SUPPORTING IMPLEMENTATION OF THE INDUSTRIAL EMISSIONS DIRECTIVE (2010/75/EU) - 2016

Date of report: 31 October 2016

Report number: 2016/01
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
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<th>Project Manager/Authors:</th>
<th>Report adopted at IMPEL General Assembly Meeting:</th>
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<tr>
<td>Project Manager: Horst Buether</td>
<td>Bratislava, Slovakia, 1 December 2016</td>
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<tr>
<td>Authors: John Seager and Terence Shears</td>
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<td>Report: 9</td>
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<td>Annexes: 230</td>
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**Executive Summary**

An initial project was carried out in 2015. This 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. Based on the results of this project the IED Implementation Guidance Book was further developed and is part of this report.

Two joint inspections were carried out at a refinery in the Netherlands and a waste processing facility in Belgium. Further joint inspections are planned for the future.

**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. Introduction

1.1. Industrial Emissions Directive 2010/75/EU

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 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.

The IED is based on several pillars, namely (1) an integrated approach, (2) use of best available techniques, (3) flexibility, (4) inspections and (5) public participation.

1. The integrated approach means that the permits must take into account the whole environmental performance of the plant, covering for example 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.

2. The permit conditions including emission limit values must be based on the Best Available Techniques (BAT). In order to define BAT and the BAT-associated environmental performance at EU level, the Commission organises an exchange of information with experts from Member States, industry and environmental organisations. This work is co-ordinated by the European IPPC Bureau of the Institute for Prospective Technology Studies at the EU Joint Research Centre in Seville (Spain). This process results in BAT Reference Documents (BREFs) and the BAT conclusions contained are adopted by the Commission as Implementing Decisions. The IED requires that these BAT conclusions are the reference for setting permit conditions.
For certain activities, namely large combustion plants, waste incineration and co-incineration plants, solvent using activities and titanium dioxide production, the IED also sets EU wide emission limit values for selected pollutants.

3. 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.

In addition, through the European Pollutant Release and Transfer Register (E-PRTR), emission data reported by Member States are made accessible in a public register, which is intended to provide environmental information on major industrial activities.
2. Purpose of the Project

The 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.

3. Organisation of the project

Two project team meetings and a workshop were held in the context of the project:

i. A first Project Team meeting in Berlin, Germany, on 10 and 11 March 2016, which agreed that the outputs from the three initial working groups in the project would be adapted and included in the guidance book. The topics covered by these groups were: Levels of non-compliance, Reporting to the public and Dealing with installations closing down, bankruptcy. Work continued on the three new topics which had already begun on: Brefs, self-monitoring and operator reporting and Tools.

ii. A second Project Team meeting in Schiedam, The Netherlands on 30 June and 1 July 2016. Immediately before this meeting there was a common joint inspection at the Kock Refinery (Kock HC Partnership B.V.). Work continued on operator self monitoring and reporting and also on definitions and horizontal aspects of permitting.

iii. A workshop in Ghent, Belgium on 5 and 6 October 2016, which finalised work on the first three topics and looked at progress on the additional two projects. Immediately before this meeting there was a common joint inspection at Galloo Group, Menen.
3.1. **Berlin Project Team meeting, 10-11 March, 2016**

At the meeting in Berlin, it was stated again that the desired outcome of the project was a level playing field of IED implementation. Work had begun on the guidance book in 2015 which would give practical guidelines on different aspects of the IED. It had drawn on work previously done by IMPEL and would also include outputs from the working groups in this project in 2015 (on levels of non-compliance, reporting to the public and dealing with installations closing down/bankruptcy). Working groups in progress at that time included those on Brefs, self monitoring and operator reporting and Tools. On Brefs, the most difficult thing identified had been to set emission limit values for BAT conclusions. The self monitoring group decided to use the findings from various earlier IMPEL projects and to expand them with any relevant new information. On Tools, the aim was to find ways of helping regulators deal with additional requirements imposed by IED. The note of this meeting is at Annex III.

3.2. **Schiedam (Rotterdam) Project Team meeting, 30 June – 1 July, 2016**

Before the meeting a common joint inspection had taken place at the Kock Refinery (Kock HC Partnership B.V.) The inspection had focused on air conditions. It was seen as a very useful experience from which it was clear that the more information that was made available beforehand, the better.

Work on operator self-monitoring had made good progress. Those working on Tools had recognized that this was a potentially large area which they needed to narrow down in order to ensure a clear focus. The requirements of the IED would be a useful starting point. Work had begun on definitions and horizontal aspects of permitting. The aim on this latter topic was to produce a single procedure for all Member States. The note of this meeting is at Annex IV.

3.3. **Ghent Workshop, 5-6 October 2016**

There was a joint inspection at Galloo Group, Menen, before the workshop. This operation is a mix of recovery and disposal of non-hazardous waste. The topic of the inspection was Air Quality and PCB and diffuse emissions. It is important to have a maximum of four guest inspectors and to have good preparation to make the process manageable. Photographs sent beforehand can
help clarify the issues. There was a presentation on the mutual joint visits of the Seveso Group which had valuable lessons for the IED joint inspections.

A presentation was given on the Seville process for BREFs from an expert seconded there.

There was a résumé of the open topics for IED implementation. A questionnaire had been drawn up on horizontal aspects of permitting which was further refined at the workshop. On Tools, a sharper focus had been agreed which involved looking only at those that would be needed to implement IED. A new sub group would look at problems with industrial waste water which had been identified as an important issue by the Commission. Another new sub group would look at what could be done through BREFs in terms of identifying good practice.

Presentations were given on current IMPEL projects relevant to IED including Baseline Reporting and Permitting and also on earlier IMPEL projects on the relationship between Water Framework Directive and IPPC, Industry and Air Quality and Derogations from BAT. There was a presentation on the project on regulating Onshore Oil and Gas Operations.

The note of this meeting is at Annex V.

4. Conclusions and Recommendations

As in the previous project, through the course of the workshop and the project meetings, the main output has been the development of good practice on different topics and of the Guidance Book on Implementation of the IED. It now includes sections on Levels of non-compliance; reporting to the public; site closure; self-monitoring; and translation of BAT Associated Emission Levels into Emission Limit Values. The Guidance Book is at Annex 2.

The work of the current sub-group on horizontal permitting should feed into the guidance book in due course as should the work of proposed new sub-groups on industrial waste water. As has already been noted, the continuing gaps in the Guidance Book illustrate the need for further work in future years in order to complete them.
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): □
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<th>1.3 Full name of work (enough to fully describe what the work area is)</th>
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<td>Mutual joint visits of industry inspectors and regulators to achieve a level playing field implementation of the IED 2016</td>
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<tr>
<th>1.4 Abbreviated name of work or project</th>
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<td>Supporting IED Implementation 2016</td>
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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)

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 pollutant 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.

IMPEL already has done some work on facilitating the implementation of the IED into the day to day work of competent authorities. Especially the projects on IED inspections and IED permitting but also the IRIs and the DTRT and easyTools projects paved the way for a better understanding and enforcement of the IED obligations. To follow up with guidance and creation of a level playing field within Europe it is highly recommendable to foster the exchange of authorities dealing with the IED.

Comparing the implementation of the IED with the Seveso Directive there was a difference regarding the common activities of the competent authorities. The Seveso Community under the
leadership of the Committee of Competent Authorities (CCA) is performing yearly mutual joint visits since some years to support a common application of the Directive especially when it comes to inspections. This has developed to a very valuable activity with the aim to reduce the implementation gap and foster a level playing field. Since 2015 this approach is now also applied to the implementation of the IED within a long running IMPEL activity of the Industry and Air Expert Team.

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 project team is preparing yearly joint meetings for a bigger group of participants which have the character of technical workshops. During these workshops the approaches of national authorities will be presented and discussed, exchange of good practice will be facilitated, joint inspections including site visits will be organised, and the implementation of the IED will be supported. In parallel new tools to support permitting and inspection will be developed. Tools already developed by IMPEL, like IRAM, will be adapted. Electronic checklists to perform inspections and forms for active publication of the inspection reports on the internet will be developed. Special topics like level playing field application of BAT, extent of operator self-monitoring and reporting obligations of the operators will be examined. At the beginning of the project in 2015 it was decided that the project should seek to produce a guidance book which would give practical guidelines on different aspects of the IED. The guidance book will draw on work previously done by IMPEL and also the outputs from this and other projects dealing with the IED implementation. In a following step the application of the tools by the national member authorities shall be supported and checked by performing country visits.

