing BAT and monitoring and in some cases following formats or criteria, contributes to good quality and quantity information collection.

If a first check, also in comparison with the BREF, shows that the quality and/or quantity of information is not sufficient, the competent authority may, **before** granting or revising the permit, request additional information. A better understanding of the specific situation may also require additional information. For example, the reference conditions and monitoring methods that underlie the emission data must be clear to be able to use them for setting an ELV

Article 12

Applications for permits

1. Member States shall take the necessary measures to ensure that an application for a permit includes a description of the following:

the installation and its activities;

the raw and auxiliary materials, other substances and the energy used in or generated by the installation;

the sources of emissions from the installation;

the conditions of the site of the installation;

where applicable, a baseline report in accordance with Article 22(2);

the nature and quantities of foreseeable emissions from the installation into each medium as well as identification of significant effects of the emissions on the environment;

the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation;

measures for the prevention, preparation for re-use, recycling and recovery of waste generated by the installation;

further measures planned to comply with the general principles of the basic obligations of the operator as provided for in Article 11;

measures planned to monitor emissions into the environment;

the main alternatives to the proposed technology, techniques and measures studied by the applicant in outline.

An application for a permit shall also include a non-technical summary of the details referred to in the first subparagraph.

Article 21

Reconsideration and updating of permit conditions by the competent authority

2. At the request of the competent authority, the operator shall submit all the information necessary for the purpose of reconsidering the permit conditions, including, in particular, results of emission monitoring and other data, that enables a comparison of the operation of the installation with the best available techniques described in the applicable BAT conclusions and with the emission levels associated with the best available techniques.

When comparing the information with a BREF/BAT-AEL five outcomes can be distinguished:

The installation uses the same techniques as described in the BAT conclusion. In this case the next step is to check if the emission level of the installation is within the BAT-AEL. If so, that emission level can be set as an ELV.

The installation uses the techniques described in the BAT conclusions, but emission levels exceed the BAT-AEL. The emission level in the operator information cannot be automatically set as the ELV (article 15). The competent authority could consider to deviate from the application and set the ELV at the upper level of the BAT-AEL or a lower level considered appropriate looking at the technical characteristics of the installation or comparable installations in the BREFs or elsewhere. This requires consultation with the operator to prevent objections and to guarantee enforceability.

The installation uses techniques other than those described in the BAT-conclusion. In this case the emission level must be compared to the BAT-AEL and additionally the technique must be tested against the Annex III criteria to determine BAT (article 14, para 5). This second test can identify cross-media effects possibly leading to interference with other BAT conclusions. If this is not the case and the emission level is within the BAT-AEL, that emission level can be set as an ELV.

The installation uses techniques other than those described in the BAT-conclusion and emission levels exceed the BAT-AEL. The emission level in the operator information cannot be automatically set as the ELV (article 15). The competent authority could consider deviating from the application and set the ELV at the upper level of the BAT-AEL or a lower level considered appropriate looking at the technical characteristics of the installation or comparable installations in the BREFs or elsewhere. Alternatively, the competent authority may refuse to grant the permit or require the operator to send in a justified application for an article 15(4) derogation. This must be distinguished from processes and environmental effects not covered by BAT conclusions. In that situation, competent authorities and operators must derive an ELV using the criteria of Annex III IED (article 14, para 6, IED).

The operator applies for an article 15, para 4, derogation to use a less stringent ELV than the BAT-AEL. See factsheet 2.11. See factsheet 2.11.

In all situations, the quality of the permit application needs to be checked thoroughly:

Does the emission level reflect the best available techniques looking at the installation and its activities, the materials and energy and the conditions of the site?

Are the proposed emissions reduction techniques acceptable in terms of appropriate design, operation and maintenance and optimal capacity and availability?

The BREF chapters on techniques to consider in the determination of BAT and on emerging techniques provide useful information for this check. Other sources may also be used, for example:

Comparable installations elsewhere in or outside Europe

The operator, competent authority or both can investigate the feasibility of applying other or additional techniques that potentially can reduce the emissions.

In particular, in the case of general binding rules, information from technology institutes, universities and industry representatives (both the IED sectors and material suppliers/suppliers of emission reduction technology).

In summary, the ELV is normally set with respect to the actual emissions from the installation under normal operating conditions. This level is a single value, not a range for each operating window/scenario/product. It is within the range of the BAT-AEL and not necessarily at the upper level of the range. The collection and analyses of information by the operator, competent authority and/or legislator (in the case of general binding rules) is aimed at setting the ELV at a realistic, practicable and enforceable level.

All activities of the competent authority to define the ELV must be clearly reported, by means of a technical report or included in the permit itself. This justification is part of the requirement to make information available to the public and to enable public participation (article 24, para 2).

Article 24

Access to information and public participation in the permit procedure

2. When a decision on granting, reconsideration or updating of a permit has been taken, the competent authority shall make available to the public, including via the Internet in relation to points (a), (b) and (f), the following information:

the content of the decision, including a copy of the permit and any subsequent updates;

the reasons on which the decision is based;

the results of the consultations held before the decision was taken and an explanation of how they were taken into account in that decision;

the title of the BAT reference documents relevant to the installation or activity concerned;

how the permit conditions referred to in Article 14, including the emission limit values, have been determined in relation to the best available techniques and emission levels associated with the best available techniques;

where a derogation is granted in accordance with Article 15(4), the specific reasons for that derogation based on the criteria laid down in that paragraph and the conditions imposed.

Step 2 Setting monitoring requirements

The IED requires operators to make and submit a monitoring plan as part of the permit application (article 12, para 1j). The competent authorities are required to set conditions on monitoring that enable verification of compliance with the permit. The conditions should cover methodology, frequency, evaluation, data processing, recording and presentation. BAT conclusions on monitoring provide the reference for setting the monitoring conditions.

Article 14

Permit conditions

1. Member States shall ensure that the permit includes all measures necessary for compliance with the requirements of Articles 11 and 18.

Those measures shall include at least the following:

[…]

(c) suitable emission monitoring requirements specifying:

(i) measurement methodology, frequency and evaluation procedure; and

(ii) where Article 15(3)(b) is applied, that results of emission monitoring are available for the same periods of time and reference conditions as for the emission levels associated with the best available techniques;

Article 16

Monitoring requirements

1. The monitoring requirements referred to in Article 14(1)(c) shall, where applicable, be based on the conclusions on monitoring as described in the BAT conclusions.

[…]

The monitoring plan should be checked and, where necessary, modified by the competent authority **before** granting the permit in order to improve the reliability of the plan.

Frequently used criteria to check monitoring plans are:

- Conformity with BAT conclusions on monitoring.
- *Conformity with the goals of the monitoring, which should meet the goal of the BAT conclusion and verify compliance.*
- Consistency of the complete monitoring system, not only the monitoring of separate parameters.
- Inclusion of obligations regarding Monitoring Data Quality Assurance (e.g. UNI EN 14181 for CEMS, laboratory/operators qualification, sampling methods and procedures …).
- Application of CEN standards or, if CEN standards are not available, ISO, national or other international standards which ensure the provision of data of an equivalent quality level.
- Check if acknowledged (legal) persons do the monitoring or at least the testing of the monitoring system.

Check if the monitoring plan is sufficiently risk-based: The frequency increases with the impact of a failure of abatement techniques. Another approach is to take into consideration the sensitivity of the receptor in question to determine which method to choose based on its limit of quantification and error.

Monitoring plans can also be compared wi*th existing monitoring programs in similar installations to check the quality.*

General binding rules often include monitoring requirements. In addition to these general binding rules, d*etails (such as parameters, reference conditions, intervals, reporting requirements and monitoring methods) might be specified in the permit.* After the publication of BAT conclusions for a sector, a comparison is made between the monitoring requirements in general binding rules and the monitoring requirements in the BAT conclusions. Based on this comparison, a proposition is made for implementing additional monitoring requirements in the general binding rules.

Sometimes BAT conclusions allow alternative methodologies and sometimes operators would prefer to use other monitoring methods or frequencies:

Often the least stringent monitoring method and frequency is taken where the BAT conclusions allow alternatives. When existing permits and general binding rules are already more stringent, the existing conditions are reaffirmed.

In case of BAT conclusions which provide alternative methods of monitoring, all methods are usually allowed.

If the operator proposes an alternative method to the one specified in the permit (and/or in the monitoring plan) he must prove, with the application of international procedures, the equivalence of the alternative method (in terms of LOQ, LOD, …).

For the specific situation of another period and/or other reference conditions than in the BAT conclusions (article 15, para 3) in advance it is checked if the method allows recalculation to the same circumstances (reference conditions) of the BAT conclusion.

The competent/control authority can also change monitoring methods and/or frequency **after** the permit issue, depending on the specific situations, the monitoring results, the results of inspections, the number and type of non-compliances, and any incidents/ accidents that have occurred.

Individual Competent Authorities/Member States have developed guidance for specific sectors on the interpretation of the BAT conclusions on monitoring.

In summary, a good quality monitoring plan and a thorough check of the monitoring plan in advance of granting the permit can, to a great extent, ensure that compliance with the permit conditions can be verified reliably.

Step 3 Setting compliance rules

The IED requires, on the one hand, that ELVs should be set for normal operating conditions (Article 15, para 3) and, on the other, that measures should be included for other than normal operating conditions (Article 14, para 1f). For this, again, good quality and detailed information is needed, for example:

Installation specific

Permit application (Article 12)

Monitoring plan and data (Article 14)

Notifications on incidents, accidents and non-compliance (Articles 7, 8).

Sector information

Background information on the BAT-AELs in the BREFs

CEN standards or other technical standards for maintenance, good operation, etc.

Comparable installations elsewhere in or outside Europe

Article 14

Permit conditions

1.Member States shall ensure that the permit includes all measures necessary for compliance with the requirements of Articles 11 and 18.

Those measures shall include at least the following:

[…]

(f) measures relating to conditions other than normal operating conditions such as start-up and shut-down operations, leaks, malfunctions, momentary stoppages and definitive cessation of operations;

Article 7

Incidents and accidents

[…]

(a) the operator informs the competent authority immediately;

(b) the operator immediately takes the measures to limit the environmental consequences and to prevent further possible incidents or accidents;

(c) the competent authority requires the operator to take any appropriate complementary measures that the competent authority considers necessary to limit the environmental consequences and to prevent further possible incidents or accidents.

Article 8

Non-compliance

[…]

2. In the event of a breach of the permit conditions, Member States shall ensure that:

(a) the operator immediately informs the competent authority;

(b) the operator immediately takes the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) the competent authority requires the operator to take any appropriate complementary measures that the competent authority considers necessary to restore compliance.

[…]

In particular, the following information is needed:

Reference period: the time period to which the ELV refers, e.g. half hour or daily average, average over half hour sampling period, (non-)continuous process.

Reference conditions: the ELV must include reference conditions to be used for the compliance check (e.g. pressure, temperature, oxygen concentration, humidity ...).

In principle, emission limit values are expressed for the same or shorter period of time and under the same reference conditions as the BAT-AEL. If not, additional monitoring is required to prove yearly that the level of protection is equivalent.

Monitoring methods: for each ELV/emission point, including QA procedure (e.g. UNI EN 14181 for CEMS);

Other than normal operating conditions such as start-up and shut-down of operations, leaks, malfunctions, temporary stoppages and definitive cessation of operations in order to determine:

if emissions from non-routine operations are relevant and different from routine operations, and if so (examples from Member States show that this is not always the case), to set higher ELVs for defined parameters and non-routine operations including limits on frequency and duration for other than normal operating conditions in order to make clear when the ELV based on the BAT-AEL applies and when it doesn't apply.

Not all other than normal operating conditions can be anticipated. That is why the IED includes the obligation to inform the competent authority in case of incidents and (possible) non-compliance (article 8 and 9). Based on these notifications the permit conditions may be reviewed to ensure more effective regulation. During one "emergency situation", usually during a short period after one exceptional event, the operator may exceed the ELV and the compliance rules but should take immediate measures to rectify the situation and identify its causes so that future incidents can be prevented. The operator also has to communicate what happened and the actions that are being implemented to the permitting and inspections authorities e.g. on a 24h limit.

Examples from Member States show that general binding rules often do not include rules on other than normal operating conditions. The permits for individual installations cover these conditions.

In summary, the challenge in setting compliance rules is to check if other than normal operating conditions leading to higher emission levels are expected and, if so, to distinguish these clearly from normal operating conditions to which the BAT-AELs apply.

Factsheet 3.01 - Describing the context for inspections

Identifying the scope

Relevant factors are (in random order):

- Geographical area for which the inspecting authority is competent
- Mission and goals (in general) of the inspecting authority
- The environmental outcome the inspecting authority is trying to achieve
- Statutory tasks, competences and measures to enforce of the inspecting authority
- Applicable legislation, either originated from a EU-, national- or regional level, against which the inspecting authority is competent to inspect
- Obligations to inspect, laid down in specific (EU-)legislation
- Established environmental (national) policy and priorities
- Interests of stakeholders (e.g. NGO's, branches of industries)
- Public opinions
- Register of activities and installations for which the inspecting authority is competent to inspect (the level of detail needs to be tailored for the Member State):
    - Sectors of industries
    - Types and sizes
    - Numbers and geographical distribution of installations
- Relevant environmental issues (water, air, safety, etc) for which the inspecting authority is competent to inspect
- The inspection resources (financial and human) that are available for the inspecting authority
- Types of inspection activities (control, compliance promotion, information transfer etc) to be covered

Gathering Information

Information on the following issues may be relevant in this respect:

<u>Environment</u>

- Environmental issues (environment, safety, public health, nature) particularly relevant for the area concerned
- Information on the state of and trends in the (ambient) environment (e.g. data from national or regional networks of pollution control sampling stations or monitoring devices)

<u>Installations</u>

- Sector-specific issues/needs, e.g. expertise, attitude, culture, compliance behaviour and economics of (industrial) target groups
- Information on the numbers, location and the branches of small and medium sized enterprises in the area that are regulated and falling under the scope of the inspection plan

- (Minimum) frequency of inspections based upon (national) legislation or national or local goals.
- Information on individual controlled activities/installations, such as information on:
    - Legal requirements and permit situation
    - Emissions/discharges (results from emission monitoring), environmental impact, risk, accidents/incidents
    - Complexity of installation
    - Location of installation
    - Compliance record / behaviour (inspection history)
    - Performance record (e.g. Environmental management systems, self monitoring and reporting, safety management systems, audits, experiences of inspection authorities)
    - Relevant complaints

General

- Changes in legislation that need to be implemented
- Quality and enforceability of the requirements in legislation or permits
- Research on types of industry, objects and spatial planning done by third parties (e.g. Universities, Statistical boards or other Inspectorates)
- Coordination and cooperation with other (inspection) authorities
    - Feedback and evaluation of past inspections
    - Likelihood of offences (e.g. is there a big financial profit for not complying to legislation)

To gather, store and use all this information the inspecting authority should have an effective data management system. Software applications are a useful tool in this regard. It is important to keep these information systems updated. For example after every inspection, when installations have been changed or when complaints are received or accidents have occurred.

Factsheet 3.02 - Impact criteria

1. Type and kind of installation

Score	Definition
0	Non-IPPC installation without need of an environmental permit
1	Non-IPPC installation without need of an environmental permit but object of environmental regulations
2	Non-IPPC installation that needs an environmental permit
3	IPPC installation; Non-IPPC installation as relevant part of a lower tier Seveso establishment
4	IPPC installation as relevant part of an upper tier Seveso establishment or with obligatory environmental impact assessment
5	IPPC installation as relevant part of an upper tier Seveso establishment and with obligatory environmental impact assessment

2. Impacts on human health or the environment

Score	Definition
0	No environmental complaints, environmental accidents or incidents in the last 5 years
1	At least one minor environmental complaint, minor environmental accident or incident in the last 5 years
2	More than two minor environmental complaints, minor environmental accidents or incidents in the last 5 years
3	At least one relevant environmental complaint, relevant environmental accident or incident in the last 5 years
4	One important or more than two relevant environmental complaints, environmental accidents or incidents in the last 5 years
5	One important or more than two relevant environmental complaints, environmental accidents or incidents in the last 2 years

3. Releases to air

Score	Definition
0	Activity **is not mentioned** in Annex 1 of the EPRTR Regulation and there are **no releases** to air
1	Activity **is mentioned** in Annex 1 of the EPRTR Regulation but **no threshold** of Annex 2, column 1a,

	is exceeded and there are **no other releases** to air
2	Activity **is or is not mentioned** in Annex 1 of the EPRTR Regulation, **no threshold** of Annex 2, column 1a, is exceeded but there are **other releases** to air
3	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>1**
4	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>5**
5	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>10**
* Ratio of release to threshold value	

4. Releases to water / off-site transport in waste water

Score	Definition
0	Activity **is not mentioned** in Annex 1 of the EPRTR Regulation and there are **no releases** to water or off-site transports in waste water
1	Activity **is mentioned** in Annex 1 of the EPRTR Regulation but **no threshold** of Annex 2, column 1b, is exceeded and there are **no other releases** to water or off-site transports in waste water
2	Activity **is or is not** mentioned in Annex 1 of the EPRTR Regulation, **no threshold** of Annex 2, column 1b, is exceeded but there are **other releases** to water or off-site transports in waste water
3	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>1**
4	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>5**
5	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>10**
* Ratio of release or off-site transport to threshold value	

5. Releases to land

Score	Definition
0	Activity is **not mentioned** in Annex 1 of the EPRTR Regulation and there are **no releases** to land
1	Activity **is mentioned** in Annex 1 of the EPRTR Regulation but **no threshold** of Annex 2, column 1c, is exceeded and there are **no other releases** to land

2	Activity **is or is not mentioned** in Annex 1 of the EPRTR Regulation, **no threshold** of Annex 2, column 1c, is exceeded but there are **other releases** to land
3	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to land - normalised to the thresholds* of Annex 2, column 1c - is **>1**
4	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to land - normalised to the thresholds* of Annex 2, column 1c - is **>5**
5	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to land - normalised to the thresholds* of Annex 2, column 1c - is **>10**
* Ratio of release to threshold value	

6. Off-site transfer of waste

Score	Definition
0	No activity specific waste
1	Non-hazardous waste <2,000 t/y or hazardous waste <2 t/y
2	Non-hazardous waste >2,000 t/y or hazardous waste >2 t/y
3	Non-hazardous waste >20,000 t/y or hazardous waste >5,000 t/y
4	Non-hazardous waste >50,000 t/y or hazardous waste >10,000 t/y
5	Non-hazardous waste >100,000 t/y or hazardous waste >20,000 t/y

In case of transfrontier shipment of waste into foreign countries (at risk) the limits for scoring are lower:

3	TFS: non-hazardous waste >1,000 t/y or hazardous waste >100 t/y
4	TFS: non-hazardous waste >5,000 t/y or hazardous waste >500 t/y
5	TFS: non-hazardous waste >20,000 t/y or hazardous waste >5,000 t/y

7. Input of waste

Score	Definition
0	No waste input
1	Non-hazardous waste <2,000 t/y and hazardous waste <2 t/y
2	Non-hazardous waste >2,000 t/y or hazardous waste >2 t/y
3	Non-hazardous waste >50,000 t/y or hazardous waste >1,000 t/y

4	Non-hazardous waste >100,000 t/y or hazardous waste >5,000 t/y
5	Non-hazardous waste >250,000 t/y or hazardous waste >10,000 t/y

In case of transfrontier shipment of hazardous waste from foreign countries (at risk) the limits for scoring are lower:

3	TFI: hazardous waste >500 t/y
4	TFI: hazardous waste >1,000 t/y
5	TFI: hazardous waste >5,000 t/y

8. Quality of the local environment

Score	**Definition**
0	There is no contribution by the installation and therefore no influence on the environmental quality
2	There is contribution by the installation but the environmental quality is better than the ambient standard
3	There is contribution by the installation and the environmental quality is kept at the ambient standard
4	There is contribution by the installation to the violation of environmental quality standards by less then 3%
5	There is contribution by the installation to the violation of environmental quality standards by more then 3%

9. Sensitivity of the local environment

Residential area, schools, kindergartens, hospitals, homes for the elderly, drinking water catchment areas, flood areas, nature conservation areas or FFH-areas (nature 2000), and wetland programmes

In case of more than one object/area the smallest distance counts: Shall be assessed one score lower than the others.

Score	Definition
0	No sensitive areas in the surroundings or distance is >10 km
1	Sensitive areas outside the influence sphere of emissions or distance is <10 km
2	Sensitive areas within the influence sphere of emissions or distance is <5 km
3	Sensitive areas within the influence sphere of mayor accidents or distance is <1,5 km

4	Sensitive areas close to facility premises, the distance is <100 m
5	Facility lies within a sensitive area or in the direct vicinity

10. Risk of accidents

Score	Definition
0	No (categories of) dangerous substances covered by Annex I of the Seveso-II Directive
1	Sum of (categories of) dangerous substances covered by Annex I of the Seveso-II Directive - normalised to the thresholds of Column 2*) - is >1
2	Sum of (categories of) dangerous substances covered by Annex I of the Seveso-II Directive - normalised to the thresholds of Column 2*) - is >2
3	Sum of (categories of) dangerous substances covered by Annex I of the Seveso-II Directive - normalised to the thresholds of Column 2*) - is >4 or - normalised to the thresholds of Column 3 - is >0.75
4	Sum of (categories of) dangerous substances covered by Annex I of the Seveso-II Directive - normalised to the thresholds of Column 3*) - is >1
5	Sum of (categories of) dangerous substances covered by Annex I of the Seveso-II Directive - normalised to the thresholds of Column 2*) - is >50
*) Ratio of managed amount to threshold value	

11. Noise

Score	Definition
0	No relevant emissions
1	Noise emissions are more than 5 dB(A) below limit value
2	Noise emissions are more than 1 to 5 dB(A) below limit value
3	Noise emissions are plus or minus 1 dB(A) around limit value
4	Noise emissions exceed limit value by 1 to 5 dB(A)
5	Noise emissions exceed limit value by more than 5 dB(A)*) **) This can't only be handled by routine inspection, action is needed*

Factsheet 3.03 - Operator performance criteria

1. Compliance

Score	Definition
-1	No relevant non compliances of the installation with the permit conditions or violation of the operator duties
0	One relevant non compliance of the installation with the permit conditions or violation of the operator duties
1	More than one relevant non compliance or one important non compliance with the permit conditions or violation of the operator duties

2. Attitude of the operator

Score	Definition
-1	Operator reacts immediately after recognising a condition of relevant non-compliance
0	Operator reacts after receiving a warning letter form the competent authority
1	Operator reacts only after repeated warning letters or after a formal administrative decree of the competent authority

3. Environmental management system

Score	Definition
-1	Site is registered under EMAS and the operator is working successfully with this environmental management system
0	Site is not registered under EMAS but the operator is working successfully with an accepted environmental management system
1	Site is not registered under EMAS and the operator is not working with an accepted environmental management system

4. Application of BAT

Score	Definition
-1	The installation is exceeding BAT requirements
0	The installation does reflect the BAT requirements

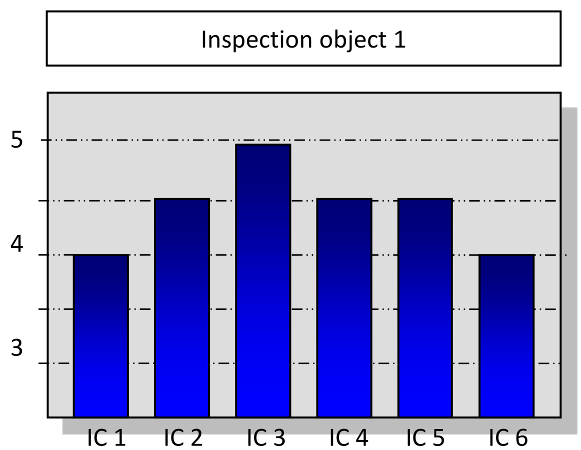
1	The installation does not reflect the BAT requirements

Factsheet 3.04 - IRAM

The scores of the impact criteria are directly linked to the risk categories and therefore to the inspection frequencies. In IRAM the inspection coordinator decides before the start of the assessment how many highest scores of an inspection task are needed to induce the highest inspection frequency. This is called "The Rule". The more impact criteria are used for the assessment the higher the number of highest scores that is "necessary" to induce the highest inspection frequency. See example below.

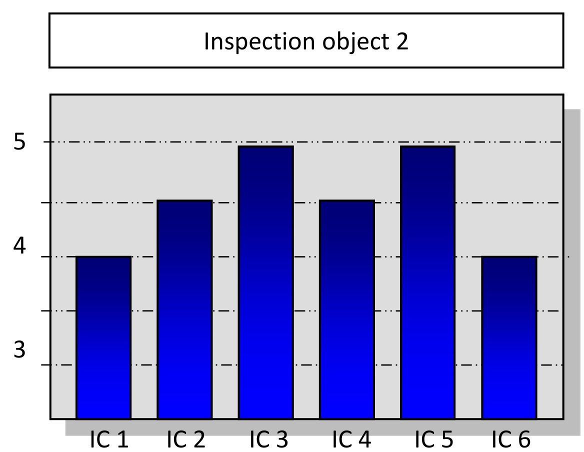
Example Impact criteria and setting the Rule:

In the risk assessment for inspection object 1 and 2 the highest score for all impact criteria is "5" which equals to the highest risk category and the highest inspection frequency of (for instance) once a year. If the minimum number of highest score is 2, the inspection frequency of once a year is induced when at least two impact criteria have a maximum score of "5". In that case the risk category is also "5". If only one impact criteria has the maximum score of "5" the risk category will be lowered by one step to "4" and the inspection frequency is less than once a year.



If the rule ="1", "only one highest score is enough", then the Risk category = 5

If the rule ="2", "two highest scores are needed", then the Risk category is lowered by one step (Risk category = 4).



If the rule = "1", "only one highest score is enough", then the Risk category = 5;

If the rule = "2", "two highest scores are needed", then the Risk category stays 5;

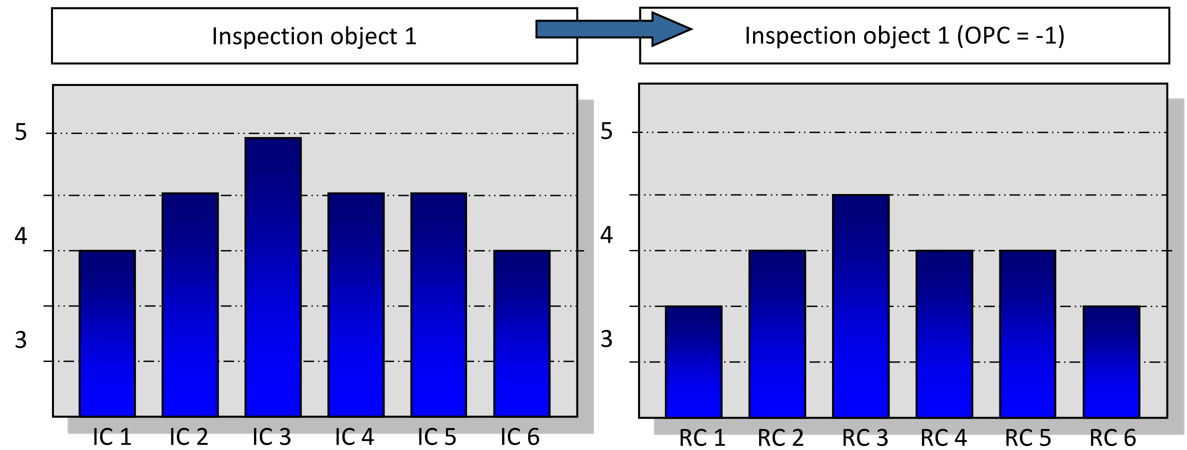
If the rule = "3", "three highest scores are needed", then the Risk category is lowered by one step (Risk category = 4).

In IRAM, the operator performance criteria (OPC) are used as probability criteria. Their role is to shift the Risk category and therefore the inspection frequency. In case of good operator performance the shift will be to a lower inspection frequency and in case of bad operator performance the shift will be to a higher inspection frequency. For this reason the operator performance criteria can be scored with "-1" (good), "0" (moderate) and "+1" (bad). In case of good operator performance one point is subtracted from each impact score and in case of bad operator performance one point is added to each impact score. By introducing these probability criteria, the impact scores are transformed into risk scores.

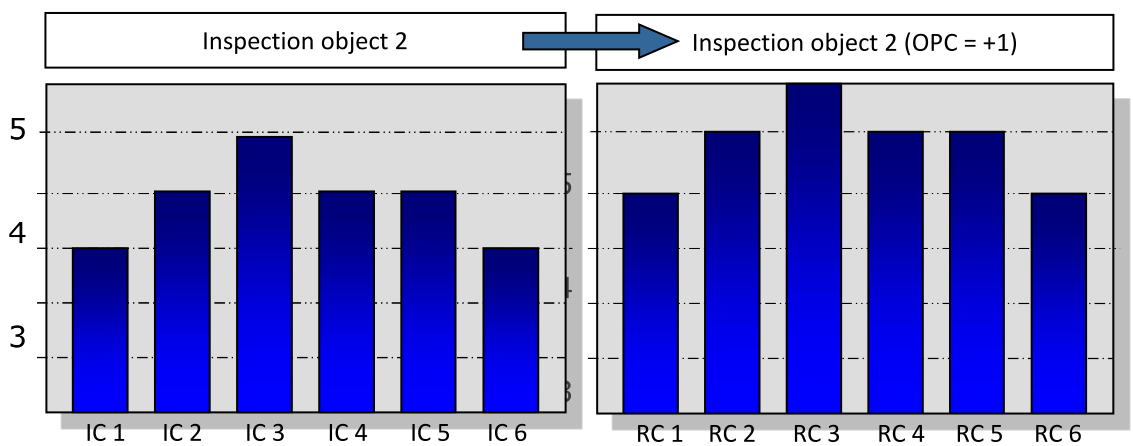
As a result the inspection frequency will be one step lower or respectively one step higher. In case of more than one operator performance criterion the result of the scoring will be the average of all OPC scores, rounded to the integer. This avoids that the shift of the inspection frequency will be bigger than one step.

Example Probability Criteria

In the next 2 examples the role of the Probability Criteria becomes clear. The influence of a good or bad operator performance is explained for inspection object 1 and 2.
The operator performance of inspection object 1 is good: OPC = “-1”
This means: 1 point is subtracted from each impact score and the he impact scores are turned into risk scores.
Assume the rule = “1”, then one highest score is enough”, so the Risk category = 4



The operator performance of inspection object 2 is bad: OPC = +1;
This means: 1 point is added to each impact score.
Assume the rule =“1” again, then one highest score is enough, so the Risk category = 6.



Note that if the maximum risk category was defined to be 5, then the final risk category for this

inspection object will be the maximum = 5.
If so desired, the inspection authority can decide on a higher inspection frequency for this specific inspection object.
The result is a Risk profile that could be used by the inspector to choose the most important subjects for inspection.

Frequencies of site visits in IED

After assessing the risk of an inspection object and calculating the risk category, an inspection frequency can be assigned to the inspection objects.

Legal obligations with respect to the minimum inspection frequency per inspection object need to be taken into account. The IED sets the minimum site visit frequency for lowest risk installations at 1 inspection in 3 years and for highest risk installations at 1 inspection a year.

To make sure we comply with these legal obligations IRAM introduces a so called “safety net”. This safety net will ensure that the inspection frequency for this inspection object will never be lower than the legal minimum inspection frequency.

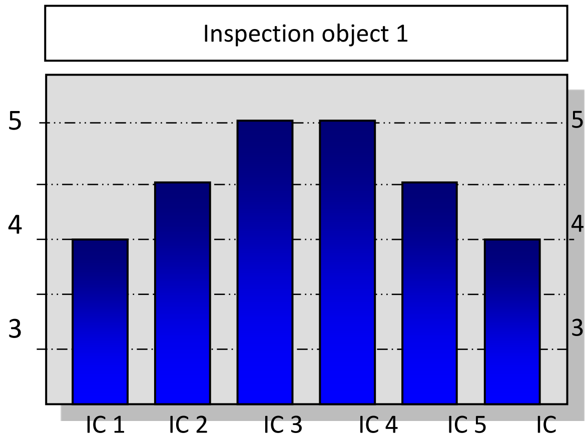
Inspecting authorities should be aware that in order to do a risk assessment, up-to-date information is needed, including data on low risk installations/activities, gathered through inspections (e.g. minimum inspection frequency).

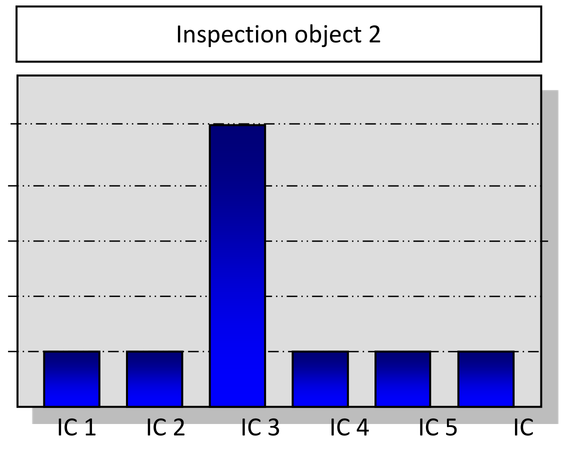
Allocating resources

As described above the outcome of the risk assessment sets the frequency of inspections. The frequency however doesn't tell us how much time we need for an inspection. A very complex inspection object may take more time to inspect than a simple object. Besides technical complexity we also have to take into account the scope of the inspection: will it be a fully integrated inspection or an inspection only on the most important environmental issues? This last part of complexity, the inspection profile, can be included in a risk assessment model and will give information on the question “how much time will this take me”.

Example inspection profile

Inspection object 1 scores high on several impact criteria:





Inspection object 2 scores high on just one impact criterion:

The (theoretical) maximum of all the scores = 5 + 5 + 5 + 5 + 5 + 5 = 30

The sum of the scores of inspection object 1 = 3 + 4 + 5 + 5 + 4 + 3 = 24 (= 80% of 30)

The sum of the scores of inspection object 2 = 1 + 1 + 5 + 1 + 1 + 1 = 10 (= 30% of 30)

"How much time will this take me" is reported in IRAM as an inspection %. The way to implement the inspection % is to define ranges or inspection effort categories.

Example inspection effort category

Here the inspection % output is reported as a range of 4 categories in 25% increments. The highest range (100%-75%) is termed 'D' and the lowest (0%-25%) is 'A'. If the required inspection time for a full integrated inspection would be 40 hours then:

Calculation	**Resulting inspection effort category**
Inspection object 1 requires 24/30 = 0,8 = **80 %** of 40 hours	Category D
Inspection object 2 requires 10/30 = 0,36 = **30 %** of 40 hours	Category B

Integrated inspections **might be directed where the inspection profile is larger than 50% (i.e. Categories C&D)**

Inspection on themes **(e.g. inspection focussing only on Impact Criteria 3 above) might be directed where the inspection profile is lower than 50% (i.e. Categories A&B)**

In addition to the required inspection time that is allocated to the different inspection objects, the inspection authority can also use the "inspection profile" to determine the focus of the inspection.

<u>Example inspection focus</u>

For object 1 this would be the environmental aspects under impact criteria 2, 3, 4 and 5, while the inspection for object 2 focuses on the aspect under impact criterion 3.

Another way to deal with complex inspection objects such as object 1 is to work with a multi annual inspection plan:

IC3 and IC4 are inspected every year;

IC2 and IC5 are inspected every second year additionally;

IC1 and IC6 are inspected every third year additionally

Normally the total amount of staff available is limited and does not necessarily match with the staff time needed for carrying out all prioritised inspection activities. It is important that we bridge this gap along the planning process and that we give account for this in the inspection plan. We can choose to adjust our priorities. But we may also want to adjust our targets or inspection strategies for certain prioritised inspection activities, or to reconsider the inspection schedule.

In any case we need to know the total staff time needed to perform all the prioritised inspections. And we must assess the average amount of time required for carrying out different types of inspection activities. For instance we need to know for each type of controlled installation the average time needed for performing a certain type of routine inspection, including preparation, travelling, the actual site visit, reporting, (possible) enforcement actions and court cases. The enforcement actions (e.g. sanctions or repressive actions) cannot be planned in advance and average time based on experience has to be used.

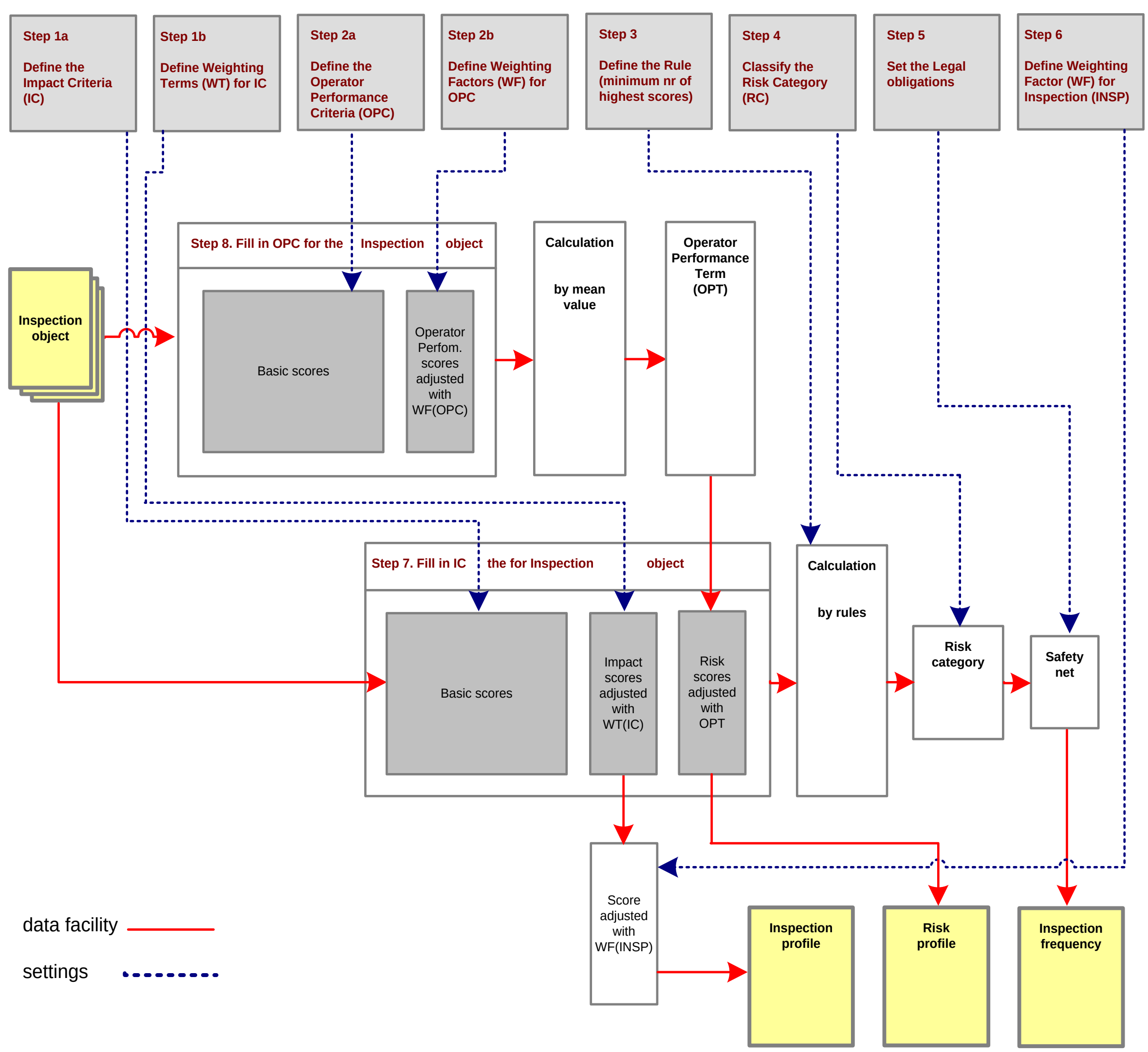
This will be dependent on the size and complexity of a certain type of installation and the average compliance record of the sector, etc[4].

In addition to the inspections outlined above, we must include information on staff time which is needed for administrative and legal support and for follow up actions (e.g. enforcement actions). Often a simple percentage of the total inspection time is taken for this.

Resources will also have to be allocated for non-routine inspections (e.g. responding to complaints and accidents). It is important to reserve an amount of time for non-routine inspections. On average the amount of time needed for non-routine inspections could be between 20% and 40% of the total time of an inspectorate. The exact percentage is to be determined by experience, achieving a good balance between routine and non-routine inspections.

[4] Inspection units can be useful here. Inspection units can be defined as logical units that are dimensioned in such a way that 1 inspector is able to carry out an inspection within a given time.

The next figure shows the basic steps of the Risk Assessment model. Risk assessments start by first defining your criteria and settings. The criteria and Weighting Factors and Terms are defined in step 1a, 1b, 2a and 2b. Next, define "the Rule" (the minimum number of highest scores), the classification of the risk category (in combination with the inspection frequency) the legal obligations and the weighting factor for inspections. This is done in steps 3 to 6. These settings are normally made by a coordinator and will apply to all the inspection objects that are being assessed under a specific inspection task. In the final steps (7 and 8) the actual data relating to each of the inspection objects are entered.



Step 1a – Define the Impact Criteria

In step 1a the impact criteria are defined.

Each inspection object is scored against a set of impact criteria, and every impact criterion itself is defined with a set of sub criteria (often with thresholds).

In section 2.1 a list of possible Impact criteria is given. If we take the Impact criterion "emission to air" as an example, the set of sub-criteria and the scoring range could look like this:

Example emission to Air

Score	Definition
0	Activity **is not mentioned** in Annex 1 of the EPRTR Regulation and there are **no releases** to air
1	Activity **is mentioned** in Annex 1 of the EPRTR Regulation but **no threshold** of Annex 2, column 1a, is exceeded and there are **no other releases** to air
2	Activity **is or is not mentioned** in Annex 1 of the EPRTR Regulation, **no threshold** of Annex 2, column 1a, is exceeded but there are **other releases** to air
3	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>1**
4	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>5**
5	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to air - normalised to the thresholds* of Annex 2, column 1a - is **>10**
* Ratio of release to threshold value	

In this example the range is set from 0 to 5

The number of Impact criteria that will be used in the assessment is up to the inspecting authority. This can be different per organisation and per task. Note that "the Rule" (see section 3.5) is closely linked to the number of criteria that are used and that the scores are directly related to the Risk categories and therefore to the inspection frequencies.

Other examples of Impact criteria for IED can be found in annex III.

Step 2a – Define the Operator Performance criteria

Along with the impact criteria, the inspection object is also assessed against operator performance criteria, see section 2.2 for examples. Here the criteria are also defined with a set of sub-criteria and a scoring range.

The scoring range of the operator performance is different from the one used for impact. The impact is the main driver and can only be adjusted by the operator performance. This effect can be positive, negative or neutral and can be regulated by the scoring range of the operator performance criteria. Within IRAM a range of -1 to + 1 is used.

If we take the operator performance criterion "compliance" as an example the set of the sub-criteria and scoring range could look like this:

Example compliance

Score	Definition
-1	No relevant non compliances of the installation with the permit conditions or violation of the operator duties
0	One relevant non compliance of the installation with the permit conditions or violation of the operator duties
1	More than one relevant non compliance or one important non compliance with the permit conditions or violation of the operator duties

An inspection object with a high impact and a bad operator performance will receive more attention than an inspection object with a similar impact but with a good operator performance.

Other examples of Operator performance criteria for IPPC/IED and Seveso can be found in annex 2 and 3.

Step 1b and 2b – Define the Weighting Term and Factor

Impact criteria and operator performance criteria don't always have the same importance. For that reason, weighting is introduced, so one criterion can get a higher weight in the calculation than another. Weighting terms and factors are part of the steering mechanisms.

The importance of weighting is explained in section 2.3.

By introducing a weighting term, for example 2, for the impact criterion "emission to air", a score of 2 is added to the defined impact criterion. That way, we define air as two categories more important than the other impact criteria.

In the operator performance criteria, weighting is done with a weighting factor; the criterion is multiplied by the factor. For example, if the weighting factor for the operator performance criterion "compliance" is 2, the score of this criterion would be multiplied by 2. The importance of "compliance" is doubled compared to other OPC.

Another way to steer is to use a (temporary) ceiling on one or more impact criteria, the risk ceiling. For these impact criteria it will not be possible to give a higher score than the defined ceiling. For example, if we set the ceiling for the impact criterion 'noise' on 3, it will not be possible to give 'noise' a higher score than 3, although the remaining criteria could have a maximum of 5. In this example noise will normally not be responsible for a high risk classification and the resulting inspection frequency (see section 3.5 for risk classification). This step is also part of the steering mechanism.

Step 3 – Define "the Rule"

In step 3 we define "the Rule". In section 2.5 and 3.1 we already mentioned that the Rule is closely linked to the number of Impact criteria and that the more impact criteria we use the higher the Rule will be.

"The Rule" is a number (1 or higher) and works like this:

- Rule 1 means: there is only one highest score (of an impact criterion) required to equate the score of this impact criterion to same risk category.
- Rule 2 means: there are at least two highest scores (of impact criteria) required to equate the score of these impact criteria to the same risk category.
- Rule 3 means: there are at least three highest scores (of impact criteria) required to equate the score of these impact criteria to the same risk category.
- If the number of highest scores does not meet the Rule, the Risk category will be lowered by a maximum of 1 step. This step is part of the steering mechanism.

Step 4 – Classify the Risk Category

In this step we link the risk category to the inspection frequency. Within IRAM there is a direct relation between the Risk Category and the inspection frequency.

This relationship is a policy decision of the inspecting authority, for example:

- RC0 = no routine inspections
- RC1 = min 1 inspection in 5 years

- RC2 = min 1 inspection in 4 years
- RC3 = min 1 inspection in 3 years
- RC4 = min 1 inspection in 2 years
- RC5 = min 1 inspection every year

The risk category can also be used in allocating (human) resources for different inspection tasks.

This step is part of the steering mechanism.

Note that this step is not part of the internet IRAM tool – rather a policy decision for the inspecting authority as to how to use the outputs of IRAM.

Step 5 – Set the Legal Obligations and Policy (safety net)

In step 5 we set the legal obligations and or policy (per inspection object) with respect to the minimum and the maximum inspection frequency. In section 2.6 we mentioned that this "safety net" is necessary to make sure we will stay within the boundaries of national and European legislation and the policies of an organization.

The safety net will limit the drop in the risk category to a defined lowest risk category. This would be the case where the actual result of the risk assessment is lower than a given limit (e.g. if one cannot inspect a given facility less that once every three years). On the other hand an inspection authority may choose a highest inspection frequency that should not be exceeded. In this case a highest risk category can be set. This setting will change the risk category to the highest risk category if the result of the risk assessment is higher than that.

These steps are part of the steering mechanism.

Step 6 – Define the Weighting Factors for Inspections

With weighting factors for inspections we can influence the inspection profile, see section 2.3). Some environmental aspects (that are linked to a certain impact criteria) will take more time to inspect than others (because of size or complexity). For example if we would set the weighting factor for inspections for the impact criterion for waste management on 2, the scoring of waste will have a bigger influence on the inspection profile. This step is also part of the steering mechanisms.

Step 7 – Fill in the Impact Criteria scores

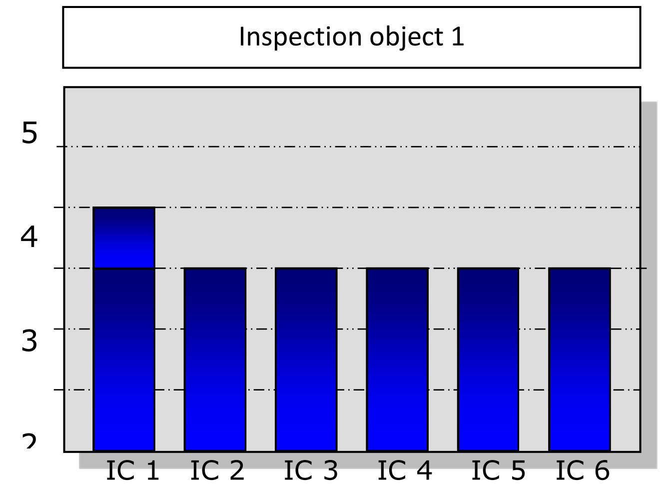
In step 7 we fill in the impact scores for the inspection objects. The impact scores are combined with the weighting terms.

The table below gives a simplified impact score of 2 inspection objects.

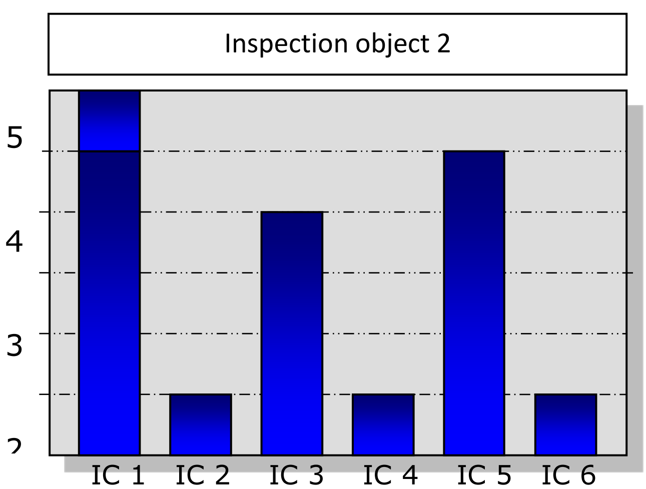
We use 6 Impact criteria, set the weighting term of Air on 1 and the Rule on 1.

Impact criterion	Air	Water	Waste	Safety	Health	Quality
Weighting Term	1	0	0	0	0	0
Range	<0, 5>	<0, 5>	<0, 5>	<0, 5>	<0, 5>	<0, 5>
Inspection object 1	3	3	3	3	3	3
Inspection object 2	5	1	4	1	5	1

For inspection object 1 the score would look like this:



The Risk category for this object (without the influence of other mechanisms) would be 4. If the Rule would be set on 2, the risk category would be 3.



And for inspection object 2 the score would look like this:

The Risk category for this object (without the influence of other mechanisms) would be 6. If the Rule would be set on 2, the risk category would be 5

Note: If the highest risk category is set to “5” also the first result will be 5.

Step 8 – Fill in the Operator Performance scores

In step 8 we fill in the scores for the operator performance for the inspection objects. The operator performance scores are combined with the weighting factors. The table on the next page gives a simplified operator performance score of the same 2 inspection objects. We use 3 criteria and set the weighting factor on compliance on 2. Note that the Rule is only applicable to the impact criteria and <u>not</u> here.

From the scores, an average operator performance score is calculated, the operator performance term (OPT).

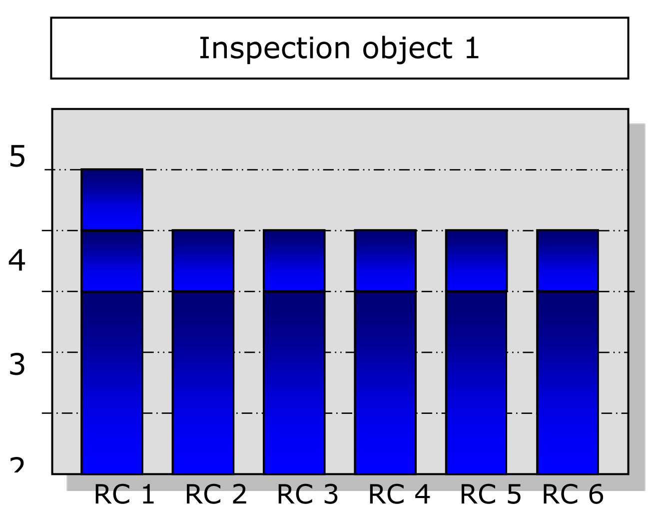
In the table above, inspection object 1 scores an operator performance term of 1, and inspection object 2 scores an operator performance term of -1.

The calculation with the weighting factor (in case of object 2) worked as follow: compliance with factor 2 scored two times -1, the other criteria both scored 0. Operator performance term is -2 divided by 4 = -0.5, which is rounded to the integer: -1. In case the weighting factor would be 1 the operator performance term would be 0 because -1/3 = -0.33, which is rounded to the integer: 0.

The way the operator performance (term) influences the risk assessment is that it induces a shift on the impact score. The impact scores, combined with the OPT-score (that results from the operator performance scores), give Risk scores!

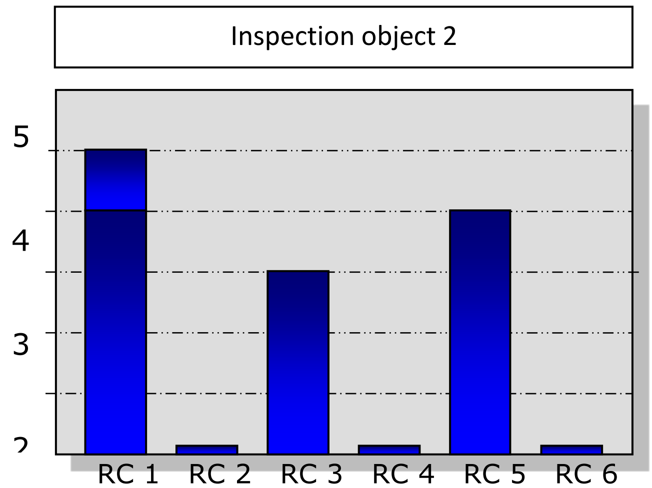
A good operator performance term (-1) lowers the risk, so it leads to a risk score that's lower than the impact score. A bad operator performance term (+1) raises the risk and will lead to a higher risk score. An average operator performance term (0) will not change the risk.

If we look at the same inspection objects the graphs (after adjusting the impact criteria with the operator performance term) would now look like the following:



For inspection object 1 the score would look like this because the OPT is added to every criterion: +1.

The Risk category for this object would be 5. If the Rule would be set on 2, the risk category would be 4.



And for inspection object 2 the score would look like this because the OPT is added to every criterion: -1.

The Risk category for this object would be 5. If the Rule would be set on 2, the risk category would be lowered to 4.

Factsheet 3.05 - Defining Objectives

Inspection authorities need to show that they are effective, that their activities solve problems, prevent harm or lead to environmental improvement. Authorities that are unable to show how they make a positive difference may face budget cuts or even run the risk of discontinuation. For that reason authorities may want to introduce ***targets describing certain desired outcomes*** and assess their efforts against these targets. The challenge here is to identify outcomes that are relevant, that can be influenced by the inspection authority's activities, and that are capable of being measured.

To illustrate the use of the terms "objectives "and "targets on outcome" we can consider a simple situation where an inspection authority wants to see an improvement in the quality of water in local rivers; that's the outcome and can be set-out as an objective. The objective could be expressed qualitatively – that the rivers are to be capable of supporting certain species of fish, or quantitatively – that the concentration of key pollutants does not exceed a particular level. This would be an appropriate objective if the inspection authority can influence the outcome. In this example, the outcome is realistic if we assume that the water quality is mainly influenced by discharges from regulated facilities and that if all of these facilities complied with their permit conditions the objective would be met. This suggests that an appropriate target on outcome would be for the inspection authority to ensure compliance with discharge limits from facilities it regulates. [5]

In the real World, some authorities are nervous about setting targets that they are not completely and exclusively in control of. They are worried that they will be criticised if targets are not met because of an unpredictable incident for example. However, it is extremely unlikely that an inspectorate will ever define outcomes that are completely in its control. What matters is that their work is targeted at achieving the desired outcome and that deviations caused by external factors are understood and can be explained. Equally important is that an authority both internally and externally communicates clearly on outcomes achieved and how and to what extent its works has contributed to these. An authority can and should claim successes when it can show that its efforts have led to concrete results.

Inspection authorities can decide to use targets on outcomes in combination with targets on inputs and outputs. Targeting and monitoring inputs can help an authority to show "the price" for achieving certain outcomes or how efficient certain inputs are in relation to the achieved outcomes. Targeting and monitoring

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[5] Note that in the IMPEL project report, mentioned in section 2.1 and footnote 2, the distinction is made between "final outcome" and "intermediate outcome". One could argue that in the terminology of this guidance an ***objective*** describes a desired final outcome, like a certain improvement of the environment. A ***target (on outcome)*** describes a desired intermediate outcome, in terms of a certain improvement in compliance leading to the final outcome of improvement of the environment. We have chosen not to use the terms final outcome and intermediate outcome in this guidance, but to stick to the terms objectives and targets as defined in the "Doing the right things" Guidance Book.

outputs can help an authority to demonstrate the effectiveness of certain actions carried out in relation to the outcomes achieved. The main focus of this guidance is however on setting targets on outcomes.

It should be noted that in practice not all inspection time will be spent on planned activities and not all planned inspections activities will be linked to targets as defined in the guidance. It should be noted that inspection authorities have to set their targets taking into account the obligations under the IED.

It is also important to stress here that inspection authorities primarily exist to ensure compliance with environmental legislation and their interventions are geared to that aim. Compliance behaviour can be directly influenced by supervision interventions, although there are other factors that influence compliance too. Better compliance can in turn lead to an environmental improvement. It therefore makes sense to set targets which are directly or indirectly related to safeguarding or improving compliance.

Improving compliance becomes particularly meaningful when it leads to solving actual environmental problems or reducing actual environmental risks. When an authority decides to start steering (part of) its activities on the basis of outcome targets, it is important that it makes the right choices. It needs to make sure that it has a clear understanding of the legislation for which it is competent, its mission and tasks, and the goals towards which it wants to strive. It should also have reliable, evidence-based knowledge of the current state of the environment so that it can identify areas where environmental problems are occurring. There may be political or community pressure for the authority to take action in all of these areas without regard to their relative importance, their cause, the competence of the authority or the cost of intervening. It is therefore crucial that the authority gathers information to identify the causes of these environmental problems. In particular, it should examine the current state of compliance with relevant environmental legislation. In cases where the problem is significant and mainly the result of a lack of compliance the authority would want to intervene but will also need to consider the resources available to it and the relative importance of competing demands.

Equally, when new legislation comes into force, an inspecting authority may want to focus its interventions on those provisions in the new law where a lack of compliance poses the highest environmental risks. It can then set outcome targets stating a certain level of compliance with these provisions to be achieved within a certain period of time. Or when a law has been in force for some time but a certain target group systematically does not comply with certain provisions, thereby causing a high environmental risk, an authority can set a target stating a certain improvement in compliance within a certain period of time.