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

Former projects dealing with the IED in a broader sense but also the IRIs and the DTRT and easyTools projects are linked to this activity. As a result of the first meetings of the 2015 IED Implementation project, the first Industry and Air Expert Team meeting, a meeting with the competent officers of the Commission, and the Implementation Challenge project the following topics were identified as most pressing problems concerning the implementation of the IED for enforcement authorities:

1. Reporting to the public
2. Levels of non-compliance
3. Dealing with installations closing down/bankruptcy
4. Implementation of BREFs
5. Self-monitoring and operator reporting
6. Baseline report – soil contamination  
7. Tools  
8. Integrated permits under IED  
9. Application of emission ranges  
10. Application of Article 18 (ELVs and Air Quality limits)  
11. Application of BAT / general binding rules  
12. Charging regimes  
13. Definitions  
14. Guidance for inspections: topics in relation to identified high risks, covering all relevant media, covering all or only a few aspects, using check lists in relation to risk criteria, announced – unannounced, ...  
15. Minimum extent and resources for IED inspections  
16. Real joint inspections, site visits instead of site seeing  
17. Public participation / complaints management  

The first three topics were under elaboration of working groups within the 2015 IED Implementation project and the results will be put into an IED Implementation guidance book. The work on topics 4 to 7 has already started within the mentioned project and shall be followed up in 2016. The work on Baseline Reporting will be in close contact with the Baseline project under the Water and Land Expert Team. It is planned to start with the work on integrated permitting in 2016. This shall be done in close contact with the IRI project on permitting. The other topics shall be elaborated in 2016 or a later phase of the long running activity.  

The IED Implementation guidance book will also contain results and recommendation of former and running IMPEL projects in relation to IED implementation.
3. Structure of the proposed activity

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

First the activity has started in 2015 as an IMPEL project running for 2 years to pave the way for a common understanding of the goals and to develop a work programme. The members of the project team consist of members of the Industry Expert Team. They are responsible to prepare the yearly joint meeting of (all) members of the Industry Expert Team. The yearly joint meeting has the character of a technical workshop. During these workshops the approaches of national authorities will be presented and discussed, exchange of best practice will be facilitated, common inspections including site visits will be organised, and the implementation of the IED will be supported. Back to back with the workshop there will be a conference on implementation of the IED and other industry related European law. Also other members of the Industry and Air Expert Team will be invited to the conference to contribute to the development of IMPEL activities needed to foster the common implementation of the IED and other industry related European environmental law and create a level playing field.

In a second step good practice examples for permitting and inspection will be identified and developed. The results of the project on implementation gaps and discussions with the Commission will be used to identify priority needs for action concerning non-compliance with the IED. Tools already developed by IMPEL, like IRAM, will be adapted, and forms for electronic inspection reports that can be used for active publication of the reports on the internet shall be developed. Joint inspections together with Water, Waste, Nature and Seveso authorities to reduce costs and optimise the enforcement of the European inspection obligations shall also be performed and tested for future collaboration. Another aspect of the second step will be work on special topics like level playing field application of BAT, extent of operator self-monitoring of soil and groundwater, mandatory inspection after serious complaints, incidents and accidents, or reporting obligations of the operators.

In a third step the application of the tools by the national member authorities shall be supported and checked by performing country visits. These country visits will be combined with site visits to see how the tools are working in the field.

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 containing
  1. Results from previous IMPEL projects
  2. Reporting to the public
3. Levels of non-compliance
4. Dealing with installations closing down/bankruptcy
5. Implementation of BREFs
6. Self-monitoring and operator reporting
7. Baseline report – soil contamination (in cooperation with Baseline project)
8. Integrated permits under IED (in cooperation with IRI Permitting project)

- Inspection tools
- Minimum extent and resources for IED inspections
- Results from real joint inspections
- Results from technical workshops and conferences on implementation of EU industrial law
- Electronic check lists for inspections and inspection report templates

**Outcome:**

Reduction of the IED implementation gap and a level playing field within IMPEL member states

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

In the following only the 2016 milestones of step 1 (2015/2016) are described in detail because the further steps depend on the results of the first 2 years.

- Development of the work program 2016: October 2015 / March 2016
- Guidance book topics: first and second project group meeting
- Minimum extend and resources for IED Inspections: first project group meeting
- Tools and electronic checklists: first and second project group meeting
- Joint inspections: after first or second project group meeting
- Workshop: country approaches / good practices / site visit: September 2016
- Conference on implementation of EU industry related environmental law: September 2016
- Development of guidance and best practice examples: until October 2016

### 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 (see item 4.2).

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 IED Implementation project a first working group on BRef application was launched to work on permitting related aspects. In 2016 a second group working on integrated permits shall be launched. The National Coordinators will be
asked to look for colleagues with special experience in permitting.

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

4.2 Project team (who will take part: name, organisation and country)

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Turkey  Şenay Aslan, senay.aslan@csb.gov.tr
UK  David Canham, david.canham@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.

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

Close contact with desk officers of the EU Commission dealing with industry related 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

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<th>Year 2</th>
<th>Year 3</th>
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</tr>
<tr>
<td>Total budget</td>
<td>64,500 €</td>
<td>ditto</td>
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6. Detailed event costs of the work for year 1

<table>
<thead>
<tr>
<th>Event</th>
<th>Travel €</th>
<th>Hotel €</th>
<th>Catering €</th>
<th>Total costs €</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(max €360 per return journey)</td>
<td>(max €90 per night)</td>
<td>(max €25 per day)</td>
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<tr>
<td>Event 1</td>
<td>9,000 €</td>
<td>4,500 €</td>
<td>1,300 €</td>
<td>14,800 €</td>
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<tr>
<td>(25 travelling participants)</td>
<td>(for 25 participants)</td>
<td>(for 26 participants)</td>
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<tr>
<td>Event 2</td>
<td>9,000 €</td>
<td>4,500 €</td>
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<tr>
<td>(25 travelling participants)</td>
<td>(for 25 participants)</td>
<td>(for 26 participants)</td>
<td></td>
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### Event 3

<Conference/workshop>

<September 2016>

<tbd>

<27>

<3/3>

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<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Travelling</td>
<td>9,720 €</td>
</tr>
<tr>
<td>Participants</td>
<td>7,290 €</td>
</tr>
<tr>
<td>For 27 participants</td>
<td>2,025 €</td>
</tr>
<tr>
<td>Total</td>
<td>19,035 €</td>
</tr>
</tbody>
</table>

### Event 4

<->

<->

<->

<->

<->

| Total costs for all events | 27,720 € | 16,290 € | 4,625 € | 48,635 € |

### 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, has to be confirmed on a yearly basis

7.4. What will the consultant do?  
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 technical workshops
2. Development of web based tools

7.7 Who is paying for the additional costs?  
1. IMPEL: 865 €
2. Not in this year

7.8. Are you seeking other funding sources?  
☑ Yes ☐ No

Support from Member Countries

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: As with the results of the easyTools project some member countries might prefer to have individual presentations of the project results for their competent authorities. The costs are normally covered by the inviting countries but this might not always be the case.
8. Communication and follow-up (checklist)

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)*

<table>
<thead>
<tr>
<th>What</th>
<th>By when</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOR *</td>
<td>September 2015</td>
</tr>
<tr>
<td>Interim report *</td>
<td>June 2016</td>
</tr>
<tr>
<td>Project report *</td>
<td>October 2016</td>
</tr>
<tr>
<td>Progress report(s) *</td>
<td>II Q/y</td>
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<tr>
<td>Press releases</td>
<td>Workshop</td>
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<td>June 2016</td>
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<td>News items for the e-newsletter</td>
<td>After 1st meeting</td>
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<tr>
<td>Project abstract *</td>
<td>After 3rd meeting</td>
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<tr>
<td>IMPEL at a Glance *</td>
<td>October 2016</td>
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<tr>
<td>Other, (give details): PPP for project presentation</td>
<td>After 1st meeting</td>
</tr>
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</table>

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

This is not foreseen for this year
hosting by IMPEL is required

8.6 Identify which groups/institutions will be targeted and how

8.7 Identify parallel developments / events by other organisations, where the project can be promoted

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.

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.
IMPEL Guidance book on the implementation of Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control)

DRAFT

Version 5.0

19 October 2016
Foreword by IMPEL Chair

The Industrial Emissions Directive (IED) is a major piece of EU legislation concerning the environmental regulation of industrial facilities across Europe. Many of its provisions are technical in nature. IMPEL has been working through a range of projects to help improve understanding of the detailed requirements of the IED and to provide guidance and tools to support practitioners in regulatory authorities in its implementation.

This guidance book has been developed with the aim of bringing together the results of IMPEL’s work and also related guidance issued by the European Commission. Links to specific projects and publications are provided to allow users to access the detailed documents. The intention is that the guidance book will be progressively developed in a flexible manner over time as more information becomes available.

We hope that this guidance book will be a valuable source of reference for all those who are involved in the implementation of the IED and that it will make a contribution to our work in protecting and improving the environment for people and wildlife in the years to come.

Dr John Seager, IMPEL Chair
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1 Introduction

1.1 Aim of this guidance book

This document provides practical guidance on the implementation of Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control), often referred to as the Industrial Emissions Directive (IED). It is a technical document, aimed at practitioners working in regulatory authorities at national, regional and local levels.

It draws upon a wide range of current and previous projects carried out by IMPEL that are relevant to the practical implementation of the IED. Gaps in the guidance document are being progressively addressed by the current IMPEL project, ‘Supporting Industrial Emissions Directive (IED) implementation (2015/01)’.

The guidance in this document is intended to complement, but not duplicate, guidance that exists elsewhere, and particularly guidance documents that have been issued formally through Communications from the European Commission. Relevant references and links to web sites of other organisations are made throughout this document.

1.2 The principles of the IED

The IED is the successor of the Integrated Pollution Prevention and Control (IPPC) Directive. Its main objective is to minimise environmental pollution from industrial sources throughout the European Union. Operators of industrial installations covered by Annex I of the IED are required to obtain an integrated permit from the authorities in the EU countries. About 50,000 installations were covered by the IPPC Directive and the IED will cover some new activities which could mean the number of installations rising slightly.

The IED is based on several 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 European Pollutant Release and Transfer Register (E-PRTR).

### 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 General structure of this guidance book

This guidance addresses specific practical issues that have been identified as of interest to IMPEL member organisations. For each of the sections the guidance considers the detailed requirements and interpretation of the IED. It takes account of implementation challenges that were identified in
IMPEL’s recent project to identify specific Implementation Challenges\(^2\). It considers related guidance, where relevant, that has been published at European and National levels. It brings together and distils relevant information and best practice from current and previous IMPEL projects.

2 Application of Best Available Techniques

2.1 BAT Conclusions

The Commission has published BAT Conclusions for the following industry sectors:

- The manufacture of glass\(^3\)
- Iron and steel production\(^4\)
- The production of cement, lime and magnesium oxide\(^5\)
- The tanning of hides and skins\(^6\)
- BAT conclusions for the production of chlor-alkali\(^7\)

\(^2\) Challenges in the practical implementation of EU environmental law and how IMPEL could help overcome them. IMPEL Report, March 2015


- The production of pulp, paper and board\textsuperscript{8}
- The refining of mineral oil and gas\textsuperscript{9}


2.2 Translation BAT Associated Emission Levels (AELs) into Emission Limit Values

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 make sure that BAT is applied (article 11). The BAT conclusions are the reference for setting ELVs including suitable requirements to monitor the emissions (article 14, para 3). In particular the BAT-AELs are important for setting emission limit values (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 does 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 other reference conditions than that stated in the BAT-AEL, additional calculation by the operator is required to prove that the level of protection is equivalent.

With this in mind, the implementation of BAT-AELs could be split into three steps:

1. Translating BAT-AELs into an ELV (from a range to a number) or more ELVs for different operational conditions
2. Setting monitoring requirements, and in case of other reference conditions, setting additional monitoring/reporting requirements
3. 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. Guidance on this derogation option can be found in paragraph 2.3 of this guidance book.

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

The IED provides the options to implement BAT-AELs in permit requirements 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 14 and 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:

1. 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.

2. 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 (see example Lombardia, Italy).
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 and, in case of general binding rules, of the group of installations under the scope of the general binding rules. For this analysis, detailed information of good quality is needed. The IED gives the legal basis to require the operator to provide the necessary information:

1. Permit application (article 12)
2. Monitoring plan and data (article 14)
3. Possibility to require operator information for reconsidering permit conditions (article 21)
4. Inspection reports (article 23)

To make the analysis, the information needs to cover in particular:

- Technical information 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 behind 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:

a) the installation and its activities;
b) the raw and auxiliary materials, other substances and the energy used in or generated by the installation;
c) the sources of emissions from the installation;
d) the conditions of the site of the installation;
e) where applicable, a baseline report in accordance with Article 22(2);
f) 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;
g) the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation;
h) measures for the prevention, preparation for re-use, recycling and recovery of waste generated by the installation;
i) further measures planned to comply with the general principles of the basic obligations of the operator as provided for in Article 11;
j) measures planned to monitor emissions into the environment;
k) 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:

1. The installations uses the same techniques as described in the BAT conclusion. In that 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.

2. 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 guarantee enforceability.

3. The installation uses other techniques than the BAT-conclusion describes. In that 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.

4. The installation uses other techniques than described in the BAT-conclusion with emission levels exceeding 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 de Brefs or elsewhere. Alternatives are to refuse 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).

5. The operator applies for an article 15, para 4, derogation to use a less stringent ELV than the BAT-AEL. This is explained in paragraph 2.3 of this guidance book.

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. Also other sources can 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 set at the level of the actual emissions of 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 upper level of the range. The collection and analyses of information by the operator, competent authority and/or legislator (in case of general binding) is aimed at setting this ELV at a reliable, 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 information to the public and 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:
a) the content of the decision, including a copy of the permit and any subsequent updates;
b) the reasons on which the decision is based;
c) the results of the consultations held before the decision was taken and an explanation of how they were taken into account in that decision;
d) the title of the BAT reference documents relevant to the installation or activity concerned;
e) 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;
f) 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 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 compliance verifying. The conditions should cover methodology, frequency, evaluation, data processing, recording and presenting. BAT conclusions on monitoring are the reference for 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 is checked/modified by the competent authority **before** granting the permit in order to improve the reliability of the plan. Often used criteria to check monitoring plans are:

1. Conformity with BAT conclusions on monitoring  
2. **Conformity with the goals of the monitoring, which should meet the goal of the BAT conclusion and verify compliance**  
3. Consistency of the complete monitoring system, not only the monitoring of separate parameters.  
4. Inclusion of obligations regarding Monitoring Data Quality Assurance (e.g. UNI EN 14181 for CEMS, laboratory/operators qualification, sampling methods and procedures ...).  
5. 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 scientific quality  
6. Check if acknowledged (legal) persons do the monitoring or at least the testing of the monitoring system.  
7. 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 in 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 with existing monitoring programs in similar installations to check the quality.

General binding rules often include monitoring requirements. In addition to these general binding rules details (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 alternatives and sometimes operators would like to use other methods or frequencies:

1. 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.
2. In case of BAT conclusions which provide alternative methods of monitoring, all methods are usually allowed.
3. 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, ...).
4. 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-compliance, the accidents occurred.

Where considered useful authorities/member states have developed guidance for specific sectors on 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 large extend determine if in a later stage compliance can be verified reliably.
Step 3 Setting compliance rules

The IED requires on the one hand to set ELVs for normal operating conditions (article 15, para 3) and on the other to include measures for other than normal operating conditions (article 14, para 1f). For this, again, good quality and detailed information is needed, e.g.:

Installation specific

1. Permit application (article 12)
2. Monitoring plan and data (article 14)
3. Notifications on incidents, accidents and non-compliance (article 7, 8).