Compliance outcomes

This guidance focuses on targets related to the following types of compliance outcomes:

improving compliance leading to an improvement of the environment

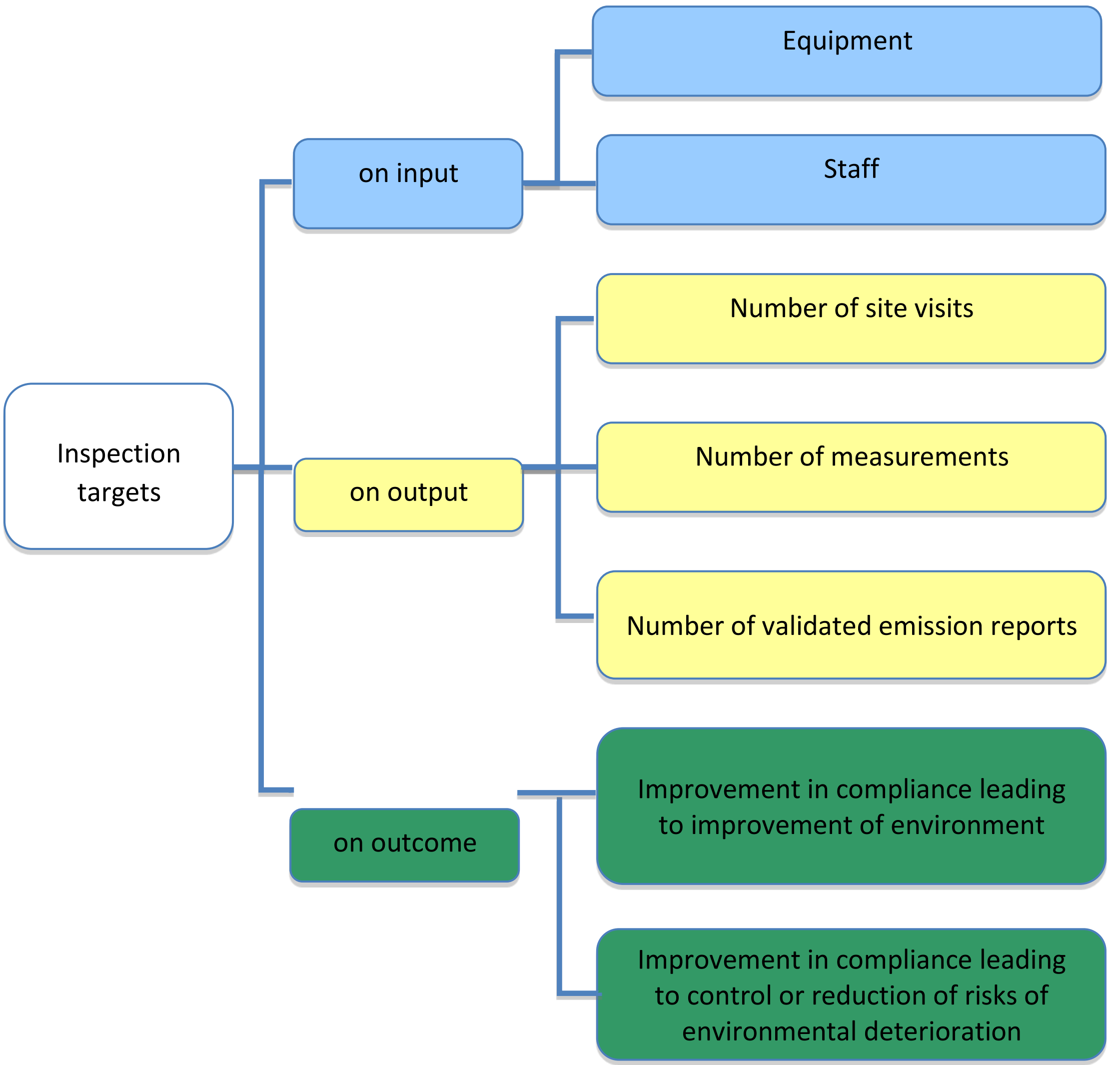
This is about raising compliance with certain environmental legislation across a particular target group within a defined period of time, resulting in a measurable improvement of the environment or solving a specific environmental problem.

improving compliance leading to control or reduction of risks of environmental deterioration

This is about helping establish or improving compliance with certain environmental legislation in order to control or reduce the risks of environmental deterioration. Such a target may be helpful where new legislation is introduced or substantially amended and supervision efforts need to address the most urgent, high risk issues. Under legislation which has been in place for some time, there may be an urgent need to target supervision activities towards a high risk sector of industry with a documented record of sustained poor compliance. In that case a target could be to achieve gradually a higher percentage of all regulated facilities within that sector that comply with certain specific regulatory requirements. Another target could be to reduce the recidivism rate within that sector i.e. the percentage of offenders in that sector that are found to have violated the law again during a specified observation period.

It is usually easier for an inspection authority to show how its interventions to tackle non-compliance have led to environmental improvements rather than how its work to maintain compliance have prevented harm. The community will usually recognise the cleaner air that results from a heavily polluting installation being brought into compliance with emission limits. In contrast, the authority's work in reducing the likelihood or consequences of another installation failing is unlikely to be noticed. One of the major challenges that all regulators face – and this applies beyond environmental inspectorates - is to effectively communicate about their work aimed at preventing harm and demonstrate that this work is effective.

The following figure shows examples of targets on inputs and outputs and the main outcome targets this guidance document is focussing on.



Since there may be a number of competing areas that the authority could improve through specifically targeted actions, it will have to set priorities, based on an assessment of the severity/scale of the environmental problem/risks in the areas concerned. Targeted interventions will often require substantial resources. The authority at this stage needs to make at least a rough estimate of what the special attention given to the selected high priority areas will cost. It also will have to take into account that some resources will be not available because they need to be allocated to non routine inspections. It may come to the conclusion that it would be more efficient to use the available resources for high priority areas other than the ones selected initially.

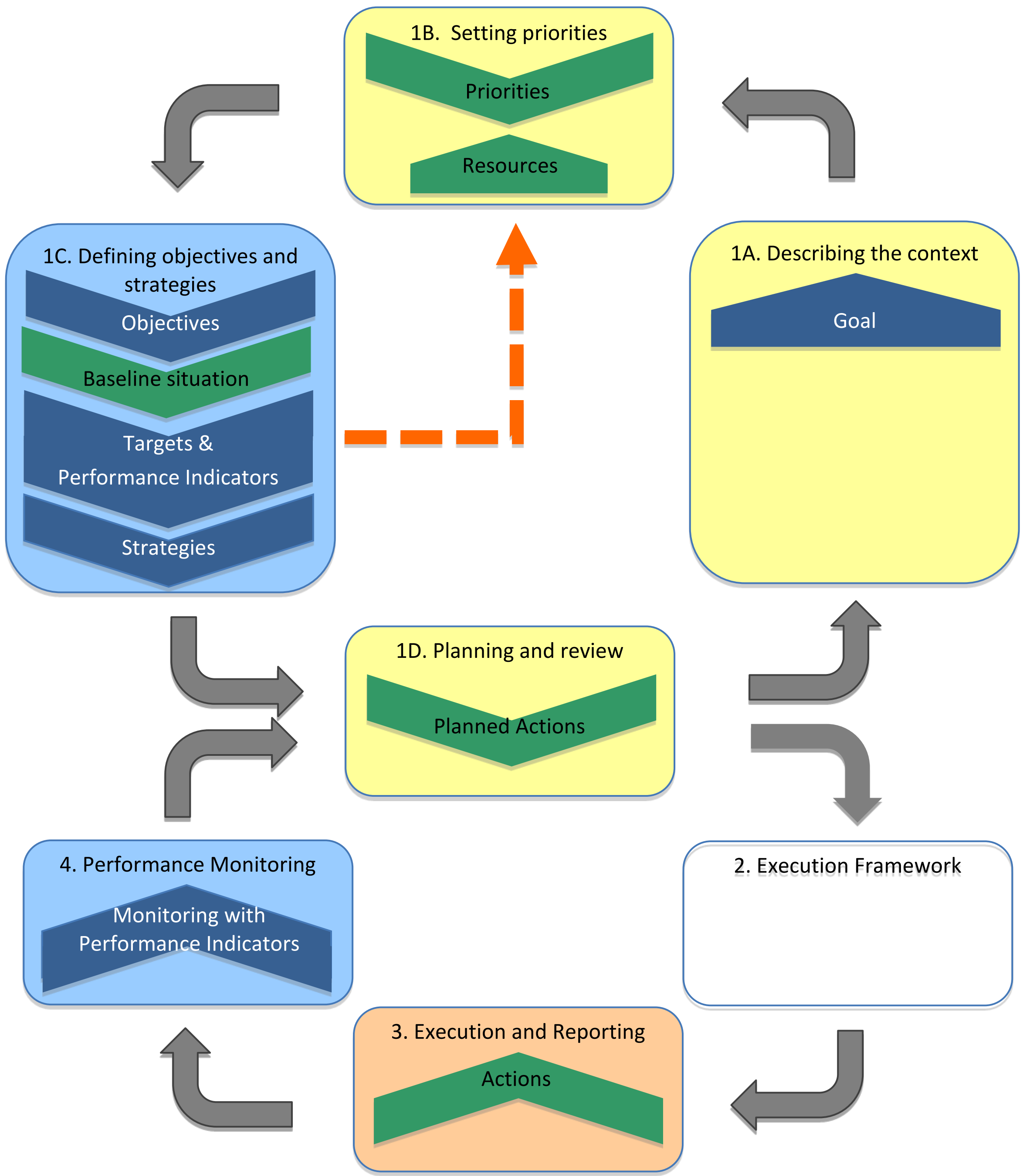
For the selected high priority areas where the authority can predict with a sufficient degree of certainty that compliance will move to a more satisfactory level within a certain period of time due to the authority's interventions, it can set targets. These will state a certain improvement of compliance or achieving certain compliance levels. The authority will also define related performance indicators to monitor on a regular basis the progress in achieving the targets. Before it can set meaningful and realistic targets the baseline situation has to be established; where is the authority starting from? Performance monitoring is only possible when both the baseline situation and target are sufficiently clear.

In order to achieve the target, the authority will have to determine the right intervention strategy, i.e. what mix of supervision interventions (activities) it will deploy. For determining the right strategy the authority needs to analyse what factors determine the (poor) compliance. At the stage of establishing the baseline situation it is often useful to gather in parallel more detailed information on the compliance behaviour of the target group which can be used as further input for determining the intervention strategy. It should be noted that when determining an intervention strategy, obligations by law to perform certain inspection activities, may limit the room to use different types of interventions.

To summarise

The two following schemes present the terms used and steps described above in a systematic order.

Describing the context	Goals	A goal states in general terms a situation or state of play the authority wishes to achieve. A goal is derived from the mission of the authority and is set on a strategic level.
Setting priorities	Priorities	Priority areas are identified on the bases of a risk assessment, looking at compliance and environmental impacts/risks.
	Resources	The final selection of priority areas will need to take account of the resources (money, staff, skills, equipment, etc) available.
Defining objectives and strategies	Objectives	An objective specifies a goal for a certain priority area.
	Baseline situation	Establishing the baseline situation refers to the process of defining the current situation /starting point from which the target can be defined.
	Targets Performance Indicators	• A target is linked to an objective and defines a concrete outcome in terms of an improvement of compliance or of the environment. • Performance indicator on outcome: a quantitative or qualitative criterion stating a certain outcome at a certain moment, used for monitoring and demonstrating progress in achieving a target.
	Strategies	The mix of interventions that aim at influencing the compliance behaviour and engaging stakeholders to help achieving the target.
Planning-execution	Planned/ implemented	The inspection plan describes the objectives, targets, indicators and strategy; the inspection schedule describes the planned actions. Planned actions are implemented during execution.
Performance monitoring	Monitoring with Performance Indicators	Performance is monitored on the basis of data gathered during execution and with the use of performance indicators previously defined. The results of the monitoring may trigger a review/revision of the targets, strategies, actions and inspection plan for the next year.


1B. Setting priorities
Priorities
Resources
1C. Defining objectives and strategies
Objectives
Baseline situation
Targets &
Performance Indicators
Strategies
1A. Describing the context
Goal
1D. Planning and review
Planned Actions
4. Performance Monitoring
Monitoring with Performance Indicators
2. Execution Framework
3. Execution and Reporting
Actions

Case Studies Setting targets on outcomes

In this annex we explain in more detail how an authority can organise its supervision activities by setting targets and monitoring its performance against these targets. We will use a case to illustrate the different steps the authority takes in the Environmental Inspection Cycle as outlined in chapter 2.

Introduction of case 1

The case – described in the blue boxes - is about bringing illegal waste management sites into compliance. This case illustrates that the general methodology set-out in this guidance can be used by inspection authorities across the full range of its competencies, not just the inspection of permitted sites.

The inspectorate has worked for a number of years to bring illegal waste sites into compliance or close them down in order to reduce the risks they pose to the environment, communities and legitimate businesses. Last year, over 1,000 illegal sites were closed down which demonstrates the inspectorate's commitment to tackling this problem. However, the net reduction in illegal sites has been modest because each year new illegal sites emerge. The inspectorate decides that a more targeted approach is required to

Targeting supervision activities will often start with the acknowledgement that a certain urgent and often persistent environmental problem occurs which is caused by a lack of compliance. Often such a situation can only be remediated through targeted action by the inspecting authority. In our case, the authority has already made considerable efforts to remedy the issue of illegal waste sites, but these efforts have not had the desired impact on the degree of compliance or the reduction of harm. A sustainable solution can only be reached by a more focused, targeted approach.

Describing the context

Step 1A: Assessing applicable legislation; Defining mission, tasks and goals of the authority; Gathering data on the environment and compliance

In the region concerned there are many legitimate waste management companies who operate several thousand waste storage, transfer, treatment and disposal sites. These operators hold the necessary permits, comply with the relevant waste management legislation and incur the necessary compliance costs. However, they face unfair competition from operators of illegal waste management sites. These sites are often relatively small and particularly associated with the dismantling of end-of-life vehicles, processing of scrap metal and burning and disposing of waste from skip hire businesses

These activities cause local air pollution and soil and water contamination. Illegal waste sites close to residential areas also cause noise and odour nuisance

The Inspectorate is competent for enforcing the legislation concerning waste management and disposal. The mission of the Inspectorate in this situation is to protect the environment by enforcing compliance with the provisions of the Waste legislation.

In our case the environmental problem is pollution and nuisance caused by waste sites that are deliberately being operated in breach of the relevant legislation. The inspectorate is competent to enforce the relevant Waste legislation. One of the goals of the Inspectorate is to help create a situation in which the operators of these sites either bring their sites into compliance with the legislation or stop operating (either at the original sites or elsewhere). This goal is based on the overall mission of the Inspectorate to protect the environment by ensuring compliance with environmental legislation.

Setting priorities

Step 1B: performing a risk assessment to decide on priority areas, taking account of available resources

The Inspectorate is faced with a number of competing demands for its attention and must decide how to allocate its limited resources in order to reduce risk to the environment or tackle actual environmental harm. The Inspectorate decides therefore to perform a risk assessment to determine the issues to prioritise. In the risk assessment, illegal waste management sites score high in terms of environmental damage and the economic harm done to legitimate operators and investment in high quality waste management infrastructure. The inspectorate's assessment is that resource spent on tackling the illegal waste sites will deliver a greater environmental impact than spending more resource on, for example, additional inspections at permitted facilities.

Prior to establishing the project, the Inspectorate performs an initial scoping exercise to determine the size of the task, resources required, the governance arrangements, phasing and duration of the project.

The Inspectorate considers that it can make sufficient resources available for tackling the problem of illegal waste sites – this will involve recruiting additional staff with specialist intelligence gathering and analysis skills, initially on a temporary basis. This is made possible because of efficiency savings elsewhere in the organisation, and the Inspectorate's policy of maximising the share of its resources directed to 'frontline' activities that deliver environmental outcomes.

At this stage illegal waste sites are assessed by the Inspectorate to be a high risk issue and consequently identified as high priority. When it comes to assessing risks of different types of installations, the Integrated Risk Assessment Method (IRAM), developed by IMPEL under the 'easyTools' project, can be useful. The tool works with a set of rules and a number of steering mechanisms. Inspecting authorities can use this tool for free; it is available online through the IMPEL website.

The inspectorate in our case makes an estimation of the resources needed for targeting illegal waste sites. The available resources of an inspecting authority may already at this stage constitute a compelling reason for the Inspectorate to adjust its priorities. Note that in our case the Inspectorate has both the will and the possibility to allocate sufficient resources for targeting the problem area.

Defining Objectives

Step 1C

Given the high priority assigned to illegal waste sites, the Inspectorate sets an objective to bring illegal waste management sites into compliance or close them down in order to reduce the risks they pose to the environment, communities and legitimate businesses.

The Inspectorate has set as objective to significantly reduce the number and impact of illegal waste management sites. This is consistent with the more general goal of the organisation to ensure compliance with the waste legislation.

Establishing the baseline situations

Step 1C

Following discussion with central Government and legitimate operators, the inspectorate decides to establish a task force focusing solely on illegal waste sites. A project structure is put in place involving a project manager, the inspectorate's national enforcement service, local enforcement teams and oversight from senior managers. The first activity of the task force is to develop the intelligence picture, including confirming the number, type, and risk profile of the illegal waste sites.

Before targets can be set, it is important to establish the baseline situation. It is about determining the baseline from which the target can be defined – in our case the number of existing illegal waste sites at the start of the project. It may also include, as in our case, further clarifying the characteristics of the prioritized area: detailed classification of the illegal waste sites, corresponding risk profiles, etc.

Setting targets on outcomes and defining performance indicators

Step 1C

The Inspectorate sets a target that the number of known illegal waste sites is reduced by 50% between 2011 and 2013, based on the number of known illegal waste sites in 2011. The target is very challenging and not only takes account of illegal waste sites known about at the beginning of the project but also any new sites that emerge during the life of the project. So for example, if there were 600 known illegal waste sites, the aspirational target would be to close 300 sites during the project. However, if between 2011 and 2013, another 500 illegal sites open or identified, the aspirational target would be to close 850 sites.

To monitor what progress is made in achieving the target the following performance indicators are chosen:

- *Reduction in the number of known illegal sites (linked to 2011 baseline);*
- *Number of sites which have been closed or brought into compliance;*
- *Positive feedback from legal operators and communities (i.e. that they think the situation has significantly improved; fewer reports of illegal sites);*
- *Feedback from field officers;*
- *Increase in the permitted capacity or throughput at permitted sites.*

The target in our case is based on the objective to reduce illegal waste sites. The longer term target is to be achieved in 2013 and is, a reduction of illegal waste sites by fifty percent, compared to the baseline of 2011. A number of quantitative and qualitative performance indicators have been selected to help assess progress in achieving the target. Note that the Inspectorate could also have set targets and performance indicators on inputs and outputs.

Defining Strategies

Step 1C

The inspectorate after a thorough analysis of the problem, the sector and its compliance behavior decides to apply systematically and consistently the following interventions:

- *To develop the national and local intelligence picture on illegal waste sites to understand both the symptoms and the causes of the problem. This intelligence will be used to inform both end of pipe enforcement activity and up-stream disruption activities;*
- *To speed up the closure of sites. As part of doing this, the inspectorate will ensure that the criminal activity is stopped and not displaced to a new site;*
- *To engage with the inspectorate's partners and stakeholders. This will include working with partner organisations to improve effectiveness in dealing with the problem. The inspectorate will also work with industry so that they understand their role in helping to tackle the problem;*
- *To use innovative interventions and approaches to tackling illegal waste sites. Through this work the inspectorate will understand which are the most effective, leaving a legacy of a more informed toolbox for dealing with the problem;*
- *To use the project resource to help intelligence-led enforcement gain greater momentum across the organisation. Where appropriate, facilitate the transfer of knowledge and skills from the project to the wider inspectorate helping to ensure long-lasting benefits. This will include careful planning and management of the project closure;*
- *To ensure environmental outcomes are sought, clearing the sites of waste where possible.*

The strategy outlines the combination and/or succession of interventions applied. In our case a range of interventions is used: prevention, providing information, transfer of knowledge, disruption, enforcement, communicate progress, spread best practice, engage stakeholders, etc. The selected interventions will often have a different timing and duration, and will require different resources. Together they form a mix, a combination that is expected to help achieve the target.

Planning

Step 1D

The Inspectorate decides that the project will run in three distinct phases:

Phase I (November 2011 to March 12) - developing the intelligence picture, including confirming the number, type, and risk profile of the illegal waste sites.

Phase II (April 12 to March 13) - acting on the intelligence – prevention, disruption and enforcement activities guided by the inspectorate's intelligence picture as well as further intelligence development.

Phase III (April 13 to September 13) – embedding new approaches developed during phase II and closing the project in an orderly transition.

A workshop will take place in March 2012 to review the intelligence held by the inspectorate and select the prevention, intelligence and enforcement activities that will be undertaken in Phase II.

This planning will be incorporated in the yearly inspection plans and schedules for 2011, 2012 and 2013. These documents contain special sections dedicated to this particular project.

Often the necessary interventions and actions are interrelated and reinforce each other. Almost always they have to be implemented over a period of more than one year to be really effective. Therefore, a target will usually be set for a longer time horizon than one year, as in our case. To manage the project properly it is important to break down the process into several phases and incorporate these in the yearly inspection plans and schedules. Based on the chosen strategy, interventions are outlined and concrete actions are described (indicating numbers, timing and duration of actions, allocated staff, equipment and other resources, etc.) in the successive inspection plans and inspection schedules. The inspection plan will also describe the targets and indicators which have been set.

Execution and reporting, Performance Monitoring and Review

Step 3, 4 and 1D

The Special Task force on illegal Waste Sites of the Inspectorate is in charge of implementing the section in the inspection plan and schedule dealing with this particular project. The Taskforce is well connected with the inspectors on the ground. The Taskforce checks regularly whether all planned actions are carried out according to the plan and the necessary data coming out of these actions are properly recorded. It takes care of a periodic review of the intelligence gathered, the latest assessment on the number and type of illegal waste sites and resource requirement.

Progress is periodically monitored using the performance indicators defined earlier and reported to senior management and stakeholders. Unexpected problems quickly are escalated by the Taskforce for resolution. Thorough project review is foreseen at the end of each year. This may lead to adjustment of the target, the strategies and the actions for the next year.

In our case a project and taskforce are established to manage the process of organising and carrying out targeted supervision activities. The project is given special, separate attention in the overall yearly inspection plans and schedules of the Inspectorate. The senior management of the Inspectorate and relevant stakeholders are involved and play their role in keeping the project on the right track. The commitment and expertise of the inspectors are sought from the start of the project. A successful outcome is also dependent on the robust implementation of planned project activities, carefully monitoring by the taskforce, well organised collection of data on actions carried out, regular monitoring against the performance indicators and procedure for review/ revision of the project target, strategy and actions.

The next three cases will further illustrate how in practise inspection targets are used.

Case 2: IED

In Region A, there are 800 IED installations. To implement article 23 of the Industrial Emission Directive (IED), the Environmental Inspectorate has chosen to work with the Integrated Risk Assessment Method (IRAM) developed by IMPEL under the “Easytools” project. To establish a baseline situation, the inspectorate undertook integrated inspections of the 800 installations following the criteria set in article 23 of the IED. The information collected allowed the inspectorate to place each installation into one of three risk categories (High risk, Medium risk and Low risk).

The Inspectorate wants to focus on compliance as a mean to reduce the overall environmental risks of the installations. Therefore the criteria “compliance”, (as part of the operator performance in IRAM) was given a higher weighting factor. The results of the risk assessment were 20% high risk (HR), 30% medium risk (MR) and 50% low risk (LR).

The compliance classification scheme allows the classification of sites into 3 categories: high compliance (HC), medium compliance (MC) and low compliance (LC). The first visit gave the following classification in compliance: HC 60%, MC 25% and LC 15%.

Describing the context	Goals	*To control or reduce the risk of environmental deterioration by improving compliance of the sites with highest potential risk for the environment*
Setting priorities	Priorities	*Inspection of IED sites focusing on the installations with the highest risk (HR and MR) and on installations with a lower level of compliance (the latter meaning the installations with the risk criteria compliance classified as LC)*
	Resources	*60% of the inspectors will be allocated to this project.*
Defining objectives and strategies	Objectives	*Reduce the risk of environmental damage by the IED sites and increase the level of compliance of the IPPC sites scoring a worst classification on the compliance risk criteria*
	Baseline situation	*Region with 800 IED sites* *Risk classification 2012: 20% HR. 30% MR and 50% LR* *Compliance Criteria classification in 2012: 60% HC, 25% MC and 15%LC*
	Targets Performance monitoring	*By the end of 2013* • *The LC sites will be reduced in 60% of the level in 2012* • *The HR sites will be reduced in 40%of the level in 2012* *By the end of 2014* • *The LC sites will be reduced in 80% of the level in 2012* • *The HR sites will be reduced in 60% of the level in 2012* • *30% of the sites classified MC in 2012 will improve category to HC* • *20% of the sites classified MR in 2012 will improve category to LR*
	Strategies	*Inspection frequency based on risk classification.* *Adequate enforcement actions on the LC sites to reduce its non compliances* *Analysis of the reason that leads to the actual level of compliance of the high risk sites that are simultaneously LC*
Planning and execution	Planned actions & Actions	*2012* • *Integrated inspection at all installations to collect information and assess the risk.* *2013* • *Adequate enforcement actions on all the LC sites, especially the ones with high risk classification in order to reduce the non compliances.* • *Inspection of all high risk sites* • *Inspection visit to 50% of MR sites and 33% LR sites* *2014* • *Follow-up inspections in order to check whether the measures were implemented and if compliance has improved (in case of HR and LC sites) and inspection of the MR and MC sites that have the highest risk classification within the respective group.*
Performance monitoring	Monitoring with Performance Indicators	• *% of sites in each risk category (HR, MR, LR)* • *% of sites in each (risk criteria) compliance category (HC, MC, LC)*

Case 3: Odour nuisance

In Region B, a severe odour nuisance resulted in the inspecting authority receiving many complaints. The Inspecting authority performed a general risk assessment (on the level of legislation/tasks) in which the odour problem was scored as “high risk”. The source(s) of the odour problem was not known. A project was set up as part of the inspection plan to solve this problem over a period of 3 years.

Phase	Step	Description
Describing the context	Goals	*The goal of the Regional Authority is to contribute to a healthy and clean environment by improving ambient air, water and soil, preventing the production of waste and promoting the recycling of waste and securing compliance with environmental law by the operators.*
Setting priorities	Priorities	*By running a general risk assessment the different tasks and responsibilities of the authority have been reviewed. Odour nuisance in the region was identified as one of the highest priority areas.*
	Resources	*Number of hours needed for this campaign is estimated on 600 hours for 2012 and 400 hours for 2013 and 400 hours for 2014.*
Defining objectives and strategies	Objectives	*To reduce odour nuisance in region A by mid 2014*
	Base line situation	*The baseline situation will be established by conducting an ambient odour study and characterise the episodes of odour nuisance to define the number of odour units and verified odour nuisance complaints..*
	Targets Performance monitoring	• *Target 1: All installations and activities that are identified as the main source of the odour nuisance comply with legislation or permit conditions by 1-7-2014;* • *Target 2: The number of odour units does not exceed two on any day in the first half of 2014;* • *Target 3: The average monthly number of verified odour nuisance complaints in the period 1-1-2014 till 1-7-2014 is reduced by 50% compared to the average monthly number of verified odour nuisance complaints in the period 1-1-2012 till 1-7-2012.* • *Performance indicators: number of verified odour complaints, number of odour units per day, number of non compliances to legislation or permit conditions by installations identified as the main source of the odour nuisance.*
	Strategies	• *Gathering information* • *Building relations and communicating with authorities, companies and local community,* • *Inspection and enforcement*
anning and execution	Planned actions & Actions	*<u>2012</u>* • *Setting the baseline situation and identify main sources* *<u>2013</u>* • *Inspection of sites and activities* • *Impose measures on companies* • *Inspect if measures have been implemented* *<u>2012 -2013 -2014</u>* • *Registration of complaints* • *Working together in a project team of representatives of the Inspecting authority, local administration and companies* • *Informing the local community about the project*
Performance monitoring	Monitoring with performance indicators	• *Number of non compliances to legislation or permit conditions by installations identified as the main source of the odour nuisance.*

Case 4: High level of PM10

In Region C, the air quality was poor because of a concentration of PM10 in the ambient air that exceeded the air quality norm by 50%. In the general risk assessment (on the level of legislation/tasks) the high concentration of PM10 got a high score and was therefore considered to be a high priority issue. Focussing on industrial sources, the inspecting authority performed a specific risk assessment on the level of industrial installations, applying an increased weighting factor for fine dust. Ten installations that had substantial fine dust emissions were labelled high risk installations. Estimations showed that full compliance by this specific group of installations with the requirements concerned would result in a significant overall reduction of fine dust emissions and reduce the exceedance of the air quality norm to about 10%. A special campaign was set up to bring these installations into full compliance.

This action is taken as part of a larger programme to improve the air quality in Region C according to EU legislation.

Describing the context	Goals	*The goal is ambient air quality that meets the PM10 concentration that meets the EU Legislation*
Setting priorities	Priorities	*By increasing the weight factor of PM 10 the risk assessment identified 10 installations in the high risk category that potentially emit PM 10.*
	Resources	*Number of hours needed for this campaign is estimated on 300 hours a year.*
Defining objectives and strategies	Objectives	*To ensure that the PM 10 concentration established in the European norm (max 50 µmg/m3 day average) is complied with.*
	Baseline situation	*The baseline situation is the day average PM 10 concentration (73 µmg/m3) that has been monitored in Region B on 1-1-2012.*
	Targets	*Target: Four years after the start of the campaign the 10 prioritised industrial installations fully comply with PM 10 provisions in their permit, leading to a situation in which the exceedance of the PM 10 concentration norm is no more than 10 percent in the region.*
	Performance monitoring	*Performance Indicators:* • *Actual average level of PM 10 concentration in region B and actual exceedance of PM 10 norm and* • *Actual number of prioritised installations in full compliance with the PM concentration ELV on 1-1-2012, 1-1-2013, 1-1-2014 and 1-1-2015*
	Strategies	• *Communicating with industry about the project upfront* • *Inspections and advise* • *Enforcement* • *Initiate permit revisions where necessary*
Planning and execution	Planned actions & Actions	• *Organise meeting with industry* • *Inspection of sites* • *Provide advise* • *Impose measures on companies* • *Inspect if measures have been implemented* • *Advise to change permits*
Performance monitoring	Monitoring with performance indicators	*Yearly monitoring on* • *Compliance behaviour of the 10 installations in what respects PM ELV.* • *Concentration on PM 10 as a day average.*

Practical and organisational aspects for setting targets

In this annex you can find some organisational and practical issues an inspecting authority should take into consideration when engaging in the process of setting targets and performance monitoring.

Organising the process

Targets raise expectations both externally and internally, expectations that need to be satisfied. Targets as a steering instrument will require from the authority long-term commitment, discipline and in many cases a change of working processes and culture. In short: introducing targets can have a profound impact on the organisation and how it is perceived. Setting targets is therefore a serious matter and cannot be a stand-alone exercise, separate from the other steps in the process of planning and executing supervision activities. If a target is set in isolation there is a serious risk that it will be ill founded and will prove to be not relevant and/or not achievable.

The authority will also need to consider what organisational format is going to be the most appropriate for managing its work. Can these actions best be managed through a specific project, programme or (thematic) campaign or as an integrated part of routine inspection activities? Using a specific organisational format like a project helps in keeping sufficient focus but at the same time bears the risk of being perceived as not part of the core business of the authority and therefore management may be more easily tempted to terminate it prematurely.

All important decisions in the process should have the explicit backing of senior management; their continuing support is required to retain commitment from across the inspectorate and to safeguard the necessary resources. Early involvement of staff and key stakeholders is also essential for getting the necessary support for the target-based project and ensuring that it is realistic and understood.

For an authority it is key to properly manage its own and others' ambitions and expectations: it is better to start small, to learn by doing, to engage only in matters you can influence and to be conscious of possible constraints or risks of failure.

When setting up a project for targeted action in a certain area it is advisable to consider the following issues:

Identify the areas the targeted actions can contribute to solve environmental problems or reduce risks

Identify and describe the relevant legislation and in particular key requirements and any draft legislation which is likely to come into force shortly;

Assess what information is available on the target group, their compliance record and behaviour and the connected environmental impact/risks;

Assess what information is still missing and how that information should be collected; consider performing additional fact finding inspections, taking additional samples, making further measurements or carrying out more detailed surveys to collect the necessary information; consider asking inspectors for their expert judgments as an additional source of information;

Assess any necessary involvement of other authorities;

Assess the possible supporting or obstructing role stakeholders (trade unions, consumer and industry associations) can/might play

Assess if there will be sufficient expertise and skills available for carrying out the project;

Assess how management and staff can be properly informed and trained;

Assess how inspectors can be actively involved in the process, including asking feedback from the inspectors at the different stages of the project (on the workload, issues related to data collection etc);

Consider establishing a communication plan and appointing a spokesman for the project;

Assess the information needs of the different internal and external audiences who have an interest in the project at the different stages of the project.

Communication

During each of the different stages (i.e. when identifying the area concerned as high priority, defining the objectives and targets, establishing the baseline situation, choosing the right strategy, carrying out the actions, monitoring performance and assessing achievements) good internal and external communication is important. Effective communication is about developing a dialogue that encourages the sharing of information. It involves seeking opinions and feed back, providing information (facts and figures) and explaining decisions and actions. Proper internal communication will encourage everyone within the authority to adopt the same line and create support and commitment throughout the organisation. Clear and timely external communication, for instance by using social media, will make the authority transparent and enables it to explain what it is doing. It can also be used to get the cooperation from relevant stakeholders, other competent authorities and the target groups concerned.

Priorities

The priorities can be set by using a risk assessment. Different methods for assessing risks related to industrial installations exist in Europe. This information, including the new developed methodology IRAM, can be found in the final report of the IMPEL project easyTools. The authority should also decide which criteria (for impact and probability) are going to be used to assess the priority areas. Although the criteria are likely to remain more or less the same throughout the years within an authority, the weighting factors of the different criteria might change as the environmental problems change.

Targets

Targets should be set in such a way that progress in achieving the targets can be monitored. The following aspects should be considered:

Define the targets as SMART (Specific, Measurable, Achievable, Realistic, Timely) as possible, taking into account the baseline situation;

Select the key regulatory requirements that should be complied with;

Select the targeted population – in many cases a certain segment of the regulated community;

Select the proper timeframe – in many cases it's more suitable to use multi annual target;

Make sure the targets are realistic in the sense that they can be achieved when applying the chosen intervention strategy (compliance promotion, compliance checking, enforcement);

When targets are related to risk categories of inspection objects (e.g. lowering the risk category of a facility from high to a lower level) one should previously identify if a high classification is related to a situation an inspection authority has a certain degree of influence on (like compliance behaviour);

Make sure the targets are realistic in the sense that they can be achieved given the available resources.

Consider setting different targets for different moments in time. Consider distinguishing different phases/steps

Performance monitoring

An inspection authority will want to know how it is performing in view of the objectives and targets it has set. Especially in the situation of multiple annual objectives an inspection authority might find it necessary to monitor its performance against certain performance indicators. Performance indicators need to be meaningful (*i.e. linked to the targets*), clear and easy to measure. Ideally the monitoring system will make maximum use of systems and data that are already in use in order to avoid disproportionate administrative burdens. The authority will need to consider whether data needs to be externally verified, how it will be collected, and how often it will be reviewed. It is important to recognise that monitoring performance won't just rely of numerical information. Qualitative feedback from the public, operators and field staff can be a valuable tool in assessing performance (and how the performance is being perceived). In assessing the progress made towards the desired outcome, the authority needs to understand the contribution its activities have made. If outcome targets are missed, does this suggest the authority has not been effective or have targets been missed because of one or more external factors beyond the authority's control or competence? What are these factors, can their impact be quantified and is it possible to revise the authority's work plan to counteract their impact?

In cases where multiple annual objectives have been defined an inspecting authority might find it necessary to also review on a regular basis if the targets that have been set, are still valid, taking into account changes to resources, risk or population size.

Performance monitoring is a process to measure whether you are achieving your targets and objectives. Here are the main steps in the process:

Decide which areas you need to measure;

Collect relevant and reliable data;

Analyse the data and turn it into useful information;

Understand your performance and assess the need for corrective action.

The following aspects should be considered when establishing performance indicators:

Comparison – a single number is not a performance indicator. It needs to be set in context by comparing with past performance or a future target;

Objective – the data used must be unbiased and complete;

Evidence – the data you are going to assess to identify performance;

Degree – indicators will be more powerful when they can identify smaller changes in performance. For example, measuring customer satisfaction on a scale of 1-10; provides more information than measuring customer satisfaction as a simple yes / no;

Performance result – measure what you should, can and will do something about;

Over time – measuring performance over time and plotting it on a graph, allow you to identify trends and predict future events.

Factsheet 3.06 - Inspection strategy

To determine the best inspection strategy it can be useful to assess the following elements:

Element 1

Clearly define the target group and the rules they have to comply with.

Element 2

Gather information about the compliance behaviour of the target group.

The aim is to get an insight into the target group compliance behaviour and the motives for that behaviour.

The following factors may influence the compliance behaviour of the target group:

The familiarity with and clarity of legislation among the target group.
The tangible/intangible advantages and disadvantages arising from compliance or non-compliance with the rule(s), expressed in time, money and effort.
The extent to which the policy and legislation is considered acceptable by the target group.
The extent to which the target group respects the government's authority.
The risk, as estimated by the target group, of positive or negative reactions on their behaviour from others than the authorities. The risk, as estimated by the target group, of a violation detected by persons or bodies other than the authorities, being reported to a government body.
The risk, perceived by the target group, of an inspection by the authorities.
The risk, as estimated by the target group, of a violation being detected in an inspection carried out by the authorities.
The perceived risk of inspection and detection of a violation resulting from being selected for inspection out of a larger population.
The risk, as estimated by the target group, of a sanction being imposed if an inspection reveals that a rule has been broken.
The severity and nature of the sanction associated with the violation and additional disadvantages of being sanctioned.

Table 8, factors that influence compliance behaviour

Element 3

Determining the inspection strategy

Based on insights on the compliance behaviour the proper inspection strategy can be determined.

Generally speaking the strategy will depend on the specific tendency of the target group to comply or not to comply and the factors that lead to this tendency. The figure here below shows a general distinction in tendencies, motives and strategies.

	Not knowing	Not able to	Not willing
Inclination to comply	Advise	Facilitate	Reward or tempt
Inclination to violate	Advise in combination with inspection and enforcement	Facilitate in combination with inspection and enforcement	(Repeated) Inspection and enforcement

Table with the relation compliance behaviour - strategy

Communication strategy

The inspecting authority can only perform in an effective, transparent and accountable way when it has a communication strategy: a set of adequate provisions and arrangements for internal information exchange and for communication with other authorities, stakeholders and the general public.

The general public should have access to information on the inspecting authorities' activities and environmental performance of the regulated community. Beyond passively responding to requests for information, the inspecting authority should pro-actively issue news releases and otherwise disseminate information. The general public should have the right to provide information to the inspectorate (for example complaints) and to have its concerns addressed.

Good communication will allow the inspecting authority to inform, understand, engage with and influence all the people who can contribute to improving the environment. Effective communication cannot be taken for granted, nor does it "just happen". It requires a systematic approach.

Factsheet 3.07 - Inspection plan

This factsheet presents the elements for an inspection plan that either are obligation from the RMCEI or are to be considered as good practice.

Defined time period and area

The inspecting authority needs to develop an inspection plan that covers a defined time period and a defined geographic area. A common time period is 1 year but multi-annual inspection plans are used. As the competence of an inspecting authority is also bound to a geographic area (municipality, region or MS) it is common to use this geographic area also in the inspection plan. Depending on the size and tasks of the inspecting authority sub-inspection plans can be developed covering all a different part of the area.

Scope

Besides time period and area the inspecting authority should give a clear picture of the scope of the inspection plan. It should describe:

- the tasks, competences and obligations it has
- its mission and goals
- the (national) policies and priorities
- the applicable legislation (EU or national)
- the controlled activities and installations
- the range of different inspection activities that can take place

Priorities

The inspection plan should describe the method used for the risk assessment, the classification and ranking of activities and installations and the priorities arising from these.

This means that besides the outcome also the process needs to be described. In other words the inspection plan should not only give the priorities itself but also the justification how the inspecting authority came to these priorities. Here the gap between available and needed resources also finds its pace.

Objectives and targets

Based on the priorities the inspection plan should describe the objectives and the measurable targets for the activities. It is important the targets are formulated in a way so they can be monitored and evaluated.

Inspection activities

The inspection plan should provide information on the numbers and types of routine environmental inspections to be carried out, including:

frequency of site visits for different types of specified controlled installations

key figures/indicators on necessary inspection capacity

Strategies and procedures

The inspection plan should describe or refer to the strategies and the procedures that will be taken into account. The inspection plan should at least include reference to:

- procedures for routine inspections, which can include site visits as well as other kind of inspection activities
- procedures on reporting
- procedures for non-routine inspections in case of
- Complaints
- Accidents and incidents
- Occurrences of non-compliance
- Inspections or activities as part of the permit procedure
- procedures for coordination between the different inspecting authorities;
- provisions for review of the inspection plan
- agreements with operators on the notification of non-compliances

Inspection programme

The inspection programme can be part of the inspection plan. The inspection plan however is public available. Therefore the inspecting authority might want to decide to include the programme as an annex or separate document. This way the programme can stay confidential.

The inspection programme at least covers:

- a defined time period
- a list of all installations to be inspected, including:
- Inspectors or inspection unit
- Type of routine inspections
- Date (days/weeks/months), time and frequency
- Amount of time and staff needed
- Co-operation with other authorities

Sample Inspection Plan; Table of contents

Note that some issues are not an obligation according to the IED. These are marked as optional.

1. Scope of this inspection plan
   - 1.1. Time period and geographic area covered by the plan
   - 1.2. Tasks, competences and (Statutory) Inspection Obligations <optional>
   - 1.3. (National) policies and priorities that have to be taken into account <optional>
   - 1.4. Applicable legislation <optional>
   - 1.5. Organisational structure <optional>
     - 1.5.1. Range of inspection activities
     - 1.5.2. Resources
     - 1.5.3. Budget*

2. The environment, activities and installations **
   - 2.1. State of the environment
     - 2.1.1. General assessment of relevant significant environmental issues
     - 2.1.2. Specific, topical environmental issues in the area
   - 2.2. Register of controlled Installations
     - 2.2.1. Environmental impact and performance
     - 2.2.2. Compliance behaviour

3. Last years performance <optional>
   - 3.1. Objectives and targets we had to reach
   - 3.2. Input, Output and Outcome
   - 3.3. Evaluation

4. This years planned performance
   - 4.1. Procedure if the Risk assessment method

4.2. Outcome of risk assessment <optional>

4.3. Priorities <optional>

4.4. Resources <optional>

4.5. Objectives and targets <optional>

4.6. Inspection and Communication strategies <optional>

4.7. Procedures for routine inspections <optional>

4.8. Procedures for non-routine inspections

4.9. Procedures for review of this plan

4.10. Procedures for drawing up the inspection programme

4.11. Provisions on the cooperation and coordination with different inspection authorities

5. Overview of inspection activities for the coming year <optional>

5.1. Routine inspections

5.1.1. Installations

5.2. Non routine inspections

5.2.1. Complains

5.2.2. Accidents and incidents

5.2.3. permits

5.3. Compliance assistance and other inspection activities

Annex: Inspection programme

- Routine inspections
  - Installations
- Non routine inspections
  - Complaints
  - Accidents and incidents
  - Permits
  - Compliance assistance and other inspection activities

* Note that some inspecting authorities do not include budget issues in their plan, as this is not part of their responsibility.

** The description here should be general and not too detailed

Factsheet 3.08 - Training programme

Before developing a training programme for an inspector or a group of inspectors a training needs assessment to be performed. This assessment will show the gap(s) between the required and existing skills and qualifications for job. Based on this assessment a training programme could include the following issues:

Knowledge:

- of work and production process within governmental organisations
- of procedures, methods and systems in the field of environmental inspections
- of Industrial sectors
- of the applicable legislation
- of the procedures in court
- of environmental management systems

Specific skills:

- basic inspection skills
- sampling of emissions, soil and waste
- assessment of administrations and data management (e.g. maintenance, monitoring, waste management)
- basic information technology
- social skills, especially for dealing with difficult stakeholders
- communication skills to communicate with industry, present enforcement action to the public and provide evidence in a court of law
- management skills to ensure a high quality and effective inspectorate, including planning skills

The inspecting authority should look into the possibility for joint or mutual training with staff from other relevant authorities.

Factsheet 3.09 - Preparation inspection

In this factsheet you will find information on the following topics:

- Type of inspection
- Inspection team
- Equipment
- Gathering information
- Inspection tools
- Checklist
- Inspection agenda

Type of inspection

- Some considerations that could be taken into account when deciding on the type of inspection, the staff and equipment needed:
- The focus of the inspection – not all issues might be relevant to inspect;
- The inspection targets that need to be achieved;
- The inspection strategy that has to be followed;
- The complexity of an installation – complex installation might require additional experts in the team;
- Situations with high risk – some extraordinary inspections, especially conducted upon complaints, incidents or accidents could lead to higher (personal) risk. Allocating more resources could be necessary (e.g. more inspectors);
- The resources needed (man-power/equipment, safety precautions);
- In relation to the previous point, it is recommended to have a check-list of the equipment needed (including safety gear, sampling equipment in case sample taking is required, laptop if available and convenient…);
- Weather condition as well as the time of a year - some additional equipment might be needed (e.g. torches, protective clothes, etc.).

Inspection team

Once the complexity of the inspection has been assessed, the inspection team is defined.

For the more complex inspections it can be decided to compose a small inspection team. It could include core and specialist competencies necessary for the effective performance of the inspection. A leader of the team should be identified, who does not necessarily have a hierarchical role with respect to the rest of the team but is the responsible for coordinating the inspection and drafting of the final inspection report.

Equipment

The inspection team identifies the equipment needed to perform the in situ inspection and it is regarded as necessary to prepare a set of documents containing at least:

- IED permits;
- Drawings of the plant;
- Technical reports;
- Recent self-monitoring report.

Gathering information and data

Information sources that will help a good preparation of an inspection are:

- Environmental Impact Assessment;
- Application for the permit;
- Environmental permits;
- Applicable legislation
- Reports of previous inspections;
- Environmental reports submitted by operators;
- Complaints received from the society;
- Communications sent by the operator (incidents, modifications, requests, etc.);
- BAT Reference documents - Technical aspects on the production cycle from the point of view of the process, on its articulation in phases and for each stage of the process related flows of material (input and output); main environmental impacts, also in terms of consumption;
- PRTR and other register;
- Information on installations received from other competent authorities;
- Internet (website of company);
- Environmental Management System (EMAS or ISO14001): relevant procedures useful for the inspection and validity of the certificate;
- Maps.

Inspection tools

On the basis of the evaluation of the collected information the following has to be prepared:

- A comprehensive questionnaire which will be used for the operator's interview
- A checklist to facilitate the inspection
- An outline of the "critical" ELV (i.e. those parameters which significantly contribute to the pollution load coming out of the installation)
- The list of BATs (according to the issued permit) which the operator should have installed and operated
- The list of documentation to be provided by the operator (e.g. self-monitoring records, annual reports submitted to the authorities)
- The inspection minutes and report templates (tailor-made for the installation) to be filled in at the end of the inspection
- Agenda of the inspection

Principles of preparing a checklist

A good checklist can facilitate inspections considerably. A checklist is the result of all the information that is assessed during the desktop study (see also section 3.3.1.2, Desktop study – gathering information and data) combined with points of interest of the inspection. Advantages of using checklists are:

- to ensure all necessary aspects will be inspected;
- a better organisation of the interview and site visit;
- time rationalisation;
- fast assessment of the non-compliance situations.

A simple "yes" / "no" if the installation is compliant with a certain provision is often used. This means that the checklist should be prepared in a way that it is possible to answer yes or no. However, it often happens the answer is not so simple - therefore additional space should be reserved on the checklist to make comments. For example to be able to specify location, good practices, problems observed, cause of non-conformity, etc.

Also be aware that checklists made for a specific installation and/or specific legislation could run out-of-date. So always check if the checklist is still up-to-date.

Checklists may include:

- the unique number of the inspection;
- the type of inspection;
- the name(s) of the inspector(s) and who is leader of the inspection team;
- the name of the company or inspection object;
- the name and function of the interviewed person(s);
- the date and time (start and finish) of the inspection;
- the inspected installation and/or area;
- the list with documents that need to be checked;
- the provisions/obligations the operator has to comply with;
- the samples that have been taken during the inspection;
- The pictures that have been taken;
- Space for notes.

A useful tip is to start an interview with general issues and end with the detailed ones.

It must be kept in mind that checklists are an important tool but cannot replace the critical mind of an experienced inspector. They can serve as a useful road map or reminder but should not restrict the inspector from changing direction based on unexpected observations.

Preparation of a short inspection agenda

A short agenda can be a very useful tool that will help to execute an inspection. Providing an operator with an agenda in advance may result in more smooth coordination of the inspection from his/her side because the operator will be aware of how many resources and people have to be available for the inspector. Preparing such a document before an inspection is not time-consuming.

The inspection agenda could consist of:

- Time schedule of each single step of the inspection.
- The type issues that will be inspected (e.g. waste management, air pollution).
- Eventual samples to be taken.
- Distribution of competencies of the members of the inspection team.
- The documents that need to be presented by the operator.
- The installations that will be inspected.
- The staff of the company that will be interviewed.
- Closure meeting of the inspection.

Factsheet 3.10 - Execution of inspections

In this factsheet inspection types are listed with the elements that could be covered during the execution of the inspection.

Routine site visits

- Examining environmental impact by following:
- Inspection programme
- EC legal requirements
- Organisational arrangements of inspectorate
- Promoting and reinforcing knowledge and understanding of operator
- Evaluating permits and authorisations
- Monitoring of emissions
- Checks of internal reports
- Follow-up documents
- Verification of self-monitoring
- Checking of the techniques used
- Adequacy of the environment management of the installation
- Additional inspection (follow-up inspection) in case of an important non-compliance has been identified (within 6 months after the initial inspection)

Non-routine site visits

- Complaints
- Accidents and incidents
- Occurrences of non-compliance
- (The need for) issuing a new permit
- (The need for) revising the permit

Investigation of accident/incident / occurrence of non-compliance

- To clarify the cause and its impact
- Responsibilities, liabilities and consequences
- Forward conclusions to the inspecting authority
- Follow up that has to be taken
- Actions to mitigate / remedy the impact
- Actions for prevention
- Actions taken by the operator
- Actions and enforcement actions

Other compliance checking and compliance assistance activities like:

- Remote monitoring (on-line inspections)
- Data from Operator self-monitoring (see also factsheet 3.11)
- Theme inspections
- Surveillance
- Remote sensing assessing operator monitoring data
- Organising information campaigns.

It goes without saying that non-compliances identified during inspections need to be followed up. However in the case of a serious non-compliance (see annex VIII on graduation of non-compliances) an additional inspection has to be executed within 6 months.

Factsheet 3.11 - Operator self-monitoring

This Factsheet provides practical guidance on the requirements for the recording and reporting of the results of the monitoring of emissions from industrial installations by the operator. Proper monitoring planning, execution and reporting is a fundamental aspect of good operational and environmental management. It is essential for assessing environmental performance and compliance with the conditions set out in environmental permits. This Factsheet covers the requirements and provisions of the Industrial Emissions Directive (IED) concerning operator self-monitoring and how this is reported to competent authorities as part of the inspection process. In particular, it addresses the minimum content of the operator self-monitoring report and the analysis and follow-up of the report by inspectors.

> Recital 26 of IED states that*:* "In order to ensure the effective implementation and enforcement of this Directive, operators should regularly report to the competent authority on compliance with permit conditions".
>
> Article 3 (22) of the IED Directive states that environment inspection covers all actions, including verification of self- monitoring.
>
> Article 14 (1c) of the IED requires that conditions in environmental permits should include suitable emission monitoring requirements specifying:
>
> (i) measurement methodology, frequency and evaluation procedure; and
>
> (ii) where Article 15(3)(b) is applied, that results of emission monitoring are available for the same periods of time and reference conditions as for the emission levels associated with the best available techniques;
>
> Article 14(1d) includes an obligation to supply the competent authority regularly, and at least annually, with:
>
> (i) information on the basis of results of emission monitoring referred to in point (c) and other required data that enables the competent authority to verify compliance with the permit

Self-monitoring (including monitoring undertaken on behalf of operators by contractors) involves repeated measurements or observations, at an appropriate frequency in accordance with documented and agreed procedures, to obtain the required information on emissions. This information may range from simple visual observations (for example, visible emissions to air from doors, flanges or valves, or the alteration of the colour of a discharge) to precise numerical data (such as the concentration or load of a pollutant).

IMPEL has carried out a body of work to define minimum criteria for environmental inspections. This included guidance on operator self-monitoring[6] which stated that: "*The monitoring of industrial processes, their releases and their impact on the environment are key elements of regulatory control. Such monitoring may be undertaken by the competent authorities responsible for inspection duties. Industrial process operators may also be required to carry out monitoring themselves and report their results to the competent authorities. This is known as operator self-monitoring*".

The IMPEL project on supporting IED implementation included a working group that looked at operator self-monitoring reporting in 2016[7]. This guidance is based on the report from that group.

Minimum content of the operator self-monitoring report

Usually, the frequency for the operator to report self-monitoring data to the competent authority is set in the permit to be on a yearly basis.

The self-monitoring report is usually based on the content of the self-monitoring plan and/or the permit conditions. The required content of the report is often included in the permit, and, in some cases, there is also a template that sets out the required structure and content for the submission of the report. The monitoring report should include information about compliance with all permit conditions. Emissions monitoring results and waste management data are also necessary to comply with the Pollutant Release and Transfer Register (PRTR) register.

Effective reporting of self-monitoring involves the production of an Executive Summary, supported by the detailed monitoring results (raw data), relevant information concerning the operation of the specific process, and assessment of compliance with the required permit conditions. The raw data should be accompanied by a more detailed description and interpretation of the underlying process trends and conditions. Other relevant information to be presented may include, for example, maintenance measures, data on materials and energy consumption, and the production of waste.

The production of the following tools/templates is recommended to ensure consistent reporting of operator monitoring:

Description of minimum content and frequency of the self-monitoring report

Self-monitoring report templates

Identification of the necessary data to comply with PRTR register requirements.

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[6] IMPEL report on Operator Self-Monitoring. February 1999.

[7] IMPEL report on Supporting Implementation of the Industrial Emissions Directive. Project 2016/1, October 2016.

Analysis of self-monitoring report to be performed by inspectors

A common approach has been identified and it is recommended that this should be applied to ensure that key components of the self-monitoring reports are included in the analysis. The assessment of the self-monitoring report submitted by the operator should usually cover the following aspects:

whether the report was submitted by the agreed date and according to the required frequency of reporting as set out in the permit conditions

the use of appropriate templates for reporting, if required

the completeness of data and parameters required, including frequency and extent of measurements

the adequacy of the operator to self-monitor its emissions: whether measurements were carried out on-site or not, by the required person or institution (internal or external laboratories, with appropriate quality control, with certification or accreditation, if necessary), by appropriate sampling at specified locations, using appropriate analytical methods and instrumentation, at a clearly defined operation status of the installation

a review of calculations and statistical analysis of the monitoring data (especially in more complex reports).

The nature and scope of the analysis should include, as a minimum, an assessment of compliance with the emission limit values set out in the permit. It may also include:

a check of overall compliance of the installation with environmental permit conditions

an analysis of the trends in environmental parameters (e.g. material and energy consumption, emissions, amount of waste produced) in order to check the operational performance of the installation so that timely action can be taken to ensure that it continues to operate within the definition of BAT

an assessment of critical conditions to be focused on in the next inspection

a comparison of the performance of the installation with other installations in the specific sector

a comparison of the performance of the installation with BAT.

Useful tools for the analysis are:

appropriate templates for the assessment and reporting on self-monitoring reports to simplify and standardize the analysis

use of a (national) database for the storage and exchange of the operator reports and of the assessment process (which may involve several experts) independent monitoring to cross-check the operator self-monitoring, e.g. by analysing samples taken during on-site visits, including split samples.

As far as the output of the self-monitoring report analysis is concerned, the IED has no specific requirements for the preparation of the report of the evaluation. Consequently, EU Member States use different approaches in the reporting of the results of the analysis of the operator's self-monitoring:

some produce the report according to a standard template and others take a free-form approach,

some produce the report as a separate document outside the site-inspection, and others incorporate the self-monitoring analysis with the reports from on-the-spot inspections,

in some countries, the reporting of the evaluation is a formal requirement, but in others it is not.

In some countries, a report on the analysis of the self-monitoring report is produced only in cases where non-compliances have occurred. In others, a report is produced even if no non-compliances are reported or detected. In these cases, the document provides evidence that supports confirmation of compliance with the conditions of the permit and the requirements of the regulations (such as: compliance with ELVs and other required parameters set in the permit, operator monitoring equipment and regime, accreditation of laboratory, time limit for reporting, frequency of reporting, use of required template for reporting).

There are also differences in practice over the notification and release of the inspector's report to the operator and other competent authorities. In some countries, the inspector may only provide notification that the report has been produced (and that it may have been placed on an inspection database). In others, the inspector's report is submitted directly to the operator or to the competent authority.

Templates for report of the self-monitoring analysis have been developed in some countries.

Follow-up of the self-monitoring report analysis

The analysis of the self-monitoring report is useful to competent authorities:

to check compliance with permit conditions, before going to a site for performing an environmental inspection;

to plan a non-routine site visit;

to review the environmental risk assessment of a plant;

to verify data sent by operators to the PRTR register;

to take decisions on interventions that might be needed to prevent environmental harm, such as suspension of the permit or suspension of operation;

to provide the evidence to support the initiation of penal or administrative procedures against operators that have failed to comply with the law.

There are two different kinds of non-compliance reporting in the self-monitoring report: first, the non-compliance is reported by the operator and second, the non-compliance is detected and reported by the inspector.

For non-compliances identified by the operator, in most EU member countries, operators have to inform competent authorities immediately when an incident or accident occurs or when emission limit values are exceeded. The competent authority will stipulate what remedial actions need to be taken by the operator to return to a state of compliance and to resolve the problems that have occurred. In these cases, the self-monitoring report should include a compilation of the incidents or breaches that occurred and the remedial action that was taken over a fixed period (usually one year). This compilation can be used to support a new environmental risk evaluation.

For non-compliances detected by the inspector during the analysis of the self-monitoring report, there are differences in approach between countries in taking follow-up action.

Italy, for example, considers that the detection of exceedances of emission limit values in the analysis of self-monitoring reports is not, in itself, enough to open infringement procedures against the operator. The breach has to be confirmed by the operator or proved by means of evidence from the actual sampling and analysis of the emissions.

Other countries do take action and may prosecute operators on the basis of self-monitoring data.

In the follow-up of cases where non-compliances are detected through self-monitoring inspectors should take into account at least the following criteria:

Whether the non-compliance is reported by the operator or detected by the inspector through the analysis of the self-monitoring report.

The level of the non-compliance.

The assessment of the reason for the breach (through a site visit or by requesting further documentation).

Factsheet 3.12 - Levels of non-compliance

This Factsheet provides practical guidance to assess the degree of non-compliance where this is detected during both routine and non-routine inspections. This will help inspectors to determine the appropriate actions to be taken. There are specific requirements in the Industrial Emissions Directive that address situations where non-compliances are found in inspections of industrial installations. These requirements cover both non-compliances with permit conditions and also complaints, incidents and accidents.

Article 23(2) of the IED requires that all installations should be covered by an environmental inspection plan at national, regional or local level. Article 23(4) requires competent authorities to regularly draw up programmes for routine environmental inspections. If an inspection has identified an important case of non-compliance with the permit conditions, an additional site visit shall be carried out within 6 months of that inspection. Article 23(5) requires that: non-routine environmental inspections shall be carried out to investigate serious environmental complaints, serious environmental accidents, incidents and

This chapter provides guidance on how to interpret these requirements based on work carried out in 2015 as part of IMPEL's project, 'Supporting IED Implementation'[8]. This report also provides some examples of practice in different countries. The project also drew upon a previous IMPEL project that looked at the question of inspections and levels of non-compliance: 'Environmental inspections of industrial installations in accordance with the Industrial Emissions Directive'[9].

Tiered approach to assessing levels of non-compliance

Three levels of compliance are described:

[8] Supporting Implementation of the Industrial Emissions Directive (2010/75/EU). IMPEL Report 2015/1.

[9] Environmental inspections of industrial installations in accordance with the Industrial Emissions Directive (IED). IMPEL Project 2012/06.

- A minor
- B significant or relevant
- C important or serious.

These three levels are summarised in next overview:

Levels of non-compliance		Permit conditions complied with?	emission limit values complied with?	environmental quality standards complied with?		Aim of the permit achieved?
A	Minor cases of non-compliance	No	Yes	Yes		
B	Relevant or significant cases of non-compliance	No	No	Yes		
C	Important or serious cases of non-compliance	No	No	No		

	No (or negligible) offences
	To be assessed from case to case; measures necessary
	Enforcement required

There is no simple definition for the three different levels of non-compliance and this will ultimately be a matter of judgement, taking into account, for example, the attitude of the operator, the frequency of recurrence of non-compliance, and the extent of participation in the European Union Eco-Management and Audit Scheme (EMAS) by the operator. Instead, sets of examples for the different circumstances of non-compliance are provided for each of the three categories to help guide decision-making by environmental-inspectors on how the level of non-compliance should be reported and what action should be taken.

It should be noted that no distinction is made here between important and serious cases. Level 3 refers only to important cases of non-compliance. Occurrence of the most serious non-compliances leading to the closing down of installations under Article 8 of the IED is assumed to be very seldom, and accordingly no definition has been provided for those cases.