Sector information

1. Background information on the BAT-AELs in the Brefs
2. CEN standards or other technical standards for maintenance, good operation, etc.
3. 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:

1. Reference period: the time to which ELV refers, e.g. half hour or daily average, average over half hour sampling period, (non-)continuous process.
2. 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.

3. Monitoring methods: for each ELV/emission point, including QA procedure (e.g. UNI EN 14181 for CEMS);
4. Other than normal operating conditions like start-up and shut-down operations, leaks, malfunctions, momentary stoppages and definitive cessation of operations in order to determine:
   a. if emissions from non-routine operations are relevant and different from routine operations and
   b. if so (examples from members 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 expected. 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 can be reviewed to ensure more effective regulation. During one “emergency situation”, usually during a short period after one extraordinary event, the operator may exceed the ELV and the compliance rules but he should take immediate measures to stop this situation and identify its causes so 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 BAT-AELs apply.
2.3 Derogation from BAT-AELs

2.3.1 Provisions for derogations in the IED

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.
2.3.2 Article 15(4) derogations

IMPEL has recently carried out a project to look at practice in countries with respect to the provisions for derogations in the IED\(^\text{10}\). The project involved a questionnaire to investigate practices in countries and this was followed by a workshop to look at specific issues in more detail.

The project did not attempt to develop consistent guidance on how to interpret the provisions of the IED on derogations. However, it did look at current practices and provided information on guidance that has been developed in different countries.

2.3.2.1 Development of guidance on the application of Article 15(4)

The IMPEL project showed that arrangements for the implementation of Article 15(4) of the IED differ from country to country. In some cases, guidance is being produced by national administrations, whereas in others guidance is being developed by the competent authorities involved in the granting of derogations.

In some cases, for example, in Germany and Italy, rules on the granting of derogations have been put in place through the legislation transposing the IED into national law. In Germany, the legislation restricts the reason for derogation to the technical characteristics of the installation only - geographical location or local environment are not considered as justified reasons for derogations. In Italy the legislation allows derogations in cases where a dedicated cost benefit analysis has been produced by an operator and where certain criteria are fulfilled.

Links to guidance on the application of Article 15(4) and made available by participants in the IMPEL project are provided below:

\(^{10}\) Sharing of draft proposals between Member States for implementing derogations from BAT-AELs under Article 15 paragraphs (4) and (5) of the industrial emissions Directive 2010/75/EU. IMPEL Final report, April 2015.
<table>
<thead>
<tr>
<th>Country</th>
<th>Type of guidance</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Guidance to operators and competent authorities on the application of Article 15(4)</td>
<td><a href="http://miljogodkendelsesvejledningen.dk/opslag/princippet-om-bat/fravigelser-fra-bat/">http://miljogodkendelsesvejledningen.dk/opslag/princippet-om-bat/fravigelser-fra-bat/</a></td>
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</table>
2.3.2.2 Development of cost-benefit methodologies

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). The assessment of costs and benefits has led to a number of participant countries either to develop an IED specific cost-benefit methodology or to modify existing cost-benefit methodologies to suit the requirements of the IED.

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 assign values to environmental harm,
useful references may exist in national publications, for example, [UK guidance on how impacts on air quality should be incorporated into a cost benefit analysis][11] or in European reports, such as the [European Environment Agency’s assessment of costs of air pollution from European industrial facilities 2008-2012][12].

Some countries have developed their own methods for assigning costs to environmental damage using real life examples, such as [Germany’s Methodological Convention 2.0 for Estimates of Environmental Costs][13].

With regard to the assessment of the **costs of compliance** with the BAT-AELs, data included in the BAT Reference documents and the use of the [European Commission reference document concerning economics and cross-media effects][14] are useful sources of information.

In order to assess the costs and benefits of action by the operator to comply with BAT-AELs a range of options may exist that are likely to require a number of scenarios to be developed. These scenarios were highlighted in many of the presentations made at the workshop and considered:

1. The do nothing scenario;
2. The compliance with the BAT-AELs scenario; and, in some cases;
3. The partial BAT-AEL compliance or move towards BAT-AEL compliance scenario.

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Where possible the costs and benefits against the scenarios developed would enable a decisive derogation decision to be made that could then be included in the justification for the permit conditions set as appended to the permit.

Detailed quantitative analysis is unlikely to provide all of the information required to allow a derogation to be justified given some of the uncertainties that exist in the assessment of costs and benefits. Quantitative information should be supplemented by qualitative information, where relevant. Indeed, in some cases and for some IED activities it was considered that qualitative analysis may be easier than quantitative analysis in the assessment of derogations under Article 15(4).

Third parties may also need to be involved in cost-benefit analysis in order to verify that a derogation is warranted or to provide an independent check of the data used as part of the analysis.

Some countries have provided links to cost-benefit guidance as follows: (note that this guidance is not always specific to the application of the IED and may have been developed for other purposes)

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost-benefit analysis guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>The guidance provided below refers to general guidance on environmental cost-benefit assessment and is not used to assess derogations for individual installations in Germany. However, it may be of interest to other competent authorities given some of the issues</td>
</tr>
</tbody>
</table>
Methodological convention on the economic valuation of environmental damage:

http://www.umweltbundesamt.de/publikationen/economic-valuation-of-environmental-damage-0

Annex A - Economic Valuation Methods:

http://www.umweltbundesamt.de/publikationen/methodological-convention-20-for-estimates-of

Annex B - Best-practice Cost Rates for Air Pollutants, Transport, Power Generation and Heat Generation:

http://www.umweltbundesamt.de/publikationen/methodological-convention-20-for-estimates-of-0

as well as “Environmental costs in the energy and transport sectors”

http://www.umweltbundesamt.de/publikationen/environmental-costs-in-the-energy-transport-sectors

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<thead>
<tr>
<th>Country</th>
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<tr>
<td>Finland</td>
<td><a href="http://www.ymparisto.fi/download/noname/%7BC5B52653-424E-4FFC-8A55-44C8A537CA32%7D/57238">http://www.ymparisto.fi/download/noname/%7BC5B52653-424E-4FFC-8A55-44C8A537CA32%7D/57238</a></td>
</tr>
<tr>
<td>Croatia</td>
<td><a href="http://www.mzoip.hr/doc/IPPC/">http://www.mzoip.hr/doc/IPPC/</a> Studija_o_smjernicama_za_ekonomsko_vrednovanje.pdf</td>
</tr>
<tr>
<td>The Netherlands</td>
<td><a href="http://www.infomil.nl/onderwerpen/klimaat-lucht/ner/digitale-ner/2-algemeen/2-11/">http://www.infomil.nl/onderwerpen/klimaat-lucht/ner/digitale-ner/2-algemeen/2-11/</a></td>
</tr>
</tbody>
</table>
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:
availability of water and quality of the surrounding environment including location of sensitive receptors.

2.3.2.4 Determining disproportionality

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 discussed in section 2.3.2.2 above. However, the results of any cost-benefit analysis will not necessarily provide an answer as to what is disproportionate for a particular installation.

The project raised the following as factors that may be considered in deciding on disproportionality (note that this list reflects individual considerations and was not an agreed list from participants):

- 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.

There was general agreement by all participants that disproportionality is not demonstrated by a break-even point resulting from a cost-benefit analysis. Rather the costs of compliance with the BAT-AEL must be clearly higher than the environmental benefits. However, what the effective level at which compliance is said to be disproportionate should be left to the competent authority to decide.

2.3.2.5 European Commission Guidance on the application of Article 15(4)

Article 15(4) provides a specific reference to the possibility of the European Commission to clarify, through guidance, the criteria to be taken into account for the application of that Article, albeit that such guidance would be based on the implementation reports submitted by Member States under
Article 72(1) of the IED. However, the Commission may issue guidance at any time and is not limited in time by these specific provisions of Article 15(4).