Each assessment of, and decision on, the level non-compliance should be done on a case-by-case basis. The assessment should take account of and respect other relevant regulations, for example, if it is a criminal offence to operate an installation without a permit this should not be rated as a minor non-compliance.

Level A – Minor level of Non-compliance

In general, these are cases where:

non-compliance presents a low risk of damage to the environment, so within a reasonable period of time appropriate measures must be taken to eliminate the non-compliances;

there are only minor violations of permit conditions /legal obligations/operator duties with no consequences for pollution prevention and control;

emission limit values, environmental quality standards and other limitations are still met;

the aim of the permit (to protect the human health and the environment against pollution and to take precautionary measures against pollution) is still achieved.

In these cases, it would usually be sufficient for the competent authority to write a letter to the operator pointing out the minor problems that require attention.

Examples:

The operations diary is not kept in orderly and up to date.

There are missing work instructions.

Pipelines are not labelled properly.

Documentation of stipulated maintenance work is not directly available, or is missing, or there are inadequate records of the work undertaken, such as data on raw material consumption.

There are missing data on waste types and waste quantities, solvent management plans, etc.

Waste management plans are missing or inadequate.

There are inadequate safety precautions at storage units or for the handling of environmentally hazardous substances (e.g. catch basins).

The operator monitoring arrangements for emissions are inadequate and fall short of accepted good practice.

Emission monitoring reports from the operator are incomplete or do not conform with accepted good practice.

The operator monitoring reports show incidences of minor non-compliance.

The agreed deadline for periodic reports is exceeded.

Other obligations under environmental law for reporting or verification are not met.

Level B – Significant or relevant non-compliance

In general, these are cases where:

non-compliance may present a risk of harm to the environment or damage has already occurred, so within a reasonable period of time appropriate measures must be taken to eliminate the non-compliances;

there are significant violations of permit conditions/violations of legal obligations/operator duties which can have consequences for the prevention and control of pollution;

it is unclear whether the emission limit values are complied with;

the aim of the permit (to protect the human health and the environment against pollution and to take precautionary measures against pollution) is in question;

the requirement, according to Articles 8 (2a) and 20 (1) (IED), that the operator has to inform the competent authority about non-compliances and changes of the operation is not met;

there are several or repeated similar minor non-compliances which could be rated as a relevant non-compliance.

Examples:

Required actions arising from inspection reports are not completed.

The required frequency of maintenance work, for example, maintenance work on an exhaust gas cleaning facility, is not complied with.

Required reports are missing (from audits, emission- or monitoring reports).

The annual emission monitoring report required by Art.14 para. 1 (d) IED is not made available, if requested, or the deadline for the periodic report is significantly exceeded.

Continuous monitoring of emissions is severely deficient, there is a failure of monitoring systems, the monitoring equipment is not operational or does not exist at all.

Safety precautions at storage units or for the handling of environmentally hazardous substances (eg, catch basins) are missing.

The operator does not hold a permit for a mode of operation where this would normally be required; this may have consequences for the control of emissions.

There has been a series of ongoing minor non-compliances that have not been addressed and resolved.

Level C - Important cases of non-compliance

In general, these are cases where:

non-compliance results in substantial harm to the environment or presents a serious risk of doing so; immediately appropriate measures must normally be taken to resolve the cases of non-compliance;

there are serious violations of permit conditions, legal obligations, or operator duties which can have consequences for the prevention and control of pollution;

emission limit values, environmental quality standards or other limitations are not met;

the aim of the permit (to protect the human health and the environment against pollution and to take precautionary measures against pollution) is not met;

there are several or repeated similar relevant non-compliances that could be rated as a serious non-compliance;

there is violation of an environmental quality standard or non-compliance that could result in harm to the environment and human health.

non-compliance is very important in terms of complaints and public perception.

Examples

Operation of an installation without a permit or a substantial change of an installation is made without necessary changes to the existing permit.

Maintenance or monitoring of environmentally relevant parts of the installation is not carried out by the operator.

The maximum permitted waste storage capacity of the installation is exceeded.

There is a malfunctioning of filter installations or protection systems leading to significant exceedance of emission limit values.

Hazardous (liquid) waste is stored on unprotected soil.

Old, single-walled sub-soil pipelines for hazardous substances may be in use without proper protection against corrosion.

The operation of the plant presents 'imminent danger' to the environment.

Emission control systems or wastewater treatment systems are not functioning.

There are exceedances of emission limit values (based on BAT-AELs) that could lead to significant impacts on public health and environment.

Important cases of non-compliance leading to an additional site visit

The decision on whether a non-compliance should lead to an additional site visit should be supported by an assessment of the risk presented by the process or activity. Section 6.2 of the combined guidance gives further information on this.

If a non-compliance detected during a routine inspection presents a higher degree of risk to the environment and human health than that identified in the existing risk assessment, then this non-compliance is considered to be important and an additional inspection within six months would be required as set out in article 23(4) of the IED.

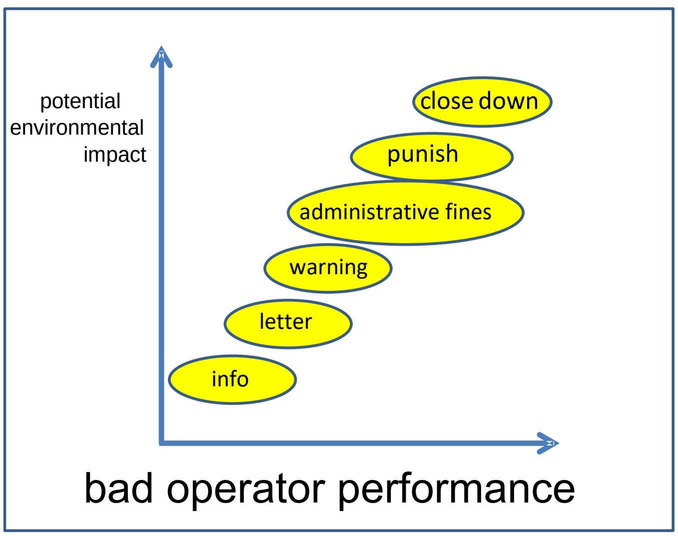
It should be noted that leaving the EMAS scheme or enlarging the production capacity may lead to a higher inspection frequency, but is not, in itself, a case of non-compliance. So, this will not lead to an additional site visit according to Art. 23(4) IED).

The risk assessment should be updated (directly) after each inspection. A higher inspection frequency could be the outcome. However, the update of the full inspection program can be done later, according to the practice of the competent authority (for example each year).

It is recommended that where an additional site visit is carried out this does not lead to the inspection cycle being changed. The next regular site visit should be performed at the planned date according to the last determined inspection frequency. If the next routine site visit is planned within the next six months, it may be combined with the necessary additional on-site inspection.

Possible action to be taken in the case of non-compliance

Decisions on the appropriate action to be taken in the case of non-compliance will depend on the impact on human health and the environment as well as the operator performance.



Reaction of the administration to non compliances

Possible measures that can be taken by the authority include:

writing a letter to the company

demanding a rehabilitation plan/technical measures

putting seals on devices

partially or full closing down a plant or activity

administrative fines

notification to prosecutors

imprisonment.

If a non-compliance is observed several times in the same year, the competent authority can adopt a partial and/or temporary closure of installation, depending on the environmental impact of the non-compliance.

In some countries, individual cases of non-compliance are recorded on a database, collected over one year and then assessed. Less-compliant sites will pay a surcharge on their annual charge, while operators with perfect compliance records may receive a discount. Another result could be a changed inspection frequency.

It should be kept in mind that the judgement and the experience of the inspectors is a very important factor when assessing and classifying cases of non-compliance. While they are useful to support decision-making, technical definitions of non-compliance levels are not sufficient on their own for a realistic assessment.

Factsheet 3.13 - Cessation of operations, bankruptcy and site closure

This Factsheet provides practical guidance on the requirements and provisions in the Industrial Emissions Directive (IED) concerning the cessation of operations of installations and site closure. There may be several different reasons why operations are terminated and these are often difficult to foresee. The guidance is aimed at helping regulators recognise the signals and then to take appropriate action. It also covers the role of financial guarantees and cessation/ decommissioning plans. Where there is a risk of soil and groundwater contamination, there is also a requirement in the IED for the operator to produce a Baseline Report and to take remedial action to restore the site to its former condition. This is covered in factsheet 2.07

Article 11(h) requires that the operator takes the necessary measures upon definitive cessation of activities to avoid any risk of pollution and return the site of operation to the satisfactory state defined in accordance with Article 22.

Article 14(f) relates to permit conditions and requires that measures are taken relating to conditions other than normal operating conditions such as start-up and shut-down operations, leaks, malfunctions, momentary stoppages and definitive cessation of operations.

Article 22 covers the provisions for site closure, including the requirement for the production of a Baseline Report in cases where there is a possibility of soil and groundwater contamination. It requires the operator to assess the state of soil and groundwater contamination by hazardous substances and to take remedial action where significant pollution has been caused.

Article 24(3) refers to access to information and public participation in the permit procedure. It requires the competent authority to make available to the public relevant information on the measures taken by the operator upon definitive cessation of activities in accordance with Article 22

The guidance in this Factsheet was developed as part of the IMPEL project on IED implementation. Further details and examples of practices in individual countries can be found in the 2015 report of this project[10].

How to find out whether a company is heading towards bankruptcy

Bankruptcy is difficult to foresee. Usually the competent authority doesn't receive information about difficulties in operations from companies.

[10] IMPEL Project on Supporting IED Implementation. Project No. 2016/01. 6 December 2015.

The following 'weakness signals' can be taken in account in assessing whether a company is at risk of imminent bankruptcy:

No annual reports being produced.

Temporary closure of the company or simplification of operations, significant changes in amount of staff and reduction in salaries.

Many non-compliances and no effort from the company to tackle them (because they don't have the money).

Problems in day-to-day operation.

Weakness signals be reflected in the risk assessment of the company.

No payment of required fees, for example, the annual inspection fee.

Financial guarantees

Experience shows that in the case of bankruptcy and/or site closure there are not enough resources to finance all measures needed to safeguard the environment. In such cases, early preservation of financial resources through insurance, financial guarantees, bank guarantees or other means (such as environmental funds) could help both operators and competent authorities in rehabilitation of the environment, closure of installations and after-care measures.

The financial guarantee is not obligatory but should be seen as be a good tool to take care of problems arising when companies have to close down, especially in bankruptcy cases; examples of good practices can be found in many countries, for example:

Environmental fund – funded by fines (50%) issued to companies because of infringements of environmental law (Portugal).

Financial guarantee is mandatory in Italy upon IED implementation for all IED plants– national decision (awaiting decree); up to now financial guarantee is required for waste treatment plants but it will be mandatory for IED sites which manage and discharge hazardous substances (Baseline report).

In Xunta de Galicia (Spain) a financial guarantee is needed for:

Companies producing waste and waste management companies

All IED installations will need to have a guarantee in 2 years' time.

In Finland, a financial guarantee is mandatory only for waste management sites:

The amount of money is calculated based on the size of the site and the cost of the cessation operations (monitoring of the site for 30 years).

In The Netherlands, a financial guarantee is mandatory for underground storage tanks containing petrol or gasoline type of liquids and landfills.

In the Czech Republic, a financial guarantee is mandatory only for landfills (both IED installations and smaller sites).

In Austria, financial guarantees can be mandatory or optional measures or they may not be possible, depending on the type of installation and the relevant material law; under the mining law financial guarantees are foreseen for mining activities schedule, mining installations and waste facilities of category A.

In Croatia, a financial guarantee is needed before granting a permit for waste management installations and before granting notifications for trans-frontier shipments of waste.

In Iceland, the guarantee is requested before a permit for waste management installations is issued. Also, an insurance of up to 1 million Special Drawing Rights (1 US$ is approximately 0,72 SDR) is needed for installations that can possibly cause pollution in the ocean or on the coastline.

In Germany (Bremen), financial guarantees are required for Windmills on public ground and for waste treatment installations dealing with waste that cannot be sold on the market, especially waste incineration plants.

In Romania, financial guarantees are required for landfills (both IED and smaller sites) and for mining activities.

In Cyprus, financial guarantees are required before granting the permit; the guarantees are used to cover possible environmental damage or to handle untreated waste (for example after bankruptcy) and are mandatory for IED Installations and for waste management.

In Slovenia, financial guaranties are used for very limited types of installations and are mandatory only for landfills of waste.

More detailed information on these examples can be found in Part 2 of the IMPEL 2015 IED Implementation Project report. The report also documents a survey of methodologies, guidance and tools for determination of financial guarantees used in different countries.

To encourage the competent authorities to use such tools the Member States can make use of art. 14 of Environmental Liability Directive (this provides an encouragement to Member States to put up a financial security system). IED installations are included in the Annex III of the Environmental Liability Directive.

In the transposition of the Environmental Liability Directive, seven member states (Bulgaria, Romania, Hungary, Czech Republic, Slovenia, Portugal and Spain) decided to establish in their national legislation on Environmental Liability a system of mandatory financial security provided in article 14 of the Directive. In some countries, actual implementation of the system is still to be developed in regulation which shall specify the form and the extent of the security, conditions for using the security, rules of accounting and keeping the records of it, and rules of the environmental protection insurance.

Definitive cessation of operations

The 2015 IED Implementation Project report provides arrange of examples of how to implement the requirements of the IED on definitive cessation. These include Finland, Romania and Xunta de Galicia (Spain). The Finnish examples illustrated the cessation and demolition of a Large Combustion Plant while the Romanian examples referred to a cessation plan included in an IED permit. The case of Xunta de Galicia (Spain) referred to a chemical plant (squalane production).

Cessation conditions included in an IED permit granted to a refinery in Romania are:

- Operational permits are very detailed
- In each permit, there is an obligation for cessation plan – the plan must be agreed by the EPA and is a part of the permit
- Contains both general and particular conditions
- The particular conditions for a refinery:
- Preliminary activities
- Cessation of the installation
- Leakage flow from pipes, hazardous substances
- Maintenance/conservation
- Dismantling of installation/equipment
- Demolition
- Remediation actions

Minimum content of a cessation/decommissioning plan

To avoid the contamination of the environment in the case of definitive cessation of operation, the permit granted by the competent authority shall contain conditions and measures that the operator must comply with. As good practice, the permit shall contain a cessation/decontamination plan and not only conditions (in most cases a few lines in the permit). In this way, the permit will be more enforceable.

The IMPEL 2015 IED Implementation Project report provides examples of decommissioning plans in different countries. An example of a decommissioning plan for an IED chemical plant was given by Sardinia Region (Italy). This plan consists of:

- Risk analysis and risk management
- Activity description, including storage of raw materials and wastes, treatment of waste water, etc.
- Health, security and environment monitoring
- Waste management plan and plan for recoverable materials.

No guidelines have been identified at EU level on the minimum content of a cessation/ decommissioning plans. Therefore, as good practice, it is recommended that the following items should be considered in drafting such plans:

- The cessation/decommissioning plan is usually prepared in the permit phase (permit recast)

- It must be approved by the relevant authorities
- Minimum aspects that the cessation of the plant must contain:
    - History of the activity of the company
        - Operational time
        - Evolution of plant engineering, structural expansions, new equipment etc.
        - Information about remediation or similar activities
        - Information about accidents
        - The context in which the plant is running
        - Identification of possible sources of environmental pollution (reservoirs / tanks / pipes / underground facilities)
        - Procedures provided for the disposal of pollution sources identified
        - Pollution prevention and reduction for the protection of the environmental compartments (Air, Water, Soil)
- Additional criteria could be:
    - Waste management and management of hazardous materials during closure
        - Focus on hazardous waste
        - Recovery or disposal
        - Foreseen production of waste
        - Demolition waste and storage
    - Monitoring of emissions to the environment during and after the closing of installations
        - Frequency of sampling and what parameters should be monitored
    - Remediation actions on contaminated compartments
        - Quantified comparison with baseline report
        - Assessment of the state of the environment - soil and groundwater
    - Information about the maintenance/demolition of the site (buildings, etc.)
    - Measures for landscaping (does not always apply).

IED Article 23 (6) obliges Member States to take the following actions:

Following each site visit, the competent authority shall prepare a report describing the relevant findings regarding compliance of the installation with the permit conditions and conclusions on whether any further action is necessary.

The report shall be notified to the operator concerned within 2 months of the site visit taking place. The report shall be made publicly available by the competent authority in accordance with Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information within 4 months of the site visit taking place.

Article 23 (6) also requires that the competent authority should ensure that the operator takes all the necessary actions identified in the report within a reasonable period (this is relevant to the provisions on action to be taken in the case of non-compliance covered in Article 8(2) of the IED).

Factsheet 3.14 - Reporting of inspection findings

This Factsheet provides guidance on the requirement in Article 23(6) of the Industrial Emissions Directive that competent authorities should make their reports on inspections publicly available. It covers the structure of the report and provides information on good practice for the reporting of inspections.

> IED Article 23 (6) obliges Member States to take the following actions:
>
> Following each site visit, the competent authority shall prepare a report describing the relevant findings regarding compliance of the installation with the permit conditions and conclusions on whether any further action is necessary.
>
> The report shall be notified to the operator concerned within 2 months of the site visit taking place. The report shall be made publicly available by the competent authority in accordance with Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information within 4 months of the site visit taking place.
>
> Article 23 (6) also requires that the competent authority should ensure that the operator takes all the necessary actions identified in the report within a reasonable period (this is relevant to the provisions on action to be taken in the case of non-compliance covered in Article 8(2) of the IED).

This guidance draws on work carried out as part of the IMPEL project on IED implementation, reported in 2015[11]. The report from the 2015 project also contains examples of inspection reports produced in different countries. This is a useful reference to support this guidance.

Interpretation of requirements of the IED for reporting of inspections

This guidance interprets the specific requirements of IED Art.23 (6) as follows:

The *report* is the key document in setting out the findings of an inspection.

The report should be *notified* to the operator. It should be noted that an inspection can involve more than one site visit. It is also possible that relevant inspection results (e.g. monitoring results) are not immediately available after the site visits. In these cases, the report has to be sent to the operator 2 months after the first site visit with a follow-up when the further results are available.

[11] Report on IMPEL Project on supporting IED implementation, 2015. Project number: 2015/01.

The report should be made *publicly available*. Reports of routine and non-routine inspections have to be made proactively available (for instance on the internet) 4 months after the site visit. If the 4 months pass and the results are not yet available then only the relevant findings should be mentioned and followed-up later when the results become available.

Recommended structure of the inspection report

The following recommended structure of inspection reports is considered to be good practice for fulfilling the reporting requirements of the IED. It is suitable for active publishing on the internet. Inspectorates may also wish to include other (optional) aspects, for example: a full form report; a description of the scope of the inspection (what was and was not inspected); and other assessments, for example, data audits and the results of non-routine inspections.

(i) Description of the inspection carried out, to include:

- Inspection basis (permit, legal regulations)
- Competent inspection authority and cooperating inspection authorities
- Type of installation (e. g. power plant or chemical plant)
- Operator (Name of the company)
- Address
- Date of inspection
- Length of inspection time
- Scope of the site inspection (e. g. integrated inspection, media that were inspected, parts of the installation that were inspected)
- Expected or unexpected site inspection

(ii) Results of the inspection and compliance assessment

This should be reported according to the guidance provided on assessing the levels of non-compliance, covered in Fact Sheet 3.11:

- No or only minor non-compliances
- Significant or relevant non-compliances
- Serious or important non-compliances

(iii) Action taken

This may include a range of measures that are initiated dependent upon the degree of non-compliance, including: warning letter, (supplementary) decree, fine, closing down of (parts of) the installation, cancellation of the permit.

It should be noted that inspection reports for publication should not contain information that violates the rights of third parties, such as protected data, and confidential information on information on industrial and business activities.

Good practice for reporting of inspections

The following guidance on good practice for reporting was developed as part of IMPEL's 2015 project on IED implementation.

Procedure

- Information should be made available for the public in a proactive way (on internet).
- Although not the main reason, publication of inspection reports can be used to increase compliance promotion.
- More and more Member States publish via the internet and in the spirit of more transparency. This approach to publication is considered to be the way forward.
- It is an important principle that there should be transparency in reporting and that therefore the inspection reports should be made public for a minimum period of time (taking into account local legal obligations).
- Three years is considered as a minimum publication period as it fits with the inspection cycle (all installations have to be inspected within three years).

Content

- The level of understanding of the published report should be targeted to the general public.
- There should be only one inspection report. A summary of the report can be extracted for publication.
- The summary should contain the basic information, without too many technical details, and not more than 1 to 3 pages in length. A fixed template should be used.
- Information on the type of inspection (scope and depth) should be included in the report (full, partial (some areas), random sample check, in depth…)
- As a minimum, only cases of non-compliance need to be included in the published report.
- There should be opportunity given to the company to react in the publication: *Before*: it is a good practice to use the legal obligation to notify the inspection report to the operator (within 2 months) for seeking comments on it (for example, possible mistakes, sensitive commercial information, privacy legislation). The operator should have a minimum time to do so. Two months is considered to be reasonable.
- *After*: once the report is published on the internet, it is final and no further opportunity should be given to the operator to give comments.
- The action taken to resolve the non-compliance should be included in the next inspection report as this finding is the result of a new inspection. This will help to motivate the operator to act quickly.

- When reporting the follow-up action required by the IED, both the actions of the operator and enforcement actions of the inspector's organisation should be mentioned. As a good practice and to avoid potential problems in subsequent judicial action, it is recommended that details on future enforcement actions should be reported but kept to a minimum.
- The name of the inspector should not be included in the inspection report, only the name of the inspection organisation.
- In the case that the site visit lasts more than one day, the last day of the site visit should be taken as the starting point for the periods for notification to the operator (within 2 months) and for making available to the public (within 4 months).

Annex IV

Doing the Right Things Permitting Project Meeting, Prague, 7 March 2017

European Union Network for
the Implementation and Enforcement
of Environmental Law

Subject:	4th project team meeting Doing the right things for Permitting
Date:	7 March 2017
Time:	09:30 – 18:00
Location:	Czech Environmental Inspectorate – Na Břehu 267, Praha 9
Participants:	Tony Liebregts, The Netherlands (chair and project leader)
	Rob Kramers, The Netherlands
	Birna Guttormsdóttir, Iceland
	Katja Buda, Slovenia
	Helena Kamenickova, Czech Republic

Thomas Augustin, Czech Republic

Judith Adamová, Czech Republic

Caroline Murphy, Ireland

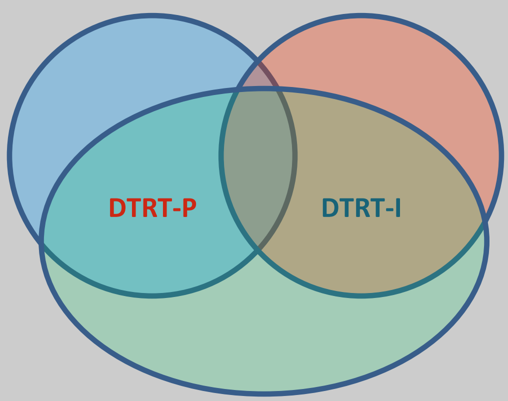
Horst Büther, Germany

Elisabete Dias Ramos, Portugal

Minutes

	Subject	Annotation
1	Welcome and opening of the meeting	Tony opened the meeting. Program of the meeting was adopted
2	Tour the table/ experience / expectations	Birna: Experience is good, done a lot since the start. Manage to go a bit further, this meeting we will be looking at the structure and try to steam line this with the project of Horst. Katja: Important to be in contact with other organisations, we have done a lot of work last year, this year we have to go further with the guidance, very interested in the IED project of Horst and have to make sure we connect well with our project to avoid overlap. Helena: to continue with the work we started and develop the guidance Thomas: is very interested to take part, is also involved in the project of Horst. Judith: it necessary to learn more about the targets of the permit writer and start working together. Caroline: A lot of work has been done and eager to get started with the guidance Elisabete: The guidance structure seems already very consistent and hopes that today we can make it even better. Further to exchange ideas with the IED project and see how we can connect both projects. Horst (project leader for IED project and chair of the expert group air and industry): Both projects (IED Implementation and DTRT-P) met in in Cologne in Dec 2016 and decided to work together. We need to see how we can develop 1 guidance. The Baseline report and derogations are also projects that needs to be included in such a guidance. Rob: hopes we can decide on the project plan and the structure of the guidance in close cooperation with the IED implementation project. Tony: expects active contribution from the project team members, that experience and good practices can be taken on board so our colleagues of IMPEL have a great guidance. Where are in close connections with the project of Horst, to see how we integrate the projects.
3	Project plan	Project plan was adopted with the following changes: • Add 2 more project team members: Alfredo and Elisabete • Project team meetings will be held in: • 2nd meeting in Dublin on 9 May • 3rd meeting in Ljubljana or Helsinki on 29 June • 4th meeting in Reykjavik or Rome on 19 Oct • Workshop will be held in Portugal (Lisbon) on 26 – 29 Sept

		• On communication, the abstract will be added and the workshop date will be placed on the IMPEL website.
4	IED Implementation project	Horst presents the IED implementation project: IED Implementation is mutual joint visit of industry inspectors and regulators to achieve a level playing field in the implementation of the IED. IMPEL now consists out of the following Expert teams - Industry and Air (IED implementation project) - TFS and waste - Water and land - Nature protection / Green IRI - Cross cutting (DTRT-P project) Why IED implementation project: • IED implementation was an important issue for the member states • Technical working group wanted country visits to look at the implementation of the IED. • There was a call for joint inspections • We needed a guidance book of good practices Question the project is asking itself: how should a guidance book look like so it can also be used for training. The UE commission is asking IMPEL to come with proposals how start with trainings for the implementation of legislation Outcome of the project: create a Level playing field by: • Identify implementation gaps • Learning from other countries • Mitigation of non-compliance with the IED • Application of BAT conclusions • Development of good practice examples • Common understanding of inspections • Development of inspection tools • Appropriate public participations Themes of the working groups: Finished • Compliance assessment with levels of non-compliance • Reporting to the public / public participation surveys • Dealing with installations closing don / bankruptcy • BRAF's application of BAT • Self-monitoring and operator reporting On-going • Inspection tools • Definitions • Horizontal aspects of permitting • Joint inspections • BAT in industrial waste water Still to start

		• Application of art 18 (ELV's and air quality limits) • Involvement of the inspector in the BREF cycle • Minimum Risk Criteria and inspection • Application of emission range / narrative BAT More information can be found in annex 1
5	Structure DTRT-P guidance	Rob presented the structure of the guidance. The structure and chapter of the guidance is following stepping stones of the Doing the right things cycle for permitting (outcome of the workshop). The stepping stones are discussed in the meeting and still found as a good basis of the guidance. The meeting was happy with how the structure looks at the moment. Some of the more important comments were: - Be clear for whom the information is. Present this for every step - The priority step misses sections on the priorities for types of permits and priorities to changes in BREF's and revisions of permits - Give more attention to possible changes in the working plan. Its' important to put some flexibility in the work plan.
6	Content of DTRT-P guidance	Discussion started how to combine both projects and develop a common guidance. DTRT-P is focussing on permitting. DTRT for inspection is focussing on inspections. They overlap where the inspector is involved in the permitting procedure. The IED implementation is focussing on permitting, inspection and obligations of industry. This part overlaps DTRT-P and DTRT-I (with respect to IED). The industry part is not covered by either DTRT-P or DTRT-I. See picture  The meeting agreed that we will develop 1 guidance containing 3 parts Part 1. Permitting Part 2. Inspection Part 3. Every other business / Industry

		It will be written in a way that it can be used as training material and easy to put online. For every step, 1 page will be dedicated. All other information will be linked to the steps in the annex.
7	Actions to be taken	• 2nd project team meeting (9 May): Caroline will cheack availability. This ia already done and its possible. • 3rd project team meeting (29 of June): Horst and Katja will check availability • May meeting: Caroline has checked availability • 4th project team meeting (9 October): Birna will check the costs having the meeting in Iceland • Workshop (26 – 29 Sept): Elisabete will check if its possible to host this in Lisbon • Project team (all) will give information and good practices on the topics that are still open before the 9 of April

Annex 1

IED Implementation

AIR

Mutual joint visits of industry inspectors and regulators to achieve a level playing field implementation of the IED

European Union Network for the Implementation and Enforcement of Environmental Law

IMPEL projects related to the IED

- Doing the right things / easyTools
- Air Quality Standards and Industrial Emissions
- Linking Water Framework Directive and IPPC
- IPPC and REACH
- IED Inspections
- Transition to IED permits
- IED/IRAM Inspection Programme
- IED and Nature Protection
- Derogations from BAT-AEL's under IED
- IED Baseline Report
- Doing the right things method for permitting

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What was missing: Mutual Joint Visits

- Committee of Competent Authorities (Seveso Directive implementation)
- Technical working group on inspections
- Topics of MJVs:
  - Country visits
  - Joint inspections
  - Special topics, e.g. safety reports
  - Development of guidance

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Desired outcome of the work

Level playing field IED implementation through:

- Identifying IED implementation gaps
- Learning from other countries
- Mitigation of non-compliance with the IED
- Application of BAT conclusions
- Development of Good Practice examples
- Common understanding of inspections
- Development of inspection tools
- Appropriate public participation

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Results so far

- Bremen, Walloon, Romanian, Dutch and Flamish IED implementation approaches
- Implementation challenges were identified
- Formation of thematic working groups
- Final results from 5 working groups
- Ongoing work and formation of new groups
- Bremen, Rotterdam and Ghent site visit
- IED Implementation Guidance Book
- Implementation of related IMPEL project results
- Project abstracts in different languages
- Exchange of experience

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IED Working Groups

Compliance assessment with levels of non-compliance
Reporting to the public / public participation surveys
Dealing with installations closing down / bankruptcy
BREFs / application of BAT
Self-monitoring and operator reporting
Inspection Tools
Definitions
Horizontal aspects of permitting
Joint Inspections
BAT in Industrial Waste Water
Application of Article 18 (ELVs and Air Quality limits)
Involvement of the inspector in the BREF cycle
Minimum Risk Criteria and Inspection
Application of emission ranges / narrative BAT

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Budget, spent in 2015

- Project Meeting 1: 17,500 €
- Workshop/Conf.: 31,500 €
- Project Meeting 2: 14,500 €
- **Altogether: 63,500 €**
- Consultant: 30 days

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Budget, spent in 2016

- Project Meeting 1: 19,000 €
- Project Meeting 2: 16,300 €
- Workshop/Conf.: 19,200 €
- **Altogether: 54,500 €**
- Consultant: 22 days

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2017 Terms of Reference

- Going on with the work programme
- Project Meeting 1: 25 participants
- Project Meeting 2: 25 participants
- Workshop/Conf.: 29 participants
- 3 Inspections: 4 participants
- Transport / Communication: 275 €
- **All together: 52,000 €**
- Consultant: 22 days

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2017 Work Programme

- Presentation of Country approaches
- Joint inspections
- Thematic working groups
- Development of Tools
- Amendment and publication of the Guidance Book
- Development of training material
- Proposal on Risk Assessment Criteria for the Commission
- Development of future Mutual Joint Visits

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Open IED Topics

- Industrial waste water
- BAT / general binding rules
- Application of Emissions Ranges
- Concentrations versus mass emission limits
- Other than normal operating conditions
- Industrial soil and groundwater monitoring
- Public participation / complaints management
- Charging Regimes
- IED farming activities
- Inspector's input into the BREF cycle

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Supporting IED Implementation

Thank you for your support

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Annex V.

Note of IED Project Team Meeting, Milan 23-24 March 2017

IMPEL Project on supporting Implementation of the Industrial Emissions Directive
Project Meeting held at the Regione Lombardia Palace, Milan, on 23 and 24 March 2017

Summary of action points from the meeting

1.	Inspection Group to look at possible minimum content for joint inspections
2.	Horst to put details of Commission funding for Joint Inspections on REACH and Classification, Labelling and Packaging on Basecamp
3.	Pieter to ask Richard Chase for Environment Agency (England) guidance on Narrative BAT
4.	John to be asked to consider how to incorporate the results of the Derogations Project into the guidance book
5.	John and Terry to look at Commission comments on Guidance Book and to incorporate them as appropriate

1. Welcome by Teresa Cazzaniga

Ms Cazzaniga warmly welcomed the IMPEL Project to Milan and said that ARPA Lombardia was very pleased to be able to host the meeting. She expressed the wish that everyone would have a comfortable stay in Milan and above all that the meeting would have very successful discussions and outcomes.

Ms Cazzaniga described the context of Lombardia. Lombardia is the first Italian region for population and for the number of local institutions, the second for population density (only after Campania) and the fourth for area (after Sicily, Piemonte and Sardinia). The population is more than 10 million citizens and the area almost 23,800 km². The population density is 419.65 inhabitants/km². There are eleven Provinces and one

Metropolitan City and more than 1,500 municipalities. There are more than thirteen Local Prosecutors' Offices and two General Prosecutors' Offices.

In terms of environmental pressures, there are almost 100,000 factories and approximately 50,000 Farms. There are approximately 1,800 IED installations (35% of the national amount) and 300 Seveso Plants (more than 25% of national plants). There are 50 lakes and 6,000 km of rivers and a long network of canals (nearly 200,000 km). There are 400 monitoring points for surface water (lakes and rivers) and 500 for underground water. There were more than 100 controls on urban waste water treatment plants.

ARPA Lombardia was established in 1999 and became fully operational in 2000. The Agency is part of the Lombardy Region governance system which means that it is one of the public institutions that takes part in the decision-making process. ARPA is a Public Institution with administrative, organisational, technical and economic autonomy. It has 940 employees including the President, Executive Director and Central Directors (Administrative, Central and Operations). There are four Technical Sectors, six Chemical Laboratories and six Departments for twelve Provinces. There are regional centres for radioprotection, air quality, air emissions, weather, landslides and avalanches.

It is organised in four sectors covering guidance and coordination, support to the Executive Director to plan activities and managing regional centres and regional monitoring (water). The six Departments cover implementation of 'on site' activities, support to local Public Administrations and definition of priorities and local activities and planning.

The main activities are environmental monitoring (air quality, surface water (rivers and lakes), groundwater and biodiversity), controls (Seveso plants, IED, Air emissions, Waste, EMAS, Noise and Electromagnetic pollution), and natural risks protection (weather climatology, hydrographic service, avalanches centre, geological centre). The laboratory activities include radioactivity, radon, PA, As, Ni, Cd, Pb samples, annual and daily bulletins, monitoring campaigns, environmental impact assessments and strategic environmental assessments.

ARPA Lombardia interacts with public, private and civil society and is a member of the National System for Environmental Protection (SNPA) established in 2016. SNPA is a federative System which is aimed at joining detailed knowledge of the territory and local environmental problems to national prevention and protection policies. It is a real network system that can be considered as a «new identity», which unifies the skills of each single Environmental Agency of Italy and of the Italian National Institute for Environmental Protection and Research (ISPRA).

2. Welcome by Horst Büther

Horst thanked Ms Cazzaniga for her kind words of introduction and said how pleased the group was to be meeting in Milan. He pointed that there was a very high attendance which in itself was evidence of the importance of the project. He thanked those present for their attendance.

The minutes of the meeting held in Ghent on 5 and 6 October 2016 were adopted as a correct record, subject to Mr Heino Falcke's name being spelt in that way (and not Falke).

There was a Tour de Table for those present to introduce themselves.

3. Background and progress of the IED implementation project

Horst gave a presentation on the background and progress of the IED implementation project. Compliance with environmental law is a priority for the Commission. Horst began by listing other IMPEL projects (past and present) which were relevant to it. These were: Doing the right things / easyTools; Air Quality Standards and Industrial Emissions; Linking Water Framework Directive and IPPC; IPPC and REACH; IED Inspections; Transition to IED permits; IED/IRAM Inspection Programme; Derogations from BAT-AEL's under IED; *IED and Nature Protection; IED Baseline Report; and Doing the right things method for permitting.* The last three in *italics* were current projects.

Results so far included information on implementation approaches in Bremen, Wallonia, Romania, The Netherlands and Flanders together with the identification of implementation challenges. Thematic working groups had been established with final results already received from five groups. Some groups were still ongoing and some new groups had been set up. Site visits had been organised in Bremen, Rotterdam and Ghent. Results from related IMPEL projects had been included in the Guidance Book. There were project abstracts in different languages and a very useful exchange of experience had been achieved.

Work had already been completed in five working groups, namely: Compliance assessment with levels of non-compliance; reporting to the public/public participation surveys; dealing with installations closing down/bankruptcy; BREFs/application of BAT; and Self-monitoring and operator reporting. Work was ongoing on five topics: Inspection tools; definitions; horizontal aspects of permitting; joint inspections; and BAT in Industrial Waste Water. Topics which would be considered in the future included: Application of Article 18 of the IED (Emission Limit Values and Air Quality limits; Involvement of the inspector in the BREF cycle; minimum risk criteria and inspection; and, possibly, application of emission ranges/narrative BAT.

The budget for the first year of the project in 2015 was 63,500€ (with 30 days' consultant time). This had reduced to 54,500€ in 2016 (with 22 days' consultant time) and to 52,000€ in the proposed budget for 2017 (again with 22 days' consultant time). If participants were able to travel to workshops and project meetings at the expense of their own authorities, that would be very helpful in that it would mean that other people would also be able to take part. The project work programme for 2017 would include presentation of country approaches, joint inspections, thematic working groups and the development of Tools. The Guidance Book would be amended and possibly merged with the guidance from the project on permitting: training material would be developed, which was another priority of the Commission. There would be a proposal on Risk Assessment Criteria for the Commission and future Mutual Joint Visits would be developed.

4. Italian system of IED implementation

Lombardia is a highly industrialised region with about 1,800 IPPC installations of which 1,100 are industrial installations. In Italy as a whole there are about 5,000 IPPC installations. The main challenges associated with IED include the extended scope of application (Annex 1), in particular waste treatment activities (in Lombardia about 100 new permits were granted in 2015). There is an issue over emission levels associated with BAT (Art.14) and the criteria for enforcement and any exceptions (derogation). There is also the question of the frequency of environmental inspections (Art.23) set with reference to an evaluation of the environmental risk from the activity which are every three years for lower risk installations and every year for higher risk installations. The requirement for the Baseline report (Art.22) for activities that use, produce or discharge hazardous substances is challenging as is the question of the publication of the inspection report and self-monitoring data (Art.24: Access to information and public participation in the permit procedure).

Permits are issued by the Provinces except for those covering large industrial installations such as refineries which are issued by the Ministry of the Environment. A further exception is waste incineration plants for which permits are issued by the Regions. Inspections are carried out by ARPA (EPA of Lombardy) though in the case of large industrial installations they are done by ISPRA (national EPA) with the cooperation of the local ARPA. There were two levels of coordination, namely the National working group between the Ministry and Regional authority and the Local working group between regional and provincial authorities.

After the BAT Conclusions are published they are considered by the Regional Working Group which includes the Permitting Authority, the Inspecting Authority, Trade Associations and Operators. The output of this group is a reference document for the Region. There are so far five regional reference documents on Manufacture of Glass, Steel production, Lime production, Cement production and Pulp and Paper. Work is in progress on Wood panel.

The Support System for Planning Controls is a new tool for risk criteria. It is an algorithm and the factors it looks at are the actual impact (real emissions and the environmental context – where the plant is located) and the potential impact in terms of the management of environmental issues and the kind of installation. Using this algorithm, every installation gets a risk index on a scale of 1-10 with those at high risk having an inspection every year as required by Art.23.

The European Commission Guidance concerning baseline reports was implemented in Italy by Ministerial Decree n. 272 of October 13, 2014. The Ministerial Decree concerning baseline reports was implemented in Lombardia (regional Decree) in 2015 for the screening phase (relevant hazardous substances with thresholds).

AIDA is the ARPA web-based tool for self-monitoring data. Every year Self- monitoring data are input into AIDA directly by the operators and are validated by the operators. Self-monitoring data are forwarded to ARPA where they are elaborated for publication on a yearly basis. Electrolytic treatment of metals is the largest IPPC category in Lombardia (24.1%) followed by non-ferrous metals (9%) and waste treatment (7.2%). Surface treatment of substances is next at 5.88 % followed by pharmaceuticals at 5.64%: all other categories are below 5%.

5. Continuous Emission Monitoring System – Project in ARPA Lombardia (ARPA)

The Continuous Emission Monitoring System (CEMS) is very important not only for the compliance with Emission Limit Values but also to obtain important environmental data such as the yearly mass flow of a pollutant (NOx, SOx, etc). In Italy, CEMS are requested in big plants (LCP > 50MW- Municipal Solid Waste Incineration Plants, Cement Kilns and Glass Furnaces under the IPPC Directive). For these plants, CEMS data are acquired every day and processed by a specific database developed by ARPA: «The CEMS Network.» CEMS are managed by the owners and an accredited laboratory is used to assess them. The context for this is that the Lombardy Region is highly industrialised with more than 100,000 industrial plants of all sizes and approximately 280 plants falling under the Seveso Directive. It is a critical area with a Regional Plan for the Improvement of Air Quality with bad weather conditions (lack of wind), much traffic and a high population density. It's important to know the sources and to identify and quantify the pollutants.

It works through a sampling group of the gaseous effluent, remote sensors (signals system, characteristic parameters of the plume), and the Distributed Control System. This information is recorded and processed by specific software called AEDOS (Data Acquisition and Processing Open Source) installed on an industrial PC. In ARPA, emission data are analysed for checking the pollutant emissions of big plants and identifying critical cases.

The table below shows the position in Lombardy Region:

Type of plant	***Plants number***	***CEMS number***
Waste incineration plants	11	23
Glass furnaces	7	7
Cement Kilns	5	6
Large combustion plants (LCP)	16	32
Summary	***39***	***68***

6. Report on the Joint inspection

The joint inspection took place at the Electrical Power Plant Cassano d'Adda. Those taking part were Robert Gross (Austria), Jaako Vesivalo (Finland), Dubravka Pajkin Tučkar (Croatia), Ruth Ciarlo (Malta) and Malgorzata Budzynska (Poland). Roberto Borghesi was present from ISPRA and representatives from ARPA Lombardia were Fabio Colonna, Vittoria Villa, Mauro Prada and Andrea Pagani. Documents were shared beforehand and a draft inspection plan was drawn up. A video conference took place via WEBEX and the inspection plan was shared. The joint inspection consisted of gathering information, requesting documents, preliminary assessment, on site visit and a report. There was a final meeting in ARPA.

The permit was in two parts. The first part contains a description of the plant and its context, the application of BAT and the provisions for air emissions, water discharge, noise and waste. The second part is the Monitoring Plan which is up to the owner and allows for the monitoring of the quantity and quality of pollutants during a year.

The strengths of the joint inspection were the good atmosphere in which it was carried out and the focus on limited items: the weaknesses were the limited time available, the time needed for translation and the lack of discussion time after the inspection.

No examples of non-compliance were found. Minutes of the inspection were prepared in English and Italian and signed by the participants. There was a suggestion that there should be a minimum content for joint inspections which the Inspection Group would look at.

7. Status of the working groups and activities

7.1 Joint inspections

The section for the guidance book had been further redrafted. There was also a list of good practice to which the latest Joint Inspection would be added. The latest one had included a video conference which was good though there had been technical problems. The group would continue working. Horst said that the Commission provided funding for Joint Inspections on REACH and Classification, Labelling and Packaging of substances (CLP). He would put the details on Basecamp. Members of this group included Marinus, Manuel, Iñaki, Maria Milagros, Florin, Silva, Antonio and Romano.

7.2 Definitions

Pieter said that some 212 terms and 30 definitions had been collected on an Excel spreadsheet and people had added some more. It was accessible via Basecamp. Thought would need to be given as to how to make it available. The problem was that there were more questions than answers. Pieter and Fabio were in this group.

7.3 Tools

The questionnaire had been sent out in January and so far there had been 15 replies containing much information. The work of the group was ongoing. People in this group included Wulf, Iñaki, Rikke, Maria Milagros, Tomáš, Vlado and Şenay..

7.4 Horizontal aspects of permitting

There was a problem of people moving in and out of the group. The questionnaire had been prepared and it would be a good idea to review it in the group. The intention was to see how countries are dealing with the horizontal aspects of permitting (for example, energy efficiency and dealing with accidents etc.). People in this group included Elizabete, Nathalie, Hartmut and Chrystalla.

7.5 Narrative BAT

Richard Chase had offered to send guidance from the Environment Agency for England on how they dealt with this. Pieter would ask Richard to send the guidance.

7.6 BAT in Industrial Waste Water

Horst said that this was a topic that the Commission had asked the group to work on. Charlotte Sholl had offered to put something on Basecamp to start the discussion. One of the outputs could be a checklist of measures for BAT. Those interested in it included Antonio, Romano and Malgorzata.

7.7 Minimum criteria and method for risk assessment

Horst gave a brief presentation on this. The risk criteria for routine inspections and site visits were the kind of installation; emissions to air; emissions to water; waste processing; soil and groundwater protection; sensitivity of the environment; risk of accidents; compliance with permit conditions; and participation in EMAS. As an example for the kind of installation, the risk related inspection interval was three years if there was simply an IED permit, two years for an IED permit and Seveso or EIA and yearly where there was an IED permit and Seveso and EIA. For emissions to air and water, no frequency was set if they were below the PRTR threshold. If they were above the PRTR threshold it was a 3 (every 3 years), 2 if abatement technology were necessary and 1 if there was a permit with BAT derogations. For waste processing, below the PRTR threshold there was no set frequency below the PRTR threshold: above that threshold it was a 3. If there was off-site transfer of hazardous waste it was a 2 and a 1 TFS of hazardous waste. On soil /groundwater protection, there was no set frequency if no baseline report was necessary and where such a report was necessary it was a 3. It was a 2 where protection technology was necessary and a 1 where contingency measures were necessary. For sensitivity of the environment, there was no set frequency if there was low level pollution. If EQSs were kept it was a 3 and a 2 if EQSs were violated. It was a 1 if Article 18 of the IED was applied. On risk of accidents where the amount of dangerous substances (DS) was below the Seveso threshold there was no set frequency. With DS were above the first Seveso threshold there was a 3 and a 2 if it was above the second Seveso threshold. Where there had been a major accident in the last x years, it was a 1.

In accordance with IRAM principles, the inspection interval is determined by the risk criteria with the shortest interval and not by the average. The inspection interval can be changed by one step up or down based on operator performance. Only risk criteria with shortest interval have to be inspected at every on-site visit. Operator performance depends on the record of compliance. Where the operator is in compliance there is a longer interval and no change where there is a minor non-compliance. Where there is a relevant non-compliance there is a shorter interval. Participation in EMAS results in a longer interval. IRAM is considered to be used by the Inspection Authorities of Austria, Belgium, Bosnia and Herzegovina, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Iceland, Israel, Italy, Kosovo, Luxembourg, Macedonia, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain and Turkey.

Horst suggested to go on with the work on criteria and to produce guidance for the IED. After approval by the IED project the guidance would be sent to the Commission. Florin, Vlado, Dubravka and Robert will take part in this sub-group.

7.8 Going beyond BAT/Air Pollution

Examples were needed and there was a need to discuss how to collect information. The Commission were keen to know about NO2, in particular the impact that a high background level of NO2 would have on emission limit values. Horst suggested that this might be combined with consideration of the National Emissions Ceiling Directive. Those interested in this included Jamie, Pieter, Elizabete and possibly a person from Cyprus.

7.9 Recommendations from the Derogations Project

John would consider how to incorporate the results of this project into the guidance.

7.10 Report from the Baseline Report Workshop

The workshop was held in Como, Italy, on 10-11 October 2016 with participants from eleven countries. The topics discussed at the workshop were: the results of the questionnaire; site definition; definition of closure of activities; monitoring; determination of relevant hazardous substances; quality check for Baseline Reporting; and Baseline Reporting for closing down a site. Responses to the questionnaire had been received from thirty institutions in sixteen countries. From the responses it was apparent that six countries have a specific guidance document for IED Baseline Reporting different from the EC guidance. Another country is in the process of preparing one. The Baseline Reports (the soil investigations and the redaction of the report) are made by private companies in all countries. A formal approval of the baseline report by the competent authority is mandatory in three countries and the validity of the baseline report is not limited in time.

For the risk assessment, most countries use fixed minimum thresholds. Only three countries follow the guidance (stages 1-3) concerning the risk of soil contamination based on hazardous substances HS quantities to decide whether a baseline report is not required. In almost all countries site inspections of the installation are carried out before the decision is made. The main concern in the stage of the site study is the wide interpretations and the variety of definitions of “site extension/limits” and “site”. It has been decided to carry out a workshop to address the lack of harmonisation regarding this definition. In most member states, data relevance is assessed on a case by case basis.

Guidance on site investigation strategy exists in almost every member state. The choice of the substances that have to be analysed varies from country to country. The way this decision is made and on what basis as well as the analytical protocols and standards applied will be discussed in greater depth at the next workshop. Most countries do not have a mandatory template for the baseline report and its approval by the authority is a part of the permit.

There is a need for a better definition of “definitive closure” as its interpretation is wide within the EU. Most countries requested a survey or an investigation upon site closure when a baseline report was not required to ensure that the site does not pose any significant risk to human health or the environment. “Significant level of pollution” is not well defined either, and needs to be better characterised. There are different possible approaches to do so: risk based, quantitative (threshold values) or other approaches. All member states agree on the implementation of monitoring to control the groundwater quality during the activity of an IED site. Nevertheless, the guidance on the IED baseline report does not cover “monitoring” in detail. It will be interesting to clarify the guidance on the monitoring work, given the possible consequences if an elevation in concentration is detected.

7.11 Update on self-monitoring

Romano said that Annelies Baert had sent out a short list of questions seeking information on the reporting of emissions monitoring results. Replies had been received from thirty organisations in twenty two member states. In only two cases was the information submitted on demand: in the others it was done automatically. Mostly the information was submitted annually though sometimes more frequently depending on the permit conditions and type of installation. In a few cases it is requested every 3 years. There was continuous monitoring for some parameters, with monitoring reports sent monthly or quarterly. Roughly half made it an obligation to use a fixed template. A similar proportion received the information in paper format as opposed to electronically. Roughly half had a summary and raw data and ten had just a summary: one had just the raw data. About half made the information available to the public passively on demand and nine made it actively available. In three cases it was not available to the public.

8. Status of the Guidance Book

8.1 Feedback from the Commission

The Commission had given some comments on the Guidance Book which Horst requested Terry and John to look at and to incorporate into the manual as appropriate. If the Groups had any comments they should get in touch with Terry and John.

The Commission wanted the guidance book to be used also as training material. This could involve a great deal of work and Horst suggested that it would be useful if the Commission's consultants could also work with us. The Commission was seeking to upgrade IMPEL's role in compliance promotion and their consultants were often used to produce guidance documents. Countries had different issues with compliance and it might be useful to look at where countries have particular problems. Horst suggested that this should be considered in the Expert Group.

8.2 Cooperation with DTRT (Permitting)

Rob Kramers explained that the project was based on IMPEL's concept of the Environmental Inspection Cycle. It consisted of step-by-step guidance to help design an optimised environmental permitting process. The ultimate goal of this project was to have permits of the required quality and a level playing field with regard to permit writing. It is a three year project. In 2016 they collected details of the procedures used within Europe and compared the procedures that are used within Europe and clarified the needs. In 2017 they will use this information to develop guidance flexible enough to accommodate the authorities while issuing permits and in 2018 they will organise training sessions and identify gaps in tools and methodologies so that new IMPEL projects can be initiated.

There were overlaps with the project on IED implementation and consequently it could be useful to combine the guidance from the two projects. Their proposal was to have a maximum of two pages for each step in the process (permitting, inspection and operator obligations) with links to factsheets to give more information. This could be available on the internet and also be used for training.

8.3 Structure of the Guidance Book

Jaako was concerned that the Guidance Book is only in English and that this created a language barrier. Horst said that translation was expensive and that the Commission were unlikely to provide much assistance on that. Jaako suggested that it should be structured in such a way that at least part of it could be readily translated, as proposed in the project on DTRT Permitting. Reporting and Derogations should be included in the Guidance Book. Antonio suggested that it might be helpful to carry out inspections under the Emissions Trading Scheme as part of the IED inspection and it would be helpful to know what should be checked.

9. Results from the breakout groups

9.1 Horizontal aspects of permitting

Chrystalla said that the group had reviewed the questionnaire and would need a further month to make it clearer. Chrystalla would contact Nancy to discuss making it into a Survey Monkey. Some answers were expected by June and it should be possible to evaluate them over the summer ready for the September meeting. The group will try to identify best practice in dealing with the horizontal issues in permitting, whether included in the permit or elsewhere. They will also look at whether Environmental Impact Assessment (EIA) should be part of the permitting process.

9.2 Joint inspections

Marinus said that the group was planning to make them more effective. An innovation was the use of video conferencing but since the technology could be unreliable it would be helpful to have telephone conferencing as a backup. The video conference needed a good agenda. There had been a discussion over whether the inspection was about tools or content: it was agreed that it was about tools since content is more complicated and needed specialists. They would draw up a list of what the hosts should prepare and the visiting inspectors would be asked to bring their procedures. They had made a first draft of Joint Inspections on basecamp which would be available to everyone together with a list of good practice. It was important to make a note of good practice seen on site (such as the CEMS, a good tool to see whether a company is behaving in accordance with the rules).   It was likely that the group could produce guidance material for training as they developed more experience.

9.3 Tools

Wulf said that there was a considerable amount of interest in the topic and the results of the discussions would be written down and finalised by the end of April. Rikke had presented the Danish database which had been constructed by an external enterprise and which met the needs of inspectors.   The Group consisted of Wulf, Iñaki, Rikke, Maria Milagros, Tomáš, Vlado and Şenay.

9.4 Waste Water Treatment

The Commission saw this as an important issue and Romano suggested that it was important to collect further information about it and to check what was happening in countries. It would be useful to look at the BREF on waste water treatment plants to see what that said. They wanted to understand the criteria on waste water to prioritise risk assessment.   At the next meeting they will have an overview of checklists used and on inspections in waste water treatment plants. It would also be interesting to know what different countries are doing with permitting, and to see how violations are assessed. In Italy, for example, it was not possible to use self-monitoring to assess violations. It would also be useful to establish what operators have to pay for what they introduce into water. In Germany this had had a big effect on the quality of waste water since the money had been used to build new purification plants. In Romania, operators payed for discharges to water and air. Antonio, Romano and Malgorzata were in this group.

9.5 Going beyond BAT

It would be important to define what is meant by going beyond BAT and what the IED says about that. For instance, Article 18 states that 'where an environmental quality standard requires stricter conditions than those achievable by the use of the best available techniques, additional measures shall be included in the permit.' Article 44 allows conditions beyond BAT (the use of national BREFs in The Netherlands is an example). Pieter and Jamie would develop a questionnaire to find examples of going beyond BAT and in what sectors and put it on Basecamp.

10. IED Project Organisation

10.1 Budget

The budget for the project was very restricted. Last year there was an overspend in IMPEL of 20,000€ and this year a conference was being organised in Oxford. There would be no additional money from the Commission though cooperation with the DTRT Permitting project should help. Horst reiterated that it would be good if people were able to travel to meetings at the cost of their own authority.

10.2 Project Organisation

For the next meeting in Ljubljana it would be necessary to identify who would like to take part in the Joint Inspection. Vlado suggested that there should be between three and five inspectors and Marinus said that it would be helpful to have an inspector from the previous Joint Inspection. Hartmut said he would be able to take pat and Marinus and Fabio would be able to help organise it.

10.3 Cooperation with DTRT Permitting

The following people would take part in the group to look at preparing joint guidance with the project DTRT Permitting: Horst, Terry, Antonio, Jaako and John.

11. Any Other business

There was none.

12. Location and date of next meeting

The next meeting would be on 21-23 June in Ljubljana (combined with DRTR Permitting) and the workshop would be in Lisbon in the week beginning 25 September (combined with DRTR permitting). The suggestion for the Ljubljana meeting was that the first day would be the Joint Inspection and the first day of the meeting of the DRTR Permitting project. The second day would be a joint meeting and the third day would be the second day of the meeting of the IED project.

13. Participants

Participation at the meeting in Milan	Country
Robert Gross	AT
Olivier Dekyvere	BE
Dubravka Pajkin Tuckar	HR
Chrystalla Stylianou	CY
Tomáš Augustin	CZ
Rikke Cochran	DK
Mette Lumbye Sørensen	DK
Silva Prihodko	EE
Jaakko Vesivalo	FI
Horst Büther	DE
Hartmut Teutsch	DE
Wulf Böckenhaupt	DE
Roberto Borghesi	IT
Romano Ruggeri	IT
Fabio Colonna	IT
Nathalie Ellul	Mt
Ruth Ciarlo	Mt
Pieter Roos	NL
Marinus Jordaan	NL
Rob Kramers	NL
Malgorzata Budzynska	PL
António Quintas	PT
Elizabete Ramos	PT
Florin Homorean	RO

Vladimir Kaiser	SI
Iñaki Bergareche Urdampileta	ES
María Jesús Mallada	ES
Şenay Aslan	TR
Jamie McGeachy	UK (SCO)
Terry Shears	IMPEL

Annex VI

Note of DTRT (Permitting) Project Team Meeting, Dublin, 9 May 2017

European Union Network for
the Implementation and Enforcement
of Environmental Law

Subject: 5th project team meeting Doing the right things for Permitting

Date: 9th May 2017

Time: 09:30 – 18:00

Location: Irish Environmental Protection Agency, Dublin, Ireland

Participants: Tony Liebregts, The Netherlands (chair and project leader)

Rob Kramers, The Netherlands

Birna Guttormsdóttir, Iceland

Katja Buda, Slovenia

Helena Kamenickova, Czech Republic

Caroline Murphy, Ireland

Caitriona Collins, Ireland

Elisabete Dias Ramos, Portugal

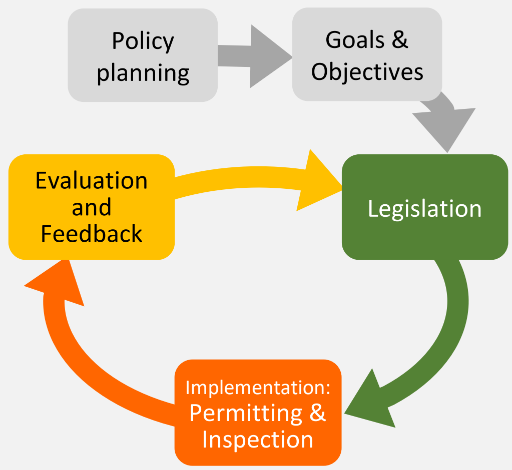
Alfredo Pini, Italy

Minutes

	Subject	Annotation
1	Welcome and opening of	Welcome by Caitriona and Tony.