The majority of participants in the IMPEL project indicated that they wished to see the European Commission develop guidance on assessing derogation requests. For those participants that indicated they were in favour of Commission guidance the following elements were seen as important to be addressed:

1) How to assess disproportionality including the potential development of a decision tree approach to assist competent authorities.
2) How to measure costs and benefits both qualitatively and quantitatively including reference costs for pollutants.
3) The level of evidence necessary to justify derogations.
4) Examples of where derogations are justified.

2.3.3 Article 15(5) derogations

Procedures for derogations under Article 15(5) appear to have had less consideration to date than those under Article 15(4). A majority of those participants in the IMPEL project that provided information indicated that operators must apply for derogations under Article 15(5) in a similar way to applying for a change to a permit. Guidance has been developed by a small number of countries:

**BE (Flemish Region):**


and:

Denmark:

http://miljogodkendelsesvejledningen.dk/opslag/princippet-om-bat/fravigelser-fra-bat/

Only one country, Malta, had issued derogation under Article 15(5). In this case, derogation was applied related to a water treatment plant within a waste management facility, specifically on the treated effluent that would be discharged to sea. During the test period the operator was instructed not to discharge to sea but to dispose of all effluent as waste for export. The operator was only allowed to discharge once the data gathered and submitted was deemed acceptable by the Authority.

2.4 Going beyond BAT (in case environmental quality standards are not met)

This section is to be completed following the work of the group set up under the IMPEL IED Implementation project.

2.5 Application of BAT within 4 years after publication of BAT conclusions

This section is to be completed following the work of the group set up under the IMPEL IED Implementation project.

3 Permitting

3.1 Provisions for permitting in the IED

The IED contains a number of provisions relating to the permitting of installations that fall within the scope of the Directive.
3.1.1 Obligation to hold a permit

Article 4(1) places a requirement on Member States to take the necessary measures to ensure that no installation or combustion plant, waste incineration plant or waste co-incineration plant is operated without a permit.

Under Article 4(2) Member States may opt to provide that a permit cover two or more installations or parts of installations operated by the same operator on the same site. Where a permit covers two or more installations, it shall contain conditions to ensure that each installation complies with the requirements of this Directive.

Under Article 3(3) Member States may opt to provide that a permit cover several parts of an installation operated by different operators. In such cases, the permit shall specify the responsibilities of each operator.

3.1.2 Granting of permits

Article 5(1) places a requirement on the competent authority to grant a permit if the installation complies with the requirements of the IED Directive.

In cases where more than one competent authority or more than one operator involved, or more than one permit is granted, Article 5(2) requires Member States to take the measures necessary to ensure that the conditions of, and the procedures for the granting of, the permit are fully coordinated, in order to guarantee an effective integrated approach by all authorities competent for this procedure.

In the case of a new installation or a substantial change where Article 4 of the Environmental Impact Assessment (EIA) Directive 85/337/EEC applies, any relevant information obtained or conclusion
arrived at pursuant to Articles 5, 6, 7 and 9 of that Directive shall be examined and used for the purposes of granting the permit.

3.1.3 General Binding Rules

Article 6 allows Member States to 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.

3.1.4 Applications for permits

Article 12(1) requires Member States to take the necessary measures to ensure that an application for a permit includes a description of the following:

(a) the installation and its activities;
(b) the raw and auxiliary materials, other substances and the energy used in or generated by the installation;
(c) the sources of emissions from the installation;
(d) the conditions of the site of the installation;
(e) where applicable, a baseline report in accordance with Article 22(2);
(f) 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;
(g) the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation;
(h) measures for the prevention, preparation for re-use, recycling and recovery of waste generated by the installation;
(i) further measures planned to comply with the general principles of the basic obligations of the operator as provided for in Article 11;

(j) measures planned to monitor emissions into the environment;

(k) 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 12(2) allows for information supplied in accordance with the requirements provided for in Directive 85/337/EEC or a safety report prepared in accordance with Directive 96/82/EC on the control of major-accident hazards involving dangerous substances or other information produced in response to other legislation fulfils any of the requirements of paragraph 1, to be included in, or attached to, the application.

3.1.5 Permit conditions

Article 14(1) places an obligation on Member States to ensure that the permit includes all measures necessary for compliance with the requirements of Articles 11 (General principles governing the basic obligations of the operator) and 18 (Environmental quality standards). Those measures shall include at least the following:

(a) emission limit values for polluting substances listed in Annex II, and for other polluting substances, which are likely to be emitted from the installation concerned in significant quantities, having regard to their nature and their potential to transfer pollution from one medium to another;

(b) appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;

(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;

(d) 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 conditions; and

(ii) where Article 15(3)(b) is applied, a summary of the results of emission monitoring which allows a comparison with the emission levels associated with the best available techniques;

(e) appropriate requirements for the regular maintenance and surveillance of measures taken to prevent emissions to soil and groundwater pursuant to point (b) and appropriate requirements concerning the periodic monitoring of soil and groundwater in relation to relevant hazardous substances likely to be found on site and having regard to the possibility of soil and groundwater contamination at the site of the installation;

(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;

(g) provisions on the minimisation of long-distance or trans-boundary pollution;

(h) conditions for assessing compliance with the emission limit values or a reference to the applicable requirements specified elsewhere.

Article 14(2) allows for emission limit values to be supplemented or replaced by equivalent parameters or technical measures ensuring an equivalent level of environmental protection.

Article 14(3) states that BAT conclusions shall be the reference for setting the permit conditions.
Article 14(4) allows the competent authority to 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.

Where the competent authority sets permit conditions on the basis of a best available technique not described in any of the relevant BAT conclusions, Article 14(5) requires that it ensures that:

(a) that technique is determined by giving special consideration to the criteria listed in Annex III (Criteria for determining best available techniques); and

(b) the requirements of Article 15 (Emission limit values, equivalent parameters and technical measures) 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.

Where an activity or a type of production process carried out within an installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process, Article 14(6) requires that the competent authority, after prior consultations with the operator, sets the permit conditions on the basis of the best available techniques that it has determined for the activities or processes concerned, by giving special consideration to the criteria listed in Annex III.

Article 14(7) states that for intensive rearing of poultry or pig installations, paragraphs 1 to 6 of this Article shall apply without prejudice to the legislation relating to animal welfare.

3.1.6 Changes by operators to installations

Article 20(1) requires Member States to take the necessary measures to ensure that the operator informs the competent authority of any planned change in the nature or functioning, or an extension
of the installation which may have consequences for the environment. Where appropriate, the competent authority shall update the permit.

Article 20(2) requires Member States to take the necessary measures to ensure that no substantial change planned by the operator is made without a permit granted in accordance with the IED Directive. The application for a permit and the decision by the competent authority shall cover those parts of the installation and those details listed in Article 12 which may be affected by the substantial change.

Article 20(3) states that any change in the nature or functioning or an extension of an installation shall be deemed to be substantial if the change or extension in itself reaches the capacity thresholds set out in Annex I (categories of activities that fall within the scope of the IED).

3.1.7 Reconsideration and updating of permit conditions by the competent authority

Article 21(1) requires that Member States shall take the necessary measures to ensure that the competent authority periodically reconsiders in accordance with Articles 21(2) to 21(5) all permit conditions and, where necessary to ensure compliance with the IED Directive, updates those conditions.

At the request of the competent authority, Article 21(2) requires the operator to 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 reconsidering permit conditions, the competent authority shall use any information resulting from monitoring or inspections.

Within 4 years of publication of decisions on BAT conclusions in accordance with Article 13(5) relating to the main activity of an installation, Article 21(3) requires the competent authority to ensure that:
(a) all the permit conditions for the installation concerned are reconsidered and, if necessary, updated to ensure compliance with this Directive, in particular, with Article 15(3) and (4), where applicable;

(b) the installation complies with those permit conditions.

The reconsideration shall take into account all the new or updated BAT conclusions applicable to the installation and adopted in accordance with Article 13(5) since the permit was granted or last reconsidered.

Where an installation is not covered by any of the BAT conclusions, Article 21(4) requires that the permit conditions shall be reconsidered and, if necessary, updated where developments in the best available techniques allow for the significant reduction of emissions.