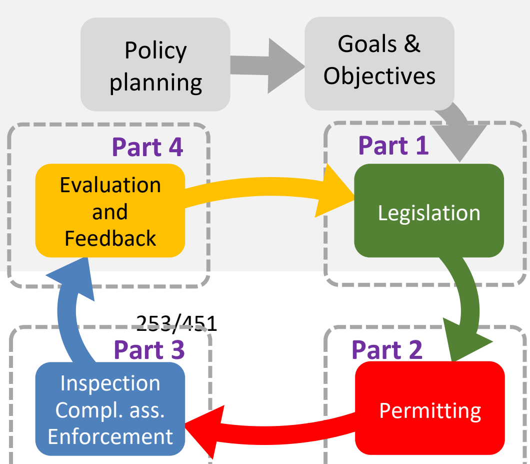
	the meeting	The following issues are added to the agenda: organisation workshop; the next project team meeting and the future of this project.
2	Tour the table/ experience / expectations	Birna: is changing position within her organisation. She will be the project manager for the implementation of WFD in Iceland. This will be her last project team meeting. Expectations: would like to go for a holistic approach while continuing with this project. Alfredo: New in the project team. Long history within IMPEL. Has been responsible for IED permitting first and following for IED inspections within the national government in Italy. Now has moved to a new position. Expectations: To have interesting discussion on this very important topic. Jamie; New in the project team. Works for the SEPA on IED Implementation issues. Expectations: is looking for new ways of working within his organisation and expects that this project will give input for this. Elisabete: Expectations: to be able to give a good contribution and to make this guidance even better. Caitriona: is also changing position, from permitting officer to mother :-). Expectations: is very interested to see where the guidance and this project is heading. Caroline; Will take over from Caitriona. Expectations: to make sure there will be a good connection between permitting and inspection. Helena: Expectations: finding good examples for this guidance. Katja: Expectations: would like to know more what happened in Milan and would like to see how can we finish the guidance. Rob: Expectations: to discuss the structure and content on this first draft but also discuss the responsibility about the whole guidance, where does this project stands for and how should we continue. Tony: Has a new job within the Inspectorate but will stay on as project leader of this project. Expectations: to develop a guidance that is integrated and combined with the IED project. To discuss how we will continue and manage this integration. Further he expects an active discussion and participation of the project team.
3	Minutes of 4th project team meeting 4	Minutes of the last project team meeting are adopted. Tony goes through the actions: the next project team meeting and workshop.
4	IED Implementation project	Rob reports back on the IED Implementation meeting that was held in Milan. The presentation of the combined guidance book was well received by this project team. Conclusions: • Project team approved to combine DTRT-P and the IED implementation guidance; • This combined guidance would consist out of 3 parts (Permitting; Inspection and; Operators obligations. • Inspection cycle should be the same as permitting cycle; • Overall structure could also be leading for new initiatives; • It should be used as a guidance and training materials; • Agreed on combined project team meeting and workshop. Rob also reported back on a meeting (Conference call) with Horst, Terry and

<table>
<tr><td></td><td></td><td>John (2 consultants of IED implementation) to discuss the structure of the combined guidance. The outcome of this discussion is the structure that is now in draft version 1.2
Part 1: Legislation
Part 2: Permitting
Part 3: Inspection
Part 4: Evaluation and feedback

Note: IED implementation is not time limited. Focus is important. What are the subjects that are good for our guidance
See annex 1 for the presentation of the report back.</td></tr>
<tr><td>5</td><td>Guidance DTRT</td><td>

The project team agreed that we use the Regulatory cycle as the basis structure (Legislation –implementation – Evaluation and feedback). To keep it simple we combine permitting and inspection in the box execution. This picture will be used in the introduction of the guidance.

The picture of the regulatory cycle will be followed by a picture in which the 4 parts of the guidance are presented: Part 1: Legislation – Part 2: Permitting – Part 3: Inspection – Part4: Evaluation and Feedback.
To keep it as clean as possible the arrows that show there is also a connection between Evaluation and Feedback and Permitting and Inspection will be left out. This connection will only be shown in part 4. Further it was agreed that only the box that is described in a certain part will be coloured, the rest will be grey.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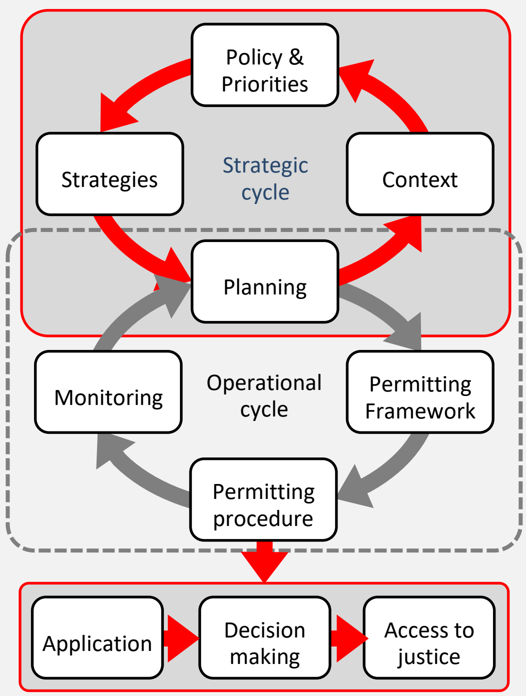
Comments on the Regulatory Cycle are:

- When possible describe the subject of evaluation and feedback also in the parts about permitting and inspection.
- The cross-references to legislation made in IED inspection report could also be helpful for permitting.

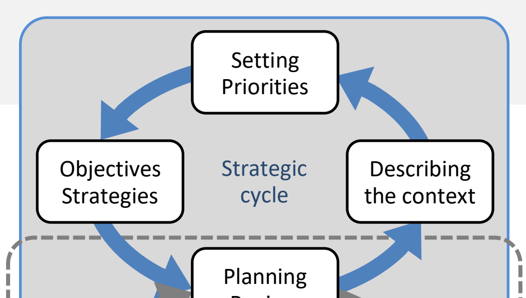
Comments on the Permitting cycle:

- Execution framework should be permitting framework. Execution should be Permitting procedure. Delete permitting procedure as text in lowest box. Policy should be is Policy and priorities. See picture below:



Comments on Inspection cycle are:

- Execution and reporting should be inspection and enforcement. Execution framework should be inspection framework. Delete text in lowest box. See picture below.



		Further comments on guidance book: • In the permitting and inspection cycle the strategic cycle should be explained first then the operation cycle; • Screening should be done for the EIA and the appropriate assessment (page 31); • BAT and setting conditions (page 30): Jamie and Alfredo will give text proposals for this part. • BAT and setting conditions (page 29): Jamie will give a text proposal on deviations; • Where the guidance mentions "some countries" replace this with the name of the country; • Relationship permitting and inspection (page 23): Conflict of interest should be replaced with blindness; • Expiring dates of permits: unlimited time is as long as the installation is not changed or until there is a new BREF + new BAT conclusions for the main activity of the installation.
6	Future	Discussion on the future of the project DTRT-Permitting. There are 3 options: <u>Option 1</u>: This project develops the framework for the guidance with the parts: Legislation; Permitting; Inspection; and Evaluation and feedback. The content should come from the IED Implementation project. They should deliver their content to the framework. DTRT-P will only be responsible for the 2 page frame work. <u>Option 2</u>: Establishing a whole new project team that will be responsible for all of the content of the guidance (framework and factsheets and other reports). <u>Option 3</u>: A mix of option 1 and 2: existing project team will be extended with expertise that we miss at the moment. DTRT-P will be responsible for framework

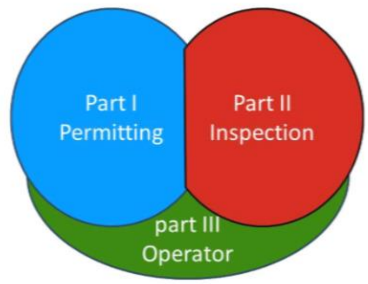
		and content. The project team agrees that the (integrated) framework should be the basis for the work and output of the industry and air cluster. Cross cutting is responsible for the whole framework and structure. There should be a project team (new or existing) that will steer this work. The coordination between the authors is the responsibility for the project leaders. Birna will prepare a discussion document Project team agreed to go for option 3. We should notify Michael about the structure and the work can find a place in the IMPEL website.
7	Next project team meeting	<u>Meeting in Ljubljana:</u> 21st of June: DTRT-P project team meeting – participants: project team DTRT-P, Horst, Terry, John and 3 additional members (in total 14 persons). 22nd of June: mixed meeting of IED implementation and DTRT-P: purpose of the meeting - to report back on the discussions on 21st and get feedback from the IED project team members. To prepare the workshop in Lisbon. Katja will check hotel for the project DTRT-P Flight booking form has to be send in asap <u>Workshop in Lisbon:</u> 27th and 28th of September. Tony will discuss with Horst who to invite for the workshop. DTRT-P would like to invite the people that participated in Halfweg <u>Last project team meeting:</u> Iceland or Italy, 24th October.
7	Actions to be taken	• Comments on the guidance send to Rob before 23 of May • Discussion paper before next Thursday (already finished and sent to Simon) • Jamie and Alfredo will give a text proposal on the subject: Boundaries of installation • Jamie will give a text proposal on the subject: deviations • Tony will notify Michael on the progress of the project • Katja will check hotel in Ljubljana • All will fill in the flight booking forms for next meeting
8	Closure of the meeting	

Annex 1

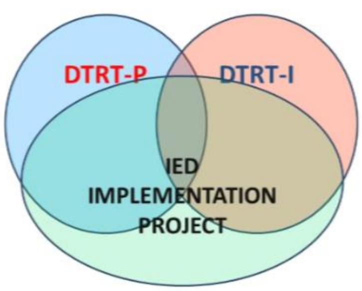
DTRT-P
Project team meeting 5

9th of May 2017
Dublin

Combined Guidance



Update IED Implementation



Part I Permitting

General
- Planning
- Framework
- Permitting procedure
- Monitoring

Strategic
- Context
- Priorities
- Strategies
- Planning

Operational
- Application
- Decision
- Access to Justice

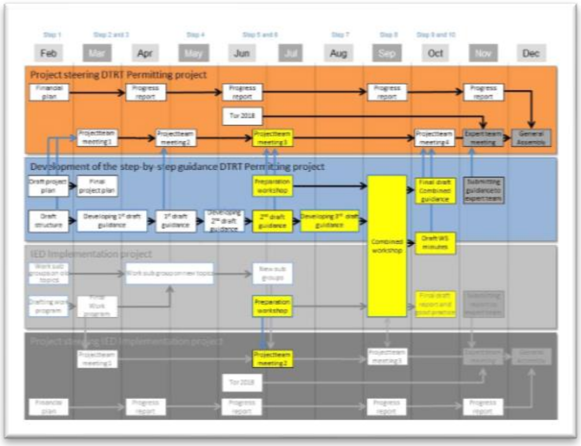
Part II Inspection

General
- Planning & review
- Exec. Framework
- Execution & reporting
- Perform. monitoring

Strategic
- Describing context
- Setting priorities
- Objectives & strategy
- Planning & review

Part III Operator

Obligations
- Baseline report
- Operator Self monitoring
- Operator reporting



Update IED Implementation

- Project team approved to combine DTRT-P and the IED implementation guidance
- Inspection cycle should be the same as permitting cycle
- Overall structure could also be leading for new initiatives
- It should be used as a guidance and training materials
- Agreed on combined project team meeting and workshop

Discussion with authors of IED guidance

- Add a part on legislation
- Delete the part on operators obligations
- Evaluation and feedback is very important but what to write in this part.
- Inspections should be: Inspection, compliance assessment and enforcement
- What about the scope: IED or broader
  It fits to more than IED

Discussion with authors of IED guidance

- Worries about the amount of extra work
- Body of the guidance: 2 pages per step so its readable on internet.
- In the 2 pages references to:
  - Fact sheets;
  - Best practices;
  - Comparison reports.
- We have to make sure we can cover all previous IMPEL work

Annex VII

Note of DTRT Permitting Meeting, Ljubljana, 21-22 June 2017

European Union Network for
the Implementation and Enforcement
of Environmental Law

Subject:	6th project team meeting Doing the right things for Permitting
Date:	21st and 22nd of June May 2017
Time:	09:30 – 18:00 and 09:00 - 12:30
Location:	Slovenian Environmental Agency,
	Vojkova 1b
	1000 Ljubljana, Slovenia
Participants:	Rob Kramers, The Netherlands (chair)
	Katja Buda, Slovenia
	Helena Kamenickova, Czech Republic
	Caroline Murphy, Ireland
	Gabriëlle Kühn, The Netherlands
	Horst Büther, Germany
	John Seager
	Terry Shears
	Simon Farrugia, Malta

Minutes 21st of June 2017

	Subject	Annotation
1	Start at 09:30 Welcome and opening of the meeting	Welcome to the project team by Rob and Katja. Absentees: Tony, Elisabethe and Alfredo couldn't not join the meeting due to other planned activities. Rob is chair of this meeting on behalf of Tony.
2	Tour the table/ experience / expectations	Simon: permit writer in Malta, but before this working as inspector. Last meeting in Milan was very fruitful to share experiences on inspections. Notices that progress has been made on the draft guidance. Expectations: sharing experiences. Gabriëlle: working at InfoMil, environmental knowledge centre in the Netherlands and project secretary of project Make it Work. Expectations: hopes to find good links between the work of Make it Work on eco-innovation and the DTRT guidance on permitting. Terry: working as a consultant in the IED implementation project. Expectations: there is a clear way forward on combining both projects. John: used to work at England Environment Agency, now working as a consultant on the IED implementation project. Expectations: good to emerge about the clarity we want in the guidance. The work on IED implementation group has brought together subgroups, e.g on monitoring. Interesting to merge the outcomes of these subgroup and also technical information. The current structure of guidance is very good. Also good to sort out what we can use and who is the main target group of the guidance. Caroline: is working on waste and permitting. Believes there is a good flow in guidance, it is easy to understand and readable. Expectations: looking on what help she can give on the development of the guidance. Helena: is the Czech representative of the environmental inspectorate. Expectations: to find some practical tools and is interested in the development of the strategy part. Katja: is working in the environmental agency of Slovenia. Expectations: looking forward on discussing what should be in the guidance and on preparing the programme of the workshop in September. Horst: working on the environmental agency in Köln and is chair of the expert team for Industry and Air. Explains that the European Commission is working on environmental compliance assurance and on the Environmental Implementation Review (EIR). In February a number of meetings took place on these subjects. Discussion is ongoing on how IMPEL can best contribute to better a implementation. IMPEL could establish a knowledge centre and a knowledge database. IMPEL could organise trainings and IRIs, wherein every Member state will have an IRI every 5 year. 2018 will be a transitional year for IMPEL. In 2019 these changes should be implemented. IMPEL has prepared a position paper on this (send to the Commission end of April). Expectations: look if the guidance will be suitable for training purposes and if it is useful for the knowledge database. Rob: is assisting Tony on the project DTRT permitting. John and Terry will be co-authors of the guidance. Expectations: to discuss the different subjects and how we can make the guidance

		suitable for training sessions. The training methodology is equally important as the content of the guidance. It's important to discuss how the guidance could be the basis for these trainings. The future of IMPEL looks good but also challenging with the new role as knowledge centre, trainings and the IRI's.
3	Approval of meeting agenda	The agenda of the 1,5 day meeting is introduced by Rob. The programme of the workshop in September in Lisbon is added to the agenda.
3	Minutes of project team meeting 5	Minutes of 5th project team meeting are approved
4	Discussion paper	Rob: During the last project meeting in Dublin we discussed how to continue with DTRT-P. The parts on inspection and legislation were added, but we are missing some of the expertise in the current project team on these subjects. The project team for 2018 will probably undergo some changes. A discussion paper was drafted and disseminated. The third year of DTRT-P (2018) will not be focussing on trainings but on further development of the guidance as we are now combining the complete guidance together with project on IED implementation.
5	Combined guidance DTRT	Introduction of new version: due to combining the complete guidance with the project team IED implementation, the guidance has a new structure. <u>Comments on the new version and level of detail of the guidance</u>: • Main driver should be compliance assurance, which requires a regulatory approach (permitting, inspection, enforcement). The work which has been done on IED inspections has the same structure as the DTRT guidance permitting and therefore can be easily combined. Main challenges persist in the permitting area. The main concerns/gaps of the Commission on this subject are: guidance on derogations, requirements on derogations (e.g costs/benefits), creating pan European standards. • Guidance will also serve as a tool to help to implement the IED • The outline (structure) is now prepare. When filling in the different subjects it will clear where the gaps are. • IED group: guidance is only one part, also exchanges good practices should be added. • It's a good idea to exchange experiences between DTRT-P and IED implementation group (permitting and inspectors) • For 2017 the project team will remain as it is, with some exchange of experience between the two projects and focus on IED legislation. For 2018 the focus will be on finishing the guidance with input of the IED implementation project. **Tony and Horst** will decide on how to go forward. <u>Comments on targets groups of the guidance</u>: • In general: It should be taken into account that EPA's in Europe are organised differently (with respect to permitting and inspections). Therefore the aim should be to define a minimum level or define good acceptable level: e.g. what would be good practice across Europe to inspire these organisations. Then it is for policy and strategic departments to decide what is the cycle and give a backbone to their strategy. The factsheet should include the statement: expression of good practices across Europe and it's up to the EPA's across

Europe to translate these in their country.
Target audience:
- management
- strategic departments
- policy makers (focus on IED)
- permit writer (focus on IED)
- inspectors
- IRI groups (as DTRT is used as basis for IRI and Commission is planning to increase the frequency of IRI in MS and guidance could be part of the IRI process).
- other interested groups: since the guidance will be set up as a webpage, it can be used as a stepping stone for searching and getting information

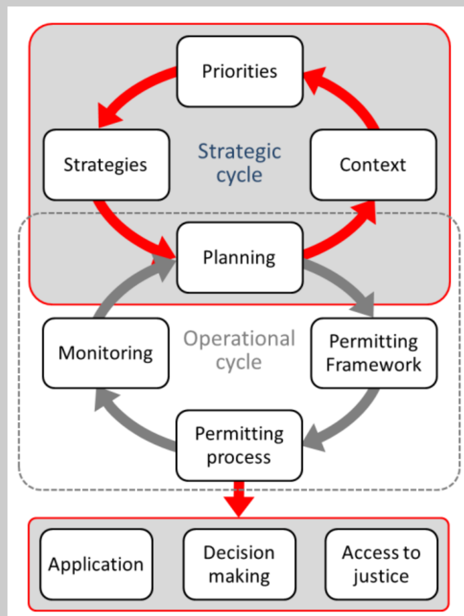
Amendments on the structure of the guidance:
Main structure:
Addition of a connection between Evaluation and Feedback and Policy planning because it also feeds into policy planning:

Add glossary/explanation of terms used in the guidance.

I. Legislation:
Amendments: connection arrow is added between Evaluation and Feedback and Policy planning.

The (most important) articles of the IED will be included this part. References will be made per article to the implementation sections in part II, III and IV.

II. Permitting:
Amendments:



- In the box policy and priorities, the term policy is deleted because it is not clear which elements of policy should be included here.
- Priorities: adding good practices on calculation of priorities (**Action**: **Caroline**)
- Permitting process: connection arrows between application – decision making – access to justice are deleted because the last box does not automatically follows after decision making.
- Permitting process: a "standard" checklist for review of permit applications and the preparing the permit itself should be added. This checklist should contain only basic legal requirements and information of best practices.
- Permitting procedure / Application: the text on confidentiality needs to be checked **(Action: Caroline)**
- Permitting procedure / Permitting: Adding a time frame on the permitting procedure as good practice under principles.

III. Inspection, Compliance assessment and Enforcement
Also here the arrows between the boxes Preparation, Execution and Reporting have been deleted so it's more in line with permitting.

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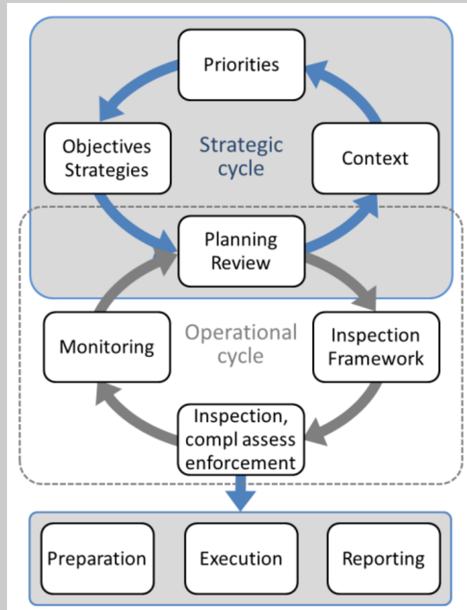
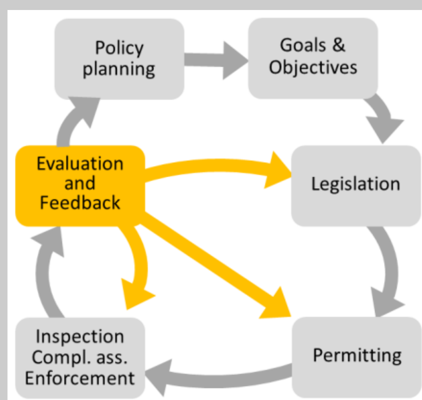
The work that has been done on IED inspections will be added where possible.



IV. Evaluation and feedback:



Division of work:
The project team DTRT is responsible for the main body of the guidance. The documents of IED should be categorised in sections and added to the guidance in the relevant parts/chapters (**Action: Terry/John**)
On language: review of English language (**Action: Terry/John**)
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<tr>
<td>6</td>
<td>Programme of the workshop in Lisbon</td>
<td>
Rob introduced a proposal for the workshop in Lisbon

- 2 days
- 40 participants
- Location: Lisbon / IGAMOAT
</td>
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</table>

- Date: 26 and 27 September 2017

Aim of workshop:
Discuss in total 8 IED implementation topics a
check how the guidance can support the practitioners in this

Layout of the workshop could look like this

Programme Combined Workshop

26 June

Morning	Welcome, logistics Tour the table and expectations	Chair Participants
	Introduction of the guidance (structure)	Presentation Rob
Afternoon	IED Implementation – subject a	4 Working groups discussion on 2 selected topics
	IED Implementation – subject b	4 Working groups discussion on 2 selected topic

27 June

Morning	IED Implementation – subject c	4 Working groups discussion on 2 selected topics
	IED Implementation – subject d	4 Working groups discussion on 2 selected topics
Afternoon	Combined Guidance in practise	Open discussion
	Actions to be taken for the guidance book	Chair

The project team agreed to present this during the joint project team meeting on 22nd of June.

6	Actions to be taken	Preparation of combined workshop in Lisbon on 27 and 28 September Comments included in the guidance by Jamie and Elisabethe to be integrated in the guidance **(Action: Jamie)** The closing meeting of the project team this year will probably be held in Italy.
7	18:00 Closure of the meeting	Rob thanks the project team and closes the meeting.

Minutes joint project team meeting 22nd June 2017

	Subject	Annotation
1	Welcome and opening of the meeting	Welcome by Horst to both project teams. Agenda was approved, a short tour the table followed.

<table>
<tr><td>2</td><td>Introduction host country on Implementation IED</td><td>Presentation on inspectorate of Slovenia by Vladimir Kaiser</td></tr>
<tr><td>3</td><td>Reporting back day 1</td><td>See presentation in annex
Combined guidance
Rob presented the results of the project meeting on 21 June. The guidance has progressed considerably, but the broadening of the scope is also a challenge for the project team.

• The factsheets which have been produced or will be produced by the working groups of the IED implementation project team.
• The guidance will be a web based tool, including references to sources.
• Existing products/work on Compliance assessment will be migrated in the new structure, including self-monitoring and reporting to the public.
• There are still some gaps on derogations, costs benefits.

Future of DTRT project
The composition of the project team will remain unchanged in 2017, but there will be some exchange between the teams on expertise: permit writers, inspectors, management and policy makers.
In 2018 we will continue with the development of the guidance. The workshop in Lisbon will give input for this development.

Division of tasks: DTRT project team is overall responsible for the guidance. There should be no overlapping, therefore it will be one document in which we will work as two project teams together.
The projects will be closely interconnected and joined project meetings will be organised.</td></tr>
<tr><td>4</td><td>Preparation Combined workshop</td><td>The combined project teams adopted the programme idea of the 2 day workshop in which we will have 16 working groups working on 8 subjects. 4 subjects will be submitted by DTRT and 4 by the IED implementation project.

The project team on IED implementation submitted the following working group subject:
1. Definitions; Making changes to permits – what is significant change
2. Joint inspections (good practices take out for guidance)
3. How to deal with other than normal operating conditions
4. Compliance assurance : other enforcement actions along fines

The project team on DTRT will submit the following project ideas:
1. Setting priorities in permitting
2. Defining your strategies in permitting
3. Permitting procedure (the common steps in the process)
4. Evaluation and Feedback in combination with Eco-Innovation</td></tr>
<tr><td>5</td><td>Closure of the meeting</td><td>Rob and Horst closes the joint part of the project team meeting DTRT-P and IED implementation.</td></tr>
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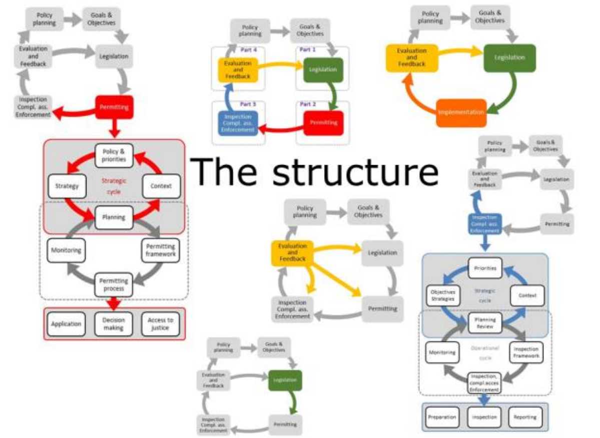
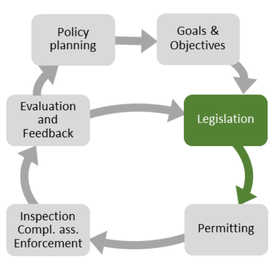
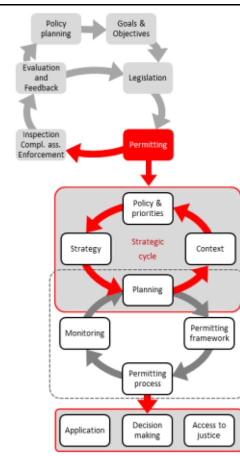
Reporting back

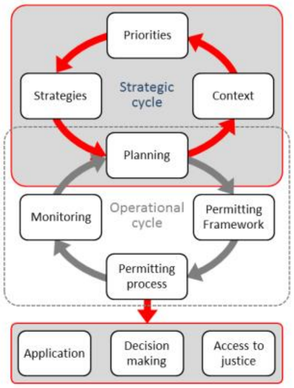
22st of June 2017
Ljubljana

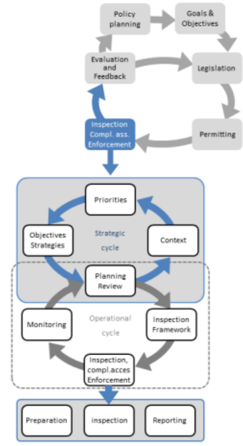
The structure

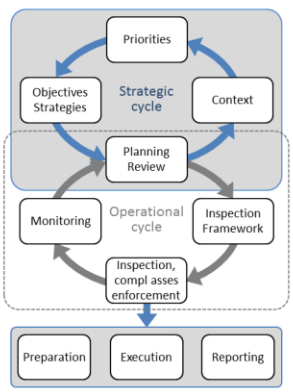


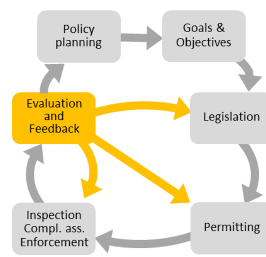






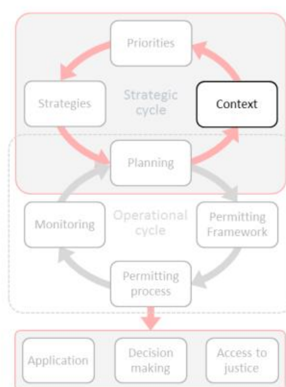






The content of the guidance

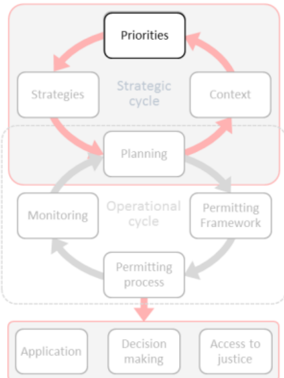
- 2 pages per step (web pages)
- References to factsheet, good practises and IMPEL reports



Context

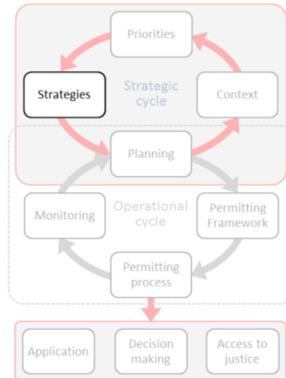
Identifying the scope
- Area
- Mission and goals
- Tasks
- Legislation
- Policies

Gathering information
- On the environment
- On installations and permit-situations
- Changes in BREFs and legislation
- Quality of permits and legislation



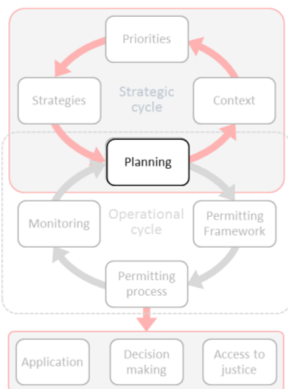
Priorities

- Environmental outcome
- Green or significant investment
- Statutory deadline / infringement risk
- Client and third party demands
- Revenue
- Policy drivers
- Age of the application
- Enforcement priority site



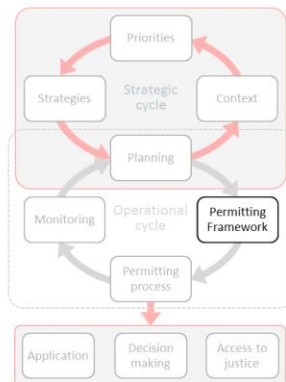
Strategies

- Objectives industrial sectors
- Application
- Applying BAT
- Setting condition
- Reviewing existing permits
- Transparency
- Cooperation (permitting and inspection)
- Communication (Internal and external)



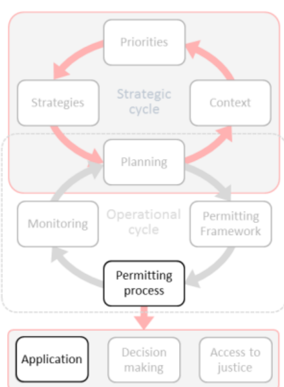
Planning

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



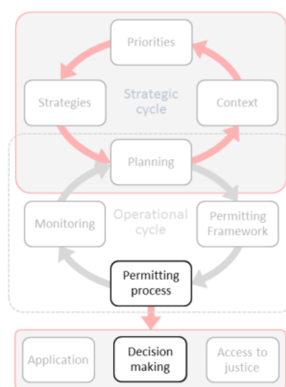
Permitting framework

- Adequate education and training
- Good guidance
- Agreements on coordination and internal and external advice
- Clear procedures
- Protocols for communication, information management and information exchange
- Clear instructions
- Checklists
- Technical literature
- IT systems
- Means of transport and communication
- Personal safety equipment



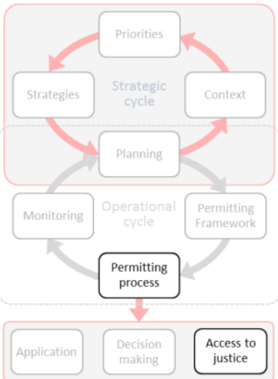
Application

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



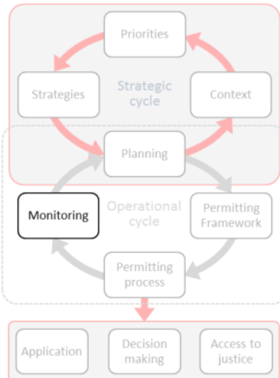
Decision making

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
- Still to be filled in

Future of DTRT for permitting

- Change the name to DTRT for P and I
- Change the team
  - Permit writers
  - Inspectors
  - Management
  - Policy makers
- 2018 will be used for further development
- Project DTRT will be responsible for the guidance, not for the factsheet and good practise

Combined workshop

- 2 days
- 40 participants
- Location: Lisbon / IGAMOAT
- Date: 27 and 28 September 2017

Aim of workshop:
Discuss in 8 topics on IED implementation and DTRT for P and I and check if and how the guidance support the practitioners in this.

Programme Combined Workshop

27 September

Morning	Welcome, logistics Tour the table and expectations	Chair Participants
	Introduction of the guidance (structure)	Presentation Rob
Afternoon	IED Implementation / DTRT for permitting and inspection : subject 1 and 2	4 Working groups discussion on 2 selected topics
	IED Implementation / DTRT for permitting and inspection : subject 3 and 4	4 Working groups discussion on 2 selected topic

28 September

Morning	IED Implementation / DTRT for permitting and inspection : subject 5 and 6	4 Working groups discussion on 2 selected topics
	IED Implementation / DTRT for permitting and inspection : subject 7 and 8	4 Working groups discussion on 2 selected topics
Afternoon	Combined Guidance in practise	Open discussion or Use an exercise to check the usability of the guidance
	Actions to be taken for the guidance book	Chair

Annex VIII

Note of IED Project Team Meeting, Ljubljana, 22-23 June 2017

Note of IED Project Team Meeting, Ljubljana, 22-23 June 2017

IMPEL Project on supporting Implementation of the Industrial Emissions Directive

Project meeting held at the Slovenian Environmental Agency, Vojkova 1b, 1000 Ljubljana, Slovenia on 22 and 23 June 2017

Summary of action points from the meeting

1.	Final draft of the report on Industrial Waste Water to be ready for the meeting in Lisbon (Romano)
2.	Marinus to use basecamp to test reactions on the preferred level of expertise of inspectors to take part in joint inspections
3.	Questionnaire on horizontal aspects of permitting will be loaded to basecamp by Chrystalla with replies requested by the end of July. Responses would be evaluated and a short report prepared for the meeting in Lisbon
4.	Simon would act as the link person between the group on horizontal aspects of permitting and the project on DTRT Permitting
5.	Horst would prepare a ToR on IED for 2018. He would discuss it with Rob from the DTRT Permitting project
6.	Topic leaders would produce short introductory papers for their topics to be discussed in Lisbon

Make it work – innovation vs permit restrictions (presentation by Gabriëlle Kühn)

Gabriëlle said that the motto of the ‘Make it Work’ initiative (MiW) is ‘better rules for a better environment’ and that the aim is to help improve EU environmental legislation and its implementation. It is a Member State initiative with a cross-sectoral approach bringing together policy makers and practitioners with cooperation from the Commission and IMPEL. The lead countries are Sweden, the Netherlands and UK (Scotland). It has produced recommendations for smart environmental inspections and environmental reporting and is now looking at how to better facilitate eco-innovations. Eco-Innovation is any new product, process, organisational change or marketing solution that aims to reduce the use of natural resources and to decrease the release of harmful substances across the whole life-cycle and it is crucial for establishing a low carbon, circular economy. They may not fit within current environmental legislation and could be difficult to establish in terms of permitting and enforcement which may result in legal and governance challenges.

One example involved a company which was active in several EU countries. The process involved the extraction and recycling of fine fractions of non-ferrous metals (mainly Al, Zn, Cu) from bottom ash from (household) waste incineration: the facility recovers the valuable metals which are then marketed as commodities. The eco-innovation lies in the reduction of waste and the re-use of non-ferrous metals together with less use of energy and lower emissions (CO_2 and other). The challenges are the differing interpretations by MS of the notification needed for non-ferrous metal concentrate under the Waste Shipment Regulation and the permit requirements valid for the bottom ash washing process under IED.

Another case involved Pharmafilter, a company with ambitions to be active in different MS. The process is that biodegradable, disposable products are used in hospitals instead of products that need to be sterilised after each use, such as bedpans. Used products are shredded in a closed system and flushed through the hospital sewer system. At the installation, solid waste is converted into biogas and waste water is purified. The innovation is the renewable energy (biogas) and the fact that waste water is purified and medicinal residues are removed and can be reused. There is a reduction in contamination risks from bacteria. The challenges are whether this is an IED installation (involving waste processing for (hazardous) waste) and whether the Urban Waste Water Treatment Directive applies: a hospital is not considered an agglomeration, although the composition of waste water is equal to the definition of urban waste water. Because of a lack of experience of eco-innovations at competent authorities, the company encountered a lengthy permitting process.

A third case concerned whisky distilleries in Scotland. These distilleries are using by-products which arise from the brewing and distilling process, pot ale (1st distillation) and spent lees (2nd distillation) as organic material for different purposes. The by-products (mainly draff) are converted into renewable energy (anaerobic digestion creating bio-gas), thus decreasing fuel demand. There is feed for the salmon industry (pot ale replaces soy and fishmeal) and cattle and the development of a product used for soil clean–up deriving from by-product. There is no definition of 'distillery wastes' in the Scottish Waste Management Licensing Regulations and this was interpreted as waste from the manufacture of alcoholic drinks by a distillation process.

The final case examined was Opsis, an air quality monitoring system that detects diffuse emissions at chemical installations in order to reduce these. It is a flexible system: depending on the application, and criteria such as path length, monitoring times and the range of gases monitored can be chosen. The eco-innovation is the resulting clean air. The challenges are that the Key Environmental Issues that are currently proposed for chemical BREF process (emissions to air) exclude diffuse emissions. This would also mean that the Emissions Trading scheme that could help solve these issues will not be part of the picture and therefore there is no opportunity to use Emissions Trading to quantify the extent of environmental issues and gain information for the reduction of diffuse chemical emissions.

The way forward will be to collect further details of eco-innovation cases and to analyse them and to establish a shared understanding of the main challenges related to the application of the IED provisions and managing the strategic and operational IED permitting procedure. There will be opportunities to share information, experiences and solutions between MiW and IMPEL and to organise joint discussions. The MiW findings can also feed into the IMPEL-IED Guidance project.

There were similar issues as in the horizontal aspects of permitting. This was potentially a difficult area and one in which it would be helpful to have feedback from the permit writers to policy makers.

Going beyond BAT

A questionnaire had been circulated seeking examples of going beyond BAT and seven responses had been received. Pieter led an interactive questionnaire exercise at the meeting in Ljubljana to gain more information about practice in different countries concerning going beyond BAT. The IED includes different articles related to going beyond BAT. These articles include:

- Strict implementation of BAT Conclusions e.g. lower / stricter end of BAT AELs or permit conditions that require more techniques (articles 14(3) and 15(3) IED)
- Other techniques not described in BAT conclusions (article 14(5))
- Stricter than BAT conclusions (article 14(4))
- Emerging techniques (articles 15(5) and 27)
- Environmental quality standards (article 18)

The drivers include Environmental Quality Standards (local air quality, dust (PM10) and NOx), River Basin Management Plans, strict implementation of BAT conclusions, promoting emerging techniques, health concerns, national emissions ceilings, climate policies and one planet prosperity. If a company sees economic benefits in going beyond BAT then it will be more inclined to do so. The mechanisms include permits, clear regulations and permitting procedures, regulations for better than BAT, programmes to promote better environmental performance, strategies for improving air/water quality and voluntary agreements.

The rules and procedures consist of the various pieces of national legislation implementing IED together with national interpretational guidance. The rules under which stricter conditions can be set are prescribed in regulations or general binding rules and national and regional BAT conclusions which must be taken into consideration.

Gaps and obstacles to going beyond BAT include a lack of knowledge that hinders innovation, additional costs, perceived unavailability of techniques/technology, a legislative framework preventing innovation and the unknown. The sectors where there are examples of going beyond BAT include Energy (NOx), Metals (Dust – PM10), Poultry and Pigs (Ammonia and Dust), Chemicals and Glass.

Examples of sustainable growth agreements were Superglass commitments, reduce water use and effluent, enhance innovation, reduce supply chain impacts, reduce greenhouse gas emissions, develop community engagement and improve environmental and economic outcomes. The primary drivers are the environmental quality standards and River Basin Management Plans. Primary delivery is through permits and permitting procedures, with some use of voluntary agreements.

In the Guidance there will be an explanation of what is meant by going beyond BAT together with details of the relevant articles in the IED. The Guidance will be illustrated from cases collected by means of the questionnaire. There could be links to planning and prioritisation. The group at present consisted of Jamie and Pieter and more members would be welcome.

Industrial waste water

Members of this group were Malgorzata, Romano and Roberto. The Commission saw this as an important topic and it was agreed at the meeting in Milan that it would be useful to collect further information about it. The group would look at the BREF on waste water treatment plants and seek an overview of checklists used on inspections in waste water treatment plants. It would also be interesting to know what different countries are doing with permitting, and to see how violations are assessed. Seven regulating authorities made use of a checklist to perform an inspection at an industrial waste water treatment plant but eight did not. In nine authorities, where a breach of the limit value is declared within the Self-monitoring report (provided by the operator to the competent authority), this data could be used to give a penalty/fee etc, though in five authorities it could not. Usually a non-routine inspection is carried out where a breach of limits is detected in the operator report.

The report being drafted by the group would contain a chapter on the regulatory framework, a chapter on linked IMPEL projects and a chapter on Best Available techniques. This latter chapter would include information on the BREF: Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector, Horizontal BREFs, and a general analysis of waste water technologies used in industrial process. Chapter 4 would look at inspections in waste water treatment plants and would look at what should be done before and during the inspection. There would be sections on sampling, procedures and the relevant criteria to be considered for risk assessment. The final chapter would be the survey results and in the annex there would be a checklist on wastewater treatment plant inspection.

The final draft of the report would be ready for the meeting in Lisbon.

Report back from the joint inspection

The joint inspection took place on 21 June at the Aluminium foundry at IMPOL LTT d.o.o., Partizanska ulica 38, 2310 Slovenska Bistrica, Slovenia. Those taking part were Dubravka (Croatia), Fabio (Italy), Ruth (Malta), María Jesús (Spain), Darja (Slovenia) and Vlado (Slovenia). The installation is classified into a 2.5. (b) IED group according to Annex I of the IED. An environmental permit is issued for the operation of the installation with processes of melting of aluminum, including alloys and products suitable for reprocessing with a melting capacity of 1449 tonnes per day. The installation is part of a bigger industrial complex.

On 20 June the inspection team had a preparatory meeting. Documents to be used during the inspection included an environmental permit and monitoring reports (air and noise). During the inspection the team focused mostly on air emissions and noise pollution. There was an introduction by the operator which included a video presentation and information on recent upgrades. These included the new multi chamber furnace, measures taken to reduce noise and measures taken to reduce air emissions. The raw materials used are pure aluminium and clean scrap aluminium which results in lower air emissions. On air emissions, all furnaces in the cast house were checked to see whether the emissions are enclosed and captured through the filtration system. The filtration system works by integrating a combination of cyclones, injection of active charcoal and lime into the flow of gases. The air flow is than cleaned on bag filters. The stack where the probes for monitoring are located was also observed and officers checked monitoring reports of air emissions.

For noise, the operator showed the measures to reduce noise pollution and monitoring reports for noise were also checked by inspection team. The problems which had arisen in the past with noise included handling of raw material in an open storage facility, a cooling tower and a ventilator of an air cleaner. The limit value for a night period is 48db whereas monitoring had shown it to be 51 - 54db. Corrective measures were put in place which succeeded in reducing noise by 6-10db thus bringing noise below the limit value of 48db.

The main findings were that all emissions from furnaces were well collected and passed through the filtration system. All air emission results from monitoring reports were found to be within emission limit values and all noise pollution results from noise monitoring reports were also found to be within emission limit values. Officers noted general good housekeeping and clean cast house overall.

Some lessons were learnt as a result of the inspection. A pre-visit meeting with the operator allows the operator to describe what measures have been installed and any future plans that are envisaged for the company to continue to improve the company's profile and reduce the impact on environment. There were examples of best practices and new technology (covered storage of clean aluminum scrap, low dust inside the cast house etc). The general good level of housekeeping was in itself reassuring. An updated environmental permit is issued prior to the purchase of new equipment to make sure that all equipment purchased is authorised by the competent authority and according to environmental permit conditions.

It was good to focus the inspection on one or two items only rather than inspecting all items in the permit since this allowed for a shorter and more focused visit for such a large industry. It was also good practice that the inspection minutes were written on site in front of the operator and focused on the main findings of the inspection. The operator had started a new production company in Croatia. It was good that the inspection was held at the sister company in Slovenia which allowed the representative from Croatia to compare environmental permits and the operations of this company. Companies benchmark each other very quickly, more quickly than inspection officers. Cooperation between authorities is very slow and does not allow to quick response by the competent authority. The fact that the report is written on site allows for less bureaucracy. In some countries officers do not write a report on site during the inspection, but after the inspection. This will allow officers to cross check inspection points with photos taken to assure that all observations made are listed and correct. Also officers double check with permit conditions and improvement programme check list. The report is then sent to the operator including any actions with deadlines. The operator then replies back with his answers to the report.

Working groups and reporting back

Joint Inspections

The organisation and preparation for the joint inspection were both splendid. There had been a proposal for a video conference beforehand but because of technical difficulties a conference call by phone was done instead which had worked well. The guidance on organising joint inspections was now 80% completed. One possibility for the future would be to identify a specific sector to inspect though this would then require specialists from that particular field to take part in the inspection. Alternatively, rather than just current specialists, there could be inspectors who had had experience of that particular field at some point in the past. Marinus suggested that he would use Basecamp to test reactions on this.

There was already a lot of experience from Joint Inspections, particularly about the procedures used for carrying out inspections in other and the technical approach for looking at particularly categories of industrial plants. It was not necessary to go on site to look at procedures and the focus should be more on the technical part with looking at specific types of industry.

Industrial Waste Water

The group had worked through the draft of the document and while the structure was broadly the same they had made some adjustments to the document. It will contain a general overview of the BAT conclusions on Waste Water Treatment. It will also contain an overview of the main problems that can be found in a waste water treatment plant. It will include a chapter on inspections in terms of what has to be done before during an inspection such as the information to be collected. They will provide a checklist to be used during an inspection (which could also be used for a joint inspection). First there would be a general checklist for water treatment and there could then be more specific ones for different categories of industries.

There was a question about emission limit values which Romano thought could be covered by the answers to the survey.

Going beyond BAT

There was nothing further to report on this.

Tools

Rikke presented the report on behalf of Wulf. A questionnaire had been circulated seeking information on the IED requirements for which Tools could be appropriate and there had been many responses. It was apparent that existing tools varied considerably in usefulness with some being very slow and some being very good. It was unlikely that tools could be obtained that could fulfil every requirement that might be placed on them. Tools needed to be up-to-date, user friendly and able to meet all requirements. Something had already been prepared to put into the Guidance. Manuel, Maria Jesύs and Vlado would also take part in this group.

Horizontal aspects of permitting

Horizontal aspects are those obligations of the operator that apply to all installations. The group had prepared a questionnaire on horizontal aspects of permitting. This would be used to collect information on how horizontal aspects of permitting was dealt with in different countries, to identify best practices and to develop common practices and general rules on horizontal aspects to be used in IED permits. Horizontal aspects included Environmental inspections, Contact person, Process modification/extension, Consumption of raw materials, water and energy, Maintenance of equipment, Noise and odour, Staff competency and training, Prevention and management of accidents, Environmental Management System (EMS), Energy Efficiency, Site closure, Reports and Communication. Pieter suggested that storage could be added to that list. There would be a question on how these aspects were regulated whether through Permit, General Binding Rules, Legislation or in some other way and what was actually required by the above regulatory tool such as a plan, a report, an action, time-period, record keeping, etc. What is the operator's obligation regarding the horizontal aspects?

Future plans were to send out the questionnaire via basecamp and to receive responses by the end of July. Responses would be evaluated within the working group and a short report would be drafted and presented in the next meeting for comment. Since the project related to permitting it would be important to maintain a close link with DTRT Permitting. Simon would act as the link person since he was participating in both projects.

Risk assessment criteria

Horst gave a brief presentation of the paper on risk assessment that he had uploaded to Basecamp on 25 May. Article 23.4 of the IED (Environmental inspections) requires the competent authority to draw up programmes for routine environmental inspections, including the **frequency of site visits for different types of installations**. The period between two site visits is to be based on a systematic appraisal of the environmental risks of the installations concerned, not exceeding 1 year for installations posing the highest risks and 3 years for installations posing the lowest risks. Annex 1 of the Directive lists categories of activities related to different types of installations.

The IMPEL project "easyTools" identified a way of risk classification for different types of installations. They were looking for a common agreement on the classification of high risk installations under the European environmental law. As a result, they agreed to use the Environmental Impact Assessment Directive (EIA) and the Seveso Directive together with the IED to classify the installations. The EIA Directive lists all projects that shall be made subject to an environmental impact assessment. The requirements of the Seveso Directive are obligatory for all establishments handling dangerous substances above the qualifying quantities listed in Annex 1 of the Directive.

As a result, the types of IED installations can be classified in the following way:

Low risk installations: **no** EIA necessary **and no** Seveso requirements

Medium risk installations: EIA necessary **or** Seveso requirements

High risk installations: EIA necessary **and** Seveso requirements

This is a good starting point for drawing up programmes for routine environmental inspections, including the frequency of site visits for different types of installations. But it is not all since the Directive does not only take the type of installation into account but also contains prescriptions for the risk appraisal of individual installation. The systematic appraisal of the environmental risks is to be based on at least the following criteria:

(a) the potential and actual impacts of the installations concerned on human health and the environment taking into account the levels and types of emissions, the sensitivity of the local environment and the risk of accidents;

(b) the record of compliance with permit conditions;

(c) the participation of the operator in the Union eco-management and audit scheme (EMAS), pursuant to Regulation (EC) No 1221/2009(1)

First it is necessary to define the environmental risk: risk is a function of the severity of the consequence (the effect) and the probability this consequence will happen: Risk = f (effect, probability). To adapt this to the requirements of the IED the impact criteria under a) can be used as consequences and the operator performance criteria under b) and c) can be used as probabilities. The higher the impact the bigger the consequence and the better the operator the lower the probability of an adverse effect on the environment and the human health.

A scoring system for the impact criteria under a) is necessary. The scoring system shall classify the impact of a criterion into low, medium and high. As an example the impact of waste water emissions is low when there are only standard substances in the effluent, it is medium when in addition nutrients are also discharged, and it is high when in addition also dangerous substances are discharged. Such a scoring system would need to be developed for all impact criteria. In doing this it should be borne in mind that not all installations will end up in only one category of a given impact criteria. After the scoring system for all impact criteria is developed all installations can be scored for all criteria resulting in an impact profile of the installation.

As mentioned above the risk of the installation shall be defined by the impact (profile) and the operator performance. For the operator performance there are two criteria mentioned in the IED: the record of compliance and EMAS. Here again a classification is necessary: good – medium – bad operator performance. For compliance the following can be used:

good: no relevant non-compliance;

medium: only one case of relevant non-compliance;

bad: more than one case of relevant non-compliance or one case of important non-compliance;

and for EMAS:

good: participation of the operator in EMAS;

medium: no EMAS but application of an accepted EMS;

bad: no EMS.

Now the operator performance has to be combined with the impact profile of the installation to result in the risk profile. The best way to do this is to shift the scorings of the impact profile to the lower end in the case of good operator performance and to the higher end in the case of bad operator performance. In the end the installations with the biggest number high scores in the risk profile belong to the category of installations posing the highest risk and the installations with no high scores and the biggest number of low risk scores in the risk profile to the category of installations posing the lowest risk. Coming from this approach IMPEL has developed an internet application for the risk assessment of inspection objects (installations) and for drawing up programs for routine environmental inspections, including the frequency of site visits:

https://www.fms.nrw.de/lip/authenticate.do

Examples for systematic appraisal of the environmental risks of the installations concerned

For three different kinds of installations with low, medium and high risk an example scoring for the impact criteria was performed giving the impact profile. The resulting risk profile depends on the operator performance: good, medium or bad. The risk category depends on the number of high or medium risk criteria in the risk profile and is <u>not</u> the result of an average or medium value of the scoring.

Impact Profile								Operator Performance		Risk Profile								Risk Category
KI	EA	EW	SP	WP	SE	RA				KI	EA	EW	SP	WP	SE	RA		

KI: Kind of Installation; EA: Emissions to Air; EW: Emissions to Water; SP: Soil Protection; WP: Waste Processing; SE: Sensitivity of the Environment; RA: Risk of Accidents; Green: low or good; Yellow: medium; Red: high or bad

Remaining work programme 2017 and planning of 2018

Work will continue on the Guidance Book in conjunction with DTRT Permitting (which will provide the lead editorial role for the Guidance). This would be a combined document which would require a major editing job in the main body of the text and the supporting material. The first draft of the revised document should be ready by the end of August. It will be as short as possible with the actual Guidance contained in no more than two pages. All other information will be contained in factsheets that will be linked to the guidance.

Horst would prepare a ToR for the project in 2018. It would include the guidance to be developed jointly with DRTR Permitting: he would discuss that with Rob and draft the ToR accordingly. Joint Inspections would continue as this year: Marinus would write something on thematic inspections.

IMPEL had the necessary expertise, knowledge and experience to provide training materials for inspectors – both new inspectors and existing ones. The training could possibly lead to a diploma which would cover not just technical knowledge but also attitude and behaviour. This group had many very qualified and experienced inspectors: it would be possible to begin with IED and then add others. This would fit well with proposals for IMPEL to do more work on training. The Commission had made it clear that it would like more joint inspections to be carried out and it would be useful to try to obtain money from them for that, possibly under LIFE+. It would be necessary to have support from MS and from authorities to prepare an application for funding under LIFE+.

One possibility would be to have an IMPEL Inspection Academy as another expert group. This had in fact already been discussed with the Commission.

Planning of the Industry and Air expert team meeting

For the expert team meeting in Lisbon, there would be a ToR for Oil and Gas in 2018 and also a proposal from Francesco (ISPRA) concerning a UNEP Program that Horst would put onto Basecamp. Lorna Dempsey from the Environment Agency for England had been invited. Lorna was the leader of the Prosecutors' Network's group on industry and it would be interesting to hear what they are doing.

There would be eight topics for discussion at the workshop, four from Industry and Air and four from DTRT Permitting. The topics from Industry and Air would be Joint Inspections (Marinus), Other than normal operating conditions (Jamie), Other methods of Compliance Assurance (Ruth) and Definitions (Pieter). Each of the leaders for the topics would produce a short introductory paper of one or two pages for the workshop to describe what it would cover.

There would be three different joint inspections in Portugal

1. An intensive poultry or pig rearing unit (cat. 6.6 b) (Chrystalla and Jamie)
2. An animal feed production site (cat. 6.4 b); and
3. A chemical factory (cat. 4.1 h) (Ruth)

12. Risk assessment

Participation at the meeting in Ljubljana

Name	**Country**
Martine Blondeel	BE
Dubravka Pajkin Tuckar	HR
Chrystalla Stylianou	CY
Helena Kamenickova	CZ
Rikke Cochran	DK
Jaakko Vesivalo	FI
Horst Büther	DE
Caroline Murphy	IE
Roberto Borghesi	IT
Romano Ruggeri	IT
Fabio Colonna	IT
Simon Farrugia	MT
Ruth Ciarlo	MT
Massimo Fanara	MT
Pieter Roos	NL
Marinus Jordaan	NL
Rob Kramers	NL
Gabriëlle Kühn	NL
António Quintas	PT
Katja Buda	SI
Vladimir Kaiser	SI
Cyril Burda	SK
Manuel Salgado Blanco	ES
María Jesús Mallada Viana	ES
Jamie McGeachy	UK (SCO)
John Seager	IMPEL
Terry Shears	IMPEL

Annex IX

Note of Joint IED/DRTR PERMITTING Workshop, Lisbon, 27-28 September 2017

IMPEL Projects on supporting Implementation of the Industrial Emissions Directive and 'Doing the Right Things'(Permitting)

Joint Workshop held at IGAMAOT, Rua de O Século, 1200-433, Lisboa, Portugal on 27 and 28 September 2017

Summary of action points from the meeting

1.	Rapporteurs of the working groups to provide more information about the findings of their groups on Basecamp
2.	Jamie, Pieter and Jaako to turn their findings on going beyond BAT into a factsheet
3.	Horst would include the report on Industrial Waste Water as an Annex to the project report for IMPEL
4.	Terry/John would prepare a brief article for the IMPEL newsletter on what had been achieved during the year

1. Welcome and opening of the meeting

The Inspector General of IGAMAOT, Mr Nuno Banza, welcomed those present to the meeting and to Lisbon. IGAMAOT considered IMPEL to be an important priority and were very pleased that the meeting was taking place in Lisbon. It was important to learn from experience in other countries and to hear how they were tackling environmental challenges. It was therefore a pleasure to see how many different environmental authorities from all parts of Europe were present at the meeting. He added that Portugal's experience with IMPEL had been very positive and they had set up an internal environmental network within Portugal.

He concluded by expressing the hope that the discussions in the workshop would be fruitful and productive and that the work of the projects would be taken forward in a very constructive way.

Toni thanked Mr Banza for his kind words and thanked IGAMAOT for hosting the workshop. The organisation had been carried out very well by Portuguese colleagues. He welcomed all those present to the combined workshop which would provide an opportunity to discuss the provisional results of both projects – DTRT Permitting and IED implementation. It had been agreed that the Guidance Book would be merged and that the two projects would be integrated as far as possible. The Guidance contained many examples of good practice together with fact sheets giving further information. This combined workshop would provide a further opportunity to develop the Guidance and to include the contributions from the workshop.

Horst added that he was very happy to be in Lisbon and also congratulated the Portuguese hosts on the excellent organisation, not least for the three Joint Inspections that had taken place the day before (see Item 6 below). He added that there were 44 participants at the workshop. Horst mentioned the work being done by the Commission on Compliance Assurance and said that the outputs of these projects would help with that, not least in providing the basis for future training. The workshop would also provide an opportunity to hear about progress being made with Waste Water treatment, Going beyond BAT and Tools.

2. IED Inspections in Portugal

Roberto and António gave a presentation on IED Inspections in Portugal with the sub-heading What we do, How we do it, Where we are going to?

In Portugal there are 166 Seveso establishments and 865 establishments falling under IED: there are 28 inspectors. In 2016 there were some 700 inspections in total of which roughly 350 were IED inspections. This compares with a total of some 950 inspections in 2015 (of which 350 IED) and 600 inspections in 2014 (of which 380 IED). The inspection programme is based on the annual activity plan of IGAMAOT taking into account the following main aspects: results from risk analysis from IRAM; inspection frequency from Seveso Directive and IED Directive; complaints received; and specific requests or governmental requests. The supporting tools for inspections are the Guidance Book for environmental inspections (GAIA); and the general check list with the documents to check out during inspections. Other tools include documents produced by the Portuguese Competent Authority, national legislation and other standards or regulations and previous inspection reports.

The inspections cycle begins with a description of the context followed by a definition of priorities and a definition of goals and strategies with planning and revision. Next comes the preparation of the inspection and the execution and reporting of the inspection: there is then monitoring and follow up. The actual phases of the inspection are: preparation; in situ inspection; report; and follow up. There are three main types of inspections. **Extraordinary inspections** are directed to specific subjects and are in response to an environmental complaint, a governmental request, an incident/accident, or verification of an administrative restriction or inquiries determined by the prosecutor. The main goal of **Integrated inspections** is to verify the compliance of environmental legislation applied to the object of inspection. **Follow Up inspections** are aimed at verifying a specific environmental compartment. The types of reports are: Landfill; Seveso; Environmental; Chemical products; Trans frontier shipment of waste (TFS); Risk analysis reports; and FDS verification.

The environmental report is made in an integrated database designated by SGI and covers these issues: 1. Description of the activity; 2. Water consumption; 3. Water discharge; 4. Air; 5. Waste; 6. Noise; 7. Environmental performance; 8. Environmental impact assessment; 9. Other environmental Issues; 10. Other measures and observations.

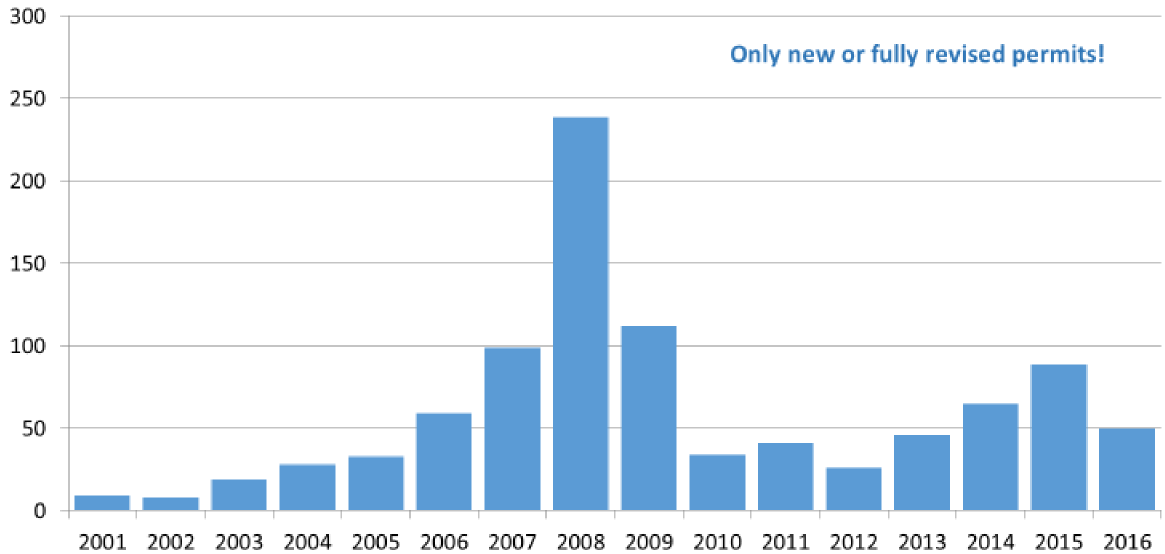
3. Environmental Permitting in Portugal

Teresa Torcato and Elisabete Dias Ramos from the Portuguese Environment Agency gave a presentation on Environmental Permitting in Portugal. The Portuguese Environment Agency (APA) is a modern public organisation created in 2012 from a merging process involving nine different institutes. APA is the national public institution whose mission is to develop and monitor the management of environment and sustainable development policies. It works in close cooperation with other public, private and non-governmental organisations, to ensure a high level of protection and enhancement of environmental systems. The main areas of activity are air, water, environmental assessment, waste, climate, chemicals, noise, public participation, environmental risks, coastal defence, environmental permitting and sustainable development. There are five strategic goals:

- Increase the level of protection, restoration and upgrading of ecosystems
- Increase the level of protection of people and property in the face of risk situations
- Improve knowledge and information on environmental matters
- Strengthen public participation and ensure the involvement of institutions
- Guarantee excellent performance of assigned tasks

APA has about 700 employees of whom 64% have academic degrees and 61% are women. Its headquarters are near Lisbon and there are five regional offices – North, Centre, Tejo River Basin, Alentejo and Algarve. Its infrastructures include Water Resources Monitoring Network, Environmental Documentation Centre, Laboratorial Network, Air Radioactivity Monitoring and Warning Network and Air Quality Network. There was a peak of nearly 250 permits issued in 2008 which was the deadline for obtaining a permit for activities covered by the IPPC Directive.

NUMBER OF ISSUED ENVIRONMENTAL PERMITS



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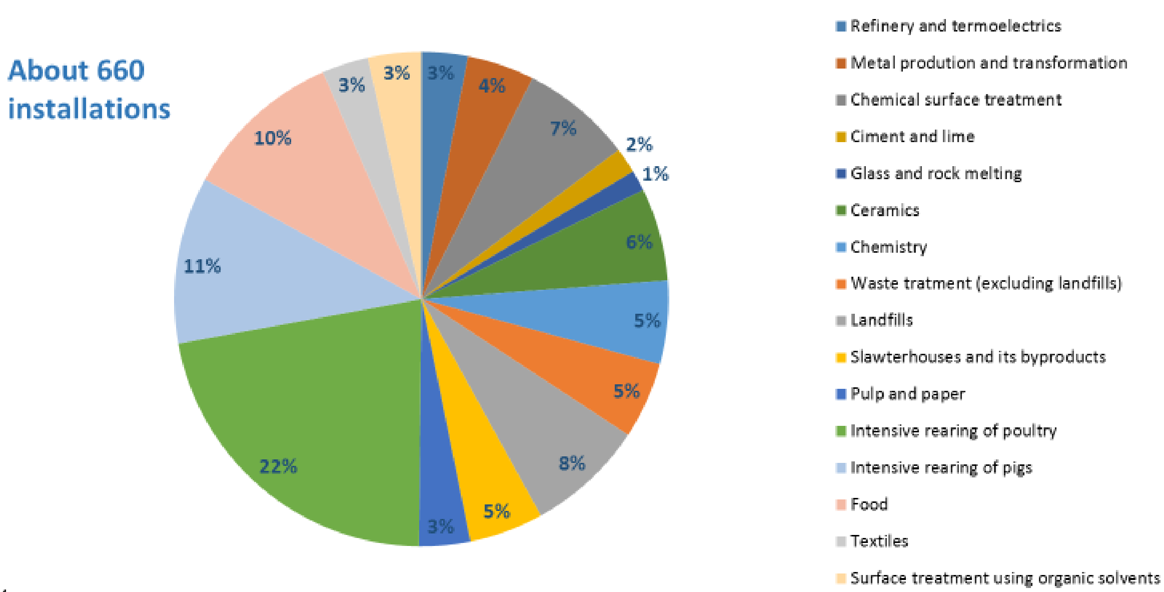
IED INSTALLATIONS BY ACTIVITY (2015)



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The content of the Environmental Permit includes the Identification of the installation, Emission Limit Values (based on BAT Conclusions), Monitoring, Reporting and Expiration Date. Under the permitting procedure, documentation is available online and the public can participate and comment online: relevant comments are taken into account in the final permit. For public access to the permit, permits are available online with a brief summary of the permitting process, derogations and participation of the public.

For single operator permitting, under the old scenario the position was that there were several autonomous environmental regulations, different procedures, different electronic platforms, duplication of concepts and documents, several fees and many hard copies of the application. Under the new approach there are several environmental regulations, integrated procedures, harmonisation of concepts, single electronic platform, single electronic application, single fee and single permit. There are guidelines for the submission of the permit applications, namely necessary documents and the contents they must include in order to supply all the information to the different applicable regulation, single application and one electronic platform. There is a single decision containing all the following information: all permit decisions from different entities, no duplication of requirements/permit conditions and available, simultaneously, to all competent authorities.

Single Environmental Permitting is available to all types of projects that are under the compliance of environmental regulation. It is integrated in several permit systems of the economic activities, namely energy, food and industrial production. It is aimed at improving the quality of the procedure through harmonised, integrated and articulated systems. It eliminates duplications and paper and provides a transparent and efficient procedure. For the user interface there is a single electronic platform for all environmental systems (SILiAmb) which is interoperable with the electronic platform of the general permitting systems. There is a framework simulator for the applicable environmental systems and for the automatic calculation of the fee. For a single application, on a block basis, there is common information to all relevant environmental systems. There is an additional block of specific information for each environmental system, if justified.

A Single Environmental Permit (SEP) integrates all permits and acts of prior control issued on the environmental domain and establishes the conditions for construction, operation, monitoring and site closure. It holds the environmental record of the installation and makes harmonised information available to all stakeholders. The concession of an environmental permit will establish a “merge" of the several decisions issued for the different environmental systems. The SEP includes all permitting conditions that the installation has to comply with, distributed by different sections**,** such as Construction, Operation and Site Closure for instance.

For IED permits they do not use standard permits but always draw up permits on a case by case basis. Vlado said that public involvement in the permitting process in Slovenia sometimes caused problems. NGOs could appeal against permits which meant that it could take a long time for permits to become valid. In Portugal, it was possible to take account of what they say and include it in the permit: in cases where it was problematic, and they wished to appeal, they would have to go to the Courts. APA did not communicate much with Inspectors though this was now beginning to change.

4. Introduction of the Combined Guidance Book

The Combined Guidance Book was already well developed, but was not yet finalised. Each step has one or two pages and will have links to factsheets which will provide guidance on good practice for specific technical issues. It was structured according to the regulatory cycle. The Guidance Book would be accessible on the IMPEL website.

There was still some current project work to incorporate, for example Going beyond BAT and Baseline Reporting. Another relevant IMPEL project was the one on the Implementation Challenge (and how to help overcome it). The questionnaire had elicited 65 responses from IMPEL members and some of the things coming out of that project were relevant to the Guidance Book. Agriculture had been identified as a problem area as was a lack of clarity in Permitting. Some problems related to definitions and some to the translation of BREFs into permits. There seemed to be a problem with IMPEL's outputs in that work had already been done in many of the problem areas and there was a question over how much it was actually being used. The question of why these areas were still providing challenges was one for IMPEL to consider. We needed to be creative in how we presented this guidance (to ensure it was used as much as possible) and also on how we organised feedback on it.

The Guidance Book contained much useful information and the intention was for it to be used as the basis for training, in cooperation with the IED Implementation Project.

5. IED Implementation/DTRT Permitting Working Groups

The meeting divided into groups to consider the following topics:

- Definitions
- Mutual Joint Visits
- Priorities for Permitting
- Strategies for Permitting
- Other than normal operating conditions
- Compliance assurance
- Permitting procedure
- Evaluation and feedback (Permitting)
- Eco-innovation

Short summaries of the conclusions of each of these groups which were presented at the meeting can be found in Annex 1 to the note of this meeting. Those who acted as rapporteurs were requested to put more information about the findings of their respective groups onto Basecamp so that these findings could be incorporated into the Guidance Book as appropriate.

6. Reporting back from the joint inspections (on 26 September 2017)

6.1 Granel – Moagens de Cerias, SA (Wheat flour production)

Those taking part in this inspection were Antonio Quintas (Portugal – Main Inspector), Maria Jose Falcao (Portugal), Maria Enroth (Sweden) and Manuel Salgado (Spain, Galicia). The inspection focused on air emissions and waste management. During the inspection officers observed:

- Chimneys and their monitoring points
- Location and compression valves of dust filters
- Waste stock areas and waste management
- Control room and maintenance operations explanations
- Septic tanks for waste water storage, and rain water canalisation.
- Chemicals storage room
- Critical points of diffuse emissions to air: charge of bulk flour and discharge of raw materials.

The lessons learned from the inspection were that it was valuable for guest inspectors to witness an ordinary inspection. The preparation meeting beforehand was useful to collect basic information. IED inspections in different countries are similar as they are checking on the same EU regulations but the time and effort of an IED inspection (study of documents, site visit, conclusions and reporting) are different between countries. There are pros and cons with announced and non-announced inspections. Most of the joint learning is done during discussions before and after the specific inspection. Know-how, installation understanding and knowledge about relevant BAT are important for focusing on key environmental issues (KEI) and environmental critical points (ECP). The environmental permit of an installation is the most important tool for inspection. A relevant permit will consider the key environmental issues (KEI) and environmental critical points (ECP) for an installation in order to facilitate an efficient inspection.

6.2 FISIPE – producer of acrylic fibres

FISIPE is a European producer of acrylic fibres with plant at Lavradio, Portugal, operating since 1976.

The process involves: continuous polymerisation; mixing of the polymer with a solvent to produce a syrup; extrusion of the syrup to produce the spun fibre; solvent recovery; cut and bailing. There is also a utilities area, tanks and a silo area for polymer storage.

The joint inspection involved looking at the operation of the plant and emissions control with respect to the environmental permit. The permit defines conditions for water consumption, energy consumption, emissions to air and to water, and the production of waste.

Key areas for the inspection were assessing compliance with the permit conditions for wastewater discharges to the urban wastewater treatment system and verifying whether the company is carrying out the self-monitoring of emissions to air properly.

6.3 Pig Farm, Canha, Montijo

Those taking part were Chrystalla Stylianou, Cyprus, Cláudia Simões, Portugal, Jamie McGeachy, Scotland and Marta Ramos, Portugal. The Pig Farm is operated by Operator Porval – Agropecuária, S.A. and has a permit for the intensive rearing of pigs. It has a finished production capacity of 4076 production pigs and 790 breeding sows (adult female swine). The installation is classified into a 6.6 (c) IED group according to Annex I of IED.

The main issues and findings were:

1. Slurry management. The separator was out of service for a long time and the previous inspection required a cover – Violation of the Permit.
2. Significant changes in the process. A new cooling water system was installed without notification resulting in higher water abstraction and higher energy consumption. There was no notification to competent authorities - Violation of the Permit.
3. Management of other waste - dead animals, hazardous waste and packaging waste
4. A notification was given to the operator requesting reports, data, licence, insurance/warranty

7 IED Ongoing Working Groups

7.3 Going beyond BAT

The group looking at this consisted of Jamie, Pieter and Jaako. The results of their work were on Basecamp. The paper looks at the main elements of BAT and they had discussed what was meant by going beyond BAT. They had concluded that there were three main competing definitions: any measure not mentioned in BAT; any measure which exceeds the performance levels associated with the BATc; and any measure, including wider considerations, that is outside the scope of the IED and the BATc. Each of these definitions is useful.

The next part involved looking at those articles of the Directive related to going beyond BAT, namely articles 14, 15, 18 and 27. Article 14 describes how permit conditions must be set and provides flexibility to include stricter conditions in permits. Article 15 is concerned with the setting of emission limit values. Article 18 is about Environmental Quality Standards and Article 27 is concerned with emerging techniques.

There are several obstacles to going beyond BAT. One is a lack of knowledge in that people are unaware of which emerging techniques are available. Another is the potential risk for the operator and the regulating authority though they had been able to find some examples in Germany, The Netherlands and UK.

The group would turn their findings into a factsheet.

7.4 Tools

Members of this group were Rikke, Vladimir, Marinus, Dubravka, Florin, María Jesús, Iñaki, Lone, Manuel, Şenay, Tomáš and Wulf.

The group had looked at Tools needed to implement IED. The group had focussed on the main new tasks of IED and when and where IT Tools should be used. They also considered which IT Tools operators and authorities have access to (such as tablets).

They had begun by looking at the articles in the IED that could be connected to IT Tools and considered those to be the ones relating to risk assessment, annual inspection plans, reminder on follow up actions and creating a report and publishing it. They also considered creating a list of installations (part of the annual plan), storage and assessment of emission monitoring results and a Tool that makes emission monitoring data publicly available.

They sent out a questionnaire and had 16 responses. These are the options outlined above as voted for in the questionnaire: a tool for the risk assessment of IED-installations 4,9, a tool for creating a list of installations 4,6, a tool for the storage and assessment of emission monitoring results 4,4, a tool for the drawing up of the annual inspection programme 4,2, a tool for creating a report and publishing it 4,1, a reminder tool for required actions 3,4 and a tool to make available to the public the results of emission monitoring 3,4.

Examples of Tools with parallel access for the authority and operator included Turkey which has an e-permitting-system that is used where the authority can request information from the applicant or Portugal which has shared tools for waste production, water permit conditions and environmental permits. The group recommends that the IT equipment of authorities should be broadened to allow parallel access to data, such as approvals or waste documents. This would avoid discussions about the relevant versions of relevant data and also offers the possibility of a quick information exchange.

There are arguments for and against the use of IT Tools but in practice they are being used more and more and are inescapable in the end. They can be a cause of mental stress factors in the daily work and the best way to optimise them is a development process with IT experts and users. The basic advantages of good IT tools are that they are motivating, because they are efficient and meeting the inspectors' needs, they are time saving and reduce the lack of resources and they improve the quality of work because they allow findings to be analysed quickly. The group recommended national solutions rather than a pan-European tool.

7.5 Industrial Waste Water

Romano said that he, Roberto, Malgorzata, Manuel and Rikke contributed to this group. The first draft of the document was on Basecamp. The Commission had asked IMPEL to look at this topic and they had tried to focus on the waste water from industrial installations. The group had considered definitions, the regulatory framework, linked IMPEL projects, monitoring and sampling of waste water, waste water management and inspections in waste water treatment plants. Related IMPEL projects were Integrated Water Approach (2017) and Linking the Water Framework and IPPC/IE Directives. The draft BREF on monitoring of emissions to air and water from IED installations gives some guidance on measurement and sampling, distinguishing between continuous and periodic measurements, between continuous and periodic sampling, and between composite and spot samples. In addition, BAT is mentioned in vertical BREFs about waste water.

There was a chapter on inspection of installations with waste water discharges which also looked at sampling. There was also a reference to dealing with violations and on what to do with the results of self-monitoring. There was an Annex with a checklist on wastewater treatment plant inspection (based on BAT) and another giving the responses to the survey. Horst said that the report would be included as an Annex to the project report.

8 Follow up and closure of the meeting

Horst and Toni suggested that there should be a single short report for IMPEL covering both projects which would summarise the results of the work over the year and include the joint inspections. There would be a brief article for the IMPEL newsletter which Terry/John were asked to prepare.

It was provisionally agreed that the project meetings in 2018 would be held in Spain, Finland and Scotland.

Chrystalla spoke about the work that had been done on the horizontal aspects of permitting. It was still possible to submit responses and she planned to have a report for the next meeting which would be turned into a factsheet.

Ana Garcia spoke briefly about the European Commission's Compliance Assurance initiative which was launched earlier this year. This initiative sets out actions to support Member States in how they promote, monitor and enforce compliance by economic operators and other duty-holders with EU environment law.

During a stakeholders conference on 31 of January, followed by a workshop on tackling waste and wildlife crime and non-compliance which took place on 20 March, IMPEL was invited to draft a position paper contributing to the initiative and providing input for the Action Plan.

The position paper identifies 6 areas where IMPEL could play a role, namely:

1. Build strategic relationships
2. Understand the implementation challenges of environmental laws and regulations
3. Develop and build capacity of environmental regulators
4. Establish a European knowledge and innovation centre for practitioners
5. Coordinate inspection and enforcement actions with transboundary relevance

6. Formalising the feedback loop

9 Feedback from working groups

How to proceed with joint inspections?

1. Goals: Harmonized view on an effective inspection. Practical ways to better compliance.
2. How to share: Focus on 1-2 common problems, bring in experience colleagues, distil 1 wisdom and 1 advice after each joint inspection, seminars/networks within and between MS, implementation/feedback (in own organisation and to policy makers)
3. Joint inspectors must have inspection experience, speak English. No consensus: Sector experience? Also permit writers?
4. Good idea: Base sectors joint inspections on (implementation) new/revised BAT conclusions

'Other than normal' operating conditions

1. Overlap between OTNOC and Article 7 (
    a. Accidents) & Article 8 (non-compliance)
2. OTNOC'S should usually be foreseeable things i.e. start-up, flaring, cleaning programs – element of risk assessment
3. OTNOC triggers specific requirements vs general requirements
4. Foreseeable OTNOCs, dis-apply ELV's.
    a. Unexpected OTNOC's in theory do the same but this may not be appropriate.
5. Confusion from Article 14(1)(f) description, it may not be correct and needs clarification. (i.e.
    a. no examples of OTNOC leaks)

Priorities for Permitting

Discussion started with the questions:

- How do we deal with priorities?
- Why do we need priorities?
- ***How, and what factors help us decide priorities for permitting?***

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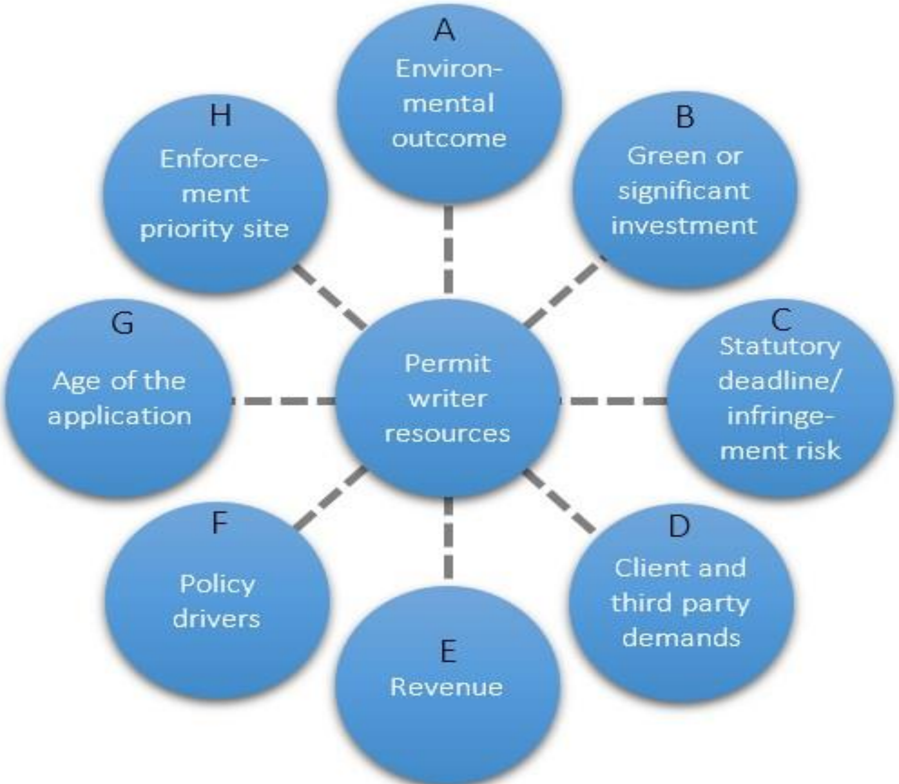

Fig 5

The guidance has identified 8 main factors which impact permit writer resources.

The group identified additional key factors which are important in determining priorities for Permitting:

1. Political Priorities and pressures.
2. Effectiveness of the permit writer
3. The competition from different private firms
4. Media Attention
5. Incentives and measures from the government that require immediate issuance of permits
6. The need to maximise the use of resources
7. Changes in BREFs, which impose changes in permits.

Strategies for permitting

1. Strategies are action plans and are important to achieve goals and objectives mentioned in the context
2. Set principles for strategies, permit should:
   a. reflect legal requirements
   b. clear environmental outcome
   c. be risk-based

   d. be proportionate
   e. should reflect public participation
   f. include principle of cost effectiveness
   g. take into account polluter pays principle
   h. should help economic growth (guidance, easy to apply for permits etc.)
3. Some additions to the guidance book:
   a. strategy on derogation
   b. templates with the aim to speed up procedures for minor changes

Definitions

1. Sharing. Wiki together with forum including practical examples would be a useful way to share and use, using different translations, next to legal also practical explanations.
2. Use feedback from inspectors to permitters and legislators.
3. Collected explanations by IMPEL are useful although still some practical issues exist.
4. Nine definitions discussed. Some definitions not yet defined, mainly related to chemical industry example industrial scale, chemical reaction.
5. 'Installation' pivotal definition IED implementation.

Other methods for compliance assurance

ASSURING

1. Communicating regularly with operators and educating them on updates in legislation to avoid non-compliances.
2. Communicating to the public any non-compliances and fines issued.
3. Stepping in the management of the installations in case of severe opposition to compliance requirements

PROMOTING

1. Explain and communicate convenience of being compliant (third part contracting)
2. Environmental compliance criteria within contracts for public services
3. Incentives for compliance (reduced fees for application, frequency and fees for inspections)

New Technologies

Satellite imaging, Drones, GPS tracking, remote monitoring

Defining steps in permitting procedure

1. There is an overall consensus that the steps mentioned under the phases application, decision making and public participation are correct
2. Some small corrections need to be done in the order of the steps
3. How the steps are filled in can be very different per member country (these steps were identified)
4. Adding best practices to the guidance of the different steps would be much appreciated

5. A platform to exchange operational permitting issues is needed

Eco-innovations

1. Many examples on eco-innovation were presented
2. Undefined process:
   -lack of knowledge
   -assessing information need and interpreting information
3. - assessing environmental unintended consequences
   a. unable/unwilling to make decisions
4. - lack of standards
   a. need for EU standards
5. - Different interpretations of the legislation
6. Solutions:
   a. engaging all stakeholders (universities, trade bodies, policy makers, operators, NGO's, general public)
7. - agree on standards

Evaluation and feedback

1. Evaluation: identifying opportunities for improvement based on experiences
2. Feedback: communication of these insights to another level
3. Feedback along the regulatory chain
4. Making effective two-way communication
5. Many examples of good practice:
6. Practical examples linked to appropriate level of organisation

10 Participation at the meeting in Lisbon

Alfredo Pini	IT
António Quintas	PT
Arie Van Konijnenburg	NL
Braulio José Belmonte Marín	ES
Chrystalla Stylianou	CY
Cyril Burda	SK
Deniss Pavlovs	LV
Dubravka Pajkin Tuckar	HR
Elisabete Dias Ramos	PT
Elisabete dos Santos Vieira	PT
Fabio Colonna	IT
Florin Homorean	RO
Francesco Andreotti	IT
Günther Dusing	AT
Helena Kamenickova	CZ
Horst Büther	DE
Inese Kurmahere	LV
Jaako Vesivalo	FI
Jamie McGeachy	UK (Scotland)
John Seager	UK
Kari Tapio Pirkanniemi	FI
Kristina Ljubojević	HR
Michael Hadjipetrou	CY
Małgorzata Budzyńska	PL
Maria Enroth	SE

Maria Malladaviana	ES
Marinus Jordaan	NL
Manuel Salgado Blanco	ES
Martine Blondeel	BE
Mette Lumbye Sørensen	DK
Mireille De Schepper	BE
Pieter Roos	NL
Peter Valentovič	SK
Rob Kramers	NL
Roberto Borghesi	IT
Roberto Valadares	PT
Romano Ruggeri	IT
Ruth Ciarlo	MT
Şenay Arslan	TR
Silva Prihodko	EE
Simon Farrugia	MT
Teresa Torcato	PT
Terry Shears	UK
Tomáš Augustin	CZ
Toni Liebregts	NL
Vladimir Kaiser	SL

Annex X

Outcome of Working Group Discussions in the Lisbon Workshop, 27-28 September 2017

Additional feedback from Working Groups in the Lisbon workshop, 27 and 28 September 2017

1. How to proceed with Joint Inspections?

Summary

1. Goals: Harmonised view on an effective inspection. Practical ways to better compliance.
2. How to share: Focus on 1-2 common problems, bring in experienced colleagues, distill one piece of 'wisdom' and one piece of advice after each joint inspection, seminars/networks within and between MS, implementation/feedback (in own organisation and to policy makers).
3. Joint inspectors must have inspection experience, speak English. No consensus: Sector experience? Also permit writers?
4. Good idea: Base sectors joint inspections on (implementation) new/revised BAT conclusions.

Session 1

- Inspectors tend to be pre-programmed on their own method. Joint inspections give other perspectives and help open your mind.
- Good to see what you can do when additional capacity is available: better, deeper preparation and availability of specialists.
- Are faster inspections possible? Check with colleagues in other countries. It depends on the quality you want. Joint inspections could lead to agreement on minimum quality.
- Advice/recommendations are welcome. Work to common approach and the same framework.

Session 2

- Inspections turned out to be very similar.
- Learned: focus on problems around the site.

- Opened view to specific problem, not a common inspection.
- Hoped to get more feedback. Objectives the same, but methods different.
- Big picture the same, small differences, e.g. monitoring and on site signed report.

On what subject should we focus?

Session 1, results mentimeter survey

- Share ideas on effective inspections plus monitoring of this: 5
- Inspection tools used during inspections: 5
- Comments:
    - Focus on 90%, 100% too much effort. What is a good result/90%?
    - Checklist, good internet connection, advice on measures to be taken by company.

Session 2, results mentimeter survey

- Good practice (measures) identified during inspection: 5
- Share ideas on effectiveness inspection plus monitoring this: 3
- Comments
    - Which inspection (methods) lead to better compliance? Comparison works if companies are comparable.
    - What was really done on site? What can you do in a certain time? How to determine the scope?

With what sector would you want to start?

Session 1, results mentimeter survey

- Chemical industry: 5
- Other: Intensive rearing pigs/poultry: 2
- Comments:
    - Relate sectors for joint inspections to EU agenda BAT conclusions, e.g. in year 3 implementation BAT conclusions prepare joint inspections. Also inspections to do recommendations for BAT conclusions review (feedback).

- Compare used approach REACH: decide togather on common focus, prepare togEther, e.g. interpretation, guidebook, reports. For REACH this is organised by inspection forum European Chemicals Agency.

Session 2, results mentimeter survey

- Waste management: 3
- Chemicals: 3
- Metals: 2
- Other: 2 (intensive rearing, feed/food)
- Comments:
    - Sector not so important.
    - Link to publication revised BAT conclusions.
    - Waste management has many issues (air, soil), special attention to bankruptcy (bank guarantee, assurance).

What way of sharing of these lessons would you prefer?

Session 1

- Sharing checklists.
- Wisdom of the day from each inspection (e.g. don't inspect what is known).
- Random checks (e.g. hazardous substances).
- Panel discussion on comparing leading to advice.
- Disseminate inspection report before meeting (now not enough time between inspection and workshops).
- Discussion/feedback on implementing wisdom/advice.
- Exchange through internet, page per sector, structured.

Session 2

- Seminars.

- More joint inspections.
- Exchange programme.
- Share in inspectors group at home, national inspection forum.
- If number of inspectors is not too big, sharing is easy, but outside that group more difficult.
- We don't have to learn how to do the inspections. Procedure not so important. Practical approach in the field is important.
- Focus on common problem instead of being complete.
- Inspector groups per sector and/or theme (soil, waste, etc.).
- Enforcement can help to check new policies and legislation.
- Short summaries.

Should there be minimum criteria for the inspectors who join these joint inspections on content and if yes what are these?

Session 1

- Experience in one sector is not a must have, because experienced person might not speak English.
- Use translated BATc to prepare inspection.
- Qualifications can differ between member states, so be careful.
- Some English necessary, technical/environmental English.
- Will to learn.
- Do you have inspection experience now or earlier? For example relevant to interpret reactions. operators. Permitter has other perspective.
- Technical expertise good to have.

Session 2

- Also permit writers in joint inspections.
- Basic knowledge of sector.
- English or common language in group.
- Participation in preparation meeting / teleconference.

- Collect experience in your own office to bring to joint inspections.

Joint Inspection is one way to identify these good measures and learn from each other. Is there another way you prefer to do this? For example, as in Seveso a conference on specific issues. Or maybe an international sector specific knowledge group on inspection related issues.

Sesion 1

- Seveso organises conferences. This is a good way for feedback to policy makers.
- Exchange programmes, including exchange experience when you come back home.
- Some one should be responsible in an organisation for improving inspections.
- Present results to other policy areas like nature or to permitters, policy makers.

Session 2

- Sector/issue networks.
- Make clear on what exactly you want to exchange.
- Annual conference.

2. 'Other than normal' operating conditions

First Group

Purpose of the session was to obtain a better understanding of the concept of OTNOC

Two types of BAT AEPLs: BAT-AELs and BAT-(non-AEL)AEPLs

These are set for normal operating conditions, not for OTNOC.

But what are normal operating conditions?

Portugal: OTNOCs: if you cannot comply with ELV this constitutes an emergency. Operator needs to notify the emergency and what was done to get into normal OC. Operator may be fined. In the permit emergencies are defined (chapter on malfunctions/failures/accidents). Emergencies have a time limit, notifications need to be done within a certain time period.

Is there a difference between optimal and normal OC? Optimal: is what the installation can achieve as a maximum optimum over some time. Sweden: normal # optimal OC. For optimal OC you also have to look at total impact, total mass emissions. Finland: yes, it is not just complying with emissions standards but you need to also look at yearly loads.

Austria: industrial process and abatement: these need to fit together. Normal is not optimal. Normal OC are basis for permit ELVs.

Should operations stop immediately in case of OTNOC?

What is OTNOC causing? Significant impact? Difficult to assess before court.

OTNOC # exceedance of ELVs, but may result in such exceedence

Finland: In application already mention foreseeable OTNOCs. Than permit proper requirements can be included. But not all OTNOCs are foreseeable. You can have a general notification/measures requirement for not foreseeable OTNOCs.

Finland: Example: pulp and paper. Strikes > shutdown and restart > how to operate the wastewater treatment plant. Austria: max period for start and closure power stations.

Define foreseeable OTNOCs in the BREFs.

Start and closure is straightforward example of foreseeable OTNOC.

Cleaning is also a good example.

Leaks and malfunctions: not foreseeable - general requirements - what caused the unforeseeable OTNOC? Due to bad operator performance??

Example : Operator cannot stop leakage as he has no spare parts

OTNOC should be as short as technically possible.

What sort of measures do you take as an authority to end an OTNOC - discuss with operator, notification to take measures, enforcement in case of breach of permit requirements (maintenance).

When you don't comply anymore you have to report this

When is something OTNOC?: difference between seasons - Scotland: dispensation

Provisonal conclusion after this session: we need to assess what role/added value of provision of OTNOCs is in compared to articles 7 and 8 (incidents, reporting non-compliances)

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Second Group

ELVs under normal conditions >> in case OTNOC they do not apply

Previous group stressed foreseeable occurrence. Incidents and accidents and non-compliance provisions - what is added value of provision on OTNOCS?

In Scotland: normal is optimal - set an ELV at that level - in case of an OTNOC the ELV does not apply

Does Scotland describe OTNOCs?

Unforeseeable OTNOCs >> rely on article 7 and 8

Foreseeable OTNOCs >> there may be specific requirements in the permit

How to define what are normal conditions?

In case of obligation of continuous measurement of emissions, operator should provide parameters for normal OC as well as for start and shutdown phase, so measured emissions can be properly assessed.

Portugal: accommodate OTNOCS by allowing temporary deviations (for a maximum period of time).

Is an accident an OTNOC?

If yes, what other obligations would the permit include in addition to the ones based on article 7 of the IED?

Incidents and accidents: we need to prevent these, check if EMS is properly working, so learn from handling incidents.

Slovenia: regarding respsonses to OTNOCs distinguish between

1) OTNOCS with no environmental impact, for instance malfunctioning of monitoring > production can go on

2) filter break > more emissions > lower production

3) disaster > stop production

What is OTNOC:

- 20-80 case: fuel source is variable in quality? No should be regulated as normal OC
- Temporary low production due to low market demand? No should be regulated as normal OC
- Technical failure not caused by bad maintenance? Is not OTNOC but incident

Start or closure is OTNOC - ELVs do not apply - this is in the permit.

Emissions of flares - in permit: flares only allowed for safety reasons - this is an OTNOC

Testing, preventive maintenance of tanks are OTNOC

Chemical plant in Sardinia, leakage from a tank, due to bad maintenance (maintenance plan was not followed) - is incident/non-compliance not OTNOC

Foreseeable - (based on risk assessment) is key characterisc of OTNOC in contrast with incidents.

Incineration plant - start and shutdown - set limits to hours for switching of and on - this should not be a routine but OTNOC

3. Priorities for Permitting

Group 1

• How do we deal with priorities and Why do we need priorities? Do we require a special time period for writing a permit? How do we meet deadlines? Are there enough resources to meet time frames?

• There are various possibilities, including that of having the need to complete different tasks depending on the resources available.

• A point we want to address this afternoon:

We are now the owners/mentors of our work. We need to find a good system of how to set our priorities and what priorities to be set. The best approach is not always possible.

• Guidance is always addressing certain factors important in setting priorities.

• The environmental Outcome... what do we understand by this?

o The investment behind the permits we are issuing.

o Statutory deadlines that we have to comply with. Including third party demands, some policy factors. (policies drive our priorities)

o The age of the application is another important factor and

o The enforcement priority.

• Before talking about other factors... what factors that you know, in some way impacted on permit writing work?

o Political priorities can influence Permit writing.... so a permit can be requested to be issued quickly on top of other permits that the permit writer might be working on.

o The Netherlands subsidise some projects (for example, the construction of wind turbines), so if that project requires a permit... that can also be requested to have a permit issued immediately.

o Another issue is with Competition... Chrystalla mentioned Competition within Private companies where these are competing for the same market (for example, Medical or pharmaceutical). The first one who gets the permit will be able to make money first because they go on the market very quickly.

o Deniss from Latvia says that the significant factor is that knowledge of permit writer... permit writers in Latvia are not specialised. He insists that ideally a Permit writer should be more specialised and issue permits for particular sectors.... Criteria would be specialised Permit Work plan on the basis, on the ability of knowledge of permit writer.

o Chrystalla mentioned Public / Media Attention – Media factors that might influence priorities can be complaints, TV, newspapers... therefore media attention creates priorities for the issue of permits. Priorities may shift depending on more 'HOT' issues which appear on TV or newspaper or radio and therefore stirs up more attention.

o Other priorities include projects which are subsidised or funded by the government... these projects, if they require permits, will take priority for permitting.

o Another case in point is if the Government issues funding for particular sectors to improve systems. These too can be priorities.

o Priority is the environmental Impact of that particular company which requires permitting. Thus, the company with the largest environmental impact will get more priority for issue of permit. However unfortunately this is not always the case, since political demands/influence take priority.

o The age of the application (how long the application has been waiting) can also be a determining factor when deciding priorities.

• Understanding the factors: Understanding whether the points that we have made should be treated in the guidelines as different points.

o Political pressures – Perhaps even though that it is very much linked to enforcement priority sites, it can also be a new point if the facility is a new one which requires pressure but requires immediate Permitting. So, a new point perhaps.

o Effectiveness of the permit writer – this can go as an additional factor. This would increase effectiveness and efficiency of the permit writer since he/she would be more knowledgeable of the industry.

o The Competition from different private firms and media attention – This can be inserted in the definition at the point on Client and third party demands.

o Incentives and measures from the government – most members think that it would be best to go into a new point.

o The Environmental Impact – Could be included with definition point.

o The need to maximise the use of resources –

o Changes in Brefs, which imposes changes in the permits. Sometimes there are not sufficient resources to monitor and implement these. Permit writers thus wait for the operator to apply for any action/ updates to permits to be carried out.

1 & 2) How many IED permit writers are there at present working at ERA or in the other authorities of the different countries?

o Italians – 160 installations and 15 permit writers

o The Netherlands – 100 installations and 7 permit writers (specialists on noise, emissions etc...)

o Latvians – 90 installations and 10 permit writers.

o Cyprus – 73 installations and 2 permit writers

o Malta – 28 installations and 5 permit writers however these work on other permits and not just on IED installations.

o Portugal – 800 installations and 14 permit writers

o Belgium (Flanders) 700 installations and 14 permit writers

o Spain (Murcia) – 400 IED installations and 15 permit writers

3) Does the permitting team work on a first in and first out option when working with permit applications?

o No – most work on prioritising on the environmental impacts first...

o Permit writers also should review the permits in view of changing BREFs, however not enough resources to review.

o Are we receiving clear priority setting methodology? Do we get a work plan? In priority setting methodology is the main factor is the deadline? Or perhaps those clients/operators who push hard will get their permit first? Sometimes is it a matter of who will give you the most complete application... going back and forth is an issue and involves waste of time.

5) Do your permit writers know the installations that they will permit in the coming year?

- We spoke about the need to have an expiration date. Most countries have permits with no expiration dates. Ruth mentioned that in Malta they still have expiries.

- Various departments are involved in discussing and producing the application to meet with the various difficulties. This is common practice for all countries. Especially when it comes to large scale operations/facilities.

- In most countries, permit workers cannot do inspections, but sometimes for large installations they do, so as to have a general idea of how the installation works.

6) Refer to the list of factors in the guidance? (page 17 and 18)

a) Environmental Outcome – in our setting priorities, if the environmental impact is high, then the environmental outcome of permitting that installation is high. All agree with this statement. Portugal have a different way to dealing with that installation – reduce the expiration date when permit is issued.

Not setting priorities is to set some kind of priorities. There is a general issue with insufficient permitting staff.

b) Significant Investment – incentives etc... - definition has been agreed upon

c) Statutory deadline/infringement risk – definition has been agreed upon

d) Client and third party demand – pressure from competing industries and media to be included. This point should be included in the definition.

e) Revenue – ok - definition has been agreed upon

f) Policy Drivers - definition has been agreed upon

g) Age of the Application - definition has been agreed upon

h) Enforcement priority sites – this definition is strictly in connection with inspectors and permit writers... based on enforcement and on nothing else. In our discussion we mentioned additional point that are not related to this point. This involves political impact/pressures, which are not necessarily political but only enforcement.

Group 2:

- Dealing with priorities? Why do we need priorities?

Special time period for writing of a permit, meeting deadlines, first in, first out basis perhaps. Which are the factors that are influencing how we set priorities in permitting?

- Additional factors apart from those points mentioned in the guidance.

What factors apart from these are setting priorities for every country/agency?

Which are the most important factors in setting priorities?

o Helena mentioned general knowledge of the installation - any environmental outcome is a priority, importance of preparing basic report of the site (baseline reports), so as to have more information about the environmental impacts that could take place on the particular site to define environmental importance/significance.

o Thomas mentioned that it depends on lack of staff/resources, thus priorities are based on resources or lack thereof. This problem is that resources is not exactly included in the 8 factors already discussed. The need to maximise the use of resources in terms of competences.

o Fabio mentioned assessing the effective impact of the activity such as impact on air and water... following this, it is important to assess the green assessment of impact.

Another issue is the presence of residential houses around the particular installation. Fabio mentioned biomass plants. The amounts of complaints are high even before the plant is constructed. Fabio also mentioned political priorities

o Ruth mentioned political pressures on permit writers.

o Maria mentioned focusing on the key activities of that installation and good technical knowledge on the subject so as to decrease and minimise its impacts. The status of the environment is also another important priority. This too can be included with the need to maximise the use of resources in terms of competences.

o Maria said that the first priority should be to apply the EU directives, then they attain to the dimension of the plant, the technology, location (near population or in ODZ or sensitive area). She also mentioned that Cooperation between inspectors and permit writers should also be important and set as a priority for Portugal.

o Thomas asked whether Portuguese inspectors cooperate with permit writers. In Czech Republic, the inspectors produce their opinion on the permit and this should be set as a priority when permit writers are working on the applications for installations.

o Maria from Portugal said that when they find issues with the permit, they ask the national authorities to update the permits accordingly, but they do not have an active participation in writing the permits.

o Competences of the ministry to set priorities from the permit writers.

Can we include the mentioned factors within the framework of the guidelines as it is right now? With the points mentioned, do we have to add new points or do these fit in with the already defined definitions?

1& 2) How many IED permit writers are there at present working at ERA or in the other authorities of the different countries?

o Italians – 160 installations and 15 permit writers

o Czech Republic – 170 installations and 8 permit writers (only IED permits)

o Czech Republic – Thomas not sure – but approx 10 permit writers for 200 installations.

o Sweden – 13 installations

o Malta – 28 installations and 4 permit writers (around 1.5 or 2 working on IED)

o Lombardia – 100 installations and 10 permit writers (work on other types of permits)

o Portugal – 800 installations and 18 permit writers (not all specific on IED)

3) Does the permitting team work on a first in and first out option when working with permit applications?

No . The majority of members present during the work shop confirmed that their first priority is the environmental impact.

5) Do you know for your permit writers, the installations that you will permit in the coming year?

This group was composed mainly of inspectors and thus not everyone was able to answer this question.

4. Strategies for Permitting

First session

In the guidance an explanation is included on why there is a need for strategies: strategies are action plans and are important to achieve the goals and objectives mentioned in the context.

Participants agree that strategies are also interesting to prioritise your work. If you know what you want to achieve (e.g. all permits BAT proof) the strategy shows you how to achieve this.

In the Guidance book DTRT 10 strategies are listed. For some strategies factsheets are included. Participants were asked to check whether strategies are missing and whether there are good practices we can include in the guidance.

Remarks on the guidance:

Applying for BAT on page 19 guidance book: the aim is to review in time, but also national laws have deadlines. You must review permits on BAT. For existing installations the BATc in the permit should be reviewed within 4 years, for new installations apply BATc when adopted.

Rob remarks that you need to prioritise to review in time, because capacity is not always sufficient. Therefore, a strategy is needed to make sure that the permit complies with BAT.

Cyprus has a lack of capacity: at the agency the same person carries out inspections and writes the permit. In general, communication with the operator is difficult. To separate permitting and inspectors is not considered a good thing in Cyprus. The advantage of doing both is that you know the plant better. Disadvantages are that more work and more effort is put into the permit than in inspections.

Possible solution for lack of capacity: to issue the permit for a longer or unlimited time. In Cyprus the validity for a permit is 4 years.

Factsheet 2.02 of the Guidance book: Applying BAT

In the factsheet BAT a special programme is mentioned in the text. For the participants this was not clear. Rob suggests that this be clarified in the next version.

Factsheet 2.03 of the Guidance book: Review of existing permits

Some clarification is needed on the time frame. For LCP this seems to be different.

In addition, some explanation is needed in the guidance on how to deal with the issue of the main installations vs the other installations. The directive prescribes main activity. Therefore, how to approach main conclusion? This question should go back to working group (Pieter Roos). Romano: 4 years is for the main activity.

On the review of exiting permits the following comments have been made:

IT: Every 5 years a review should take place according to the law. When there is a substantial change, the permit needs to be revised.

DG: a permit is for an unlimited time. Reviews take place on regular basis.

MT: in Malta a permit is valid for 4 years.

RO: when new air quality or water quality regulations come into force, the agency/inspection unit requests a revision. The agency will receive the application, an assessment and an inspection on site takes place. A meeting at the office is held to assess what should be changed. Based on the assessment the permit will be revised.

MT: same system as RO.

To determine what is "on regular basis", a strategy could be developed.

GE: new BAT will be translated in national regulation when needed. Not all BREFs are transposed. When it is transposed in general binding rules, the competent authority is responsible for implementation.

PT: when BATc is published, it is binding. Competent authorities must choose which ELV they have to apply to according to new BATc. Operator can propose which ELV within the limits. The permit writer then can give derogation on cost efficiency. Especially on waste water ELV. In some regions the installation for waste water discharge is different because of different water quality (sensitive water bodies).

MT: there are some challenges regarding the building and environmental permit. If you don't have a building permit, you don't get an environmental permit. There is a situation now in Malta where it's not possible to issue an environmental permit because the building permit cannot be issued (build was illegal) and now the government cannot legalise the situation anymore (although they would like to). A solution could be to change the legislation to get out of the illegal situation, e.g. by legalising the operator.

Rob: interesting to develop a strategy which describes how to solve these types of situation.

What type of strategies are important to reach goals of the organisation? Short list of possible strategies

IT tools to manage:

- Expiry dates
- Priorities because of legal constrains
- Workload
- Better permits

A strategy on how a competent authority should deal with BAT. The strategy should not only be agreed within the competent authorities but also with other partner organisations.

A strategy could also focus on how to improve permits or on how to reach goals of the organisation. In the big 8 (describing the context) the organisation sets its goals. This should not only be goals but also objectives. Strategies should focus on achieving these goals and objectives. These goals and objectives should improve the permits. It's important to move to outcome instead of output. The way to do this should be clarified in the guidance.

General principles (e.g. prevent waste, re-use waste, energy efficiency) could also be included in the goals. We have to find performance indicators to monitor this.

Rob asks whether there are more issues that should be addressed in guidance?

On the derogations factsheet: it doesn't help a lot what the directive says about derogation. Perform a cost benefit study to prove it is expensive so you can get derogation. We need more guidance on a strategy on this subject.

MT: strategy on teaming up with the inspectorate. For example, if the objective and targets are clear then developing a strategy and action plan together with the inspectorate on this can be achieved.

Include templates to speed up the procedures for minor changes. For example, a fast procedure template. Add a strategy that tells what procedure to choose in which situation.

Also page 20 of the guidance book there is a statement: “on the report of the permit writer”. This statement needs more clarification.

Second session

NL: In the working group on priorities for permitting it became clear that priorities in organisations are often not set, they can change from one day to another because of developments, politics or media. Therefore, it can be difficult to follow a certain strategy when these dynamics interfere. An example of prioritisation can be on environmental impact of permits to be included in the annual plan.

It would be very useful to use a set of principles for strategies to give it a good structure. One can distinguish 8 principles for strategies:

1. The permit should reflect legal requirements
   (e.g. applying BAT)
2. The permit should include clear environmental settings
   (e.g. standards and outcomes to be met)
3. The permit should be risk based
   (e.g. risk for human beings and wildlife)
4. The permitting should be proportionate in relation to size and risk.
   (e.g. a nuclear reactor versus a storm break)
5. The permit should reflect the public participation that took place.
6. The permit should include the polluter pays principle.
7. The permitting process should be cost effective
   (e.g. GBR vs integrating permitting)

8. When possible, the permit should support economic growth.
(e.g. applying for a permit should be easy for an operator (1 window permitting process). Developing guidance for the operators so they do not have to hire expensive consultants)

Participants agreed that this set of principles for strategies is very useful to include in the guidance book.

Which good practices on strategies could be included in the guidance book?

BE: On general binding rules and permit conditions there is a need for smart balancing in an efficient way, for example, align the revisions of the permit with planning of inspections. Communication in this respect is important when the BREF is written. In Belgium this process is coordinated and when the BATc is published it can be implemented immediately. When part of the BATc is in general binding rules, a format will be prepared in Brussels (Federal government BE) for same set. This practice can be part of the strategy.

CY: General Binding Rules are difficult to develop for the Ministry. There is a lack of strategy to make an act on general binding rules or to issue as many permits. GBR are also seen as a difficult issue for certain sectors: e.g operators (owners) of farms as they sometimes do not have a high education. In that case it’s felt that permits are easier for this group to comply with. Permits however can interfere with the level playing field within a sector: some have a permit and some do not. It’s important to include in a strategy that to create a level playing field all operators within a specific sector need to have a permit.

There can also be an unequal approach when a new BATc is published and some installations are reviewed and others are not. An equal approach is needed and can be included in the strategy.

Rob: a strategy is on a higher level. Build on experience within Member States and smart balances on what we can do on general binding rules.

NL: In permitting the goals we need to achieve should be clear. To reach these goals we sometimes need to have more flexibility. A practical example: in a chemical plant every tank has its own designated product. However, the designation changes all the time and therefore the permits need to change. In the permit we could add that changes are allowed unless the product is corrosive or flammable. Of course, this should be based on the risks that can occur (Risk based permitting). Environmental monitoring system are also part of this. This approach could be transformed into a strategy for permits.

5. Definitions (as mentioned in IED)

Structure guidance

A wikipedia type of glossary closely connected to a forum were mentioned several times. Participants thought the present basecamp has too little functionality and overview to be used for a forum. The excel sheet as used till now doesn't work so well because of the limitations of the columns. There would also be a need for technical knowledgeable editors if this were the way to go on.

Next to a clear description, there was also a need for practical examples.

In general, most descriptions and clarifications of definitions already collected on basecamp were assessed as very useful. On the other hand, there were some definitions missing. Especially related to the chemical sector (chemical reaction, industrial scale, mixing).

Definitions are sometimes unclear because of the translation. These problems could be clarified by reading other translations.

Another idea was using the network to share problems with definitions and share the solutions among each other on maybe a forum as mentioned earlier. Sometimes different words are used for the same meaning. And advice would be to also look outside the EU (for example, the UN) for definitions and their clarification.

Definitions

1. Installation

Issue raised was what to do if more operators are responsible for one installation. Or if company parts are connected to a bigger firm. The question to ask is who has the (economic) power to solve non-compliances. Practical examples would help to learn how to deal with these situations. In addition, what does technically connected mean? It happens operators declare that certain parts are not

technically connected with the main factory.
2. Activities Example heading in Annex I IED: energy industry. Explain categories in relation to aggregation rule. Explain that top level categories have no real meaning! What about wine making, is that a chemical reaction? And mixing of chemicals? And what is 'industrial scale''?
3. Permit conditions: point where the emissions leave the installation Explain mixing rule based on additive share (ELV in %). Explain emission inventory and monitoring at key locations as tools for checking compliance (BREF and good practice available) Limits for air emissions, how is it created and how do you measure? Not only concentration but also load is important. How to deal with indirect emissions? BAT only for direct-channelled emissions and not for indirect and diffuse ones. And what about the emission to an on-site water cleaning facility? Is it of any use to identify ELV's for the stream from the process to the water treatment plant if contaminations can be removed biological in this treatment plant?
4. Compliance assurance; environmental inspection What is the scope, a full or risk based inspection? The question was raised what is a general assessment? In addition, is a risk-based inspection only on most important parts of an installation? In addition, what does integrated inspection mean? Sometimes, integrated means more parallel inspections of parts like water, air, soil. Or an inspection at a complex installation in many days. An inspection can be an on-site inspection, but also desk studies.

5. Capacity Use design capacity and not actual used capacity. In addition, legal binding time of operation can reduce the capacity. For instance, in case of complaints. Additional examples are needed to make this definition more clear.
6. Site (baseline report) From all the EC guidance, most participants think ownership is most important for this definition. Installation is a more important definition compared to site. In TFS site is more often used, but in fact, they mean installation. An installation can consist of more sites. On the other hand, there can be more installations on one site.
7. Permit conditions: relevant hazardous substances Not easy because conditions often change. Possible solution is to point to Reach or maybe Seveso. Another idea is to identify a list of relevant substances, including their ELV's and what substances could cause a pollution. The advice is to use examples but no limited list.
8. Compliance assurance, Operator Any legal person that can restore compliance can be held responsible, broad interpretation. A solution is the one that owns the permit. Some mentioned this is not always the case that this is the same one. Another possibility is to ask (and show) that they have the funds to repair non-compliances.
9. Reactors used in the chemical industry Guidance already collected is good to use.

6. Other methods for compliance assurance

No additional information

6. Permitting procedure

First session

Application phase:

Initiative: this can also be started by the competent authority, in case of inspection outcomes (installations for which there is no permit yet) or change in legislation.

Pre-application discussion: in Cyprus no pre-application discussion is held (no time available). Questions from the operator are answered by phone or email. Pre-application discussions are not mandatory in Europe, but are considered to be useful. It saves time in the official procedure, it's a worthwhile time-investment. You can check a lot of issues such as special planning before official procedure starts.

Be aware not to become a free consultant. An option is to judge draft application and draft annexes only once during pre-consultation.

In some countries a certified consultant is required to write the application. Large operators write the application themselves. For smaller operators the competent authority helps.
It could be a strategy to check a draft application only once, and send a letter with comments of a limited number of pages. If more pages are required, the application is rejected (the applicant has to do his homework again).

In some countries site visits take place in the pre-application phase, in other countries only during formal procedure. This is not mandatory, but useful.

Standard forms: for application are available almost everywhere, however good guidelines are needed and should be available on websites.

A list of annexes that should accompany the application could be part of the guidance.

Submission of application: by mail and hard copy (required by law in some countries), or online. Option of hard copy is still possible, even in cases where an online-application can be done. Check on completeness by permit writer, or case manager.

When application is not complete: interrupt the procedure or stop the procedure. The time to complete the application is up to the competent authority to decide. Croatia: 3 months maximum. For minor changes 15 days or 1 month. In case of interruption, in some countries the procedure time stops. In other countries not. 2 options:

- time starts at submission of application, regardless of completeness.
- time starts when the application is formally and technically complete.

Notification:

Formal my letter and e-mail.

Informal by phone or e-mail in some countries.

In NL the notification is done by an online system.

Publication:

Done through website, official gazette, local media and/or sending letters to local inhabitants. Sometimes small changes are not published. Hard copy can be viewed at local government offices. There are issues of confidential information when applications are published on internet.

Type of procedure:

The decision about what type of procedure will be followed (short or long) is often a legal decision. In Germany there are three different procedures:

- minor changes, only competent authority is consulted
- major changes without public consultation
- major changes with public consultation

The moment this decision is taken depends on the member country. In Malta and Cyprus it is during the pre-application. In other countries this can be after submission.

Second session

Decision making

Length of a procedure:
The Netherlands: public consultation 6 weeks. long procedure 6 months, short procedure 8 weeks.

Romania: public consultation 30 days, long procedure 4 months, can be longer if additional information is needed. Start when application is complete.

Cyprus: public consultation 30 days, no legal timeframe for procedures. Limited availability of staff can be a reason for long procedures.

Italy: 150 days to issue the permit. Extra time (60 days) when the application is not complete. Ask for additional information within 30 days after submission of the application.

EIA:

EIA can be part of the application / environmental permit, but also of the planning permit or building permit. In the latter case, it is not included in the application for the environmental permit.

Appropriate assessment:

Required if the installation is located inside or near a protected area. Appropriate assessment is sometimes integrated in the EIA.

Advise and consultation:

Romania & Cyprus: Permit writers have other tasks and find it difficult to spend enough time on permit writing.

Italy: national committee of experts.

The Netherlands: a lot of the advice and consultation is done in the pre-allocation phase.

General Binding Rules:

Not in Romania and Italy;

In The Netherlands there are general binding rules, which apply next to the permit. Enforceability check by inspector is common.

Fee:

In Romania there is a fee for application, for assessment of the application and for the permit.

In Italy there is a fee for inspection activities. The level is determined by law, and is related to the impact on the environment (mainly on number and size of emissions).

Additional points for the guidance
Compliance with BAT: most Member States give some time to the operator to comply with BAT (transition period), depending on the kind of adjustments needed and the environmental risks involved. The guidance could pay some attention to this issue.

7. ECO-Innovations

The purpose of the session is to understand the challenges that are faced when taking forward eco-innovations.

Specific issues, difficulties (i.e. BAT/no BREF), setting ELVs, identifying emerging techniques and understanding any legal or practical difficulties.

Italy example – they have had an experience of a waste treatment plant wanting to reuse bottom-ash. The bottom ash would be required to meet end of waste criteria, but legislation specifies that the only legitimate reuse of this material is in cement. But in this specific example the company wanted to recover metal from the bottom ash, before using the remaining material in the production of construction materials or as landfill cover. The operator ultimately wants to classify the recovered material as aggregate or road construction material but there are noItalian standards for this currently.

As a consequence of many provincial authorities in Italy having responsibility for the regulation of this industry there is a lot of inconsistency – some authorities allow this, some don't. This lack of decision making is a consequence of lack of responsibility at the provincial level without the necessary higher support from regional or national governments. Similarly, there is no clear path for the operator to get decisions made or to understand what information they actually need to present. This lack of clarity is an issue for both sides.

The provincial authority looked for support from outside Italy. The Netherlands has examples of bottom ash recovery, but there are relevant standards, testing standards and analysis. This is still a live issue. Responsibility and experience need to be shared and consistent within and between countries. A national review is currently underway to review this situation but hasn't produced any useful outputs. Appropriate level of empowered governance is needed to make a suitable and consistent decision. The main issue during permitting of these eco-innovations is timescales for permitting authorities to make decisions and availability of adequate supporting information.

In summary, what information is required and sufficient? Who is empowered and responsible to make any decisions due to the risks? There is a lack of standards within Europe to ensure a level playing field.

Portugal example – Similar to Italy. No new technologies generally but operators are required to explore how best to maximise operation – i.e. water saving/waste minimisation. As an example, the pulp industry want to utilise biosludge as a fuel source in combustion plant, but don't want the material to be classified as a waste and as such CO2 incineration. A basecamp enquiry was made to try and gather experience from elsewhere in Europe. There is a lot of available sludge but no sufficient landfill space to accept it.

Moving forward by classifying the material as "fibre" so it can be burned as a fuel in the recovery boiler. It's not a waste but a fibre residue. They have tried to apply the IED in a way that is useful to the operator to allow reuse and improved economy, by integrating the material in another product cycle – thereby optimising the procedures in their operation. Getting to this stage has been difficult due to legislative issues and knowledge gaps. A particular issue has been the requirement to make amendments to the permit to allow this, but the changes are minor in comparison to including waste incineration conditions. The reuse of sludge is not mentioned in the BREF, but there is a vague suggestion in the BAT conclusions – the BAT conclusions are not clear enough which is causing confusion.

Belgium example – They have a waste treatment plant that makes chemicals from organic waste and plastic, the process is similar to, but not, incineration. National legislation has caused an issue whereby there is non-favourable public opinion which is stopping the project. It's important that pre-consultation is undertaken for innovative projects to improve public perception.

Poland examples – Pulp and paper industry are utilising cardboard as a raw material, having to educate the public that this isn't waste and can be more usefully utilised. The process of developing eco-innovations is also important and we need to get it right. There is a view of lack of support from European legislation. In the case of end of waste for metals, the commission previously provided support and interpretation but they have stopped doing this resulting in inconsistency in interpretation between member states. Common standards are required as otherwise member states come to different positions. One of the main principles of eco-innovation is to push the operator to reuse and recovery.

Scotland example - Recently had very early enquiries (still at a very early stage and hasn't yet progressed yet beyond first principles) about waste conversion at breweries, whereby spent grains are converted to higher quality protein. This is intended to be achieved by feeding the grains to flies for maggot production with a conversion rate of about 75%, the resulting maggots have a much high raw protein content than the feedstock and could more effectively be used as raw protein source for animal feed. The maggots would be milled into feed pellets. While in principle this is an effective eco-innovation, consideration of benefits vs risks as a consequence of conversion has been highlighted as important issue. The maggot production process is very odorous and also intentionally produces very large quantities of flies, we need to be sure that any consequent risks are effectively controlled. Consideration of trade-offs is an important issue when considering any eco-innovation.

The Netherlands example – Salt treatment and removal example. Solution is to change the location, but what is the best environmental outcome? If there are no examples there is a dilemma. Broad consideration is required as you need to make a decision on the best environmental outcome.