Article 21(5) states that the permit conditions shall be reconsidered and, where necessary, updated at least in the following cases:

(a) the pollution caused by the installation is of such significance that the existing emission limit values of the permit need to be revised or new such values need to be included in the permit;

(b) the operational safety requires other techniques to be used;

(c) where it is necessary to comply with a new or revised environmental quality standard in accordance with Article 18.

3.2 IMPEL project on permitting under the IED

In 2012, IMPEL carried out a project on permitting under the Industrial Emissions Directive (IED). The project aimed to: document changes that Member States will make to their permitting systems to accommodate the provisions of Chapter 1 and Chapter 2 of the IED and to determine how Member States are addressing the issue of substantial change at permitted facilities, now that

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15 Industrial Emissions Directive (IED) – the transition to IED permits and how to deal with substantial change at a permitted facility. IMPEL report, October 2012.
‘substantial change’ has been redefined by the IED. The project used a questionnaire approach which asked participating countries what would be different in the permitting systems required by the IED compared with previous regimes (eg IPPC). This was followed by a workshop to discuss the issues that arose in the questionnaire and also the question of how to interpret what constitutes ‘substantial change’.

The project was more about comparing practices and approaches in different countries. It did not attempt to develop Europe-wide guidance. It made a number of conclusions and recommendations for further work in the area of IED permitting:

**Concentration Limits Vs Mass Emission Limits**

It was recommended that a project should be developed to look at the potential differences between environmental regulators in prescribing concentration or mass emission limits in the BREFs and implementing decisions. There are strong arguments to be made for both approaches to environmental regulation. There is also a wealth of knowledge among the competent authorities of using both approaches, and their experiences would be valuable in developing a more uniform application of emission limit values in IED permits across the EU.

**Changes to Permit Conditions**

There are a number of different mechanisms for making changes to permits (both substantial and non-substantial changes) in each jurisdiction and it appears from the workshop that the possibility of discussing common templates for standard rules would be welcomed. The systems for making changes to permits in place in those countries represented at the workshop showed surprising variations and there are merits to each of the systems. If the best parts of each of those systems could be brought together, a uniform approach among competent authorities should be welcomed by industry. This is equally applicable among regional permitting authorities within the same country that have different approaches to reviewing or amending permits.
Other than Normal Operations:

During the discussions it became clear that there are differences between the competent authorities on the interpretation of what is considered ‘other than normal operating conditions’. One measure that could be adopted is for a register of all abnormal operations to be developed for different industries, either at an IMPEL level, or during the BREF review process for inclusion in the BREF documents. This should help to ensure uniform application of the requirements of the Directive across all MS. Any such register would be a non-exhaustive list of potentially abnormal operations and would be suited to the BREF process as the descriptions of the different BAT can include references to potential abnormal operating conditions.

Adoption of Implementing Decisions:

The potential exists for the development of a long-term IMPEL project to look at how MS are going to adopt the implementing decisions into national policy/guidance/legislation. According to the European Commission, one of the problems identified in the review of the IPPC Directive in 2007 was insufficient implementation of BAT leading to limited progress in the prevention and reduction of industrial emissions and to distortion of competition due to large differences in environmental standards. This was one of the driving forces behind the development of the IED and with significant changes in the requirements surrounding BAT conclusions, now may be the ideal time to begin to examine how the implementation process could be streamlined across the EU.

3.3 Measures to be included in the permit (art. 14)
This section needs further consideration/elaboration. It was suggested as an addition to the guidance, and linkages with Section 5.5.3 (verification of self-monitoring) and 5.9 (site closure) need to be clarified.

3.3.1 Decommissioning plan/cessation of activity

3.3.2 Self-monitoring plan (minimum content)
4 Baseline Report on soil contamination

4.1 Relevant provisions of the IED on establishing a baseline report


Article 22, paragraphs 2 to 4, contain provisions for the definitive cessation of activities involving the use, production or release of relevant hazardous substances in order to prevent and tackle potential soil and groundwater contamination from such substances. A key tool in this respect is the establishment of a ‘baseline report’.

Where an activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination, a baseline report is to be drawn up before starting the operation of the installation or before a permit for the installation is updated for the first time after 7 January 2013. The report will form the basis for a comparison with the state of contamination upon definitive cessation of activities. Where information produced pursuant to other national or Union law reflects the state at the time the report is drawn up, that information may be included in, or attached to, the baseline report.

Article 3(19) of the IED clarifies that the baseline report needs to provide information on the state of soil and groundwater contamination by relevant hazardous substances.

Article 22(2) specifies that a baseline report should contain at least the following information:

(a) information on the present use and, where available, on past uses of the site; and
(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.‘

4.2 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. 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:

**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.

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

A project 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 best practices. The results of this work should be available by end of 2016.

4.4  Baseline Report on soil contamination

a. Aim of the baseline report in relation to soil pollution
b. Definition of relevant hazardous substances, quality and quantity
c. Limitation of the object of investigation
d. Inspection of soil and ground water

These areas were suggested as part of the IMPEL IED guidance. Some of them seem to be covered in the Commission guidance. Other aspects could be considered in the new IMPEL project on baseline reports. This needs further consideration.

5  Environmental Inspections

5.1  Provisions of IED on environmental inspections

Article 23 sets out the requirements for environmental inspections for installations falling within the scope of the IED.

5.1.1  System of environmental inspections

Article 23(1) requires that Member States set up a system of environmental inspections of installations addressing the examination of the full range of relevant environmental effects from the installations concerned.
Member States must ensure that operators afford the competent authorities all necessary assistance to enable those authorities to carry out any site visits, to take samples and to gather any information necessary for the performance of their duties for the purposes of this Directive.

5.1.2 Inspection plans

Article 23(2) places an obligation on Member States to ensure that all installations are covered by an environmental inspection plan at national, regional or local level and to ensure that this plan is regularly reviewed and, where appropriate, updated.

Under Article 23(3), each environmental inspection plan must include the following:

(a) a general assessment of relevant significant environmental issues;
(b) the geographical area covered by the inspection plan;
(c) a register of the installations covered by the plan;
(d) procedures for drawing up programmes for routine environmental inspections pursuant to paragraph 4;
(e) procedures for non-routine environmental inspections pursuant to paragraph 5;
(f) where necessary, provisions on the cooperation between different inspection authorities.

5.1.3 Risk-based programmes for routine environmental inspections

Based on the inspection plans, Article 23(4) requires that the competent authority shall regularly draw up programmes for routine environmental inspections, including the frequency of site visits for different types of installations.
The period between two site visits must be based on a systematic appraisal of the environmental risks of the installations concerned and shall not exceed 1 year for installations posing the highest risks and 3 years for installations posing the lowest risks.

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.

The systematic appraisal of the environmental risks shall 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.

The Commission may adopt guidance on the criteria for the appraisal of environmental risks.

5.1.4 Non-routine inspections

Article 23(5) requires that non-routine environmental inspections be carried out to investigate serious environmental complaints, serious environmental accidents, incidents and occurrences of non-compliance as soon as possible and, where appropriate, before the granting, reconsideration or update of a permit.

5.1.5 Inspection reports
Following each site visit, Article 23(6) requires that 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.

Without prejudice to Article 8(2), the competent authority shall ensure that the operator takes all the necessary actions identified in the report within a reasonable period.

### 5.2 General principles for environmental inspections

IMPEL has long history of working to provide inspectors with practical approaches and tools for managing environmental inspections. Much of this work is relevant to the requirements for environmental inspections under the IED.

#### 5.2.1 Minimum criteria for environmental inspections

IMPEL’s early work focussed on developing EU-wide criteria for environmental inspections. IMPEL has published a series of [guidance documents on the planning and reporting of inspections](#) . It also previously published a [Reference book for Environmental Inspections](#).

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17 Minimum Criteria of Inspections: Planning and Reporting. IMPEL report 1999/03.

The guidance incorporates a series of documents, including:

- General Principles (Nov 1997)
- Frequency of Inspections (Dec 1998)
- Operator Self-Monitoring (Dec 1998)
- Planning and Reporting of Inspections (June 1999)

This work also provided the basis for the formal EU Recommendation on minimum criteria for environmental inspections19.

5.2.2 ‘Doing the right things’

IMPEL carried out a series of projects, under the name of ‘Doing the right things’ which were designed to provide practical guidance to inspectors in planning and executing inspection programmes.