Italy example – red mud landfill from aluminium production. A company from Australia undertook tests to reuse this material and had developed a product that could utilise red mud as a raw material. The proposal was to reuse this material in pellet form to remediate soil and waste water. But the competent authority had no idea about the proposals and didn't have the knowledge to make decision on whether to allow this project. A pilot plant was constructed in Italy but as the competent authority was unable to make a decision they lost the opportunity. The operator lost patience and relocated to the USA where they very quickly gained authorisation. The root cause of this issue was lack of knowledge and the provincial authority being risk averse and not wanting to make a decision on whether the process was safe to use. Process understanding vs long term management. It's not lack of information as in this case there was a lot of information, but rather how to interpret the information to make the right decision on what was necessary.

Flanders example – eco-innovation can be a matter of public perception. As an example, they have manure treatment plants to treat excess manure, but locals can halt their development. Nimbyism (not in my backyard) is an issue.

Arrangements and solutions Sufficient knowledge, capacity to consider, risk assessment and weighing different impacts, authority ultimately needs to be empowered to make a decision, responsiveness (what is the CA's attitude to the proposal?)

Latvia example – the cement industry wants to improve the process and implement cleaner technology, they are achieving this by collaborating with universities. Innovations with universities is a good approach (Dutch bottom ash is a good example of this).

Portugal example – Operators regularly call in with ideas and opinions. We are optimising the procedure for a biomass boiler by requiring the installation of a dryer (to dry the fuel) to make the process more efficient. May need to ask for help from other authorities to achieve a good outcome.

Scotland example – Sector planning, limited roll-out currently but looking to expand to all sectors. Provides an opportunity to try and anticipate eco-innovations within a sector through joint working with associations and operators. to focus the agenda in a sector for the next few years by exploring early. Other participants at the workshop considered that this is hard to do due to resources.

Portugal example – micro algae CO2 capture at cement plant. This is really easy to allow as it is a passive process with environmental benefits and due to the local climatic conditions works easily.

Open discussion – what policies are there for encouraging the circular economy and using waste streams more? This is difficult for many authorities as BAT development is handled by separate divisions. In Scotland, SEPA's statutory purpose encompasses circular economy but this is not usually a requirement in other authorities. In The Netherlands green deals bring parties together to speed up sectoral work and develop joint solutions. There is usually a mismatch between regulators and operators and we need to have joint understanding. There is a lot of uncertainty and lack of technical support. In many cases there are no relevant standards or guidance. Some issues can only be solved at EU level.

8. Evaluation and Feedback

There was clearly a need to work together, but how? How do you engage feedback and be efficient in the whole chain? How do you give advice and feedback to other levels and have effective 2-way discussion? How do you work with permit writers (PW)/inspectors (INSP)?

Italy – they are starting to build a relationship between PW and INSP. In many cases things are appearing in the permits that can't be enforced as there is no understanding of the real situation. INSP can make suggestions to PW. This can resolve the problem but the suggestions are not being taken on-board. INSP are collecting suggestions but they are not being used. The ultimate decision is up to the people you are working with and the decision can be out of their hands due to lack of staff, additional workload or lack of available guidance. Feedback is important but it has to be constructive feedback to further the agenda and shared understanding.

All INSP authorities give their opinion, the draft permit should be reviewed by the inspector. Some conditions are too general to enforce. The draft is also sent to the operator who can make suggestions. Pre-meetings between all parties occur on the application but not the permit.

Portugal – To maintain good communication between PW and INSP, Inspection reports are sent to the permitting agency, common inspections are undertaken as are informal/formal discussions. Co-location of PW and INSP means they all talk. A shared database is also useful. Information collation to improve communication is important but there can be resistance to change. E-tools tools to improve effective communication and access to information.

Legislative barriers, if the inspectors find problems it is hard to effect change to the permit as the law states that the operator must make an application to make any changes. Good communication at the informal level, but this is frustrated by barriers at the formal level. They are now starting to share documents, but if the operator makes an application then they proceed to enforcement.

Poland – They have an obligation to improve permit faults and there is a legislative requirement to have effective communication between PW and INSP.

Spain – Same authority but split between PW and INSP. There is a requirement for the permit writer to visit the site at least once.

Czech Republic – the application is reviewed by the inspector as part of the app process but the INSP's views are non-binding.

Latvia – PW and INSP are in the same institution and share information. They want quality in reporting from their permits but there is a still a lack of collaboration. INSP like flexibility in the permit to allow the operator room to make changes. Balance of information is important.

Scotland – currently, permit writer is usually also the inspector. This gives a good perspective. Though this approach will be changing.

How do you get help and request for advice?

Jan – improved communication and cooperation is essential but what do you need to achieve this? Situations are different between countries but we need to recognise go practice examples.

Open discussion

Committee made up of representatives from all levels gives an effective forum to talk about issues and make decisions interpret issues and give an answer. Forum needs to be empowered to make a decision on issues, issue a decree or answer any doubts. Authorities need to be appropriately empowered to make decisions. Should committees include the operators?

The DTRT guidance doc should have examples throughout the guidance and should be embedded, rather than a standalone section. All examples shouldn't be mixed, different governmental levels need to be clearly defined.

Authorities should be proactive in effective communication between different layers of government.

It's not common to report up the governmental chain in relation to practical measures. Where provisions aren't working a channel is effective, only if the uptake is guaranteed.

Annex XI

Going beyond BAT

IMPEL IED IMPLEMENTATION PROJECT 2017

Guidance – Going Beyond BAT

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Member States	Finland, Netherlands, Scotland (UK)
Date	22 September 2017

What is going beyond BAT?

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The IED does not include any specific definition of *"going beyond BAT"*. To understand what *"going beyond BAT"* is, it is recommended to have a closer look at the meaning of BAT. The core principle of the IED is to assess whether an installation meets the expected performance levels and achieves an ELV within the BAT-AEL range. This is done by comparing the performance of the techniques employed at an installation with the relevant BAT Conclusions (BATc) and its anticipated performance under normal operating conditions to achieve the BAT-AELs.

BAT is about the optimisation of site-specific performance. It may be the case that an installation has all the most modern technologies and abatement equipment, but if it is not operated or maintained correctly, the performance of this equipment is not optimised, and it may not be BAT. Similarly an installation could use older technologies, but is operated in such a way that their performance is optimised and the results meet BAT for that installation.

The BATc do not define which techniques or technologies should be used by an installation. The practical suitability of particular techniques will vary on a case by case basis and will be site specific – dependent upon the technical characteristics of the installation, operational limitations, local conditions and any environmental outcomes that are necessary to minimise impact and protect the environment as a whole.

The BATc will contain BAT - associated emission levels (BAT-AELs). Typically BAT-AELs will be presented as a range. It should be noted that due to the principle of optimisation where the BATc present a range of emission limits it is not appropriate to simply set the ELV at the top of the BAT-AEL range. The appropriate ELV from the BAT-AEL range is what protects the environment and can be achieved by the optimised performance of the installation when operating normally. This means that as part of the BAT assessment authorities must assess and ensure that site specific performance is optimised and can achieve the performance levels within the range of the BAT- AELs. If it is concluded as part of the assessment that site-specific performance is optimised, then BAT for that installation will be reflected by the emission levels associated with this optimised performance, and ELVs set accordingly.

Assessing BAT

While the BATc do not specify that a particular technology or technique is utilised by an installation, it lists various technologies and techniques that may be applicable. This is not an exhaustive list and if a technique has not been identified by the BATc this does not mean that it is not BAT.

Where a technology or technique has been listed in the BATc, BAT associated emission levels or BAT associated performance levels may also be included. These will present what is considered to be the normal operating range for BAT techniques or technologies and should be the reference for setting the permit conditions. These are also a useful reference for determining whether the performance of a particular installation is optimised and should form the basis of any discussions with the operator. It should be noted that the BATc may prohibit the use of certain technologies or techniques, however this is unusual.

Environmental regulators can set permit conditions on the basis of techniques that are not described in any of the relevant BATc – however it must be satisfied that the proposed approach represents BAT. Where an alternative technique is proposed, environmental regulators should utilise Annex III of the IED that contains criteria for determining Best Available Techniques. These criteria should be considered in assessing whether the proposed alternative technique are based on sufficient justification from the operator and can be considered to be BAT.

Different views on Going beyond BAT

There are different views on what *"going beyond BAT"* actually means. The three main competing definitions are detailed below:

1. Any measure which is not explicitly defined within the BAT Conclusions. This approach involves the strict interpretation of the contents of BATc, meaning that any technique which is not expressly detailed has to be considered to be *"going beyond BAT".*
2. Any measure which exceeds the performance levels associated with the BATc, i.e. BAT –AELS and BAT-AEPLS. BAT, in terms of the BATc is quantified as any measure which can meet the BAT-AELS or BAT-AEPLs. Therefore if a technique can exceed the anticipated performance levels identified in the BATc then this is going beyond BAT. It is acknowledged however that this approach restricts *"going beyond BAT"* only to measures which are within the scope of the IED and the BATc.
3. Any measure, including wider considerations which are outside the scope of the IED and the BATc. This approach while also encapsulating the definition in point 2, also allows the environmental regulator the flexibility to consider other measures, including social and economic issues.

Regardless of which definition is used, it is considered that where a *"going beyond BAT"* measure is incorporated in permit conditions or assessed as a part of the decision making process in granting or reconsidering a permit that it can subsequently become BAT. As a consequence *"going beyond BAT"* has an ongoing value in identifying "*developments in BAT*" particularly where BAT conclusions are to be reconsidered. As a minimum, it is an essential part of the regulatory cycle to routinely consider measures outside the BAT conclusions and whether they can achieve performance either within (or better than) the BAT-AEL range. Going beyond BAT is essential for development of IED/BAT; otherwise BAT is a stand still.

Legislation

Legislation

The IED includes four articles related to going beyond BAT: articles 14, 15, 18 and 27. These articles are described below, followed by an explanation and examples gathered through a short questionnaire and sessions as part of the IMPEL project Supporting IED implementation.

Article 14 ***Permit conditions***

[…]

3. BAT conclusions shall be the reference for setting the permit conditions.

4. Without prejudice to Article 18, the competent authority may set stricter permit conditions than those achievable by the use of the best available techniques as described in the BAT conclusions. Member States may establish rules under which the competent authority may set such stricter conditions.

5. Where the competent authority sets permit conditions on the basis of a best available technique not described in any of the relevant BAT conclusions, it shall ensure that:

(a) that technique is determined by giving special consideration to the criteria listed in Annex III; and

(b) the requirements of Article 15 are complied with.

Where the BAT conclusions referred to in the first subparagraph do not contain emission levels associated with the best available techniques, the competent authority shall ensure that the technique referred to in the first subparagraph ensures a level of environmental protection equivalent to the best available techniques described in the BAT conclusions. […]

Article 14 describes how permit condition must be set. It provides flexibility to include stricter conditions in permits.

Article 14(3) requires BAT conclusions to be used as the reference for setting permit conditions. This allows less strict, but also stricter conditions. A permit condition that requires two or more techniques to be applied is allowed, even though the BAT conclusions often only require one or a combination of techniques. An example is the use of process integrated measures (like low NOx burners) in combination with end-of-pipe techniques (like catalytic NOx reduction) in combustion plants. As a result the emission levels are at the middle or lower end of the ranges in the BAT-conclusions, making a stricter emission limit value feasible.

Article 14(4) allows conditions requiring a better performance than the best available techniques described in the BAT conclusions. This provides flexibility to include very well performing techniques in permit conditions or again a combination of techniques that result in lower emissions than the ranges in the BAT conclusions. Examples can be found in several sectors. One example is waste gas sulphur recovery in existing refinery units that achieve minimum recovery percentages that are higher than in the BAT conclusions. Also for intensive rearing of pigs and poultry combinations of techniques result in lower ammonia and dust emissions than the ranges in the BAT-conclusions.

Article 14(5) provides flexibility to allow different or new techniques that perform similar or better than the best available techniques in the BAT conclusions. Many examples show that this paragraph is important for promoting emerging techniques and other innovations: Air scrubbers and bio filters in intensive rearing of pigs and poultry[12], water cooling instead of air drying in the fertilizer industry, emission reduction of PAHs in the aluminium anode production (see Example 3 – Netherlands), etc. Article 14(5) emphasizes one of the important pillars of IED to set output based requirement providing freedom for operators to choose techniques they consider best for their situation.

Article 15 ***Emission limit values, equivalent parameters and technical measures***

[…]

[12] For example: http://www.sciencedirect.com/science/article/pii/S1537511015000653

3. The competent authority shall set emission limit values that ensure that, under normal operating conditions, emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions referred to in Article 13(5) through either of the following:

(a) setting emission limit values that do not exceed the emission levels associated with the best available techniques. Those emission limit values shall be expressed for the same or shorter periods of time and under the same reference conditions as those emission levels associated with the best available techniques; or

(b) setting different emission limit values than those referred to under point (a) in terms of values, periods of time and reference conditions.

Where point (b) is applied, the competent authority shall, at least annually, assess the results of emission monitoring in order to ensure that emissions under normal operating conditions have not exceeded the emission levels associated with the best available techniques. […]

5. The competent authority may grant temporary derogations from the requirements of paragraphs 2 and 3 of this Article and from Article 11(a) and (b) for the testing and use of emerging techniques for a total period of time not exceeding 9 months, provided that after the period specified, either the technique is stopped or the activity achieves at least the emission levels associated with the best available techniques.

Article 15(3) requires emission limit values to be within the emission levels associated with the best available techniques in the BAT conclusion. Emission limit values are not necessarily set at the upper level, but can also be at the middle of lower end of the range if that better reflects the best available techniques to be applied. In this way article 15(3) provides legal possibilities for competent authorities to go beyond BAT when setting emission limit values in permit conditions. Article 15(3) is similar to article 14(3), but specifically for emission limit values.

Article 15(5) allows nine months exemption of BAT to test emerging techniques. This article is helpful when operators would like to apply a potentially better performing technique, but cannot yet provide proof of its performance, because the technique is not yet or rarely applied at full scale or in a certain sector. An example of the practical application of article 15(5) is in the permit for an installation that tests abatement technology.

Article 18 ***Environmental quality standards***

Where an environmental quality standard requires stricter conditions than those achievable by the use of the best available techniques, additional measures shall be included in the permit, without prejudice to other measures which may be taken to comply with environmental quality standards.

Article 18 of the IED on environmental quality standards reflects that the IED uses a combined approach to reduce pollution. On the one hand the IED requires all installations to apply BAT, which are techniques that at (European) sector level are considered technically and economically feasible for all installations in the sector. On the other hand the IED requires industrial activities to be tested against the geographical location and local environmental circumstances, which can be quite different from installation to installation. Article 18 instructs authorities to include stricter conditions than BAT (to go beyond BAT) if necessary for compliance with environmental quality standards on the location of the installation and its surroundings. These additional requirements must be proportional. If the pollution is mainly or also caused by other installations or other sources (like traffic or ships) other measures should be considered first or more measures must be applied.

In Europe several cases show that this is implemented in practice and illustrate how this is done (see also text on drivers and mechanisms). Often this is a co-operation between authorities and operators and not just enforcement. Examples:

- stricter and additional emission limit values for NOx from coal fired power plants (see Example 3 – Netherlands)
- additional abatement for dust and lead in the steel industry (see Example 3 – Netherlands)
- additional emission reduction measures for installation in air quality plan (see Example 4 – Cologne (Germany))
- stricter water discharge requirements for pulp and paper production in the vicinity of phosphorous sensitive surface waters (see Example 1 - Finland)

Article 27 ***Emerging techniques***

1. Member States shall, where appropriate, encourage the development and application of emerging techniques, in particular for those emerging techniques identified in BAT reference documents. […]

Article 27 orders member states to encourage the development and application of emerging techniques. This includes a good application of the articles (14, 15, 18) explained above and good help from authorities to operators wanting to go beyond BAT. It also includes a range of activities outside the IED to promote emerging techniques, like voluntary agreements (See Example 2 – Scotland (UK))[13] and fiscal discounts[14].

Drivers

Drivers
What are the reasons to go beyond BAT? As stated previously the primary reason in the IED for *"going beyond BAT"* is to drive the development of BAT as otherwise BAT will stand still. However this is not usually the main driver, and it is

[13] Another example is the Voluntary Agreement on Energy in The Netherlands: http://www.energieakkoordser.nl/doen/engels.aspx

[14] http://english.rvo.nl/subsidies-programmes/mia-environmental-investment-rebate-and-vamil-arbitrary-depreciation-environmental-investments

usually external factors, outside the scope of the IED which require member states and authorities to require beyond BAT measures are implemented by operators.

Member States and authorities have highlighted that the following drivers as being the main factors for going beyond BAT:

Environmental Quality Standards (EQS) – EQS for both emissions to air and to the water environment are the primary driver for going beyond BAT. While EQS are in place at the EU level, in many cases national or local EQS can have stricter limits, for health or environmental protection concerns - meaning that achievement of ELVs within the BAT-AEL range may not be sufficient.

The primary EQS for going beyond BAT are in relation to PM2.5 and NOx.

River Basin Management Plans (RBMP) – RBMP requires the protection and improvement of the water environment for the benefit of wildlife, people and the economy – and specifically requires that all water bodies meet good status. Achieving the goals of the RBMP in many cases supersedes the IED and as a consequence may require that operators go beyond BAT in order to achieve the specific goals of the relevant RBMP.

Promoting emerging techniques – Article 27 of the IED introduced a specific duty on member states to encourage the development and application of emerging techniques, and specifically those identified in BAT reference documents. Depending upon the nature of a member states IED implementing regulations this duty may require environment regulators to proactively require operators to go beyond BAT.

National Emissions Ceilings – The National Emission Ceilings Directive sets national emission reduction commitments for Member States and the EU for five important air pollutants: nitrogen oxides (NOx), non-methane volatile organic compounds (NMVOCs), Sulphur dioxide (SO2), ammonia (NH3) and fine particulate matter (PM2.5). These pollutants contribute to poor air quality, leading to significant negative impacts on human health and the environment.

Climate and resource-use policy's – Some member states have national or regional climate or resource use policies aimed at either emissions reduction, reducing water use, carbon-based energy use, materials use and all forms of waste and pollution beyond compliance standards. These policies can be highly ambitious. To deliver operators and environmental regulators will need to be clearer, stronger, more innovative and more collaborative – potentially focusing on techniques which go beyond BAT.

Mechanisms

Mechanisms

How does going beyond BAT work in practice? In the end setting conditions that go beyond BAT is also implementing legislation. So the mechanisms for going beyond BAT are very similar to setting conditions on BAT. Sometimes industry is in the lead, sometimes the authorities.

Legislation on environmental quality standards and specifically monitoring data showing a possible exceedance of a standard is a reason for operators to send in a permit application, which includes better performing measures than straightforward implementing of BAT conclusions. The same monitoring data provide the justification for competent authorities to set stricter conditions when deciding on a permit application or when reconsidering and updating an existing permit.

Also for other drivers, like economically driven energy savings or resource efficiency, corporate social responsibility, etc. going beyond BAT follows the normal steps of permit application, drawing up conditions, justification, public partition, decision.

Besides the stricter permit conditions themselves conditions related to going beyond BAT are:

- additional monitoring requirements

- requirements to study feasibility of emerging or other better performing techniques

- temporary exemption of BAT (article 15, para 5)

- transition periods.

Several mechanisms help stricter conditions:

- Strict implementation of BAT Conclusions: As stated previously the BATc provide a degree of flexibility in that any approach can be taken to meet the BAT-AELs and BAT-AEPLs. However some member states have taken an approach of strict implementation of the BAT conclusions, through either drivers in national IED implementing regulations or by setting National or Regional BAT conclusions which must be taken into consideration. As a minimum this approach drives operators to adopt the BAT standards and where they are identified emerging techniques.
- National legislation / General binding rules: National IED implementing Regulations can set rules under which stricter conditions can be set, and as a consequence require operators to go beyond BAT. These are usually prescribed in either discrete regulations or general binding rules. When better performing measures are needed for more installations in the same sector, member states can draw up general binding rules. In several EU member states rules including stricter conditions are in force, for example for intensive rearing and combustion plants. These rules ease the justification of stricter requirements for individual installations, because the reasons are already included in the general binding rules for the whole sector. It also helps acceptance, because general binding rules streamline and harmonize and make conditions predictable.National / regional BAT conclusions or guidance: Similar to general

binding rules, but less binding, are guidelines to set stricter conditions if appropriate for certain sectors or for compliance with environmental quality standards.[15]

- Plans and programmes: Plans and programmes, for example air quality plans, are drawn up to comply with environmental quality standards. In the EU examples exist of plans that include measures for industrial installation (see Example 4 – Cologne (Germany)). Plans and programmes help to set stricter requirements because of their integral approach of an area: All pollution sources (more than industry) in area are considered and the most (cost) effective measures are chosen. Plans and programmes make decisions more fact based and predictable.
- Environmental management systems (EMS): EMS are developed per installation or operator with the aim to improve environmental performance. They can be more general or specific or be integrated in quality assurance system. For all sectors under the IED BAT-conclusions include EMS.
- Voluntary agreements: Voluntary agreements can give security and can also promote a level playing field. Both are important conditions for operators for investing in better techniques (See Example 2 – Scotland (UK))[16].
- Cost benefit analyses: Cost benefit analyses are a tool to calculate feasibility of measures and choose the best measures against lowest costs. Also additional costs compared to conventional measures can be calculated which might be input to subsidies or fiscal discounts. In another interpretation operators use cost and benefits to choose if an investment outweighs potential image damage and discussion with authorities.[17]
- Stable and long term policies: Clear regulations and long term policies help improving environmental performance. This is scientifically proven (Porter hypotheses[18]). Clear regulations and policies give certainty to operators which are a condition for investments.

Gaps & Obstacles

Gaps & Obstacles

It is common for both environmental regulators and operators to highlight potential gaps and obstacles in developing techniques which go beyond BAT. The most common issues include:

Lack of knowledge might hinder innovation – The operator cannot be expected to innovate on its own. Good help from the competent authority is required to assist with questions of operators to new techniques. The competent authority should help the operator by:

- help implement successful innovation in ways that create success in terms of sustainable economic growth and

[15] Scotland: http://www.gov.scot/Resource/0050/00507617.pdf and https://laqm.defra.gov.uk/documents/LAQM-TG16-April-16-v1.pdf

[16] Another example is the Voluntary Agreement on Energy in The Netherlands: http://www.energieakkoordser.nl/doen/engels.aspx

[17] At EU level the Reference document on Economics and Cross-media Effects provides information: http://eippcb.jrc.ec.europa.eu/reference/BREF/ecm_bref_0706.pdf

[18] https://en.wikipedia.org/wiki/Porter_hypothesis

improvements to the environment;
- help facilitate engagement with key players and potential partners;
- help facilitate access to Industry specialists and key Industry stakeholders in order to advise and share information and help to signpost to regional, national and European supporting bodies for advice and financial support.

Going Beyond BAT can have additional costs – While this is a legitimate concern, particularly in relation to the IED and the concept of disproportionate cost. However in the future the environment will be a major business issue, not a 'sideline' issue. Businesses will more often view environmental and social issues as a market driver of business success rather than as a compliance issue involving thoughts about minimum cost and minimum business disruption. For successful businesses, the environment should be viewed as an opportunity, not a problem. This could include for example:

- Consumer demand for environmental credentials.
- Investor requirements for environmental performance.
- Supply-chain requirements for environmental performance.
- Assessment by external ratings bodies (e.g. CDP2, DJSI3).
- Trade association membership standards.
- Expectations of potential employees about environmental performance.
- Social scrutiny (e.g. residents, NGOs) and via social media (e.g. Twitter).

Furthermore as the IED specifies that BAT conclusions should be reconsidered on a cyclical 8-10 year timeframe, failure to adequately invest at an early stage may have the effect of increasing future costs as BAT develops over time.

Availability of techniques/technology – There is a misconception that BAT is all about having the right types of technologies, kit and abatement plant at an installation. This is not the case. BAT is about the optimisation of site-specific performance. It may be the case that an installation has all the most modern technologies and abatement equipment, but if it is not operated or maintained correctly, the performance of this equipment is not optimised, and it may not be BAT. Similarly an installation could use older technologies, but is operated in such a way that their performance is optimised and is BAT for that installation.

The key to going beyond BAT is innovation, which does not necessarily require additional equipment or technologies. Better design, building, operation, maintenance and decommissioning will lead to better results.

However it is acknowledged that if techniques are not available that the IED cannot solve this.

Legislative Framework preventing innovation – Article 27 of the IED specifically requires that member states shall encourage the development and application of emerging techniques and in particular those emerging techniques identified in BAT reference documents. As a consequence article 27 implies a duty for all member states to promote rather than prevent innovation. If national IED implementing regulations prevent innovation then the IED may not have been correctly transposed. Interpretation issues can be a legislative obstacle, for example when determining if new processes fall under IED and if so, which environmental requirements apply. Solutions can often be found in better knowledge (see lack of knowledge hinders innovation). A broadly accepted way to prevent legislative obstacles is to integrate and co-ordinate permit procedures and decisions. Finding a balance between clear and flexible legislation can be a challenge, for example in waste legislation, which is closely related to IED. Helpful actions: Stakeholder involvement and making sure choices and decision are made well-informed.

Example 1 - Finland

Going Beyond BAT – Example 1 - Finland

The Regional State Administrative Agency Eastern Finland (ISAVI) has given an environmental permit to Finnpulp Ltd. for operation of a bleached kraft pulp and bio product mill in Kuopio. According to permit condition 2 the permit holder must treat the wastewater of the mill in a way that the emissions to the watercourse are less than following limit values:

Emission	Monthly Average	Yearly Average
COD_{Cr}	30 t O_2/d	24 t O_2/d
AOX	450 kg/d	400 kg/d
$P_{(tot)}$	**25 kg/d**	**20 kg/d**
$N_{(tot)}$		420 kg/d
SS	1 200 kg/d	1 000 kg/d
Sulphate		**55 t/d**

In order to prevent contamination of the watercourse it has been necessary to set the limit values for the waste water discharge stricter than suggested in the permit application. **Additionally it has been necessary to set the limit value for phosphorus below the range set in the BAT/BREF, because phosphorus is limiting nutrient in the watercourse below the discharge point. In order to prevent internal loading, also sulphate has been set an emission limit value.**

The place of waste water discharge from Finnpulp Ltd is Kelloselkä in Kallavesi -lake. The affected area reaches downstream rather far further south.

The water body of Kallavesi is according to Water Framework Directive classified in good ecological and chemical condition. The most critical parameter for the state of the water body is the biomass from phytoplankton. **Limiting nutrient in Kallavesi is phosphorus. Its concentration in water is influenced not only by the phosphorus load but also among others by the concentration of sulphate, if increased sulphate concentration in water limits the normal turnover in spring and autumn, or it inhibits the natural chemical bonding of phosphorus with iron and sedimentation. Increase of the phosphorus concentration and the following eutrophication and increase of basic production could lead to the change of the ecological state of Kallavesi from good into satisfactory.**

When considering the permit conditions for the waste water and allowed wastewater discharges into the watercourse, the permit authority had to assess the relation of the waste water discharge to BREF limit values and the tolerance of receiving water body. In the application the applicant has presented an examination, in which from the applicant presented waste water load would not alter the good ecological state of the main water body Kallavesi. **This examination is nevertheless not sufficient when deciding limit values for waste water discharges. In addition it had to be estimated, if the waste water load causes significant damage or risk outside the water body Kallavesi but smaller watercourses inside the affected area.** According to 20§ of the Environmental Protection Act it is also necessary to take the precautionary principle into account when considering the permit conditions and emission limit values. **Therefore the limit values of the allowed waste water load are set in the way, that beforehand estimated the limit for significant environmental damage or risk of it would not be exceeded under any thinkable hydrological circumstances and/or emergency conditions in the mill.**

Example 2 – Scotland (UK)

Going Beyond BAT – Example 2 – Scotland (UK)

The Scottish Environment Protection Agency (SEPA) uses Sustainable Growth Agreements[19] as a mechanism to drive going beyond BAT.

Sustainable Growth Agreements (SGAs) are voluntary formal agreements between SEPA and an organisation (or organisations) that focus on practical action to deliver environmental outcomes and help achieve One Planet Prosperity. Most SGAs are signed with individual businesses, but some will also be with groups of businesses, trade bodies, local authorities, Non-Governmental Organisations and others. Through an SGA, SEPA can help organisations collaborate with experts, innovators and stakeholders on different approaches that could improve environmental performance and also help create commercial and social success.

SGAs are an important tool to encourage organisations to embed compliance (a minimum requirement) and help set their own 'beyond compliance' targets which hopefully will also improve profitability; for example by driving reductions in water, energy and materials use and all forms of waste. Under an SGA, SEPA can help organisations collaborate with experts, innovators and stakeholders on different approaches that could improve environmental performance and also create commercial success (e.g. innovative technologies or redesigning processes) and help create social success (e.g. community regeneration support). New opportunities for growth can also be explored, for example through new product lines, synergies with other businesses, or enhanced reputation and improved market position. An organisation may also decide to work more with supply chains (e.g. suppliers, transport, distribution or customers) to achieve better environmental compliance and outcomes.

Through the SGA, it is intended these organisations will become leaders, championing the benefits of environmental

[19] Sustainable Growth Agreements (SGA) as a mechanism for going beyond compliance. https://www.sepa.org.uk/media/286874/superglass_sustainable_growth-agreement.pdf

excellence.

SEPA's 1st SGA is with a company called Superglass. Through the development of Superglass products

and processes, Superglass aims to maximise their economic and environmental benefits, by utilising the best possible practices. In doing so, Superglass is striving to move beyond compliance.

Superglass is a manufacturer of glass mineral wool products. The manufacturing process uses more than 80% recycled glass and this post-consumer waste is sourced from around the UK. The type of insulation products manufactured at the site provide thermal, acoustic and fire insulation properties which are used in our walls, floors and roofs to retain heat in homes, schools and businesses. Research has shown that over its lifetime, typical glass wool saves over 300 times the energy used in its manufacture and transport. Superglass products therefore have a generic British Research Establishment Green Guide rating of A+.

As an IED annex 1 activity Superglass has held a Permit for the site since 2005. In 2012, new management committed to investing in the factory and fully engaging with SEPA. Superglass has invested in projects to lower ammonia emissions, introduced a new Preventative Maintenance system, built a new resin batch plant, introduced new fiberising technology, replaced the furnace recuperator, introduced an Environmental Management System and vastly improved housekeeping.

SEPA's Regulatory Strategy *One Planet Prosperity* describes the 21st century environmental challenges that Scotland and other countries across the world face, including over-use of natural resources and climate change.

According to the ecological footprint measure, Scotland needs approximately three planets to sustain its current way of living. There is, however, only one planet and most nations around the world face the dilemma of significantly overusing the planet's capacity to support human activity. All parts of our communities, businesses and government will have key roles to play to enable Scotland to successfully tackle this 21st century challenge of creating social and economic success within planetary constraints. In terms of environmental regulation, this effectively means that SEPA needs to get all those it regulates to meet their legal obligations and reach compliance; and also help as many regulated entities as possible move beyond compliance.

Superglass is entering into a Sustainable Growth Agreement to firmly entrench this compliance performance **and** to help Superglass go beyond compliance.

Superglass's commitments include:

- To proactively seek innovative solutions to reduce water use and waste production and to maximise the opportunity to reuse, recover or recycle effluents and wastes that are produced;
- To continue to explore opportunities for innovation, trials and the development of new products that will enhance the range of products Superglass manufacture;

- To continue to work with supply chains, transport and distribution companies and customers for better environmental outcomes;
- To explore opportunities to reduce energy use within the entire site including the investigation of the reuse of heat produced by the furnace to the ovens and exploration of increasing the use of renewable energy sources;
- Develop local community engagement with an emphasis on building positive community relationships; and
- To work with SEPA to identify new emerging opportunities in order to improve economic, social and environmental outcomes.

It should be noted that as a focus of an SGA is beyond compliance only some of these commitments have directly correlation to requirements of the IED. Commitment areas which are out with the scope of the IED are highlighted in red.

Example 3 – Netherlands

Going Beyond BAT – Example 3 – Netherlands

Competent authorities in The Netherlands included in permits of the metals, energy and chemical industry conditions stricter than the BAT-AELs or at the lower end of the BAT-AEL ranges to fit new or extended industrial installations in areas with a lot of industry near residential areas or nature. Meeting legal requirements (quality standards) was an important driver as well as corporate social responsibility of the operators.

High efficiency and low NOx energy production[20]

For the time being, energy from fossil energy sources will be essential to an affordable and reliable energy supply. There are two new coal-fired power stations in the port of Rotterdam, which provide a significant contribution to the energy supply. The new power stations of Uniper and Engie are capable of co-firing biomass, have an extremely high efficiency of 46 per cent and are prepared for the capture and storage of CO_2. The power stations also have modern scrubbing systems for particulate matter and NOx.

Reducing particulate matter, heavy metals and dioxins in steel industry[21]

Tata Steel builded a bag filter installation to complete a major environmental improvement project at its IJmuiden steel plant in the Netherlands. Tata Steel intends the facility to reduce emissions of fine particles, heavy metals and dioxins from the sintering process by at least 75%. This project has involved the construction of two huge, technologically sophisticated installations, each the size of an apartment block. The EUR100 million new facility will contain 45,000 m² of bag filters, the equivalent of more than six football pitches. It consists of two parts, one for dedusting the sinter plant and one for capturing and cleaning the gases from the sintering process. The dedusting facility has been operational since autumn 2011 and immediately made a contribution to IJmuiden’s environmental performance, lowering fine particle

[20] https://www.portofrotterdam.com/en/cargo-industry/energy-industry/fossil-energy

[21] https://www.tatasteeleurope.com/en/news/news/2013/2013_IJmuiden_air_filter_corp

emissions by 7% in that year.

Preventing emission particulate matter fertilizer production[22]

Innovative cooling reduces particle emissions during the cooling of fertilizer granules in the installations of OCI Nitrogen in The Netherlands. To expand capacity, a new permit was required. The lower levels imposed by the competent authority presented a serious challenge, because traditional air-cooling systems produce fine particles. The company concerned, OCI Nitrogen, opted for indirect water cooling, but this technology could not be applied directly. Now that is has been installed and several troubles have been solved, the particle emission has been reduced from 174 tonnes a year to zero. Moreover, energy consumption in this cooling section has been reduced by 75% and production has increased by 20%.

Reducing PAHs emission of aluminium anode production[23]

The sustainable production of anodes is part of the policy of Aluchemie. Aluchemie invested in the world's largest fume treatment plant of its kind in the world, which was opened in 2009. The plant cleans emissions resulting from the production process. This results in a 98% reduction of PAH's emission (poly aromatic carbohydrates).

Example 4 – Cologne (Germany)

Going Beyond BAT – Example 4 – Cologne (Germany)
To meet the air quality standards in the Cologne area in Germany the competent authorities formulated an air quality plan[24] that includes measures aimed at the industry (besides other sources like traffic). The measures use existing legislation that provides authorities legal options to require additional emission reduction, but the authority also puts efforts in co-operation with the industries concerned to implement the measures voluntarily. In the context of the proportionality assessment of the interests concerned, the autority must provide proof that the concrete plant makes a relevant contribution to the harmful pollutant emissions. The pollution analysis shows a share of the industry of 9% at the NOx overload location. The aim of the air pollution control plan is to reduce emissions through industrial measures 2 µg/m3. The measures focus on two large industrial sources (Evonik Carbon Black GmbH, Werk Kalscheuren and Basell Polyolefine GmbH). These installations are state of the art, but the air quality situation requires additional emission reduction going beyond BAT. Concrete technical measures are included in the plan.

[22] http://www.ocinitrogen.com/EN/Pages/Press%20releases/Press-Release---Cool-wins-Responsible-Care-prize.aspx

[23] http://www.aluchemie.nl/en/mens-en-milieu/milieu-en-maatschappij.html

[24] http://www.bezreg-koeln.nrw.de/brk_internet/leistungen/abteilung05/53/luftreinhalteplaene/luftreinhalteplan_huerth.pdf

Annex XII

How to deal with Inspections of Wastewater treatment plants

Wastewater treatment plants: how to deal with inspections

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

Title of the report: Wastewater treatment plants: how to deal with inspections	**Number report:** 2017/xxx
Authors (IED Implementation Project team – Subgroup "Wastewater"): • Romano Ruggeri (Italy) • Roberto Borghesi (Italy) • Małgorzata Budzyńska (Poland) • Manuel Salgado (Spain) • Rikke Cochran (Denmark)	**Total number of pages: 83** Report: 27 Annexes: 55
Executive Summary The present Report is the result of the work of the Subgroup "Wastewater", that is part of the "IED Implementation" project team. It intends to be a first approach to deal with the topic of assessing compliance of wastewater discharging by industrial installations with EU legislation; consequently it is mainly addressed to inspection Authorities that have to tackle this task.	
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. Definitions[25]

Urban waste water: Domestic waste water or the mixture of domestic waste water with industrial waste water and/or run-off rain water

Domestic waste water: waste water from residential settlements and services which originates predominantly from the human metabolism and from household activities

Industrial waste water: Any waste water which is discharged from premises used for carrying on any trade or industry, other than domestic waste water and run-off rain water

Primary treatment: treatment of urban waste water by a physical and/or chemical process involving settlement of suspended solids, or other processes in which the BOD5 of the incoming waste water is reduced by at least 20 % before discharge and the total suspended solids of the incoming waste water are reduced by at least 50 %

Secondary treatment: treatment of urban waste water by a process generally involving biological treatment with a secondary settlement or other process in which the requirements established in Table 1 of Annex I of Council Directive 91/271 are respected

Appropriate treatment: Treatment of urban waste water by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of Council Directive 91/271 and other Community Directives

2. Regulatory framework

2.1. Directive 2000/60/EC - Water framework Directive

In 2000, the European Union took a groundbreaking step when it adopted the Water Framework Directive (WFD). It introduces a new legislative approach to managing and protecting water, based not on national or political boundaries but on natural geographical and hydrological formations: river basins. It also requires coordination of different EU policies, and sets out a precise timetable for action, with 2015 as the target date for getting all European waters into good condition.

Waters must achieve good ecological and chemical status, to protect human health, water supply, natural ecosystems and biodiversity.

The definition of ecological status looks at the abundance of aquatic flora and fish fauna, the availability of nutrients, and aspects like salinity, temperature and pollution by chemical pollutants. Morphological features, such as quantity, water flow, water depths and structures of the river beds, are also taken into account. The WFD classification scheme for surface water ecological status includes five categories: high, good, moderate, poor and bad. 'High status' means no or very low human pressure. 'Good status' means a 'slight' deviation from this condition, 'moderate status' means 'moderate' deviation, and so on.

[25] From Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

2.2. Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

The Council Directive 91/271/EEC concerning urban waste-water treatment was adopted on 21 May 1991. Its objective is to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors (see Annex III of the Directive) and concerns the collection, treatment and discharge of:

- Domestic waste water
- Mixture of waste water
- Waste water from certain industrial sectors (see Annex III of the Directive)

The areas into which urban waste water entering collecting systems shall be discharged are divided into: (a) sensitive areas; and (b) less sensitive areas.

This is illustrated in the figure below:

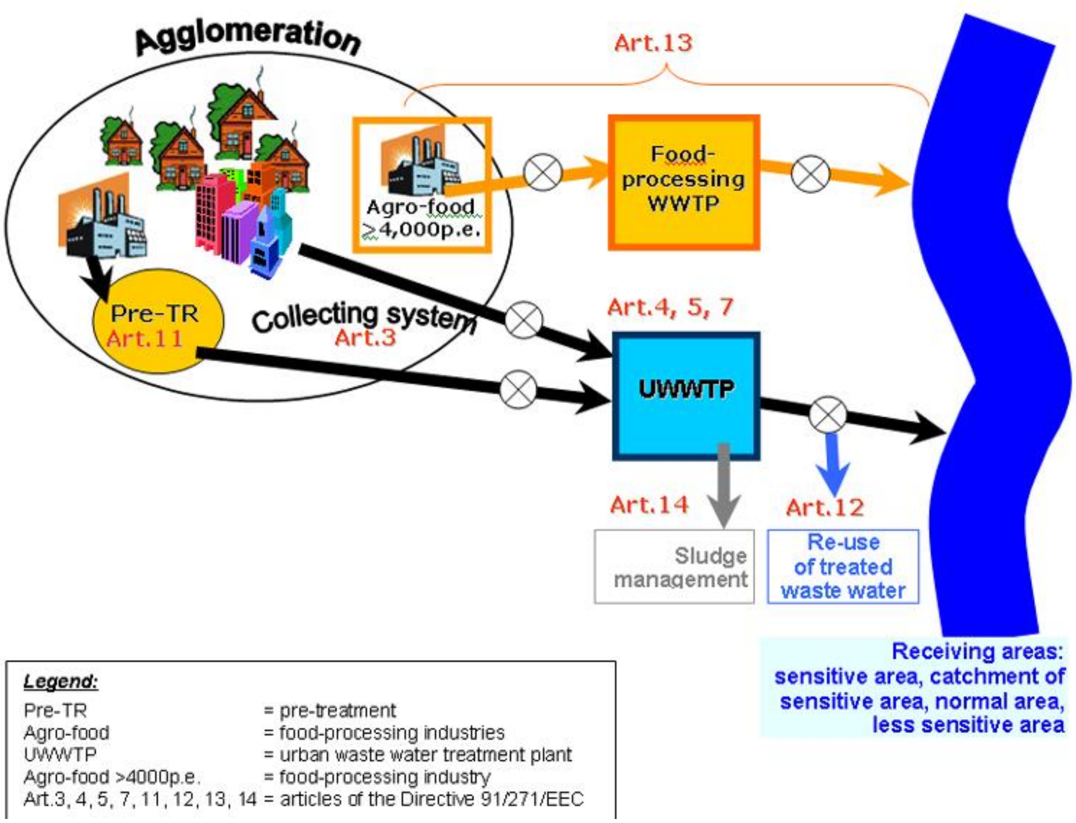

Figure 1: Discharging scheme

Four main principles are laid down in the Directive:

- Planning:
    - The Collection and treatment of waste water in all agglomerations of >2000 population equivalents (p.e.);

- Secondary treatment of all discharges from agglomerations of > 2000 p.e., and more advanced treatment for agglomerations >10 000 population equivalents in designated sensitive areas and their catchments;
- A requirement for pre-authorisation of all discharges of urban wastewater, of discharges from the food-processing industry and of industrial discharges into urban wastewater collection systems;

- Regulation
- Monitoring by Competent authorities or appropriate bodies:
  - Monitoring of the performance of treatment plants and receiving waters;
  - Controls of sewage sludge disposal and re-use, and treated waste water re-use whenever it is appropriate.
  - Discharges from urban waste water treatment plants to verify compliance with the requirements of Annex I.B.
- Information and reporting:
  - Information collected by competent authorities or appropriate bodies in complying with paragraphs 1, 2 and 3 shall be retained in the Member State and made available to the Commission within six months of receipt of a request.

Specifically the Directive requires:

- The Collection and treatment of waste water in all agglomerations of >2000 population equivalents (p.e.);
- Secondary treatment of all discharges from agglomerations of > 2000 p.e., and more advanced treatment for agglomerations >10 000 population equivalents in designated sensitive areas and their catchments;
- A requirement for pre-authorisation of all discharges of urban wastewater, of discharges from the food-processing industry and of industrial discharges into urban wastewater collection systems;
- Monitoring of the performance of treatment plants and receiving waters;
- Controls of sewage sludge disposal and re-use, and treated waste water re-use whenever it is appropriate.

The Directive states that the discharge of industrial waste water into collecting systems and urban waste water treatment plants is subject to prior regulations and/or specific authorizations by the competent authority or appropriate body. Industrial waste water entering collecting systems and urban waste water treatment plants shall be subject to such pre-treatment as is required in order to :

- protect the health of staff working in collecting systems and treatment plants,
- ensure that collecting systems, waste water treatment plants and associated equipment are not damaged,
- ensure that the operation of the waste water treatment plant and the treatment of sludge are not impeded,
- ensure that discharges from the treatment plants do not adversely affect the environment, or ensure that receiving waters comply with other Community Directives,
- ensure that sludge can be disposed of safety in an environmentally acceptable manner.

2.3. Directive 2010/75/EU - Industrial Emissions Directive (IED)

To control industrial emissions, the EU has developed a general framework based on integrated permitting. This means the permits must take account of a plant's complete environmental performance to avoid pollution being shifted from one medium - such as air, water and land - to another. Priority should be given to preventing pollution by intervening at source and ensuring prudent use and management of natural resources. Directive 2010/75/EU of the European Parliament and the Council on industrial emissions (the Industrial Emissions Directive or IED) is the main EU instrument regulating pollutant emissions from industrial installations.

Best available techniques (BAT) conclusions are the reference for setting permit conditions for installations covered by Chapter II of Directive 2010/75/EU. The competent authorities should set emission limit values which ensure that, under normal operating conditions, emissions do not exceed the emission levels associated with the best available techniques as laid down in the BAT conclusions.

The most specifically focused in waste water treatment are the **Conclusions for common waste water and waste gas treatment/management systems in the chemical sector** (WWT BAT - Commission Implementing Decision (EU) 2016/902 of 30 May 2016). Although other BAT conclusions and reference documents deal with waste water treatment.

Independently operated treatment of waste water not covered by Directive 91/271/EEC and discharged by an installation covered by Chapter II of the Directive is an activity subjected to the IED permit.

With regard to indirect releases of polluting substances into water, the effect of a water treatment plant may be taken into account when determining the emission limit values of the installation concerned, provided that an equivalent level of protection of the environment as a whole is guaranteed and provided this does not lead to higher levels of pollution in the environment.

2.4. Regulation (EC) No 166/2006: the European Pollutant Release and Transfer Register (E-PRTR)

Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 established the European Pollutant Release and Transfer Register (E-PRTR), in the form of a publicly accessible electronic database. This database meets the requirements of the United Nations Economic Commission for Europe (UN-ECE) Protocol on Pollutant Release and Transfer Registers, signed by the EU in May 2003.

This register is available to the public free of charge on the internet. The information it contains can be searched using various criteria (type of pollutant, geographical location, affected environment, source facility, etc.).

The register contains information on releases of pollutants to air, water and land, as well as off-site transfers of pollutants present in waste-water and waste. The register covers 91 pollutants listed in Annex II, including greenhouse gases, other gases, heavy metals, pesticides, chlorinated organic substances and other inorganic substances; release data to water for each pollutant exceeding threshold value (according to Annex II of the Regulation) have to be produced by the operator.

Releases are reported when the level of emissions exceeds a certain threshold and originates from one of the 65 activities listed in Annex I. The majority of these activities are also regulated under the Directive on industrial emissions and comprises, in particular, the establishments covered by the following sectors: energy production, mineral industry, chemical industry, waste and wastewater management, and paper and wood production and processing.

Where available, the register also provides some information on pollution from diffuse sources.

The regulation is a key instrument in delivering the requirements of the Aarhus convention as it provides the public with the opportunity to be involved in further developing the register and preparing amendments.

2.5. Recommendation 2001/331/EC minimum criteria for environmental inspections in the Member States (RMCEI)

The RMCEI contains non-binding criteria for the planning, carrying out, following up and reporting on environmental inspections. Its objective is to strengthen compliance with EU environment law and to contribute to its more consistent implementation and enforcement in all Member States. The RMCEI covers all industrial installations, companies and facilities that need authorisation, permit or licensing requirements under EU law. Such installations are also called "controlled installations" in the RMCEI.

This Recommendation suggests that all environmental inspection tasks should be carried out according to a minimum criteria applied in the organising, carrying out, following up and publishing the results of such tasks, in order to strengthen the compliance with environmental law.

Besides providing general obligations for MS, such as aiming for high environmental protection and cross-border cooperation, the RMCEI deals with four main areas:

- Establishing plans for environmental inspections of installations
- Performing inspection
- Reporting on inspection
- Investigating serious accidents, incidents and occurrences of non-compliance.

3. Linked IMPEL projects

3.1. Integrated water approach (2017)

The implementation of EU legislation on water and land has been identified as one of the top challenges in recent IMPEL research.

The objective of this project is to identify, both from the regulatory and technological point of view, how the water resource is managed today in the industry sector subjected to the Integrated Environmental Permitting (IEP) regulation.

The main aim of this project is to compare and share, among the IMPEL members, the implementation of EU legislation relating to water resources management and protection in industrial installations and activities. New approaches for reducing fresh water consumption and over-abstraction of water are to be identified, enhancing water reuse through process analysis, water balance and utilities optimization.

This project is also focused on the implementation of innovative technologies for industrial water treatment able to provide energy saving, sludge production minimization and re-use of treated waste waters, allowing to respect the required discharge limits.

3.2. Linking the Water Framework and IPPC/IE Directives (2010-2013)

The IED Directive 2010/75/EU and Water Framework Directive 2000/60/EC are two of the most wide-reaching items of EU environmental law. They have presented many challenges to the Member States.

Installations regulated under IPPC may impact on the water environment, such as through direct or indirect discharges of pollutants, water abstraction, etc. IPPC requires installations to operate in conditions of compliance with Best Available Techniques (BAT). They are also required to respect environmental quality standards established in EU law, including those derived under EU water law. However, the relationship between the two sets of obligations is often far from simple.

Therefore a phased IMPEL project was started in 2010 to investigate the relationship between both directives. The analysis focused on pressures from point source pollution due to organic (e.g. untreated/partially treated waste water from agglomeration and industry), nutrient and chemical substance emissions.

4. Monitoring and sampling of wastewater: JRC Reference Report on Monitoring of Emissions to Air and Water from IED installations (Draft 2017)

4.1. Monitoring regimes

The chapter “Monitoring of emissions to water “of the BREF “Reference Report on Monitoring of Emissions to Air and Water from IED installations” includes information on:

- water pollutants
- continuous/periodic measurements
- surrogate parameters
- toxicity tests and whole effluent assessment
- costs.

This BREF gives some guidance on measurement and sampling, distinguishing between continuous and periodic measurements, between continuous and periodic sampling, and between composite and spot samples.

In the case of **continuous (on-line) measurements**, no discrete samples are taken. Two types of continuous monitoring techniques can be considered:

1. Fixed in-situ (or in-line) continuous reading instruments. Here the measuring cell is placed in the duct, pipe or stream itself. These instruments do not need to withdraw any sample to analyse it and are usually based on optical properties. Regular maintenance and calibration of these instruments is essential.
2. Fixed on-line (or extractive) continuous reading instruments. This type of instrumentation continuously extracts samples of the emission along a sampling line, transport them to an on-line measurement station, where the samples are analysed continuously. This type of equipment often requires certain pre-treatment of the sample.

In the case of **periodic measurements**, sampling may be carried out continuously or periodically:

- For <u>continuous sampling</u>, the samples are taken continuously with a fixed or variable flow rate. If the sampling flow rate is adjusted continuously to the waste water flow (flow-proportional), the samples are representative of the bulk water quality. This requires either continuous on-line measurement of the flow rate or a sufficient number of discrete samples for the relevant time period to allow the determination of changes in the waste water composition. This method is most suitable for taking representative samples of waste water discharges when the flow rate and concentration of the parameter of interest vary significantly. However, this method can involve higher costs, in particular, depending on the number of samples to be analysed; therefore, it is only applied in extraordinary cases.

• For periodic sampling, the samples are taken at different intervals, typically depending on time or waste water volume flow rate. One example is flow-proportional sampling, in which a predefined amount of sample is taken for each predefined volume of waste water discharged.

<table>
<tr><th colspan="3">Continuous (on-line) measurement</th></tr>
<tr><th colspan="2">Sampling type</th><th>Sample type</th></tr>
<tr><td rowspan="3">Continuous</td><td>Direct measurement in the effluent flow without extraction</td><td rowspan="3">No discrete samples</td></tr>
<tr><td>Time-proportional extraction</td></tr>
<tr><td>Flow-proportional extraction</td></tr>
<tr><th colspan="3">Periodic measurement (analysis of each separate sample)</th></tr>
<tr><th colspan="2">Sampling type</th><th>Sample type</th></tr>
<tr><td rowspan="2">Continuous</td><td>Time-proportional extraction</td><td rowspan="4">Discrete samples for short time intervals or composite samples for longer time intervals (e.g. 24 hours)</td></tr>
<tr><td>Flow-proportional extraction</td></tr>
<tr><td rowspan="3">Periodic</td><td>Time-proportional extraction</td></tr>
<tr><td>Flow-proportional extraction</td></tr>
<tr><td>Instantaneous extraction</td><td>Spot samples</td></tr>
</table>

The following main sample types for periodic measurements can be distinguished:

- Composite samples are, by far, the most commonly used samples. They are obtained by mixing appropriate proportions of periodically (or continuously) taken samples. Composite samples provide average compositional data. Consequently, before combining samples, it should be verified that such data are desired and that the parameter(s) of interest do(es) not vary significantly during the sampling period. It is assumed that this is generally the case for industrial waste water.
- Spot samples are discrete samples taken at random time intervals. They are generally not related to the waste water volume discharged, but typically used when treating batches of waste water. The application depends on the parameter, its variations, and the waste water matrix in the industrial sector.

Several water parameters can be measured continuously as well as periodically. A number of parameters, such as pH, temperature and turbidity, are typically measured continuously, because the results are used for process control and are important to run the waste water treatment plant properly.

Examples of water parameters that can be continuously measured include the following:

- Water flow;
- pH, dissolved oxygen, and conductivity by direct electrochemical measurements;
- nitrate and ammonia by specific ion electrodes;
- metals by anodic stripping voltammetry;
- ammonia, phosphate, total phosphorus (TP), and iron by spectrophotometry;
- TOC by combustion and IR spectrometry.

Periodic measurements are defined as the determination of a measurand at specified time intervals. In general, these measurements are based on periodic sampling at fixed intervals, which can be time-, volume- or flow-dependent, followed by an analysis of the parameters under investigation in the laboratory (on-site, off-site).

A measurement plan has to be defined, to ensure that emission measurements are adequate for the given measurement objective.

The location of the sampling point(s) should ensure that the sample is representative of the effluent discharge. It is recommended to accurately describe and mark the sampling point on the process flowsheet, if possible supplemented with photographs to facilitate identification of the exact location. Also the sampling point should be constructed to fit sampling equipment and with room for personnel to service the equipment.

Monitoring in BAT conclusions is usually based on flow-proportional composite samples. However, time proportional composite samples may lead to equally representative results provided that the variations in the concentrations or flows are small.

Taking composite samples over a period of 24 hours is usually automatic; instruments automatically withdraw a portion of sample at the appropriate volume discharged or time. It is advisable that the total sample volume is as large as is reasonably practicable to accommodate. In addition, it is necessary to consider the stability of the target parameter over the total sample collection time, as samples may deteriorate while being kept in the automated sampling device. In order to preserve the composite sample, it is often cooled and chemicals might be added.

4.2. Sampling equipment

The choice of sample container is of major importance to preserve the integrity of the samples (e.g. to prevent sample contamination or losses due to adsorption or volatilisation). For the sampling of waste water, plastic containers are generally recommended for most parameters. Glass containers are generally used for the measurement of oil, grease, hydrocarbons, detergents, and pesticides [152, ISO 1992]. EN ISO 5667-3:2012 includes detailed provisions on the types of containers to be used, depending on the parameter. This standard is complementary to other, more specific measurement standards which provide more detailed information on the required type of container and its pretreatment.

Typical simple devices used for manual sampling include buckets, ladles, or wide-mouthed bottles that may be mounted on a handle of a suitable length. Another possibility is to use Ruttner or Kemmerer samplers which consist of a tube with a hinged lid at each of its ends.

Automated sampling to obtain flow- or time-proportional samples can be carried out with several different devices which may be using a chain pump (paternoster pump), a peristaltic pump or compressed air and/or vacuum.

EN ISO 5667-3:2012 provides general information on the preservation and handling of water samples, including maximum storage times. To preserve pollutant concentrations that may change during sample storage, the following measures may be necessary, depending on the waste water composition and the pollutant concerned:

- storage of the sample in the dark;

- cooling of the sample;
- filtration of the sample;
- stabilisation of the sample with acids, alkalis, or other chemicals;
- re-dissolution of precipitates.

5. Waste water management: Best Available techniques in different industrial sectors

Waste water management, collection and treatment, as well as water saving measures, are part of the BAT Conclusions issued for different industrial sectors.

The following BAT Conclusions covering waste water treatment have been issued so far:

- Decision (EU) 2016/902 (CWW: Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector)
- Decision 2014/687/EU (PP: Pulp and paper)
- Decision 2014/738/EU (REF: Refining of Mineral Oil and Gas)
- Decision 2012/135/EU (IS: Iron and Steel Production)
- Decision (EU) 2017/302 (IRPP: Intensive Rearing of Poultry & Pigs)
- Decision 2013/163/EU (CLM: Production of Cement, Lime and Magnesium Oxide)
- Decision 2013/732/EU (CAK: Production of Chlor-alkali)
- Decision 2013/84/EU (TAN: Tanning of Hides and Skins)
- Decision (EU) 2015/2119 (WBP: Wood-based Panels Production)
- Decision (EU) 2016/1032 (NFM: Non-ferrous Metals Industries)
- Decision 2012/134/EU (GLS: Manufacture of Glass)
- Decision (EU) 2017/1442 (LCP: Large Combustion Plant)

The BREF "Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector" is particularly focused in the treatment of wastewater; a short description of this BREF and a list of the main requests of the above listed BAT Conclusions for a proper management of waste water is given below.

5.1. BREF Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector

This BREF for Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector concerns the activities specified in Sections 4 and 6.11 of Annex I to Directive 2010/75/EU, namely:

- Section 4: Chemical industry;
- Section 6.11: Independently operated treatment of waste water not covered by Council Directive 91/271/EEC and discharged by an installation undertaking activities covered under Section 4 of Annex I to Directive 2010/75/EU.

This document also covers the combined treatment of waste water from different origins if the main pollutant load originates from the activities covered under Section 4 of Annex I to Directive 2010/75/EU.

Chapter 2 of the BREF provides data and information concerning the environmental performance of waste water treatment plants (WWTPs) at chemical sites.

Chapter 3 describes in more detail the techniques to prevent or, where this is not practicable, to reduce the environmental impact of operating installations in this sector that were considered in determining the BAT. This information includes, where relevant, the environmental performance levels (e.g. emission and consumption levels) which can be achieved by using the techniques, the associated monitoring and the costs and the cross-media issues associated with the techniques.

Chapter 4 presents the BAT conclusions as defined in Article 3(12) of the Directive.

Commission Implementing Decision (EU) 2016/902 of 30 May 2016 established best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector.

In particular, these BAT conclusions cover the following issues referred to water treatment:

- environmental management systems;
- water saving;
- waste water management, collection and treatment;
- waste management;
- treatment of waste water sludge.

The techniques listed and described in these BAT conclusions, althought generally applicable, are neither prescriptive nor exhaustive. Other techniques may be used that ensure at least an equivalent level of environmental protection.

5.2. BAT in wastewater management: an insight in the BREFs

Some common key BATs can be found in the issued BAT Conclusions; these are here listed as they are generally present in the waste water management of all the industrial sectors:

Environmental management systems

In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS). Establish and maintain an inventory of waste water streams, as part of the environmental management system, that incorporates information about the characteristics of the waste water.

Sampling and Monitoring

- Monitoring of key process parameters (including continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. influent to pretreatment and influent to final treatment).
- BAT is to use ISO 5667 for water sampling and to monitor the emissions to water at the point where the emission leaves the installation.

- Monitor emissions to water in accordance with EN standards with at least a fixed the minimum frequency (varying for the different industrial sectors).

Emission levels

- Emission levels associated with the best available techniques (BAT-AELs) for emissions to water usually refer to values of concentrations (mass of emitted substances per volume of water), expressed in µg/l or mg/l. Unless otherwise stated, the BAT-AELs refer to flow-weighted yearly averages of 24-hour flow-proportional composite samples, taken with the minimum frequency set for the relevant parameter and under normal operating conditions. Time-proportional sampling can be used provided that sufficient flow stability is demonstrated.
- In some cases, yearly average is an average of all daily averages taken within a year, weighted according to the daily production, and expressed as mass of emitted substances per unit of mass of products/materials generated or processed (pulp and paper industry). The BAT-associated emission levels (BAT-AELs), set in the CWW BATc, apply to direct emissions to a receiving water body from:
  - (i) the activities specified in Section 4 of Annex I to Directive 2010/75/EU;
  - (ii) independently operated waste water treatment plants specified in Section 6.11 of Annex I to Directive 2010/75/EU provided that the main pollutant load originates from activities specified in Section 4 of Annex I to Directive 2010/75/EU;
  - (iii) the combined treatment of waste water from different origins provided that the main pollutant load originates from activities specified in Section 4 of Annex I to Directive 2010/75/EU.

Reducing emissions to water

- Reduce the volume and/or pollutant load of waste water streams, to enhance the reuse of waste water within the production process.
- Maximise internal recycling.
- Remove insoluble and soluble polluting substances:
  - Removal of insoluble substances by recovering oil (API Separators (APIs), Corrugated Plate Interceptors etc.); removal of insoluble substances by recovering suspended solids and dispersed oil (Sand Filtration, dissolved Gas Flotation (DGF) etc.)
  - Removal of soluble substances including biological treatment and clarification: Biological treatment techniques may include Fixed bed systems or Suspended bed systems.
- In order to prevent the contamination of uncontaminated water and to reduce emissions to water, BAT is to segregate uncontaminated waste water streams from waste water streams that require treatment (Water and drainage system for segregation of contaminated and uncontaminated water streams).
- Avoid sending non-contaminated water to general waste water treatment.

Reducing the volume of waste water sludge

In order to reduce the volume of waste water sludge requiring further treatment or disposal, and to reduce its potential environmental impact, BAT is to use one or a combination of the techniques given below.

- Conditioning. Chemical conditioning (i.e. adding coagulants and/or flocculants) or thermal conditioning

- Thickening/dewatering. Thickening can be carried out by sedimentation, centrifugation, flotation, gravity belts, or rotary drums. Dewatering can be carried out by belt filter presses or plate filter presses.
- Stabilisation. Sludge stabilisation includes chemical treatment, thermal treatment, aerobic digestion, or anaerobic digestion.
- Drying. Sludge is dried by direct or indirect contact with a heat source.

Treatment

- BAT is to use an integrated waste water management and treatment strategy that includes an appropriate combination of the techniques
  - Process-integrated techniques: Techniques to prevent or reduce the generation of water pollutants.
  - Recovery of pollutants at source: Techniques to recover pollutants prior to their discharge to the waste water collection system.
  - Waste water pretreatment: Techniques to abate pollutants before the final waste water treatment. Pretreatment can be carried out at the source or in combined streams.
  - Final waste water treatment by, for example, preliminary and primary treatment, biological treatment, nitrogen removal, phosphorus removal and/or final solids removal techniques before discharge to a receiving water body.
- BAT is to pretreat waste water that contains pollutants that cannot be dealt with adequately during final waste water treatment by using appropriate techniques. In general, pretreatment is carried out as close as possible to the source in order to avoid dilution, in particular for metals. Sometimes, waste water streams with appropriate characteristics can be segregated and collected in order to undergo a dedicated combined pretreatment. Use an adequate pretreatment for each final flow.
- When further removal of organic substances, nitrogen or phosphorus is needed, BAT is to use tertiary treatment (pulp and paper industry).

Prevent or reduce odour emissions

In order to prevent or to reduce odour emissions from waste water collection and treatment and from sludge treatment, BAT is to use one or a combination of the techniques given below.

(a) Minimise residence time of waste water and sludge in collection and storage systems, in particular under anaerobic conditions.

(b) Chemical treatment. Use chemicals to destroy or to reduce the formation of odorous compounds (e.g. oxidation or precipitation of hydrogen sulphide).

(c) Optimise aerobic treatment. This can include: (i) controlling the oxygen content; (ii) frequent maintenance of the aeration system; (iii) use of pure oxygen; (iv) removal of scum in tanks.

(d) Enclosure. Cover or enclose facilities for collecting and treating waste water and sludge to collect the odorous waste gas for further treatment.

(e) End-of-pipe treatment. This can include: (i) biological treatment; (ii) thermal oxidation. Biological treatment is only applicable to compounds that are easily soluble in water and readily bioeliminable.

5.3. Waste water technologies used in industrial process: general analysis

The main unit processes used at the final WWTPs are:

- physical-chemical and biological treatment or only biological treatment:
  - Complete mix activated sludge (CMAS) flat tank
  - CMAS tower biology
  - membrane bioreactor
  - activated sludge without further specification;
  - fixed-bed reactor
  - expanded-bed process
  - biological treatment without further specification
- physical-chemical treatment only:
  - neutralisation
  - precipitation/coagulation/flocculation
  - crystallisation
  - skimming
  - oil-water separation
  - oxidation with H_2O_2
  - stripping
  - activated carbon filtration.

With respect to the *final solids (TSS)* removal step, the following techniques are applied at the WWTPs:

- sedimentation
- ultrafiltration, including membrane bioreactor
- sand filtration
- filtration without further specification
- flotation
- reverse osmosis

Depending on the *organic load* of the influent, a variety of pretreatment processes are used, including:

- additional activated sludge processes
- trickling filters
- fixed-bed reactors
- anaerobic pretreatment
- oxidation
- oil-water separation

- stripping.

Several of the WWTPs apply *nitrogen and/or phosphorous* removal:

- biological nitrification/denitrification
- chemical phosphorous precipitation.

Unit for waste water *sludge* reduction: Conditioning, Thickening/dewatering, Stabilisation, Drying.

6. Inspections in wastewater treatment plants: indications

The aim of the inspection is to check compliance of the operator with the operating/environmental conditions set in the issued permit.

6.1. Before the inspection: desktop study

The inspection team should be fully prepared for the inspection. It should therefore gather all the relevant information and data that is available.

The collection and evaluation of existing information about the installation is critical for the success of the inspection. Examples of information to be collected are listed below:

- Reports of previous inspections of the site
- Application for the permit
- Environmental permit/s and Self monitoring plan: provisions for water treatment and discharge
- Monitoring data at the discharging point included in the Environmental reports submitted by operators (build the trend)
- List of analytical methods used in the installation
- Layout of the water treatment plant: waste water streams and sections of the plant (partial discharging point to avoid mixing)
- BREF for Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector and sectorial BREF
- List of EMS technical procedures related to management of the treatment.

The issues that should be taken into account while examining self-monitoring results (Self monitoring register - last lab analysis) are as follows:

- Checking if the self-monitoring is done in line with the permit, i.e. checking the frequency, parameters measured, equipment used.
- Checking if the reference methods for taking samples and making measurements and analysis were used.
- Checking whether a certified (accredited) laboratory did collection of samples and analysis.
- Check data about efficiency of the treatment (trend).
- Checking if emission limit values are breached.

On the basis of the evaluation of the collected information the following has to be prepared:

- Relevant questions which will be used for the operator's interview
- A check list to facilitate the inspection
- An outline of the "critical" ELV (i.e. those parameters which significantly contribute to the pollution load coming out of the installation)
- The list of BATs (according to the issued permit) which the operator should have installed and operated
- The list of documentation to be provided by the operator (e.g. self-monitoring records, annual reports submitted to the authorities)
- Agenda of the inspection (see next subsection)
- Analytical devices for an on-site sampling of the discharged water.

The preliminary analysis of the collected documentation must enable a better understanding of the cycle of the water treatment plant and its past and current critical points. Advantages of using a checklist (see Annex to have an example) are:

- to ensure all necessary aspects will be inspected;
- a better organisation of the interview and site visit;
- time rationalisation;
- fast assessment of the non-compliance situations.

6.2. During the inspection

The aim of the inspection will be to check compliance of the operator with the operating/environmental conditions set in the issued permit.

The checklist and the operating/environmental conditions set in the issued permit will be the „guidance" throughout the inspection. If necessary, take samples, and/or define the samples that should be taken by a certified (accredited) laboratory or try to be on site when the samples are taken randomly so the inspector knows it is done right.

During the documentation checking, the following items should for example be verified:

- Self monitoring register (last lab analysis);
- Assess change in treatment efficiency by comparing the most recent data with the trend (check permit conditions if present)
- Maintenance operations register;
- Communications to Competent Authority (threshold breaches etc);
- Liquid Waste input/output register;
- EMS Procedures.

During the inspection visit, the sections of the waste water treatment plant have to be investigated, with the following main purposes:

- Check correspondence of the points of discharge with those indicated in the permit
- Check the waste water streams in order to assess that compliance with the limits is not achieved by dilution
- Check procedures, competences (training…) and tools used by the operator or third company to take samples
- Check if all the sections of the plant are working
- Check how the sludge (produced by the treatment) is treated and which is the final destination (use in agriculture, incineration, landfill etc)
- Check which parameters are continuously monitored (flow, pH etc); check maintenance of devices and calibration
- Check how rain water is managed (first flush collection and treatment)
- System to collect not treated water in case of heavy rain
- Check if any kind of pretreatment is needed for the pollutants that will not be affected by the final treatment
- Check if treated water is re-used or discharged.

6.3. Sampling

Sampling is the action to extract a (waste) water mass with a view to investigating a number of clearly defined properties. A representative sample is a sample whose composition corresponds to that of the wastewater to be investigated or a specific part thereof.

6.3.1 Auditing

When the inspection group is auditing the sampling and analysis activities of the operator (or of a third part), the aim of the site inspection should be to check:

- the compliance of the operator with the reference methods adopted for taking samples and making measurements and analysis, related to conditions set in the monitoring plan (and permit);
- the qualified competences of the operators (training, personnel certification registrations etc.);
- the accredited laboratory collected samples and analysis, and relative signature of the responsible.

ISO 5667 establishes general requirements for sampling, preservation, handling, transport and storage of all water samples including those for biological analyses.

6.3.2 Performing sampling

Some Inspection Authorities can perform sampling by their own. In order to ascertain whether the limits of acceptability, as set by current legislation, are complied with, the sampling of the waste water must be carried out at the sampling point, immediately before the effluent point in the receiving body. The sampling well must be easily accessible and of adequate size.

The sampling may be instantaneous (withdrawing a suitable volume of effluent in one solution), medium composite (obtained by mixing a number of samples, taken in a given period of time; from it you get the required volume for analysis), continuous (continuous withdrawal of a portion of the effluent for a certain time period to obtain the volume required for the analysis).

Devices and tools should preferably be made of inert material. The preference is for stainless steel because teflon (PTFE) is very expensive and the other materials have limitations:

- corrosion resistant steel (stainless steel) is suitable for all groups of parameters.
- thermoplastic (PE, PVC) is unsuitable for the sampling of organic compounds, but is suitable for the other applications.
- fluoropolymer (PTFE, TFE) is suitable for all groups of parameters.

The sample bottles must be clean and made of the proper material and of the correct size to transport and store waste water samples. A proper bottle should be used for each group of pollutant:

Pollutant	Bottle	Volume (minimum)
Metals	Plastic	50 ml
VOC	Glass	40 ml (vials 100% off)
Total hydrocarbons Fats and oils Chlorinated / phosphoric pesticides Phenols and / or aldehydes IPA	Dark glass	250 ml
Microbiology - E.Coli	glass / plastic sterile	300 ml – 1 l

Handle the following filling rate of the sample bottle:

- Complete the bottle for volatile parameters for 100% off;
- Do not fill the mineral oil bottle by more than 80%;
- Fill in the bottle for inorganic parameters for 90%.
- If the parameter to be analyzed is not known, go to the lowest fill rate of 80%.

Samples should be transported as soon as possible in the laboratory; however, they should not be kept longer than 4 hours at temperatures above 10 ° C; as far as the samples for microbiological analysis are concerned, they should be maintained both during transport and in the laboratory at a temperature of 3- 5 °C.

A sampling lists and labels for the sampling bottles should be prepared in advance. The sampling lists contain all the information required for sampling such as:

- Name and object code of the loader;
- Description and code of the sampling point;
- Lab Info Number;
- Sampling method (stitch / collect);
- Analyse parameters;
- Conservation.

Use clean gloves and prevent the sample from being contaminated from the environment

6.4. Dealing with violations

A survey covering all aspects from permit procedure to inspection and sampling/analysis has been conducted (Annex 2). 19 member states and country regions answered the survey. The overall results are described in section 7.

Of all the answers to the survey, can be distinguished two basic systems of dealing with the violation. One of them is the case where further proceedings are conducted by the Authority, the second is where proceedings are handled over to police, public prosecutor and competent judicial authorities. Among countries in which permit is not issued by the same Authority that check compliance with permit conditions it is usually the inspection who conduct proceedings (but not in all cases).

If a breach of the limit value is declared within the self-monitoring report, provided by the operator to the competent authority, these data are possible to be used to take further actions. There is no country when that data cannot be used in any action. But that actions differs in countries. This may be a penalty imposed directly on the basis of these measurements or measurements may be the introduction to other verifying actions leading to penalty.

In that first situation after receiving measurement results for an appropriate period of time, Inspection Authority is checking it and, in case of non-compliance with the values set in the permit, a decision imposing an administrative penalty is issued. At the request of the operator, the Authority may postpone the deadline for payment of the administrative penalty if it carries out the enterprise (project/operation) which may constitute a basis for postponing the penalty. If the enterprise has been completed in due time, as confirmed by the quality of the purified effluent, the penalty is discontinued. The operator has also the right to appeal against the decision imposing the penalty to the second instance authority.

In the second situation, a breach of the limit values declared within the self-monitoring report does not constitute itself an automatic evidence of the violation. It has to be technically verified and that should be performed by the inspection authority. Often after submitting self-monitoring report with declared breach of emission limit value competent authority make action for verifying non-compliance and it this is done by asking the operator for more details or by making site inspection. In some countries penalty can be set only after one inspection on the plant where those results are observed. Self-monitoring reports are also used as tools for checking the compliance with the permit conditions.

If non-compliance is noticed from such reports than an inspection on site is undertaken in order to enforce the permit condition. Usually this means that the operator is punished by a penalty for breaching the permit conditions but also a permit suspension may be taken into consideration. Punishment may be imposed but two more analysis has to be done and the inspector has to be present during sampling. If the average value of three result (one from self-monitoring) exceeds the limits, then the authority can issue a penalty. When such a breach is reported, the Authority requests further corrective action to rectify that breach. Moreover, should the operations result in exceedance of the emission limit values indicated in the permit, the operator is required to designate a mixing zone as stipulated in the requirements of the Water Framework Directive or to apply for derogation from achieving the required emission levels.

In other systems competent authority itself can't issue a fine. If there are exceedances of the terms of approval, this will be excluded by the state/ the municipality - and may end with a police report and a fine. The police conduct investigations. If there has been a crime, police hands over the case to the public prosecutor. If the case goes to the court, the competent authority is called to the court as a witness. The fine is imposed by the court. Authority may also order a stop of the discharge of waste water.

In most countries the sanction for exceedance of wastewater discharge quality are imposed by inspection bodies on the basis of control measurements. In fewer cases penalties are imposed by permitting authority or other competent authority, usually after non-compliance are reported to that authority by inspection. Operator may have a right to ask for postponing the deadline for payment, to appeal to higher instance authority, to submit a complaint against penalty report to the competent court, to spread the penalty into instalments. The smallest number of cases is when penalties are imposed only by court.

Type of punishment for exceeding the permissible conditions depends on the severity of the crime and if done on purpose or on pure negligence, and on the impact in the environment. Usually the punishment is to impose a fine. Only in cases where there is an imminent threat of damage to the environment or if operator does not restore the non-compliance situation or if it's a second breach, authority may issue a decision, like closure of the plant or part of it, withdrawal of the permit.

Type of punishment:

- fine by authority (some with maximum upper limit, like for instance 4000 euros),
- monetary fines by court,
- jail,
- restriction operation,
- prohibiting operation by court,
- suspension of the permit,
- cancelation of the permit,
- remediate measures,
- closing down part or whole installation,
- official warning,
- order of penalty payment
- administrative enforcement,
- withdrawal permit,
- withdrawal of bank guaranties.

6.5. EMS Procedures

Importance is checking the Environmental Management System (EMS) that operator should implement. EMS are considered in every BAT conclusions, as Best Available Practice, but it is not compulsory having a EMS certification (EMAS, ISO14001), as far as could be an internal process. Checking compliance of EMS procedures is particularly relevant when the EMS is not certified.

It is fundamental checking how the operator is able to tackle possible malfunctions of the waste water treatment plant, causing environmental critical situations.

During the inspection visit, the sections of the waste water treatment plant have to be investigate, with the following main purposes:

- List of procedures/instructions of Environmental Management System (EMS) to understand how the process is covered by documentation
- List of critical devices for the environment (e.g. parts, devices, instruments of measures in the treatment waste water plant) to focus the main environmental aspects
- Maintenance procedures and related registrations (check frequencies and manner registration on waste water treatment plant)
- Checking performance and taking corrective action. Does the company take action systematically following the examination of deviations and near deviations as a means to improve the compliance performance?
- Monitoring and measurement. Does the company communicate in this annual report the performance in relation to all relevant regulatory requirements?
- Environmental Emergency scenarios and related actions.

6.6. Relevant criteria to be considered for risk assessment (IRAM tool)

Pursuant to the Industrial Emission Directive (IED) all inspections should be planned in advance.

The competent authority must draw up inspection plans and programs for installations and establishments, including the frequency of site visits. These frequencies should be based on a systematic risk appraisal. Within the IMPEL project “Easy tools” a new rule based methodology was developed and tested, called Integrated Risk Assessment Method (IRAM).

Each installation is rated against impact criteria; when assessing the risk for IPPC (IED) installations examples of appropriate impact criteria include “Quantity/quality of water pollution”.

Releases to water are therefore among the criteria identified to set priorities, and it is worth to mention how they are declined in the IRAM risk assessment:

4. Releases to water / off-site transport in waste water

Score	Definition
0	Activity **is not mentioned** in Annex 1 of the EPRTR Regulation and there are **no releases** to water or off-site transports in waste water
1	Activity **is mentioned** in Annex 1 of the EPRTR Regulation but **no threshold** of Annex 2, column 1b, is exceeded and there are **no other releases** to water or off-site transports in waste water
2	Activity **is or is not** mentioned in Annex 1 of the EPRTR Regulation, **no threshold** of Annex 2, column 1b, is exceeded but there are **other releases** to water or off-site transports in waste water
3	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>1**
4	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>5**
5	Activity **is mentioned** in Annex 1 of the EPRTR Regulation and **the sum** of the releases to water or off-site transports in waste water - normalised to the thresholds* of Annex 2, column 1b - is **>10**
* Ratio of release or off-site transport to threshold value	

7. Main results of the Survey

A survey has been handed out at the first stage of the project containing preliminary questions to MS about waste water treatment. There have been 19 replies from 15 countries. There is no such situation in any MS that parameters of the quality of treated wastewater are stated only in law. In majority of cases – 16 answers from 12 MS parameters are stated both in low and in permit. In 3 MS parameters are stated only in permit. There are many different systems regulating the manner in which waste water permits are issued. Also permits are issued by various Authorities, both as regards the administrative area to which the body is responsible and the competence of authority.

Of all countries where the discharge conditions are defined both in the law and in the permit, in 8 MS (12 answers) permit can specify more restrictive conditions than in low, and in 2 MS permit can specify more and less restrictive conditions. In 2 MS permits can not specify other than the law conditions. The reasons for having possibility of setting in permit restrictive conditions are as follows. In these cases (and they are particular not regular situation) permit conditions are related to the state of the recipient water body (lower water quality than more restrictive conditions for waste water discharged) or to the quality of the water used in the industrial processes (higher quality parameters for raw water than higher quality parameters for waste waters).

There are more reasons for possibility of setting only more restrictive conditions in permit than those prescribed by law.

- situation where special care must be given to recipient bodies which belongs to sensitive areas or other areas of environmental importance.
- in terms of requiring monitoring of parameters which are not specifically indicated in law or impose stricter emission limit values;
- if Best Available Techniques allow to attain smaller values and also if facilities are located in specific delicate places;

- condition more restrictive than e.g. BREF/BAT-conclusions if it is necessary regarding WFD, which is implemented in an executive order which again in turn must be implemented in the permit;
- if water quality standards are not met by applying BAT-AELs.

Permit determining the quality parameters of discharged waste water (whether it is an IPPC or sector permit) is issued by the same authority that inspect installation in 9 MS (11 answers). Permit is issued and inspected by different authority in also 9 MS (11 answers). 2 MS (3 answers) occurred in these 2 groups. The reason is that in that 2 cases permit conditions can be checked both by issuing authority and by different one.

In majority of cases where permit is issued by the same authority than the one that check compliance, permit issues and check compliance is done by different departments or different group of people in one department or different team within the same authority or section who is checking compliance work and do research independent from the permitting section and management of both sections is different.

Advantages, which respondents of survey indicated, of that system over the other, is that experts who perform inspection may have better knowledge about the facility and can monitor the environmental performance of the facility more effectively. When it’s the same authority it provides an integrated approach and knowledge from the approval process is utilized in the inspection. Inspectors who write authorization know very well the operations and thus can effectively carry out their checks. This enables better handing over of the case files and continuous communication between permitting and compliance teams thereby facilitating mutual understanding of permit conditions and compliance issues such as enforceability. The authority who make the inspections knows the conditions established in the permit and the complete administrative file of the activity. More knowledge and experience in one authority, more exchange of knowledge, better transfer of information.

Advantages of the system where permit is issued by different authority than the one that check compliance with permit conditions is improving the transparency on the decisions and avoiding corruption. Disadvantages is that issuing authority may not know an installation good or even does not see an installation at all. That system increases the need of communication between authorities which results in amount of correspondence between authorities and extended time for writing permit. Notwithstanding respondents indicated involving inspecting authority into decision main process as a good habit.

Analytical measurements of the discharged treated waste water are conducted by operator (itself or by hired third party laboratory), by inspection authority (itself or by hired laboratory).

The operator is responsible for performing monitoring in all 15 MS (19 answers) who responded to the survey. Regarding countries where permit issue and inspect different authority, operator is also responsible for sending results to permitting authority in 8 MS (12 answers) and in 4 MS for sending results to inspection authority. It means in 3 of that MS operator is responsible to send results to both permitting authority and inspecting authority. In 4 MS operator is responsible for sending results to permitting/inspecting authority.

The inspection authority has a checklist to perform an inspection in an industrial waste water treatment plant in 7 MS (11 answers). It can be either dedicated/separate checklist or part of complex checklist, checklist made individually for purpose of installation. Inspection authority doesn’t have a checklist in 8 MS. There are cases where inspection of the industrial waste water treatment plant is included in the inspection of the whole industrial plant and no checklists are used but an agenda for the inspection. Also, there are cases where no such standard checklists exist, and case specific checklists are prepared using the particular permit and making reference to previous on-site inspections before any inspection at such an installation.

Sampling and analysis should be performed by an accredited laboratory in every MS, but not in all cases not accredited sampling or not accredited measurements are treated as invalid. It might be some exceptions, although very rare or special approval has to be issued. In court that analysis or measurements could be easily challenged or just would be unacceptable. In some countries measurements or sampling without accreditation is the basis for issuing a decision imposing an administrative penalty.

	Only law	Only permit	Both	Permit can specify only more restrictive cond	Permit can specify more and less restrictive cond	No more no less	Permit issue authority = inspection	Permit issue authority ≠ inspection
Turkey			+			+	+	
Cyprus		+?	+	+			+	
Romania			+		+			+
Czech Republic			+	+			+	+
Denmark		+					+	
Estonia			+	+				+
Slovak republic			+	+			+	
Slovenia			+			+		+
Finland		+						+
Portugal			+		+		+	+
Malta			+	+			+	
Spain (Navarra)			+	+				+
Spain (Galicia)			+	+			+	(+)
Spain (Castilla la Mancha)			+	+			+	
Spain (Cantabria)			+	+				+
Spain (Andalucía)			+	+	(+)		+	
Netherland		+					+	
Italy			+	+				+
Poland			+	+				+

Annex 1: Checklist on wastewater treatment plant inspection

Introduction

This is an extensive draft checklist, so a selection of questions should be made previous to inspection. A part of the work required to cover all the reported information is a desk work.

The following check list has been divided in the following Parts:

PART 1: STANDARDIZED INFORMATION TO BE FACILITATED BY OPERATORS WHEM ACTUALISING A PERMIT

PART 2: ENIVIRONMENTAL INSPECTION CHECKLIST FOR INDUSTRIAL WASTE WATER

PART 3: GENERAL REQUIREMENTS, ACCREDITATION LABORATORY AND METHODS

GENERAL INFORMATION ABOUT THE INSTALLATION

Date of inspection:	
Inspection typology:	*Routine or non-routine environmental inspections*
Installation:	
Address:	
IPPC category:	
n. of permit:	
IPPC referent:	
E-mail:	
Phone number:	

Part 1: Standardized information to be facilitated by operators when actualising a permit

This Part of the checklist is based on best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for common waste water and waste gas treatment/management systems in the chemical sector.

Permit authorities should ask operators to facilitate all the information in a standard form. In that way, inspectors' verification task could be tuned up to detect possible non-conformities.

COMMISSION IMPLEMENTING DECISION (EU) 2016/902 of 30 May 2016				
Establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for common waste water and waste gas treatment/management systems in the chemical sector				
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
BAT	Transposed into national law	☐	☐	

1. Environmental management systems EMS				
BAT 1	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features:			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
iv	**Implementation of procedures paying particular attention to:**			
	Certified by Independent Body • EMAS	☐	☐	
	• ISO 14001	☐	☐	
f	Effective process control	☐	☐	
g	Maintenance programmes	☐	☐	
	Maintenance of records	☐	☐	

h	Emergency preparedness and response	☐	☐	
i	Safeguarding compliance with environ-mental legislation	☐	☐	
v	**Checking performance and taking corrective action, paying particular attention to:**			
a	monitoring and measurement (see also the Reference Report on Monitoring of emissions to Air and Water from IED installations — ROM)	☐	☐	
d	Independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained	☐	☐	
vii	Following the development of cleaner technologies	☐	☐	

BAT 2	In order to facilitate the reduction of emissions to water and the reduction of water usage, BAT is to establish and to maintain and inventory of waste water as part of the environmental management system (see BAT 1), that incorporates all of the following features:			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
i	**Information about the chemical production processes, including:**			
a	Chemical reaction equations, also showing side products	☐	☐	
b	Simplified process flow sheets that show the origin of the emissions	☐	☐	
c	Descriptions of process-integrated techniques and waste water/ treatment at source including their performances	☐	☐	

ii	**Information, as comprehensive as is reasonably possible, about the characteristics of the waste water streams, such as:**			
a	Average values and variability of: • *flow,* • *pH,* • *temperature,* • *conductivity*	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	
b	Average concentration and load values of relevant pollutants/parameters and their variability • *(e.g. COD/TOC,* • *nitrogen species,* • *phosphorus,* • *metals,* • *salts,* • *specific organic compounds)*	☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐	
c	Data on bio eliminability *(e.g. BOD, BOD/COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. nitrification))*	☐	☐	

2. Monitoring				
BAT 3	For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (including continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. influent to pre-treatment and influent to final treatment			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Process parameters	☐	☐	

BAT 4	BAT is to monitor emissions to water in accordance with EN standards with at least the minimum frequency given below. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Daily (*TOC / DOD / CSS / TN /* N_{inorg} */ TP)*	☐	☐	
b	Monthly *(AOX / Metals)*	☐	☐	
c	Toxicity *(To be decided based on a risk assessment, after an initial characterization)*	☐	☐	

3. Emissions to water				
3.1.	**Water usage and waste water generation**			
BAT 7	In order to reduce the usage of water and the generation of waste water, BAT is to reduce the volume and/or pollutant load of waste water streams, to enhance the reuse of waste water within the production process and to recover and reuse raw materials.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Reduce the volume and/or pollutant load of waste water streams	☐	☐	
b	Enhance the reuse of waste water within the production process	☐	☐	
c	Recover and reuse raw materials	☐	☐	

BAT 8

3.2	**Waste water collection and segregation**
BAT 8	In order to prevent the contamination of uncontaminated water and to reduce emissions to water, BAT is to segregate uncontaminated waste water streams from waste water streams that require treatment.

	Compliance with BAT	Yes	No	Data/ Remarks/ Explanations
a	Channel segregation system	☐	☐	

BAT 9	In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water incurred during other than normal operating conditions based on a risk assessment (taking into account e.g. the nature of the pollutant, the effects on further treatment, and the receiving environment), and to take appropriate further measures (e.g. control, treat, reuse).			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Appropriate buffer storage capacity for waste water	☐	☐	

3.3	**Waste water treatment**			
BAT 10	In order to reduce emissions to water, BAT is to use an integrated waste water management and treatment strategy that includes an appropriate combination of the techniques in the priority order given below.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Process-integrated techniques	☐	☐	
b	Recovery of pollutants at source	☐	☐	
c	Waste water pre-treatment	☐	☐	
d	Final waste water treatment	☐	☐	

3.3.1	**Waste water pre-treatment**			
BAT 11	In order to reduce emissions to water, BAT is to pre-treat waste water that contains pollutants that cannot be dealt with adequately during final waste water treatment by using appropriate techniques.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**

a	Pre-treatment to protect the final waste water treatment plant *(e.g. protection of a biological treatment plant against inhibitory or toxic compounds)*	☐	☐	
b	Pre-treatment to remove compounds that are insufficiently abated during final treatment *(e.g. toxic compounds, poor-ly/non-biodegradable organic com- pounds, organic compounds that are pre- sent in high concentrations, or metals during biological treatment)*	☐	☐	
c	Pre-treatment to remove compounds that are otherwise stripped to air from the collection system or during final treatment *(e.g. volatile halogenated organic com-pounds, benzene)*	☐	☐	
d	Pre-treatment to remove compounds that have other negative effects *(e.g. corrosion of equipment; unwanted reaction with other substances; contamination of waste water sludge)*	☐	☐	
e	Is the pre-treatment as close as possible to the source in order to avoid dilution, in particular for metals	☐	☐	

3.3.2	**Final waste water treatment**			
BAT 12	In order to reduce emissions to water, BAT is to use an appropriate combination of final waste water treatment techniques.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
	Preliminary and primary treatment			

a	Equalisation	☐	☐	
b	Neutralisation	☐	☐	
c	Physical separation *(e.g. screens, sieves, grit separators, grease separators or primary settlement tanks)*	☐	☐	
	Biological treatment (secondary treatment)			
d	Activated sludge process	☐	☐	
e	Membrane bioreactor	☐	☐	
	Nitrogen removal			
f	Nitrification/denitrification	☐	☐	
	Phosphorus removal			
g	Chemical precipitation	☐	☐	
	Final solids removal			
h	Coagulation and flocculation	☐	☐	
i	Sedimentation	☐	☐	
j	Filtration *(e.g. sand filtration, microfiltration, ultrafiltration)*	☐	☐	
k	Flotation	☐	☐	

3.4	**BAT-associated emission levels for emissions to water** *(applying at the point where the emission leaves the installation)*			
	The BAT-associated emission levels (BAT-AELs), for emissions to water given in Table 1, Table 2 and Table 3 apply to direct emissions to a receiving water body from:			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**

i	The activities specified in Section 4 of Annex I to Directive 2010/75/EU	☐	☐	
ii	Independently operated waste water treatment plants specified in Section 6.11 of Annex I to Dir. 2010/75/EU provided that the main pollutant load originates from activities specified in Section 4 of Annex I to Dir. 2010/75/EU	☐	☐	
iii	The combined treatment of waste water from different origins provided that the main pollutant load originates from activities specified in Section 4 of Annex I to Dir. 2010/75/EU	☐	☐	

	BAT-AELs for direct emissions of TOC, COD and TSS to a receiving water body			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Total organic carbon (TOC) = 10-33 mg/l *(The BAT-AEL applies if the emission exceeds 3,3 t/yr)*	☐	☐	
b	Chemical oxygen demand (COD) = 30-100 mg/l *(The BAT-AEL applies if the emission exceeds 10 t/yr)*	☐	☐	
c	Total suspended solids (TSS) = 5,0-35 mg/l (*The BAT-AEL applies if the emission exceeds 3,5 t/yr)*	☐	☐	

	BAT-AELs for direct emissions of nutrients to a receiving water body			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**

a	Total nitrogen (TN) = 0,20-1,0 mg/l *(The BAT-AEL applies if the emission exceeds 2,5 t/yr)*	☐	☐	
b	Total inorganic nitrogen (N_{inorg}) = 5,0-20 mg/l *(The BAT-AEL applies if the emission exceeds 2,0 t/yr)*	☐	☐	
c	Total phosphorus (TP) = 0,50-3,0 mg/l *(The BAT-AEL applies if the emission exceeds 300 kg/yr)*	☐	☐	
	BAT-AELs for direct emission of AOX and metals to a receiving water body			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Adsorb able organically bound halogens (AOX) = 0,20-1,0 mg/l *(The BAT-AEL applies if the emission exceeds 100 kg/yr)*	☐	☐	
b	Chromium (expressed as Cr) = 5,0-25 µg/l *(The BAT-AEL applies if the emission exceeds 2,5 kg/yr)*	☐	☐	
c	Copper (expressed as Cu) = 5,0-50 µg/l *(The BAT-AEL applies if the emission exceeds 5,0 kg/yr)*	☐	☐	
d	Nickel (expressed as Ni) = 5,0-50 µg/l *(The BAT-AEL applies if the emission exceeds 5,0 kg/yr)*	☐	☐	

e	Zinc (expressed as Zn) = 20-300 µg/l *(The BAT-AEL applies if the emission exceeds 30 kg/yr)*	☐	☐	

4. Waste				
BAT 14	In order to reduce the volume of waste water sludge requiring further treatment or disposal, and to reduce its potential environmental impact, BAT is to use one or a combination of the techniques given below.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Chemical conditioning *(i.e. adding coagulants and/or flocculants) or thermal conditioning (i.e. heating) to improve the conditions during sludge thickening/dewatering.*	☐	☐	
b	Thickening *(can be carried out by sedimentation, centrifugation, flotation, gravity belts, or rotary drums. Dewatering can be carried out by belt filter presses or plate filter presses).*	☐	☐	
c	Sludge stabilisation *(includes chemical treatment, thermal treatment, aerobic digestion, or anaerobic digestion).*	☐	☐	
d	Drying *(Sludge is dried by direct or indirect contact with a heat source).*	☐	☐	

5. **Emissions to air**

5.1.	**Waste gas collection**			
BAT 15	In order to facilitate the recovery of compounds and the reduction of emissions to air, BAT is **to enclose the emission sources** and to treat the emissions, where possible.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
	Emission sources enclosed	☐	☐	

BAT 6	BAT is to periodically **monitor odour** emissions from relevant sources in accordance with EN standards.			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
a	Dynamic olfactometry according to EN 13725	☐	☐	

BAT 21	In order to prevent or, where that is not practicable, to reduce odour emissions **from waste water collection** and treatment and from sludge treatment, BAT is to use one or a combination of the techniques given below:			
	Compliance with BAT	**Yes**	**No**	**Data/ Remarks/ Explanations**
i	Minimise residence times	☐	☐	
ii	Chemical treatment	☐	☐	
iii	Optimise aerobic treatment			
a	Controlling the oxygen content	☐	☐	
b	Frequent maintenance of the aeration system	☐	☐	
c	Use of pure oxygen	☐	☐	
d	Removal of scum in tanks	☐	☐	
v	**End-of-pipe treatment**	☐	☐	
a	biological treatment	☐	☐	

b	thermal oxidation	☐	☐	

Part 2: Environmental inspection checklist for industrial waste water

This checklist has been divided in the following sections:

- Installation Permits
- Waste water streams origin and pollution characteristics
- Sewer network
- Waste water treatment
- Cooling / steam water
- Rain water
- Changes in last 3 years
- Monitoring Plan Compliance
- Operating instructions
- Malfunctions and accidents prevention and correction measures
- Reporting

1.	**Installation Permits**			
	Questions	**Yes**	**No**	**Data / Comments / Explanations**
1.1	Activity permit?	☐	☐	
1.2	Construction stage permit	☐	☐	
1.3	Discharge permit	☐	☐	
1.4	Sewer nets permit	☐	☐	
1.5	Does the entity have formal regulations for the introduction of waste water into the environment?	☐	☐	

2. Waste water streams origin and pollution characteristics (BAT 2, 8)				
	Questions	**Yes**	**No**	**Data / Comments / Explanations**
2.1	Identify the **processes** that produce industrial discharges	☐	☐	
2.2	Identify **Relevant Pollutants** produced in the industrial process	☐	☐	
2.3	Verify if there is any emergency **bypass**	☐	☐	
2.4	Is there consistence between total water consumption and total waste water?	☐	☐	
2.5	Check if the organization is authorized to treat the discharge of water coming from a different installation.	☐	☐	

Table of Waste water streams origin and pollution characteristics (*BAT 2, 8)*				
Wastewater partial streams	**Treatment**	**Amount m^3/yr.**	**Relevant pollutants and annual load**	**Verification Remarks**
Production wastewater				
Cleaning Waste water				
Sanitary wash water				
Polluted rain water				
Cooling / steam water				
Rain water				
Total waste water:m3/yr				

3. Sewer network (BAT 8, 9)

	Questions	Yes	No	Data / Comments / Explanations
3.1	Map of water discharge pipelines with control points. **Sewer system, pipelines and points of discharge** correspond to the description and map of installations? *(E.g. shaft constructions, culverts, wastewater pumps, flood pumps, pressure pipes without pressure network, installations in pressure and vacuum dewatering networks, rainwater drainage systems, rainwater drainage systems, rainwater drainage systems, rainwater drainage systems, rainwater drainage basins)*	☐	☐	
3.2	Is there any preventive system for rainwater accumulation?	☐	☐	

4.	**Waste water treatment (BAT 11, 12, 13)**			
	Questions	**Yes**	**No**	**Data / Comments / Explanations**
4.1	Flow chart (data sheet) of water discharges	☐	☐	
4.2	Bypass, discharges without established treatment, dilution, areas without treatment. Was any of these detected during inspection?	☐	☐	

4.3	**Treatment systems.** Indicate which kind of treatment plant: 1. batch system, continuous system, 2. sedimentation, 3. anaerobic stage, 4. nitrification, 5. denitrification, 6. intermediate clarification, 7. elimination, 8. filtration, 9. separators, 10. neutralization, 11. oxidation, 12. boiling, 13. flocculation / precipitation, 14. stripping, 15. ion exchange, 16. reverse osmosis, 17. membrane filtration, 18. Sludge treatment: 19. thickening, 20. sludge drying	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	
4.4	Treatment plant 1	☐	☐	
4.5	Treatment plant 2	☐	☐	
4.6	- Treatment systems and devices are operative - integrity of the sewage pipelines through video inspection	☐	☐	

5. Cooling / steam water				
	Questions	**Yes**	**No**	**Data / Comments / Explanations**
5.1	Identify chemical characteristics of cooling water source	☐	☐	
5.2	• Select feasible cooling water treatment (chemical composition) using less hazardous chemicals or chemicals that have lower potential for impact on the environment. • Apply less corrosion-sensitive material/Analysis of corrosiveness of process substance as well as of cooling water to select the right material	☐	☐	
5.3	Optimize dosage regime by monitoring of cooling water and systems conditions			

6. Rain water				
	General location data:			
	Questions	Yes	No	Data / Comments / Explanations
6.1	Does rainwater accumulate?	☐	☐	If so, classification of rainwater according approval regarding pollution ☐unloaded (class I) ☐low loaded (class II) ☐high loaded (class III)

6.2	Discharging rainwater together with wastewater? E.g. 1. drainage water, 2. mixed water discharge (acc. state of the technique), 3. cooling water, 4. waste water from steam generation, inorganic weakly contaminated or treated wastewater 5. other	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	
6.3	Rainwater treatment available? E.g. 1. oil separator, 2. rain clarifier, 3. rainwater retention basin, 4. storage space canals, 5. seepage wells, 6. rigoles, 7. seepage shafts 8. other	☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐	If so, which one?
6.4	Treatment plant 1	☐	☐	
6.5	Treatment plant 2	☐	☐	

7. Changes in last 3 years				
n.	**Question/Compliance**	**Yes**	**No**	**Data/ Remarks/ Explanations**
7.1	Have there been changes in technology or installations?	☐	☐	

7.2	Have any changes in procedures or auxiliary materials?	☐	☐	
7.3	Have the changes been reported to the competent authority?	☐	☐	
7.4	Does exist a procedure to manage changes	☐	☐	
7.5	Changes verified:	☐	☐	

8. Monitoring Plan Compliance (BAT 3, 4, 5, 6, 12) - As in Integrated Environmental Authorisation								
(1) **Kind of Waste water**	(2) *Treatment*	Discharges and control points			(4) Monitoring Plan		
		(3) receiver	X	Y	Parameters	Periodicity	By Who?

(1) Industrial / domestic like /industrial rain water / rain water / Also indicate possible monitoring in basin waters.
(2) Yes / No (*Treatment explanation further). -*
(3) Public sewage /Private sewage / River basin /lake basin / Sea basin
(4) Control plan as established in permit

Check compliance since last inspection (<3 years)

n.	Question/Compliance	Yes	No	Data/ Remarks/ Explanations
8.1	• Is self-monitoring done correctly? • Are the monitoring values complied?	☐	☐	
8.2	Is the prescribed frequency of inspections acc. the relevant installation complied? (E.g. secondary determinations)	☐	☐	
8.3	Characteristics of control point, in particular the accessibility of the operator and instruments	☐	☐	
8.4	Were measurements and determination of characteristic data carried out acc. prescribed procedures or equivalent ones?	☐	☐	
8.5	Are necessary devices and measuring instruments available to determinate characteristic data acc. to the approval conditions?	☐	☐	
8.6	What are the specifications for periodical maintenance of the measuring devices? Where is the maintenance handling documented?	☐	☐	
8.7	Was the verification of measuring accuracies carried out acc. the approval?	☐	☐	
8.8	Is the amount of wastewater discharged into the environment complies with the permit conditions?	☐	☐	
8.9	Are necessary equipment and measuring devices available to monitor the operating conditions of the permit?	☐	☐	

8.10	Are the quality measurements of discharged wastewater carried out at the frequency specified in the permit?	☐	☐	
8.11	Are the monitoring values (of the last 3 years) complying with Admissible Emission Levels?	☐	☐	
8.12	Measuring devices accuracies are verified periodically?			
8.13	Are measuring instruments connected to a permanently occupied measuring room?	☐	☐	
8.14	Is the sampling performed by an operator who has a quality management system certificate? or automatically by a metrological sampler?	☐	☐	
8.15	Sample analysis are made by a laboratory covered by a quality management system certificate and accredited for all tested pollutants?	☐	☐	

9.	**Operating instructions (BAT 1, 3, 7)**			
	Questions	**Yes**	**No**	**Data / Comments / Explanations**
9.1	Aspects considered in written operating instructions of the installation	☐	☐	
9.2	Supervisor of the technological process of the treatment plant and maintenance of the cleaning equipment?	☐	☐	
9.3	Are operating instructions available?	☐	☐	

9.4	Does the supervision of the correct operation of the treatment plant cover all the parameters specified in the water permit?	☐	☐	
9.5	Verify if there are monitoring systems that control the flow, the mode of maintenance/calibration, and the recording of those items.	☐	☐	
9.6	Is an operating journal available (possibly digital)? Can the operating journal be viewed retro-actively for 3 years? Have been special operating conditions entered into the operating journal?	☐	☐	
9.6	Are cases of exceedance of admissible levels recorded?	☐	☐	
9.7	Are there procedures for calibrating and maintaining measuring equipment?	☐	☐	
9.8	• Are existing regulations on maintenance, control, self-monitoring etc. considered? • Where are these regulations documented? • Are the maintenance, controls and measurements carried out and documented by the operator?	☐	☐	
9.9	Was the staff trained periodically?	☐	☐	

9.10	What are the specifications for periodical maintenance of the measuring devices? and how it is handled an emergency bypass	☐	☐	

10. MALFUNCTIONS AND ACCIDENTS PREVENTION AND CORRECTION MEASURES (BAT 17, 9)				
n.	**Question/Compliance**	**Yes**	**No**	**Data/ Remarks/ Explanations**
10.1	• Have malfunctions occurred since the last monitoring? • Have any contaminations occurred in the water body during the malfunctions?	☐ ☐	☐ ☐	
10.2	• Are sufficient retention capacities in case of malfunctions available? • What precautions have been taken to avoid repetitions?	☐ ☐	☐ ☐	
10.3	Which way ensures that malfunctions of the wastewater treatment plant are promptly reported to the competent authority	☐	☐	
10.4	Are the parameters of the treatment plant specified in certain intervals (maximum / minimum) and connected to the alarms?	☐	☐	
10.5	Are there procedures to remove irregularities if admissible (acceptable?) levels are exceeded?			

11 Reporting				
n.	**Question/Compliance**	**Yes**	**No**	**Data/ Remarks/ Explanations**

11.1	Is the responsible of waste water treatment plant reported to the environmental protection authority?	☐	☐	
11.2	Are the results of monitoring of quality and quantity of discharged wastewater submitted to the environmental protection authority on the correct forms and deadlines?	☐	☐	
11.3	Have the malfunctions /incidents been reported to the competent authority? Declaration of conformity by operator	☐ ☐	☐ ☐	

Part 3: General requirements, accreditation laboratory and methods

The purposes of this Part of checklist is to specify general requirements national and international and the criteria used in the assessment of laboratory and methods.

The general criteria for accreditation of laboratories are found in ISO/IEC 17025-2005, General requirements for the competence of testing and calibration laboratories.

The main benefits of Accreditation are:

- Formal recognition of competence of a laboratory by reputed accreditation body in accordance with international criteria.
- Better control of laboratory operations and feedback to system and are technically competent.
- Increase of confidence in testing/calibration data and personnel performing work.
- Savings in terms of time and money due to reduction or elimination of the need for re-testing of products.
- Potential increase in business due to enhanced customer confidence and satisfaction.

Main definitions

Accuracy: A measure of the degree of conformity of a value generated by a specific procedure to the assumed or accepted true value and includes precision and bias.

Audit: A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Bias: The difference between the expectation of the test results and an accepted reference value.

Calibration: Comparison and adjustment to a standard of known accuracy. The set of operations which establish, under specific conditions, the relationship between values of quantities by a measuring instrument or measuring system, or values represented by a material measure or a reference material, and the corresponding values realized by standards

Limit of quantitation (LOQ): Defined from a regulatory perspective as the lowest concentration tested and quantified such that an unambiguous identification of the analyte can be proven and at which an acceptable mean recovery with an acceptable relative standard deviation (RSD) is obtained

Method: A document that provides detailed "how to" instructions to accomplish a task.

Method validated: A method whose performance characteristics (selectivity and specificity, range, linearity, sensitivity, ruggedness, accuracy and precision and quantitation and detection limits) meet the specifications related to its intended use.

Quality Assurance: All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.

Quality Control: The operational techniques and activities that are used to fulfill requirements for quality.

Quality System: The organizational structure, responsibilities, procedures, processes and resources for implementing quality management.

Requirements				
n.	**Question/Compliance**	**Yes**	**No**	**Data/ Remarks/ Explanations**
12.1	OVERVIEW OF LABORATORY QUALITY SYSTEM • Is the laboratory accredited • Is the documentation of quality system based on the requirements of ISO 17025?	☐ ☐	☐ ☐	
12.2	LABORATORY MANAGEMENT Are the methods for analysis of parameters of interest accredited?	☐	☐	

12.3	Is there a nominated manager who are suitably qualified and experienced? Is the suitably qualified quality control manager responsible for all quality control activities in the laboratory?	☐ ☐	☐ ☐	
12.4	STAFF COMPETENCY Is the laboratory manager supported by an adequate number of qualified staff, trained in the principles and practice of relevant areas of analysis? Is a training procedure in place for laboratory staff? (These procedures should cover both analytical procedures and the relevant principles and practice of analysis, including calibration and internal and external analytical quality control)	☐ ☐	☐ ☐	
12.5	Does the quality manager conduct audits to assess compliance with systems and methods?	☐	☐	
12.6	EQUIPMENT&CALIBRATION Is a documented calibration program in place for all necessary equipment? (As well as major pieces of instrumentation this should includes all laboratory items e.g. pipettes, ovens) Are calibration records current for all equipment and maintained on file?	☐	☐	

12.7	Is a documented maintenance program in place in accordance with manufactures/suppliers' recommendations for equipment utilized?	☐	☐	
12.8	OVERVIEW OF ANALYTICAL METHODS • Are documented standard operating procedures in place for each test method? • Are all relevant procedures based on reference standard methods (as defined in the licence)? • Is a copy of relevant standard available on-site?	☐ ☐ ☐	☐ ☐ ☐	
12.9	INTERNAL QUALITY CONTROL Does the Laboratory have a documented internal quality control procedure in place? Are AQC subject to evaluation (are Charts maintained, are action taken up on failure)?	☐	☐	
12.10	EXTERNAL QUALITY CONTROL Is the laboratory a participant in a laboratory proficiency scheme?	☐	☐	

12.11	METHOD VALIDATION Is a written methodology in place to determine the performance characteristics of test methods under the following headings? • Limit of Quantitation • Accuracy • Precision • Uncertainty of measurement • Range &Linearity System Suitability	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	
12.12	ENVIRONMENTAL CONDITIONS • Is the laboratory ventilated to reduce the levels of contamination? • Is the laboratory tested to control humidity and temperature and work space temperature and test humidity are monitored? *The recommended relative humidity in the test area is 45-50% RH and the temperature in the test area is 20-25°C.*	☐ ☐	☐ ☐	

Annex 2: Answers to the survey

MEMBER STATE	ORGANIZATION	DRAFTER	ROLE OF THE DRAFTER
The Netherlands	Ministry of Infrastructure and the Environment	David Vroon	Advisor/consultant industrial discharge permits
Turkey	Ministry of Environment and Urbanization Of Turkey	Şenay Arslan	Inspector
Romania	National Environmental Guard	Florin Homorean	Commissar (inspector)
Cyprus	Department of Environment	Chrystalla Stylianou	Head of the Water and Soil Pollution Control Sector
Czech rep.	Czech environmental inspectorate	Tomáš Augustin	Environmental inspections coordinator
Denmark	Danish Ministry of the Environment, Environmental Protection Agency	Mette Lumbye Sørensen	Head of Unit
Estonia	Estonian Environmental Inspectorate	Silva Prihodko	Chief Inspector
Slovak Republic	The Slovak Environmental Inspectorate (SEI)	Peter Šimurka	Head Inspector
Slovenia	Inspectorate of the Republic of Slovenia for the Environment and Spatial Planning	Vladimir Kaiser	Director of the environmental inspection
Finland	Centre for Economic Development, Transport and the Environment for Southeast Finland	Jaakko Vesivalo	Head of Unit
Malta	Environment & Resources Authority	Simon Farrugia	Senior Officer (Environmental Permitting)
Spain (Navarra)	Departamento de Desarrollo Rural, Medio Ambiente y Administración Local	Juan Pablo Belzunegui Otano	Inspector
Spain (Castilla La Mancha)	Ministry of Environment and Spatial Planning. Regional Government of Castilla La Mancha	Olga Villegas Sánchez	Inspection
Spain (Cantabria)	Cantabria's Government	Patricia Portilla Malfaz	Inspector of Installations with Environmental Integrated Authorization
Spain (Andalucia)	Regional Environment Ministry of Andalucía	Luis G. Viñas Bosquet	Planning and Management of Hydraulic Public Domain Sub-Director
Spain (Galicia)	Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia	Iñaki Bergareche	Environmental Inspector

Portugal	General Inspectorate for Agriculture, Sea, Environment and Spatial Planning (IGAMAOT)	Roberto Valadares	Senior Inspector
Poland	Chief Inspectorate for Environmental Protection	Małgorzata Budzyńska	Senior Specialist
Italy	Sardinian Regional Environmental Protection Agency (ARPAS) - ISPRA	Romano Ruggeri - Roberto Borghesi	Environmental inspector

QUESTION1: PERMIT

Are parameters of the quality of treated wastewater stated in law? In permit? Other way? How?

TURKEY	Defined in Bylaw and in permit. Also by special provision and communiques. (e.g. some communiques for sampling, analyzing, wastewater treatment, sensitive regions, and some kind of industrial wastewater control.)
CYPRUS	The parameters of the quality of treated wastewater are stated in the Permit. If the treated wastewater is discharged to the recipient water body or soil, parameters are laid down in the Waste Discharge Permit or in the Industrial Emission Permit if the installation falls under the provisions of the IED.
ROMANIA	The quality parameters for waste water are stated both in the law (Government Decision) and in the permit. By the Government Decision no 188/2002 is established maximum allowed concentration for many quality parameters; these maximum concentrations differ on the place of discharge (municipal sewerage or directly to a water body, e.g. river). By the permit are set maximum allowed concentration for specific parameters that characterise the waste waters from a certain installation.
CZECH REPUBLIC	In legislation and In permit
DENMARK	If the waste water is discharged to the recipient it's part of the permit. Are the waste water discharged to public waste water treatment plants it's regulated in a permission granted by the municipality. The permit is either approved by the state or municipality depending om the type of industry.
ESTONIA	In law and in permit.
SLOVAK REPUBLIC	Yes. In law – Water Act, BAT Conclusions. In permit
SLOVENIA	Both in law (actually it is a decree) and in permit.
FINLAND	In permit
PORTUGAL	The limit values are established in the water permit that is autonomous and included as one annex of the environmental permit on IPPC installations. The law states also quality parameters for wastewater on non-IPPC installations, that are included on the water permit also.
MALTA	They are always specified in permit and based on national guidance documents and legislation such as the Water Policy Framework Regulations LN 194 of 2004 as amended transposing the Water Framework Directive (WFD) and related legislation. Moreover, consideration is taken on the type of activity being carried out and the nature of the effluent generated by the specific process within the installation which may require the monitoring of additional parameters. The parameters identified as requiring monitoring from a specific installation are included as part of the permit together with the associated emission limit vales, frequency of testing and reporting requirements.
SPAIN (NAVARRA)	Some parameters are specifically stated in permit. This parameters must be periodically

	controlled according to permit. General parameters are stated in law. This must be controlled only if there is any problem or question which forces its analysis, but in a general way must be attained
SPAIN (GALICIA)	In permit. If the treated waste water is discharged to the recipient body, parameters are laid down in the permit, either in the integrated environmental permit (IEP) in IPPC/IED installations or in the specific discharge permit issued by the Water Authority at basin level in non IPPC/IED installations. IEPs are issued by Regional authorities.
SPAIN (CASTILLA LA MANCHA)	If the wastewater destination is the municipal network the limits are stated by the city council. If the wastewater destination is the river the limits are stated by the national government.
SPAIN (CANTABRIA)	The parameters of quality of treated wastewater are stated in law, in the Stated legislation for Public domain hydraulic (mainly rivers) and by the autonomous community of Cantabria legislation for waters of discharge to collector or coast. The representative parameters are established in permits and could be more restrictive than law. These permits established the controls and analysis that should be done.
SPAIN (ANDALUCIA)	Both, in law -european, national and regional-, and in permits. The main applicable legislation (non-exhaustive list) are the following: National law: • Real Decreto Legislativo 1/2001, de 20 de julio, por el que se aprueba el texto refundido de la Ley de Aguas. • Real Decreto 849/1986, de 11 de abril, por el que se aprueba el Reglamento del Dominio Público Hidráulico, que desarrolla los títulos preliminar I, IV, V, VI y VII de la Ley 29/1985, de 2 de agosto, de Aguas. Regional law: • Ley 9/2010, de 30 de julio, de Aguas para Andalucía. • Decreto 109/2015, de 17 de marzo, por el que se aprueba el Reglamento de Vertidos al Dominio Público Hidráulico y al Dominio Público Marítimo-Terrestre de Andalucía. European law: • Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Best Available Techniques (BAT) reference documents (BREFs)
NETHERLAND	For bigger installations/plants in individual permits. They are based on BAT-AELs, stated in the BREFs. Smaller installations/plants sometimes have general binding rules (specific parameters) for the quality of the treated waste water. They are also based on BAT-AELs.
ITALY	Both in low and in permits. The National Decree n.152/06 establishes maximum allowed concentration for water discharge into water bodies and sewage.
POLAND	Both in low and in permits

QUESTION 2: PERMIT

Can permit specify more / less restrictive discharge conditions than law?

TURKEY	No, not in permit. But in some region, more strict discharged water quality standards are defined by special provision than in bylaw according to receiving water body pollution level
ROMANIA	In some specific cases the conditions established throughout the permit can be more or less restrictive than the condition established by law. In these particular cases the permit conditions are related to the state of the recipient water body (lower water quality than more restrictive conditions for waste water discharged) or to the quality of the water used in the industrial processes (higher quality parameters for raw water than higher quality parameters for waste waters).
CYPRUS	Yes. The Permit can specify more restrictive discharge conditions than law in the cases where special care must be given to recipient bodies where belonging to sensitive areas or other areas of environmental importance.
CZECH REPUBLIC	Permit can specify more restrictive discharge conditions than law and can not specify less restrictive discharge conditions than law
DENMARK	There must always be a legal basis for the condition. But the condition can be more restrictive than e.g. BREF/ BAT-conclusions if it is necessary regarding WFD, which is implemented in an executive order which again in turn must be implemented in the permit.
ESTONIA	More restrictive discharge condition are in the permit
SLOVAK REPUBLIC	Permit can specify more restrictive discharge conditions than law and can not specify less restrictive discharge conditions than law.
SLOVENIA	No
FINLAND	The discharge conditions are set in the permit only.
PORTUGAL	The permit can establish its own values. Usually they are the same that the ones on the law
MALTA	Yes the permit may specify more restrictive discharge conditions than those prescribed by law in terms of requiring monitoring of parameters which are not specifically indicated in law or impose stricter emission limit values.
SPAIN (NAVARRA)	Yes if Best Available Techniques allow to attain smaller values and also if facilities are located in specific delicate places.
SPAIN (GALICIA)	Yes In some basins' Management Plans, more restrictive discharge conditions than in law are laid down. Water quality conditions for the recipient body may lead also to more restrictive discharge conditions.
SPAIN (CASTILLA LA MANCHA)	More restrictive limits can be stated in the permits by the government (city council or national government). Less restrictive limits can not be stated.
SPAIN (CANTABRIA)	Yes, the permit can be more restrictive but not less restrictive than law.
SPAIN (ANDALUCIA)	Yes, permits can specify more restrictive discharge conditions than law. Conditions less restrictive than law only can be specified by permits in justified cases.

NETHERLAND	More restrictive: Possible if water quality standards are not met by applying BAT-AELs. Less restrictive: Possible if there are good reasons for derogation (e.g. specific production not mentioned in BREFs)
ITALY	IED permits can fix more restrictive threshold limits at the discharging point, according to the site-specific situation of the water body receptor (e.g. quality of the water of the river).
POLAND	Yes, more restrictive.

QUESTION 3: PERMIT

Is the permit (determining the quality parameters of discharged waste water) issued by the same authority than the one that check compliance with permit conditions? Comment please to this, whether such a system is right / not good? Advantages / disadvantages

TURKEY	Same authority. But Permit issues are carried by permit department and compliance check is done by inspection department. In my opinion, this separate system is not so efficient. When permit and compliance check are issued by the same authority, experts may have more knowledge about the facility and can monitor the environmental performance of the facility more effectively.
ROMANIA	In Romania we have a particular situation: the conditions for waste water discharges are established by two permits: water management permit and environmental permit. Of course, the conditions are the same, but those two permits are issued by two different organizations: the water management permit is issued by the „Romanian Waters" National Administration (throughout of its river basin administrations) while the environmental permit is issued by National Environmental Agency (throughout its county agencies). The inspections are undertaken by National Environmental Guard (for both permits) and inspection bodies of „Romanian Waters" National Administration (but only in respect with water management permits). Overlapping of competences in both sectors permitting and inspection of waste water discharged could create issues in implementation and enforcement of water law. To prevent that joint inspections between National Environmental Guard and inspection bodies of „Romanian Waters" National Administration are foreseen and undertaken periodically, especially in case of big IED Installations.
CYPRUS	The permit is issued by the same authority (Department of Environment) with the one that checks compliance with permit conditions. However, the authority is consisted by two distinctive groups, the permitting and the inspection group, thus the permitting and the inspections are carried out by different people. The system is effective since the good communication between the two groups is quite important for the implementation of the Environmental Laws, for the preparation of adequate, solid permits and the performing of good inspections
CZECH REPUBLIC	Permit write - Regional authority Permit can check - Regional authority and Czech environmental inspectorate. Regional authority issue permit for IPPC installation and CEI is involved in permit process and can apply involving their requirements in the permit through statement submit to regional authority in issuing permit process. The system is proven.