‘Doing the right things I’20 explored how inspection authorities set priorities with regard to their tasks in setting up inspection plans.

‘Doing the right things II’21 resulted in a step-by-step guidance book to help practitioners answer the basic questions any inspecting authority has to deal with when setting up an inspection plan.

‘Doing the right things III’22 was concerned with providing practical support to inspectors in using the guidance in their work.


20 Doing the right things I: Comparison Programme on prioritising environmental inspections. IMPEL report 2006/19.


A key feature of the DTRT work was to develop an agreed environmental inspection cycle. This has been used as the basis for adapting guidance to the requirements of the IED.
1. Planning

1a. Describing the context
- identifying the scope
- information gathering

1b. Setting priorities
- risk assessment
- allocating resources

1c. Defining objectives and strategies
- objectives and measurable targets
- inspection strategies to ensure compliance
- communication strategy

1d. Planning and review
- organizational, human and financial conditions
- inspection plan (including inspection programme)
- review and revision

2. Execution Framework
- work protocols and instructions
- protocols for communication, information management and information exchange
- equipment and other resources

3. Execution and Reporting
- routine inspections
- non-routine
- investigation
  - accidents
  - incidents
  - occurrence of non compliance

4. Performance monitoring
- monitoring
- accounting for effort, performance results
- comparing and auditing
- external reporting
Environmental inspection cycle

5.3 Risk assessment

IMPEL has carried out a series of projects to develop methods, tools and guidance to support risk assessment in the planning and execution of environmental inspections. These are relevant to the requirement for risk-based inspection programmes under Article 23(4) of the IED.

5.3.1 ‘EasyTools’ and Integrated Risk Assessment Methodology (IRAM)

To support inspectors in the execution of risk assessment in the planning phase of the environmental inspection cycle, IMPEL carried out a project, known as ‘EasyTools’\textsuperscript{23}. The project produced a guidance manual\textsuperscript{24} and an associated web-based tool aimed at providing a simple and flexible means of quantifying relative risk in the planning and targeting of inspections of industrial installations.

At the heart of this approach is the method developed to calculate relative risk, known as the Integrated Risk Assessment Methodology (IRAM). This method is based on assessing both the potential and actual impacts of facilities and the performance of the operator.

\textsuperscript{23} Development of an easy and flexible risk assessment tool as a part of the planning of environmental inspections linked to European environmental law and the RMCEI (easyTools), phase 2. IMPEL report 2011/05.

\textsuperscript{24} easyTools - RISK ASSESSMENT GUIDANCE BOOK. IMPEL, February 2012.
The main IRAM principles are:

I. The inspection frequency is determined by the highest impact score
II. The inspection frequency is reduced by one step, if the set number of highest scores is not met (the Rule)
III. The inspection frequency can be changed by one step up or down based on operator performance
IV. The more criteria are scored high, the more inspection effort is needed

The main risk criteria used to assess impact and operator performance are:

Potential impacts

- Kind and type of installation
- Risk of accidents
- Handling and storage of waste

Actual impacts

- Levels and types of emissions: air, water, soil
- Sensitivity of the local environment
- Incidents and accidents

Operator performance

- Compliance with permit conditions
- Attitude of the operator
- Environmental management system (EMAS)

5.3.2 Risk criteria

The success of the implementation of IRAM depends on the choice of risk criteria for impact and operator performance. Because it was designed to be a flexible tool, IRAM leaves the user freedom in the selection and the weighting of risk criteria. IMPEL carried out a project on risk criteria for the
prioritization of environmental inspections\textsuperscript{25} to share experience on the application of criteria and indicators used in risk assessment in different countries.

Risk criteria, indicators and parameters in use were collected from inspection authorities and a database was created with access via IMPEL’s Basecamp. A risk criteria ‘dashboard’ was also developed to support users in the selection of appropriate criteria.

5.4 IED inspection plans and programmes

5.4.1 IMPEL guidance on inspections in accordance with the IED

In 2012, IMPEL carried out a project on environmental inspections of industrial installations in accordance with the Industrial Emissions Directive (IED)\textsuperscript{26}. The objective of this project was to organise an exchange of information concerning best practices for the implementation of Article 23 and other relevant articles of the IED. Taking into account the guidance on inspection planning and risk appraisal already developed by IMPEL as well as the requirements of the IED an interactive guidance book on IED inspection\textsuperscript{27} was developed.

The guidance book aims to help practitioners to implement the requirements for inspections set out in Article 23 of the IED and other related Articles. It builds on the main phases of the inspection cycle previously developed by IMPEL and adapts them to the specific requirements of the IED. It also draws on methods and tools previously developed by IMPEL, for example, the use of the IRAM rule-based method in the assessment of risk required under Article 23(4) of the IED.

\textsuperscript{25} Risk Criteria for the Prioritization of Environmental Inspections. IMPEL report, March 2016.

\textsuperscript{26} Environmental inspections of industrial installations in accordance with the Industrial Emissions Directive (IED). IMPEL report 2012/06.

\textsuperscript{27} IED Inspections. Guidance for the implementation of the IED in planning and execution of inspections. IMPEL, June 2013.
The guidance book helps to provide a common understanding of the technical and legal inspection terms used in the IED and helps to establish a level playing field in applying the new inspection obligations of the IED in the IMPEL member countries.

The structure of the guidance is summarised in the figure below.
The IRAM methodology has been further tested in a project to use it in drawing up IRAM-related inspection programmes\textsuperscript{28} in which the IRAM tools were further developed and refined.

The project group developed an overview of what an inspection programme should look like and defined mandatory and optional information requirements.

\textit{Mandatory} issues are:

1. Defined time period of the program
2. Name of installations / identification numbers
3. Risk categories and related frequencies
4. Type of inspections (e.g. integrated etc.)
5. Dates of the last inspections
6. Dates of the next inspections (year, month)

\textit{Optional} issues are:

7. Results of the last inspections (compliance)
8. Compliance records
9. Alert when dates have passed
10. Names or teams of inspectors or units

\textsuperscript{28} Environmental inspections of industrial installations in accordance with the Industrial Emissions Directive (IED) – Drawing up of IRAM related inspection programmes. IMPEL report 2013/08.
11. Inspection categories; inspection efforts
12. Amount of time needed for the inspections
13. Amount of staff needed for the inspections
14. Qualifications and/or skills needed
15. Equipment needed
16. Co-operation with other authorities needed

5.5 Environmental Inspections

This chapter needs further consideration and elaboration through the current IED Implementation Project

5.5.1 Site visits (routine, non-routine, unannounced, cross media)

5.5.2 Minimum content of operator self-monitoring report

Both the content of the operator self-monitoring report and the frequency that it is required to be submitted to competent authorities differs widely across the EU countries. 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.

Some examples of good practices are already available as produced by environmental authorities across the EU.

5.5.3 Analysis of self-monitoring report to be performed by inspectors

Article 3 (22) of the IED Directive states that environment inspection covers all actions, including verification of self-monitoring.

The methods of analysis of IED self-monitoring reports differ widely across the EU member countries. As a result of the different legal systems and administrative structures in the Member States, the responsibility for analysis of self-monitoring reports may lie with the competent authority and/or an inspectorate or an environmental protection agency.

There are also differences in the date of the analysis (after each submission of a report or during the next inspection including an on-site visit), the level of detail of the analysis (e.g. depending on the type and complexity of the report), the nature and scope of the analysis and the tools used.

Notwithstanding these differences, 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 Industrial Emissions Directive (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.
5.5.4 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).
5.5.5 Checking of techniques used and adequacy of the environmental management of the installation

5.6 Tools - check lists, procedures and electronic records

This chapter needs further consideration and elaboration through the current IED Implementation Project.

5.7 Levels of non-compliance

Article 23(5) of the IED requires that: non-routine environmental inspections shall be carried out to investigate serious environmental complaints, serious environmental accidents, incidents and occurrences of non-compliance as soon as possible and, where appropriate, before the granting, reconsideration or update of a permit.

In addition, Article 23(4) IED states that: 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.