DENMARK	It's the same authority that approves the permit and performs inspection (check compliance with the permit condition). I think it's a good idea that it's the same authority because it provides an integrated approach and knowledge from the approval process is utilized in the inspection. If the waste water is discharged to public waste water treatment plants is it regulated in a permission granted and inspected by the municipality. The public waste water treatment plant is regulated by a permission approved by the municipality and inspected by the state.
ESTONIA	No, the permit is issued and controlled by different authority. Our system helps to avoid any kind of corruption.
SLOVAK REPUBLIC	Yes. In Slovak republic the permit is issued by the permitting authority – The Slovak Environmental Inspectorate. The same authority also enforces the conditions of permit. This system is based on the Competence Act and is proven. Inspectors who write authorization know very well the operations and thus can effectively carry out their checks – this is advantage.
SLOVENIA	No. Agency issue the permit and inspectorate inspect. It is good except if it would be one person then an issuing authority would know an installation better. Usually an issuing authority does not see an installation at all.
FINLAND	At the moment no. From 2019 onwards permitting and compliance monitoring will be under the same roof.
PORTUGAL	The permitting and inspection authority are not the same in Portugal. Nevertheless the permitting authority can also do compliance check on water permit conditions. The system improves the transparency on the decisions, but increases the need of communication between authorities.
MALTA	Compliance with the permit conditions is checked by a different team within the same authority issuing the permit. This enables better handing over of the case files and continuous communication between permitting and compliance teams thereby facilitating mutual understanding of permit conditions and compliance issues such as enforceability.
SPAIN (NAVARRA)	If discharges are to public sewage system yes If discharges are to river directly not. Basin authorities are responsible
SPAIN (GALICIA)	Yes. Discharge permits are issued by Water Authorities of Water Basins. Permits may be issued by Water Authorities belonging to the Regional administration, in the case of basins within the boundaries of a region, or to the National administration, in the case of basins going beyond the boundaries of a region. If the treated waste water is discharged to the public sewage network, parameters are laid down in the permit issued by the municipality concerned. IEPs of IPPC/IED installations include permit conditions regarding waste water discharge and both IPPC Service (permitting Service) of the Regional Ministry of Environment and Spatial Planning and Water Authorities participate in drafting discharge conditions but Water Authorities have the final word. In checking compliance both Environmental Inspection of the Regional Ministry of Environment and Spatial Planning and Water Authorities participate but as in the case of

	permitting, the Water Authorities have the final word. The system is right when both Authorities are aligned in their action. Otherwise some overlapping and lack of coordination may arise.
SPAIN (CASTILLA LA MANCHA)	Yes, the permit is made by the same authority (Regional Deputy Environment Ministry of Castilla – La Mancha region, Spain) that the one that check compliance with permit conditions, but in the field of wastewater there is a feedback of the national government. In other words, there is a feedback. We send the reports to them and if they detect any non-compliance, they send it to us. It has the advantage that the same authority that knows the permit can do a better follow up of the delivered documentation. On the other hand, the work of the national government is very useful because they have a complementary task to ours.
SPAIN (CANTABRIA)	Depends of the competence of the place where the waste water is discharged. The Environmental Integrated Authorization (EIA) is issued by the same authority than the one that check compliance with permit conditions only when the waste water is competence of the Community of Cantabria. In the other cases (mainly discharges to the rivers), it is separated the authorization of the inspection. There are not problems in neither cases, although the advantage of been the same authority is a better transfer of information.
SPAIN (ANDALUCIA)	Yes, the same authority that issued the permit controls its compliance. In our opinion, that's a good system because the authority who make the inspections knows the conditions established in the permit and the complete administrative file of the activity.
NETHERLAND	Yes, by the same authority. This system works fine as long as the section who is checking compliance can work and do research independent from the permitting section. Management of both sections is different. Both sections have the same goal to protect the water quality. Advantage More knowledge and experience in one authority. More exchange of knowledge.
ITALY	In Italy the authority issuing IED permits is different from the one responsible of the inspections. Anyway, inspection competent authorities usually participate to the permitting procedure.
POLAND	Permit is issued and inspected by different authorities.

QUESTION 4: MONITORING

Who runs the analytical measurements of the discharged water? Operator / Inspection Authority / third part-who?

TURKEY	For self-monitoring, analysis is done by accredited laboratory. Results are checked during inspection. Besides, If discharged wastewater flow is more than 10.000 m3/day, the operator has to set online monitoring system which is connected to network of authority. In permit procedure and compliance check the samples are taken by the laboratory. Permit writer also has to be present and check the sampling procedure. Operator pays the analysis.
ROMANIA	All three: the operator has the duty to carry out its self monitoring obligation set up by the permit conditions and this could be done through its own laboratory or by third party laboratories; the „Romanian Waters" National Administration holds its own laboratories through which it can perform analytical measurements.
CYPRUS	The operator has the duty to carry out self-monitoring as set up by the permit conditions and this is done by accredited third party laboratories.; The Inspection Group (Department of Environment) is supported by the State General Laboratory, a public accredited laboratory. DoE may take samples during routine inspections under the control of the implementation of either the Waste Discharge Permits or Industrial Emissions Permits and carry them to SGL for analytical measurements
CZECH REPUBLIC	Third part – laboratory with accreditation. Operator can carry out measurement if have accreditation for sampling and analysing. Inspection authority - CEI – can take sample (but can not use those measurement in administrative procedure) and submit sample to the laboratory for analysing.
DENMARK	Usually it is the third part and only in special cases the company. The results is send to the authority (state or the municipality depending on who has approved the permit). The third part is paid by the operator.
ESTONIA	The operator, who has the duty to carry out self-monitoring obligation (set up by permit conditions). In case of suspicion or problems – Inspection Authority.
SLOVAK REPUBLIC	An operator can perform a measurement if he has a sampling and analysis accreditation or can do so by an accredited laboratory. The inspection authority cannot take samples and is not equipped to analyze them. The inspection authority has an accredited laboratory for this purpose. Third part – Accredited laboratory.
SLOVENIA	Accredited laboratory.
FINLAND	Operator or third party (consultant) paid by the operator.
PORTUGAL	The operator can do its own measurements. The inspection authority takes samples when needed to do cross-check during inspections.
MALTA	The permit obliges the operator to ensure that analytical measures are taken in a determined manner at their own expense. Such monitoring is to be carried out by a 3rd party and at an accredited laboratory. Monitoring can only take place after the Authority approves a method statement in accordance with the permit conditions or in accordance with a monitoring plan submitted as part of the application documentation.

SPAIN (NAVARRA)	Operator – self control (is own laboratory) or external laboratory (UNE-EN 17.025) Inspection Authority – according to annual planning, samples are sent to external laboratory (UNE-EN 17.025) Organism – if water is discharged to rivers, basin authorities can take samples according to its own procedure
SPAIN (GALICIA)	All three: the operator has the duty to carry out its self-monitoring obligation set up by the permit conditions and this is done by accredited third party laboratories.; very few operators have accredited laboratories available and usually only for a limited number of parameters and not all of them. The Inspection Service is supported by the Environmental Laboratory of Galicia, (LMAG in its Spanish and Galician acronym) a public accredited laboratory of the Regional Ministry of Environment and Spatial Planning to take samples and to analyse them to carry out periodic analytical measurements during routine inspections of IPPC/IED installations.
SPAIN (CASTILLA LA MANCHA)	It is made by a third part, it is an authorized control organization (OCA).
SPAIN (CANTABRIA)	The type or frequency of the analytical measurements depends on the permit. The usual controls are: - Self monitoring by the operator (Installation owner)) - Scheduled or discretionary inspections by Inspection Authority - Monthly, quarterly, biannual or annual control by third part, accredited entity collaborating with the administration
SPAIN (ANDALUCIA)	The analytical measurements of the discharge water may be runs by operator (self monitoring), by authority (inspection) or by third-party. Third party are regional or national ministry authorised entities.
NETHERLAND	The operators of the installations and the Inspection Authorities run the measurements of the discharged waste water. Sometimes operators have outsourced these activities to third parties.
ITALY	Operator is obliged to perform self monitoring measurements at the discharging point: these are usually performed by a third part (accredited laboratory) on behalf of the operator. Inspection authorities do perform both sampling and analytical measurements; in Italy regional environmental inspection authorities own their own laboratory.
POLAND	The operator is required to ensure that emission measurements are carried out by an accredited laboratory. If the operator has his own accredited laboratory, he performs analysis himself (rarely) if not – third party (most) – accredited laboratory.

QUESTION 5: SELF MONITORING

Is the operator responsible for performing monitoring analysis and sending results to the authority? To the one who issued the permit? To other? Which is the frequency set in the permit to send analytical results to the competent authority?

TURKEY	See question 4
ROMANIA	As I indicated to the previous question, the operator is responsible for carrying out the self monitoring of its waste water discharges as well as to send the self monitoring results to the competent authorities, both inspection and permitting authorities. The frequencies for reporting are set up though permit conditions and may vary from quarterly to yearly depending on the size of the installation and its impact on water.
CYPRUS	The operator is responsible for carrying out the self-monitoring and this is done by third party laboratories. Results are submitted to the DoE once every year or whenever the DoE asks them, or during inspections. The frequencies for reporting are set up though permit conditions usually annually and immediately in case of no compliance.
CZECH REPUBLIC	Operator is responsible for performing monitoring analysis and in case of non-compliance operator have to inform inspection authority about breach of permit. Results (summary) from monitoring operator have to send every year as a part of self-monitoring report to the Regional authority (permit writer). Regional authority make self-monitoring report public available via information system IPPC (web page). The frequency for sending self-monitoring report is set in permit (and in legislation too) and is yearly. Operator have not obligation send results from analytical measurement to the Czech environmental inspectorate automatically, but have to send measurements on request and have to submit measurement during inspection.
DENMARK	See question 4
ESTONIA	The operator is responsible for performing monitoring analysis to the permit giver. To the inspector upon request. The frequency is set in the permit, it can vary from monthly to annually.
SLOVAK REPUBLIC	Yes. Operator is responsible for performing monitoring analysis and in case of non-compliance operator have to inform inspection authority about breach of permit. Results (summary) from monitoring operator have to send every year as a part of self-monitoring report to the permit authority - SEI. The frequency for sending self-monitoring report is set in permit (and in legislation too) and is yearly. Operator have obligation send results from analytical measurement to the Slovak Environmental Inspectorate automatically, but have to send measurements on request and have to submit measurement during inspection.
SLOVENIA	Operator has to hire an accredited laboratory and then send report to issuing authority. Ones per year.
FINLAND	Yes, to the monitoring authority and to the concerned municipal environmental authority. The frequency is set in the permit and can vary from monthly to annually.

PORTUGAL	The operator is responsible to perform monitoring analysis and send its results to the permiting authority. The frequency is usually one trimester.
MALTA	Yes the operator of permitted installations is responsible to submit results of the performed analysis to the Authority which issued the permit and is checking on compliance (same Authority as described above) on an annual basis as part of an Annual Environmental Report. Each permit would then specify the type and frequency of the required analysis. For example, certain operators are required to collect and submit quarterly data on certain parameters discharged into the marine environment. Additional monitoring requirements other than the Annual Environmental Reports, and as stated in the environmental permit may also be submitted on a regular basis as agreed upon with the Authority.
SPAIN (NAVARRA)	Yes, usually is established in the permit Yes, to the one who issued the permit. For facilities not included in the 2010/75/UE Directive range, sometimes local authorities Every three or six months or every year.
SPAIN (GALICIA)	The operator is responsible for carrying out the self-monitoring and this is done by third party laboratories (with very few exceptions). Results are submitted to the IPPC Service (Permitting service). In IPPC/IED installations, the IPPC/IED Services provides all the results of self-monitoring to the Inspection Authority for routine inspections. The frequencies for reporting are set up though permit conditions and may vary from monthly, quarterly to yearly depending on the size of the installation and its impact on water.
SPAIN (CASTILLA LA MANCHA)	The operator is responsible for sending monitoring results to the authority. It sends these results to the same authority that issues the permit. The frequency depends on the importance of the plant. An usual frequency is one year.
SPAIN (CANTABRIA)	The operator is responsible for performing monitoring analysis and sending results to the authority who issued the permit with the frequency set in the permit (changeable: monthly, quarterly, biannual or annual).
SPAIN (ANDALUCIA)	Yes, the Andalusian law (Decreto 109/2005) regulates the operator obligation for performing analysis and sending to the authority who issued the permit. The frequency to sending the analytical results is established in each permit, although it is variable, from once in each year to even several sendings per month
NETHERLAND	An operator in the Netherlands is responsible for performing monitoring analysis, not for sending results to the competent authority (due to reducing administrative expenses for the industry). Incidents (with the possibility that permit conditions, e.g. limit values, are exceeded) should be reported to the authorities.
ITALY	The operator is responsible for performing monitoring analysis according to the contents of the Self Monitoring Plan which is part of the IED permit and sets frequencies, methods and parameters. Results are sent once per year (within the 30th of January) to the Authority who issued the permit, the inspection authority and other involved authorities (municipalities ecc.)
POLAND	Yes, to both: authority who issued the permit and inspecting authority. Measurement results are submitted:

	1) in the case of periodic measurements performed more than once a month - within 30 days of the end of the quarter in which the measurements were made; 2) in other cases - within 30 days of the end of the measurement.

QUESTION 6: INSPECTION

Does the inspection authority have a checklist to perform an inspection in a industrial water treatment plant? If yes, please attach it

<table>
<tr><td>TURKEY</td><td>Yes but not available in English</td></tr>
<tr><td>ROMANIA</td><td>Up to now we do not use such tools in our inspections..</td></tr>
<tr><td>CYPRUS</td><td>No, the DoE doesn’t have a specific checklist to perform an inspection in an industrial waste water treatment plant. The inspection is based on the terms of the IED Permit.</td></tr>
<tr><td>CZECH REPUBLIC</td><td>No</td></tr>
<tr><td>DENMARK</td><td>Some have – it’s part of the inspection of the whole industrial plant.
Denmark has 98 municipalities and they decide for themselves how they are performing the inspection. There are some guidelines from the state.</td></tr>
<tr><td>ESTONIA</td><td>No checklist are used.</td></tr>
<tr><td>SLOVAK REPUBLIC</td><td>No. The inspection authority checks the individual permit conditions.</td></tr>
<tr><td>SLOVENIA</td><td>No</td></tr>
<tr><td>FINLAND</td><td>Inspection of the industrial waste water treatment plant is included in the inspection of the whole industrial plant. No checklists are used but an agenda for the inspection.</td></tr>
<tr><td>PORTUGAL</td><td>No</td></tr>
<tr><td>MALTA</td><td>No such standard checklists exist. Case specific checklists are prepared using the particular permit and making reference to previous on site inspections before any inspection at such an installation.</td></tr>
<tr><td>SPAIN (NAVARRA)</td><td>Yes
<table>
<tr><th>6</th><th colspan="2">AGUAS RESIDUALES</th><th>S</th><th>N</th><th>NP</th></tr>
<tr><td>1</td><td colspan="2">Los puntos de vertido existentes son los indicados en la Licencia de actividad</td><td></td><td></td><td></td></tr>
<tr><td>2</td><td colspan="2">Los efluentes existentes son los autorizados y están identificados según la Licencia</td><td></td><td></td><td></td></tr>
<tr><td>3</td><td colspan="2">Las instalaciones de tratamiento son los indicados en la Licencia</td><td></td><td></td><td></td></tr>
<tr><td>4</td><td colspan="2">Los elementos de control en continuo son los indicados en la Licencia</td><td></td><td></td><td></td></tr>
<tr><td>5</td><td colspan="2">Los elementos de control en continuo disponen de los certificados de calibración e instalación indicados en la Licencia</td><td></td><td></td><td></td></tr>
<tr><td>6</td><td colspan="2">Se anotan los datos de consumo de agua y volumen vertido de todos los contadores y caudalímetros con la periodicidad indicada en la Licencia</td><td></td><td></td><td></td></tr>
<tr><td>7</td><td>Realización de</td><td>Se realizan con la periodicidad establecida en la Licencia</td><td></td><td></td><td></td></tr>
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	(continued nested table below)

	controles reglamentarios según AAI	Se cumplen los VLE			
8	Realización de autocontroles según AAI	Se realizan con la periodicidad establecida en la Licencia			
		Se cumplen los VLE			
7	**EFLUENTES DE VERTIDO DE LA PLANTA**				

PUNTO		**EFLUENTE**						**Realización de controles reglamentarios según Licencia**	**Cumple VLE**
Nº	**Destino**	**Nº**	**Nombre**	**Sistema tratamiento**	**Dispositivo control**	**Accesibilidad**	**Equipo medición continuo**		
1	Colector de residuales	1	Aseos y servicios	Ninguno	Arqueta que permita la inspección visual y la toma de muestras	--	--	--	--
2	Colector de residuales	2	Limpieza de maquinaria	EDARI: Homogenización con aireación y tratamiento biológico MBBR	Canal abierto normalizado y medidor de caudal	S	N	--	--
		3	Limpieza de maquinaria						
		4	Osmosis inversa del suero lácteo						
3	Colector pluviales	5	Cubiertas y zonas pavimentadas	Ninguno	Ninguno	--	--	--	--
Observaciones									

SPAIN (GALICIA)	No, the Inspection Service doesn't have a specific checklist to perform an inspection in an industrial waste water treatment plant, so far, but waste water discharge is included as a chapter in the check-list issued to perform routine inspections in IPPC/IED installations. Items regarding waste water discharge make up the chapter
SPAIN (CASTILLA LA MANCHA)	Yes, we have a check-list for each type of plant. A part of this check-list is related to wastewater.

SPAIN (CANTABRIA)	When the inspection of the waste water is competence of the Community of Cantabria, we have a check list with all the conditions imposed in the EIA (atmosphere, noise, residues… included waste waters), it's adapted for each installation.
SPAIN (ANDALUCIA)	The check lists are made individually before each inspection and incorporates all the specific conditions established in the permit. There's not general checklist available, but we attach a couple of particular examples
NETHERLAND	Yes, there are different checklists and instruction manuals. The instruction manual for sampling waste water is attached (in Dutch).
ITALY	A general checklist for waste water discharge has been issued by the network of environmental agencies.
POLAND	Yes, in our system we have 3 checklist regarding waste water: 1. Municipal waste water treatment plants 2. Water and waste water management 3. Industrial plants (general) We can modify them according to our needs

QUESTION 7: INSPECTION

If a breach of the limit value is declared within the Self monitoring report (provided by the operator to the competent authority), can this data be used to give a penalty/fee etc ?

TURKEY	No. Two more analysis has to be done and the inspector has to be present during sampling. If the average value of three result (one from self monitoring) exceeds the limits, than the authority can issue a penalty
ROMANIA	We use the self monitoring reports as tools for checking the compliance with the permit conditions. In case we notice from such reports that the results of analytical measurements are not complying with the maximum allowed concentration for one ore more quality parameters set un in the permit than a an inspection (site visit) is undertaken in order to enforce the permit condition. Usually this means that the operator is punished by a penalty for breaching the permit conditions but also a permit suspension may be taken into consideration
CYPRUS	Yes
CZECH REPUBLIC	Yes, but often after submitting self-monitoring report (with declared breach of emission limit value) competent authority make action for verifying non-compliance (ask operator for more detail or make site inspection).
DENMARK	If there are exceedances of the terms of approval, this will be excluded by the state/ the municipality - and may end with a police report and a fine. The police conduct investigations and hands over the case to the public prosecutor if there has been a crime. The competent authority may also order a stop of the discharge of waste water. The competent authority itself can issue no fine. The fine is imposes by the court.
ESTONIA	Yes (fee)
SLOVAK REPUBLIC	Yes, but often after submitting self-monitoring report (with declared breach of emission limit value) competent authority make action for verifying non-compliance (ask operator for more detail or make site inspection).
SLOVENIA	Yes
FINLAND	Yes
PORTUGAL	Yes, usually only after one inspection on the plant where those results are observed
MALTA	When such a breach is reported, the Authority requests further corrective action to rectify that breach. Moreover, should the operations result in exceedance of the emission limit values indicated in the permit, the operator is required to designate a mixing zone as stipulated in the requirements of the Water Framework Directive or to apply for derogation from achieving the required emission levels. There is a mechanism in the permits which requires the operators to declare the non compliance upon identification. Thus the authority is not only notified upon the submission deadline of the quarterly or annual reporting episode.
SPAIN (NAVARRA)	Yes, but only if the self monitoring report comes from a UNE-EN 17025 laboratory
SPAIN (GALICIA)	Yes
SPAIN (CASTILLA LA	If there is a breach of the limit value in the sent report, a penalty procedure can be started.

MANCHA)	
SPAIN (CANTABRIA)	When the inspection of the waste water is competence of the Community of Cantabria, the Self monitoring report provided by the operator can be used to give a penalty/fee only if it is done by an accredited laboratory; although the usual procedure would be to check it with measurements made by the administration.
SPAIN (ANDALUCIA)	Yes, obviously the knowledge noncompliance with the limit values can be used to give a penalty or fee. If the breach is declared within the self monitoring report, the noncompliance evaluation must be determined under Decreto 109/2015 criteria. In any case, the common mechanism to issue a penalty is associated within the inspections performed by the authority. The self monitoring report is usually used for increase or relax the authority control of the activity.
NETHERLAND	It is possible to use this data when this is specifically addressed in the permit of the operator. The authorities want to use these data also in other situations, but that is not possible yet in the Netherlands. This is subject of discussion (with the industry).
ITALY	A breach of the limit values declared within the Self monitoring report (provided by the operator to the competent authority), does not constitute itself an automatic evidence of the violation without a technical check that should be performed by the inspection authority. Therefore, a non compliance declared in the report of the operator is not enough for a sanction but it has to be technically verified by the inspection authority.
POLAND	Yes, decision imposing administrative punishment

QUESTION 8: ENFORCEMENT

Based on what measurements, in case of non-compliance, does the authority issue a penalty? Conducted by authority? By operator? Other?

TURKEY	If the sample taken during inspection does not comply with the standards, inspection authority applies sanction.
ROMANIA	As previous mentioned the measurement can be carried out by operator, third parties or competent authority. If any of these measurements unravel beaching of permit conditions regarding ELVs than a penalty may be issued by the inspection authority..
CYPRUS	Mainly when conducted by the authority but exceedances of ELV recorded in self-monitoring reports may also lead to penalty procedures.
CZECH REPUBLIC	Conducted by accredit laboratory. In case that operator have own accredited laboratory is possible used operator measurement for issuing penalty
DENMARK	See question 7
ESTONIA	Measurement can be carried out by competent authority. In case of non compliance penalty may be issued by Inspection Authority.
SLOVAK REPUBLIC	Yes. Conducted by accredit laboratory. In case that operator have own accredited laboratory is possible used operator measurement for issuing penalty.
SLOVENIA	Inspection react on a base of a monitoring report prepared by an accredited laboratory.
FINLAND	In case of non-compliance the competent authority asks the police to conduct investigations, if the non-compliance is because of a crime. If the investigations show to a crime, the police hands over the case to the public prosecutor. If the case goes to the court, the competent authority is called to the court as a witness. The competent authority itself can issue no penalties.
PORTUGAL	The penalty is issued by the inspection authority only after one inspection on the plant, and it is based on evidences collected during the inspection namely the monitoring results performed by the operators.
MALTA	The Authority issues a penalty based on the type, gravity and duration of a non compliance with permit condition. This also depends on whether the operator rectifies such a non compliance within the timeframes agreed upon with the authority.
SPAIN (NAVARRA)	Accredited laboratories (UNE-EN 17.025) and inspection organisms (UNE-EN 17.020)
SPAIN (GALICIA)	Mainly when conducted by the authority but exceedances of ELV recorded in self-monitoring reports may also lead to penalty procedures.
SPAIN (CASTILLA LA MANCHA)	Yes, a penalty procedure can be started by the authority that has issued the permit.
SPAIN (CANTABRIA)	It is the competent authority who issues a penalty in case of non-compliance.
SPAIN (ANDALUCIA)	The authority may issue a penalty in noncompliance cases based in measurements conducted mainly by the authority and, to a lesser extent, by the operator and third-part.
NETHERLAND	Mostly on measurements conducted by the authority. Sometimes based on a message and/or measurements of the operator (see answer 7). Violation of rules can also be prosecuted by the Public Prosecution Service (`Openbaar Ministerie´/OM). Its field of work is criminal law. Some civil servants of the competent

	authority are called special investigating officers (´buitengewoon opsporingsambtenaar´). They are managed directly by the Public Prosecution Service. The Public Prosecution Service and the courts together make up the judiciary. The Public Prosecution Service decides who has to appear before a court and on what charge.
ITALY	A penalty can be issued on the based on the results of the analysis performed by the competent authority; it can also be issued on the basis of a negative result of a technical assessment following a breach of the limits detected in the annual report of the operator.
POLAND	Conducted by operator in accredited laboratory (own or external)

QUESTION 9: ENFORCEMENT

What is the type of punishment for exceeding the permissible conditions? Fine / decision / other

TURKEY	Just giving fine or fine with stopping the facility.
ROMANIA	In this case a penalty is issued and also the suspension of the permit is asked until the operator complies with the ELVs. If the operator doesn't comply within 6 months then the cancelation of the permit is asked by the inspection authority. The suspension and cancelation of the permit is issued by the decision of permitting authority.
CYPRUS	Out of the court fines can be imposed by the DoE inspectors up to 4000 Euros for every offence. Additionally when offences are taken to court, monetary fines can be imposed or/and the operator can go to jail according with the provisions of the Law. For very serious offences which include cases in which human health and the environment are seriously threatened, the Chief Inspector can ask the court to prohibit operation.
CZECH REPUBLIC	Most often are imposed fine, but is possible impose remediate measures and in case of serious non-compliance is possible impose restriction operation or closing down part or whole installation.
DENMARK	See question 7
ESTONIA	Fine and administrative procedure and injunction
SLOVAK REPUBLIC	First, remedial measures are imposed and, in the event of a serious breach, non-compliance may impose a fine, limit operation or shut down operations.
SLOVENIA	Both a fine and a decision. A decision is a curative measure to solve the problem. An administrative fine in restrictive measure and do not solve a problem but it has an educational effect.
FINLAND	Depends on the severity of the crime and if done on purpose or on pure negligence, and on the impact in the environment from fine to jail.
PORTUGAL	Usually is a fine. The operator may be ordered by the inspection authority to cease the discharge when the measurements are exceeding the conditions on the permit or in other situations like when is making an unauthorized discharge.
MALTA	When exceeding permissible conditions, the authority may decide to take Administrative action, legal Action or withdrawal of bank guarantees
SPAIN (NAVARRA)	Usually fine

	Exceptionally partial or total closure
SPAIN (GALICIA)	Both fines and decisions. In our legal system administrative offences are classified in non-serious, serious and very serious offences. Penalties provided for on-serious and serious offences are in general fines and the obligation to restore the situation to its original state. For very serious offences, which include cases in which human health and the environment are seriously threatened, additionally a decision to prohibit operation can be the result.
SPAIN (CASTILLA LA MANCHA)	The sanction can be a fine or the withdrawal of the permit in the more important cases. It can also include criminal liability and in this case the competent authority is the Criminal Court.
SPAIN (CANTABRIA)	Fine and/or decision.
SPAIN (ANDALUCIA)	Usually the type of punishment for exceeding the permissible conditions is to impose a fine. Only in cases where there is an imminent threat of damage to the environment, authority may take decisions, like activity clausure, against the operator. In any case, that's regulated in wastewater and environmental quality laws.
NETHERLAND	Administrative sanctions are: Official warning Order of penalty payment in a cease and desist letter (`Last onder dwangsom´) Administrative enforcement Withdrawal permit
ITALY	According to the non compliance the penalty can be an administrative fine or follow a penal path. Furthermore, Competent Authority sets a deadline within which the operator has to comply again with the permit. The further step (whether the operator does not restore the compliance situation or in case of a second breach) is the closure of the plant and the withdrawal of the permit.
POLAND	Decision imposing administrative punishment (=Q7)

QUESTION 10: ENFORCEMENT

Who imposes a penalty? (Licensing authority / inspection body / court / other)

TURKEY	Inspection body
ROMANIA	The penalty is imposed by the inspection authority (National Environmental Guard and inspection bodies of „Romanian Waters" National Administration). The operator may to submit a complaint against penalty report to the competent court within 30 days after the penalty report is issued or communicated. The court may decide to maintain the penalty, to reduce the level of penalty, to replace the penalty with a warning or even to cancel the penalty report.
CYPRUS	The Inspectors of the DoE can impose out of the court fines. Additionally when offences are driven to court, the court can imposes monetary fines or/and can send the operator to jail according with the provisions of the Law.
CZECH REPUBLIC	Inspection authority, and is possible impose fine by Permit authority
DENMARK	See question 7
ESTONIA	Inspection Authority. Criminal cases - court
SLOVAK REPUBLIC	Inspection authority. The court may change the decision to inspect the fine.
SLOVENIA	Inspector
FINLAND	Court
PORTUGAL	Inspection body or the water permitting authority.
MALTA	The inspection body and the licensing (permitting) body form part of the same authority. In cases referred for court action, the court imposes penalties as prescribed in the law.
SPAIN (NAVARRA)	Licensing authority (local or regional government); inspection body only proposes to start the penalty procedure Court only if there is exceptionally serious effects or a legal resource
SPAIN (GALICIA)	Depending of the classification of the offences (non-serious, serious and very serious), penalties are imposed by officials at different levels of the Regional Ministry of Environment and Spatial Planning. The penalties corresponding to very serious offences are imposed either by the Regional Ministry or by the Government. Inquiries leading to the penalties are carried out by lawyers (civil servants) of the Legal Services of the Regional Government The Permitting Service (IPPC Service) and the Inspection Service participate in the procedure providing all the information available: inspection minutes and reports, self-monitoring reports etc
SPAIN (CASTILLA LA MANCHA)	The inspection body proposes the start of the civil sanctions and the procedure is analyzed by the Juridical Service. It could in some cases arrive to the Legal Authority.
SPAIN (CANTABRIA)	The penalty is imposed by the Authority with competence in the place where the waste water is discharged.
SPAIN (ANDALUCIA)	Usually the penalties are impose by the license authority, who is assisted by the inspection

	authority.
NETHERLAND	The inspection body is competent for administrative sanctions. Criminal prosecution is done by Public Prosecution Service.
ITALY	The inspection authority assesses the non compliances and report to the Competent Authority suggesting the measures to be taken; the last one imposes the penalty.
POLAND	Inspecting body

QUESTION 11: LAB ANALYSIS

Should sampling and lab analysis have to be performed by an accredited entity? In the case of sampling or analysis without accreditation, are measurements considered invalid?

TURKEY	Yes should be. The facility can do analyses by itself for its own check. In the case of sampling or analysis without accreditation, the measurements are considered invalid.
ROMANIA	At least once a year the operator has to perform the self-monitoring through an accredited laboratory. If this requirement is not fulfilled then a breaching of the permit condition is took into consideration.
CYPRUS	The accredited entity must be accredited for sample collection (which includes planning of sampling) and for analysing each of the parameters included in the discharge conditions. If both accreditations (accreditation for sampling and accreditation for analysing samples in laboratory) cannot be proofed, the measurements are not considered invalid but can be easily challenged in court procedures. In these cases, the results regarding the parameters for which the entity lacks accreditation are not considered invalid but again can be challenged in court procedures.
CZECH REPUBLIC	Sampling and lab analysis have to be perform by an accredited entity.
DENMARK	Usually sampling and analysis should be accredited but in special cases the company can do it themselves. The measurements are considered invalid.
ESTONIA	Sampling and lab analysis should be accredited.
SLOVAK REPUBLIC	Sampling and laboratory analysis have to be perform by an accredited entity.
SLOVENIA	Yes – accredited laboratory.
FINLAND	Sampling and lab analysis should be accredited.
PORTUGAL	Sampling can be done without accreditation, and the results are considered valid. The analysis procedure is determined by law and that procedure is accredited by a national accreditation organism. In case of divergence in wastewater analysis performed by the operator and the inspection the result obtained from the analysis carried out by the National environmental lab serve as proof.
MALTA	Lab analysis has to be usually carried out at a laboratory accredited to at least EN ISO 17025:2005/Corr 1:2006 and preferably for each and every test. In case analysis is to be carried out without accreditation, this would be subject to a specific approval by the Authority upon submission of further details on the proposed analytical methods and

	laboratory.
SPAIN (NAVARRA)	Yes, not accredited entities or laboratories are not considered as acceptable It depends of the case, but sampling by accredited entities are strongly preferred. In court would be unacceptable
SPAIN (GALICIA)	Definitely yes. The accredited entity must be accredited for sample collection (which includes planning of sampling) and for analysing each of the parameters included in the discharge conditions. The accreditation is issued by the Entidad Nacional de Acreditación (ENAC) which is the agency entitled by the government to operate in Spain as the only National Accreditation Body, pursuant to Regulation (EU) No 765/2008 that regulates the functioning of accreditation in Europe. If both accreditations (accreditation for sampling and accreditation for analysing samples in laboratory) cannot be proofed, the measurements are considered invalid. If may happen that the entity is accredited for analysing some parameters and not others. In these cases, the results regarding the parameters for which the entity lacks accreditation are considered invalid and the operator is requested to repeat the sampling and analysis for those parameters. Additionally all staff participating in the sampling and analysing must be internally qualified by the accredited entity. Qualification procedures are checked by ENAC.
SPAIN (CASTILLA LA MANCHA)	Yes, it can be done by an accredited entity.
SPAIN (CANTABRIA)	The sampling and lab analysis have to be performed by an accredited entity if not they are considered invalid.
SPAIN (ANDALUCIA)	The response is affirmative for both questions. Only if the sampling and lab analysis is performed by operator (self monitoring) can be out of accreditation.
NETHERLAND	Yes, the laboratory should have an accreditation.
ITALY	Sampling and lab analysis have to be performed, on behalf of the operator, by an accredited entity. In the case of sampling or analysis without accreditation, measurements are considered invalid.
POLAND	Yes, only accredited entity. In the case of sampling without accreditation or analysis without accreditation, measurements are considered invalid. For measurements performed in a non-accredited laboratory, inspecting body will impose administrative punishment by way of a decision.

QUESTION 12: LAB ANALYSIS

Does the inspection authority perform sampling and analysis on its own?

TURKEY	In some special cases, the laboratory department and inspection department of Ministry can do inspection together. In this cases laboratory department takes samples, do the analysis and send to results to inspection department.
ROMANIA	The National Environmental Guard doesn't but the „Romanian Waters" National Administration does.
CYPRUS	The Inspection authority performs only sampling. The inspection authority (Department of Environment) is supported by the State General Laboratory, a public accredited laboratory. DoE takes samples during routine inspections under the controlling of the implementation of either the Waste Discharge Permits or Industrial Emissions Permits and carry them to SGL for analytical measurements.
CZECH REPUBLIC	Perform sampling yes (but can not use those measurement in administrative procedure), perform analysis no, have to ask accredited lab.
DENMARK	Usually not on waste water from industries.
ESTONIA	Yes (if there were not violation)
SLOVAK REPUBLIC	No, the inspection authority must require an accredited body to collect and analyze it.
SLOVENIA	No. But sometimes hire an accredited laboratory.
FINLAND	On surface water quality yes, not on waste water discharge.
PORTUGAL	Only sampling. Analysis are being done on accredited public labs.
MALTA	The Authority does not usually perform sampling and analysis on its own but it requires operators to conduct such measurements at their own expense as directed by the Authority. The authority is however empowered to take all the necessary samples and carry out sampling tests as it deems necessary
SPAIN (NAVARRA)	Yes, sampling is performed by public accredited organism (UNE-EN 17.020); samples are sent to accredited laboratory (UNE-EN 17.025)
SPAIN (GALICIA)	Yes, but supported by the Environmental Laboratory of Galicia (LMAG in its Spanish and Galician acronym) both for sample collection and analysis. Environmental Inspectors are qualified for water sample collection
SPAIN (CASTILLA LA MANCHA)	No, they are performed by authorized inspection entities.
SPAIN (CANTABRIA)	When the inspection of the waste water is competence of the Community of Cantabria, there are sources to perform sampling and analysis on its own.
SPAIN (ANDALUCIA)	Yes, the inspection authority has its own accredited entity for sampling and lab analysis.
NETHERLAND	The inspection authorities perfom sampling on their own. Most of the analysis is done by a central accredited laboratory. Some specific parameters are analysed by other, commercial, accredited laboratories.
ITALY	Yes. Regional environmental inspection agencies have their own laboratories.

POLAND	Yes, if authority believes that the measurements submitted by the subject are doubtful or if authority wants to verify the measurements of the operator but inspection authorities own measurements can not be the basis for the legal imposition of the penalty. They may be the reason for not recognizing the results of the operator and only considering measurements of operator not valid may impose a penalty.

QUESTION 13: LAB ANALYSIS

Which compliance criteria is adopted to the measure and its uncertainty in relation to the limit?

TURKEY	Discharged wastewater quality limits are defined in Bylaw for each industrial sector. A communique defines also sampling procedure and analyzing methods
ROMANIA	Don’t know.
CYPRUS	Uncertainty is taken into account to decide whether the limit is exceeded or not.
CZECH REPUBLIC	The results of accredited lab is accepted and compared with emission limit
DENMARK	That is set in the permit. The state has some guidelines.
ESTONIA	It is set in the permit
SLOVAK REPUBLIC	The results of accredited laboratory are accepted and compared with emission limit.
SLOVENIA	---
FINLAND	That is set in the permit.
PORTUGAL	The compliance criteria are stablished in the permit. The uncertainty is taken in account to check on the compliance during inspection.
MALTA	The Authority currently obliges operators to abide by the monitoring specifications and minimum performance criteria delineated in 2009/90/EC.
SPAIN (NAVARRA)	Value + uncertainity must be lower than limit
SPAIN (GALICIA)	Uncertainty must be taken into account to decide whether the limit is exceeded or not.
SPAIN (CASTILLA LA MANCHA)	The used criteria is the uncertainty of the measurement device.
SPAIN (CANTABRIA)	When the inspection of the waste water is competence of the Community of Cantabria, the measurement uncertainty is considered to check the compliance with the limit
SPAIN (ANDALUCIA)	If the lab value is IN the uncertainly interval, it's consider non evaluable; if it's UNDER the uncertainly interval, it's consider compliance with the limit value; and if it's ABOVE the uncertainly interval, it's consider non-compliance with the limit value.
NETHERLAND	In the Netherlands there are two kinds of emission limit values: theoretical and empirical (based on a dataset) with different uncertainty in relation to the limit. Rounding of figures is also taken into account.
ITALY	A national guideline has been issued (http://www.isprambiente.gov.it/it/pubblicazioni/pubblicazioni-del-sistema-agenziale/l2019analisi-di-conformita-con-i-valori-limite-di) to manage with uncertainties in

	the comparison with threshold limits.
POLAND	Uncertainty of measurement is an expanded uncertainty calculated using an expansion factor of k = 2, which corresponds to a confidence level of approximately 95%.

Annex XIII

Joint Inspections: Proposal of Scheme and Contents

OBJECTIVE

Improve the inspections and surveillance applying to EU legislation

The Commission considers that improvements may be appropriate by Assessing options for complementing national inspections and surveillance in a targeted way at EU level, including[26]

- More systematic use of peer-review inspections, drawing on existing initiatives of IMPEL (the network of national inspectors)
- improve the efficiency and quality of IED inspection programmes;
- sharing experiences and best practices;
- addressing common problems and challenges;
- documenting different tools, practices, findings and other resources;
- awareness of the strengths and weaknesses of IED inspection programmes.

JSG CHARACTERISTICS

- Joint Inspections subgroup (JISG) should be in the form of technical workshops that prepares and evaluates during the meeting the joint inspection,
- The joint inspection should be organised in such a way that it cost as little time to prepare as possible but with a focus on maximum practical knowledge exchange and benefit to host as well as visiting inspectors as possible during the joint visit.
- A joint inspection is a on-site inspection, focused on procedures and methods used by the host country. A secondary aim is to learn on content. If it is possible to organise the particularly areas of inspections are of common interest to all inspectors that join the inspection.
- Need a minimum of 1 to two days for preparation, joint visit and discussion of it
- For maximum knowledge exchange and time efficiency the visiting inspectors preferably know about the industry they will inspect!

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[26] Stated in COM 95 final: Improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0095&from=EN

- Need a previous discussion of each participant´s organisation procedures
- Need a further analysis and abstract of conclusions aiming to describe a common procedure and detect weak points.
- Amount of visiting inspectors should be two or max three to have maximum involvement and knowledge exchange. If more participants, there should be more inspection teams.
- Visiting inspectors should be able to speak English.
- The inspection will be done in English so the company where the inspection will take place should be preferably a multinational one. If this is not possible the host company will arrange for a translator of the host language to English. Be aware that working with translators cost more time because of translation so the focus area should be limited or the inspection time increased.

PROCEDURE

T = joint inspection date

See also attachment with schematic process

T-2 months

- The host country identifies a company that is willing to receive the international inspection team.
- The company should not be to big and complicated.

T-2 weeks

The host country sends (at least):

- An agenda with the main items to be inspected.
- A summary of the findings of the last inspection.
- An overview of documents the host will use for preparation of the
- Inspection.

The host country sends (optional, if available):

- If available in English also info on the company (homepage)
- the most important rules that apply
- a summary of the relevant Bref.
- a brief explanation of their system (IRI annex a can be used for this).

Special notices on the Agenda

- Identify time for the practical issues concerning the `visiting' part.
- It is important to limit the inspection subjects/focus so that there is enough time to ask questions.
- Presentation from the company should be limited in time and should be focussed on the environmental and safety issues.

A typical agenda could consist of the following items and order.

- Day 1 afternoon of site: Presentation of host inspector. Short presentation of the facility to visit. Show the documents and tools used for preparation as mentioned at the preparing teleconference.
- Day 2 morning on site: Site visit starting with introduction team and short presentation by company. Followed by the actual inspections and close out to the company
- Day 2 afternoon on or of site: participants discus the major findings and how they would report it an deal with it. After that the visiting inspectors will prepare a presentation to the plenary meeting with the major findings, strong and weak points and opportunities of improving.
- Day 2 joint diner inspection team
- Day 3 morning: compare procedures and checklists used between visiting and host country. Summarize the major differences and put in a short presentation..
- Day 3 or 4: presentation of major findings and procedural differences to the plenary meeting

T-1 week

The host country organises a two hour telephone conference with the visiting inspectors with a clear agenda with decision points.

Agenda items for telephone conference.

- Practical issues (transport, time, safety clothing/shoes/other protection gear etc)
- Addition info concerning the agenda during the joint visit
- An overview of the company and the major risks and issues
- The subject to inspect at the joint inspection
- In case of more than one inspection group the division of inspection subjects
- The regulations that will be inspected and methods that will be used
- If time allows. The host country will share their procedure, explanations of usual data bases, documents, and information about the site visit. Otherwise this item will be explained during Day 1 at the preparing meeting just before the joint inspection.

T-1 week

The visiting inspectors prepare an overview for the procedures and checklists they use for this type of inspection.

The host inspector drafts a presentation for the plenary meeting with what has been done during the joint inspection.

During The JISG Meeting.

- The roles should be clear. The host company executes the inspections and visiting inspectors observe and ask questions. It is the task of the host to identify and report possible non compliances.
- If non compliances are discovered, the host will deal with this separately with the company.

After the JISG Meeting:

- All inspectors will make a short report with their major findings of the inspection and will compare this with each other.
- The major findings will be put in the already prepared presentation by the host inspector.
- A first draft of the presentation for next day will be set up. The visiting inspectors fill in the lessons learned form (see attachment).

On first day of meeting IED workshop

- Time should be claimed for an additional learning opportunity for the visiting inspectors and host. They will compare their procedures. What's extra and what's less.
- The visiting inspectors will share their major findings with the host inspector on the methods and procedure used and will discuss possible improvements.
- The visiting and host inspectors finalise the presentation to the meeting.
- After this meeting one of the JSG inspection team will present the results from the JS.

POSSIBLE TOPICS TO DISCUSS

Most important issues

- SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of IED inspections or more practical.
- Share ideas about effectiveness of the demonstrated inspection and what methods are used to measure this.
- What good practices did I identify during this inspection?
- What good practice will I take home for improvement?

- What issues for improvement have I identified and what tools/advice can I offer to implement this improvement easier.
- Inspection reports and minutes.
- Inspection tools.
- Good practices (measures) in the industry identified during the Inspection.
- BATs compliance

Nice to have issues

- Cooperation between authorities
- Inspection time

POSSIBLE INDUSTRIAL SECTORS

These were identified because new directives are actually being improved, but could be others:

- Electronic & Electric Devices Waste Management Units
- Waste shipments,
- Waste treatments,
- Chemical industry
- Refinery
- Energy production

Planning & evaluation

See attachment

Available budget and source

- Travel: Impel
- Hotel: Impel
- Working hours: each authority
- Food: host

REFERENCES

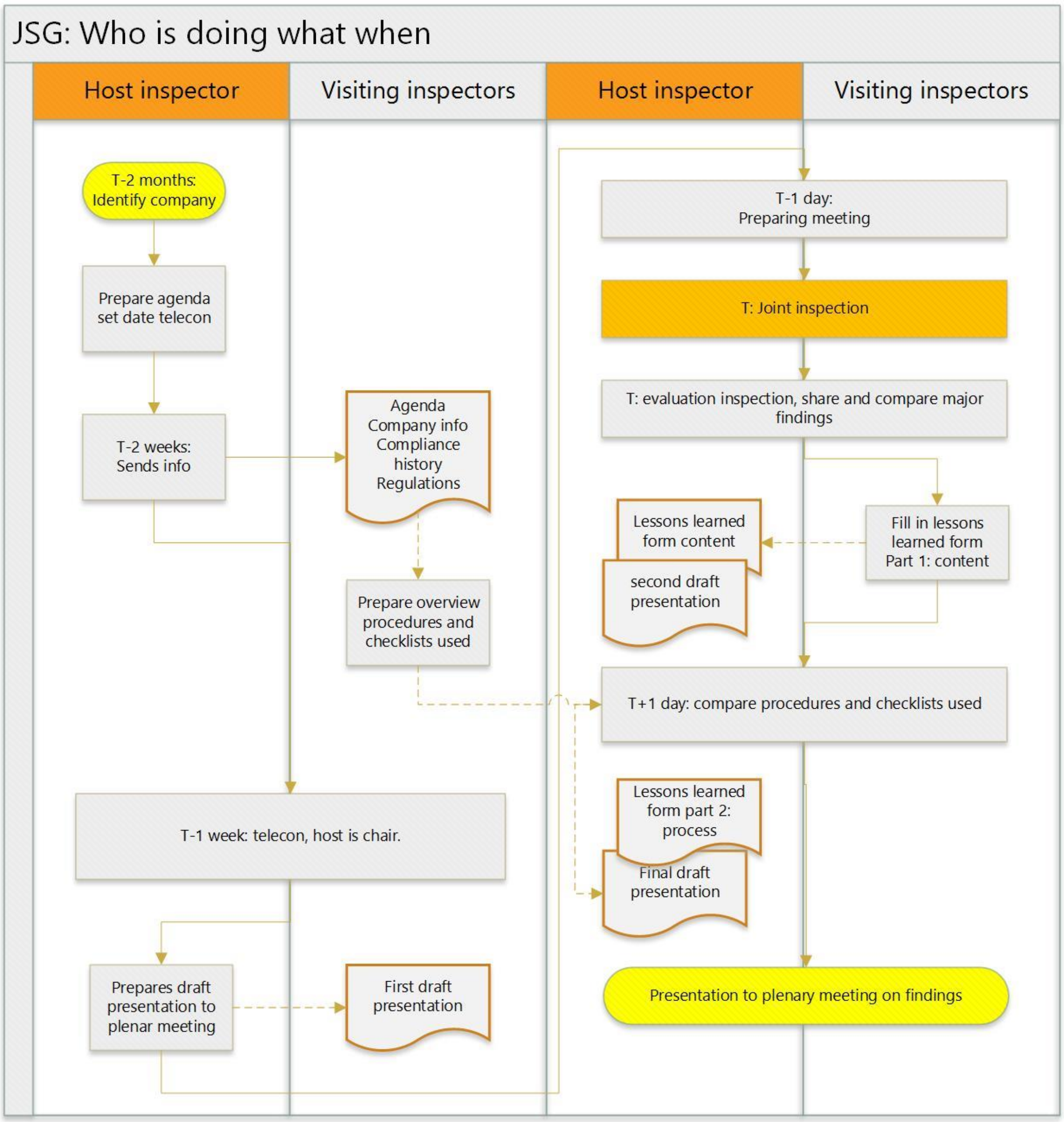
COM 95 final: Improving the delivery of benefits from EU environment measures: building confidence through better knowledge and responsiveness. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0095&from=EN

Objective: Improve the inspections and surveillance applying to EU legislation The Commission considers that improvements may be appropriate by assessing options for complementing national inspections and surveillance in a targeted way at EU level, including more systematic use of peer-review inspections, drawing on existing initiatives of IMPEL (the network of national inspectors).

MJV Tool Kit. Guide to hosting a Mutual Joint Visit Workshop for Seveso Inspectors. Major Accidents Hazards Bureau. Dc 2014. https://minerva.jrc.ec.europa.eu/EN/content/minerva/d7bde1ae-1054-40f1-b91a-94bc25e78fe1/mjv_toolkit.

JISG: Joint Inspections SubGroup

Schematic overview on JSG



Lessons learned form joint inspections (next page)

When, where and who	Type of industry	Subject	Lessons

When, where and who	Type of industry	Subject	Lessons
Rotterdam, The Netherlands June 2016 Bram Beun NL Host Manuel Salgado SP Silva Prihodko EST	Refinery Koch	-Verify EPRTR data on air emissions air -Check requested info to do a BBT check -Following up measures taken after an incident	Content • Creating a good atmosphere helps to obtain better quality information from the company. • A good inspection needs previous and easy to handle information. • More information obtained from the facility increases the quality of the inspection • High Quality permits make inspections easier. • A feedback from inspector to permit writers is a must! • Environmental data inputs in order to comply with permit and PRTR requirements are also a hard effort for facilities. Making that task easier should improve the quality of the information from facilities. • Sharing doubts with specialized inspectors helps in standardizing inspections and will improve the quality of the inspections. • Use of three year data with trends and compare with other similar companies. Joint inspection procedural • Small group optimal for maximum exchange of knowledge. • Host prepares a Bref summary note for the visiting inspectors. Al relevant Bref measures for the subject that will be inspected are written in this document. • Use a day before to do the preparation. • Host sends for preparation basic company info like website. • Host sends for preparation basic info on inspection results in the past and most important rules and regulations. • Focus on a limited subject is crucial for an effective joint inspection. • Share how you prepare yourself. • Share what compliance tools you do use. • Share info on how much time is used for several activities. • Share if you measure emissions yourself or if this is (partly) outsourced

When, where and who	Type of industry	Subject	Lessons
			• Having experience in the type of industry to be inspected is nice to have for the visiting inspectors but not crucial. • Identify strength and weaknesses of the Seveso joint inspection approach • Role of visiting inspectors must be clear for all • Prepare a checklist together what to inspect • Organise in such a way it is clear to the company they use limited time for introduction of their organisation and the host makes sure it is relevant to the to be inspected items • Question, is it limited to the inspection or also on enforcement actions • Question, is it possible to put other subjects like soil and water discharge and treatment on the inspection agenda? • Add the reporting part to the joint inspection

When, where and who	Type of industry	Subject	Lessons
Galloo, Belgium Oktober 2016 Bobby Verhagen NL Robert Valadares PT Antonio Quintas PT	recycling firms of ferrous and non-ferrous metals	-Verify the application of dust prevention measures	Content • A new possible problem and approach concerning the diffuse emissions regarding in particular this type of waste recycling plants (PCB in dust); • A practical approach to the BAT applicable to this sector. Examples have been showed. F.I. Using treatment of ambient air in activated carbon filters, collecting polluted waste water and treatment, resin coated concrete floors and water spray; • A view on other practices concerning sampling collection; Joint inspection procedural • Improving the level of participation of all of the inspectors present doing a complete sharing of the work of inspection on site (that can be done by sharing item's on a check-list on the field); limit the size of the group to 3 and only one per country. • Stressing clearly what are the main objectives of the inspection on site splitting it on sub-objectives or hypothesis to be checked on site; • Creating more opportunities for discussion between the inspectors and the inspectorates at the end of the inspection to stress and discuss the conclusions, giving more emphasis on pre preparation and preparation phase; • Find time to identify what's the information that would be written on the report and how it's done on each country. • Not enough time for preparation. Because of language to much effort to translate and share info (permit, reports etc.) and because of budget limited time available; Provide two weeks before; Overview last inspection results; Type of docs used for preparations (not the docs); One week before teleconference with joint inspection team.

When, where and who	Type of industry	Subject	Lessons
			• What is the aim of the joint visit; Focus on how to do an inspections; Focus on specific subject e. g. air quality or storage dangerous of goods. • What tools to share during inspections; Procedures, checklists used • Joint visit at good or bad and big or small company; Go to a smaller not to complicated company so the focus can be on how to inspect and is less distracted by the content. • Overview lessons learned by standard form; One of the members will prepare a format where others can add or modify. Use logic steps like before, during and after. • Follow up on joint inspection to team? ; No, the joint inspection stops at the reporting. • What to do in case of a violation during joint inspection? Put in strategy during visit.; F.I. have or plan a separate meeting apart from the join team with the company. • Not enough discussion time after the joint inspections and or reporting time; Put this part in the program. When focused there should be additional time should be available for this program item

When, where and who	Type of industry	Subject	Lessons
Milano, Italy, march 2017 Fabio Colonna (IT) Robert Gross (AT) Dubravka Pajkin Tuckar (HR) Jaakko Vesivalo (FL) malgorsata budzynska (PL) Cyril Burda (SK)	Energy power plant A2A S.p. A. Cassano d'adda		Content • Inspector and company sign a document with all findings during the inspection. So there is less uncertainty about what has been found. • Online information from Cems on status (start up, normal operation) and emission to air and measurements on emission to water is a useful inspection tool. Company knows the authorities can see their performance and will report more earlier in case of problems with emissions. Possible downside is that responsibility shifts from company to authority and it also costs time to keep track of. Joint inspection procedural • Teleconference maybe left out in case of clear agenda and documentation from host. But it is also a good reminder to visiting inspectors to set their mind on the inspection to come and preparation at home. . • Teleconference with video and chat function like webex can be a powerful tool to communicate in distance. • Improve learning opportunity by sharing procedures and checklists used for this type of inspection between each other. • More time needed do discuss these procedures and draw conclusions. Claim some time during plenary meeting to do so.

When, where and who	Type of industry	Subject	Lessons
Slovenia, Ljubljana, 21th of June 2017 Dubravka Pajkin Tuckar, Croatia Fabio Colonna, Italy Ruth Ciarlo`, Malta María Jesús Mallada Viana; Spain Darja Stanič-Racman, Slovenia Vladimir Kaiser, Slovenia	Aluminium Foundry	air emissions and noise pollution	• The fact that a pre-visit meeting is held with the operator allows the operator to describe what measures have been installed and any future plans that are envisaged for the company to continue to improve the company's profile and reduce emissions. • Allowed inspectors to visit a modern plant. An example of best practices and new technology (covered storage of clean aluminum scrap, low dust inside the cast house etc.) • No reason to be suspicious in view of good general housekeeping. • It was good practice by the operator to communicate beforehand with the competent authority regarding any equipment that is envisaged to be introduced. An updated environmental permit is issued prior to the purchase of such equipment to make sure that all equipment purchased is authorized by the competent authority and according to environmental permit conditions. • It was good to focus the inspection on one or two items only rather than inspecting all items in the permit since this will allow for a shorter and more focused visit for such large industries. • It was also good practice that the inspection minutes were written on site in front of the operator focused on the main findings of the inspection. • Inspection preparation – preparatory meeting important prior to inspection. Operator started new production company in Croatia. It was good that the inspection was held at the sister company in Slovenia and see environmental permit, which allows Croatia to compare environmental permits, and operations of this company. • Companies benchmark each other very quickly, more quickly than inspection officers. Cooperation between authorities is very slow and does not allow to quick response by the competent authority.

When, where and who	Type of industry	Subject	Lessons
			• The fact that the report is written on site, allows for less bureaucracy. • The writing of reports is different in some countries, where officers do not write a report on site during the inspection as in the case of Slovenia, but the report is written after the inspection. This will allow officers to cross check inspection points with photos taken to assure that all observations made are listed and correct. Also officers double check with permit conditions and improvement program check list which allows for a full report. The report is then sent to the operator including any actions with deadlines that might be given to the operator. The operator than replies back with his answers to the report. • Prior to the inspection an inspection plan is prepared so as to remind the inspector about the points that need to be checked during the inspection.
Portugal, Lisbon, general remarks			• When there will be more inspections at the same time during future IED meetings, it is important that the meeting agenda accommodates preparation of the report and the presentation. So there will be maximal learning opportunity for the teams, the meeting and the Impel community! No standard rules, only specific permits for IED installations. • Last development going from several permits on specific themes like waste, air etc. now one integrated permit. • All inspections are unannounced. Also the ones at the complex companies. • Typically an integrated inspections within one working day with, depending on the complexity of the company, a team of several colleagues. • Recently going from analog to digital reporting in a new recently developed system.

When, where and who	Type of industry	Subject	Lessons
Portugal, Lisbon, 27th of September 2017 Roberto Valadares, Rui Cabrita (PT, host), Fabio Colonna (IT) and Malgorzata Budzynska (P).	Chemical Factory (cat. 4.1 h);	water discharges, air emissions water consumptions and some other aspects like legionella and energy use	• Allowed inspectors to visit a big plant. • Focus on many items: an occasion to learn items generally not dealt with. • According the Portuguese procedures operators has to send data required by the inspectors during the site visit; the most of work will be in the office after operator sends data • Accurate preparation – preparatory meeting important prior to inspection. • Good atmosphere during the inspection: good cooperation of the operators • Companies benchmark each other very quickly, more quickly than inspection officers. Cooperation between authorities is very slow and does not allow to quick response by the competent authority.

Portugal, Lisbon, 27th of September 2017
Marta Ramos, Claudia Simeos (PT, host), Christella Stylianou (CY), Jamie McGeachy (Scotland)
	Intensive rearing of poultry or pigs (cat. 6.6 c)	Slurry management
		Significant changes to the process
		Management of other waste
			• No announcement of inspection is standard
			• Very little or no communication between inspectors and permit writers
			• Different requirements in permits (BAT)/ different local conditions (dry climate):
			  ○ Cover of reception tank
			  ○ Cover of lagoons
			  ○ Impermeability of lagoons
			  ○ Ground water monitoring
			  ○ Collection of rain water

When, where and who	Type of industry	Subject	Lessons
Portugal, Lisbon, 27th of September 2017 António Quintas, Maria Jose Falcao (PT, host), Maria Enroth (S) and Manuel Salgado (SP)	feed industry (cat. 6.4 b)	air emissions and waste management	• It is valuable for guest inspectors to participate as witnesses in an ordinary inspection. • It is necessary to have beforehand basic information and a preparation meeting in order to participate in an ordinary inspection. • IED inspections in different countries are quite similar due to checking on the same EU-regulations. • The disposition of the different parts of an inspection (study of documents, site visit, conclusions and reporting) are different between different countries. • Differences with announced and non-announced inspections. There are pro's and con's with both. Non-announced inspections often create stress to operator and difficulties in collecting relevant information. It does not necessary give more information about non compliances. Obviously you get to see more "every day" operation/ordinary housekeeping if you come non-announced. • Most of the joint learning is done during discussions before and after the specific inspection. • Know-how, installation understanding and knowledge about relevant BAT are important prerequisites for focusing on key environmental issues (KEI) and environmental critical points (ECP). • The environmental permit of an installation is the most important tool for inspection. • A relevant permit will consider the key environmental issues (KEI) and environmental critical points (ECP) for an installation in order to facilitate an efficient inspection.