This chapter provides guidance on how to interpret these requirements based on work carried out as part of IMPEL’s 2015 project, ‘Supporting IED Implementation’\textsuperscript{29}. 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’.

5.7.1 Tiered approach to assessing level of non-compliance

Three levels of compliance are described:

A  minor
B  significant or relevant
C  important or serious.

These three levels are summarised in this overview:

<table>
<thead>
<tr>
<th>Levels of non-compliance</th>
<th>Permit conditions complied with?</th>
<th>emission limit values complied with?</th>
<th>environmental quality standards complied with?</th>
<th>Aim of the permit achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Minor cases of non-compliance</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>😊</td>
</tr>
<tr>
<td>B  Relevant or significant cases of non-compliance</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>😞</td>
</tr>
</tbody>
</table>
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 reoccurrence 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.

5.7.1.1 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 basin).
• 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.

5.7.1.2 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.

5.7.1.3 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.

5.7.2 Important cases of non-compliance leading to an additional site visit according to article 23 (4) IED

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. Guidance on the use of risk-based tools and procedures for inspection planning is provided in section 5.3 of this document.

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.

According to the guidance set out in section 5.3, 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.

5.7.3 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.

Possible measures that can be taken by the authority include:

- writing a letter to the company

Reaction of the administration to non compliances
• 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 effect of the non-compliance.

In some countries, individual cases of non-compliance are recorded onto 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.

5.8 Reporting to the public

IED Art. 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 (OJ L 41, 14.2.2003, p. 26) within 4 months of the site visit taking place.

This guidance draws on IMPEL projects on IED implementation carried out in 2012 and 2015 respectively, previously referenced in this document. 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.

5.8.1 Interpretation of requirements of the IED for reporting

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. An outline of the contents of an inspection report that can be made publicly available is provided in section 5.8.1.

The report should be notified to the operator. It should be noted that an inspection can consist of more than one site visit. It’s 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.

The report should be made publicly available. Reports of routine and non-routine inspections have to be made actively available (for instance on the internet) 4 months after the site visit. If the 4 months pass and results are not yet available then only mention the relevant findings and follow-up later when the results become available.

5.8.2 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, cooperating inspection authorities
- Kind 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 in section 5.7 of this document on assessing the levels of non-compliance:

- 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.

5.8.3 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.

5.8.3.1 Procedure

• Information should be made available for the public in an active 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 way of 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).

5.8.3.2 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. A recommended structure is provided in section 5.8.1.

• 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 (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 follow-up action required by the IED both the actions of the operator and enforcement actions of the inspector’s organization 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 organization.

• In the case that the site visit lasts more than 1 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).
5.9 Site closure (Bankruptcy and temporary and definitive cessation of activity in IED installations)

This section draws on the work carried out on site closure as part of the IMPEL 2015 project on implementation of the IED, previously cited in this document. The report from this project also contains examples of practices in different countries on related topics including the use of financial guarantees, cessation of activities and decommissioning plans. These serve as a useful reference to support this guidance.

5.9.1 IED provisions for site closure

The following IED provisions address the bankruptcy and cessation of installations:

*Article 11 (General principles governing the basic obligations of the operator)*

(h) the necessary measures are taken 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 (Permit conditions)*

(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 22 (Site closure)*

2. 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.

Where information produced pursuant to other national or Union law fulfils the requirements of this paragraph that information may be included in, or attached to, the submitted baseline report.

The Commission shall establish guidance on the content of the baseline report.

3. 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.

4. Where the operator is not required to prepare a baseline report referred to in paragraph 2, the operator shall, upon definitive cessation of the activities, 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 any significant risk to human health or the environment due to the contamination of soil and groundwater as a result of the permitted activities and taking into account the conditions of the site of the installation established in accordance with Article 12(1)(d).

**Article 24 (Access to information and public participation in the permit procedure)**

3. The competent authority shall also make available to the public, including via the Internet at least in relation to point (a):

(a) relevant information on the measures taken by the operator upon definitive cessation of activities in accordance with Article 22

5.9.2 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 operation from companies.

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.
5.9.3 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 transfrontier 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.

5.9.4 Definitive cessation of operation
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

5.9.5 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 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:
  o 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
  o Identification of possible sources of environmental pollution (reservoirs / tanks / pipes / underground facilities)
  o Procedures provided for the disposal of pollution sources identified
  o Pollution prevention and reduction for the protection of the environmental compartments (Air, Water, Soil)
• Additional criteria could be:
  o Waste management / management of hazardous materials during closure
    ▪ Focus on hazardous waste
    ▪ Recovery or disposal
    ▪ Foreseen production of waste
    ▪ Demolition waste and storage
  o Monitoring of emissions to the environment during and after the closing of installations
    ▪ Frequency of sampling and what parameters should be monitored
  o Remediation actions on contaminated compartments
    ▪ Quantified comparison with baseline report
    ▪ Assessment of the state of the environment - soil and groundwater
  o Information about the maintenance/demolition of the site (buildings, etc.)
  o Measures for landscaping (does not always apply).
6 Reporting obligations of the operator

This chapter is to be completed following the work of the group set up under the IMPEL IED Implementation project

6.1 Incidents and accidents

6.2 Non-compliance

6.3 Operator report on emissions

The IED contains provisions concerning the monitoring of emissions and associated parameters. Self-monitoring (including monitoring undertaken on behalf of operators by contractors) is based on repeated measurements or observations, at an appropriate frequency in accordance with documented and agreed procedures, to obtain the intended information on emissions. This information may range from simple visual observations (e.g. visible emissions to air from doors, flanges or valves, or the alteration of the colour of a discharge) to precise numerical data (e.g. concentration or load of a pollutant).

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 14 (1d) of the Industrial Emission Directive (IED) states that “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:

(d) 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 conditions; and

(ii) where Article 15(3)(b) is applied, a summary of the results of emission monitoring which allows a comparison with the emission levels associated with the best available techniques.

In the report of the IMPEL project “Operator Self-Monitoring” it is 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”.

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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.

7 Related topics

7.1 IED and REACH

**REACH (EC 1907/2006)** is an EU regulation relating to the Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. REACH also aims to enhance innovation and competitiveness of the EU chemicals industry.

The regulation of chemicals and industrial emissions are connected in different ways. Many of the industrial activities listed in Annex I of the IED are related to the manufacture or processing of chemical substances and to potential releases or emissions of pollutants.

At the same time, chemical substances are regulated under the REACH Regulation.

IMPEL has recently completed a project to look at [linking the IED and the REACH Regulation](#). It carried out a systematic analysis of the linkages and synergies of the REACH Regulation with the IED. It showed how downstream users / operators can benefit from the information generated under REACH and IED for cross - legislation compliance. Best practice examples from the participating IMPEL organisations covering templates, tools, work flow sheets and supporting guidance show that competent REACH and IED authorities try to bring together the information generated under the two pieces of legislation and to optimise their daily work. It was recommended that competent REACH

and IED authorities should cooperate closely to exchange information, avoid duplication of work, and carry out joint inspections.

7.2 IED and Natura 2000

The Habitats Directive\(^{31}\) forms the cornerstone of Europe’s nature conservation policy. It is built around two pillars: the ‘Natura 2000’ network of protected sites and the strict system of species protection. All in all the directive protects over 1,000 animals and plant species and over 200 habitat types which are of European importance.

Article 6 is one of the most important articles in the Habitats Directive as it defines how Natura 2000 sites are managed and protected. It is of particular relevance to the regulation of IED facilities and sites.

Paragraphs 6(1) and 6(2) require that, within Natura 2000, Member States:

- Take appropriate conservation measures to maintain and restore the habitats and species for which the site has been designated to a favourable conservation status;
- Avoid damaging activities that could significantly disturb these species or deteriorate the habitats of the protected species or habitat types.

Paragraphs 6(3) and 6(4) lay down the procedure to be followed when planning new developments that might affect a Natura 2000 site. Thus:

- Any plan or project likely to have a significant effect on a Natura 2000, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned (Article 6.3)

• In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest. In such cases the Member State must take appropriate compensatory measures to ensure that the overall coherence of the N2000 Network is protected. (Article 6.4)

An IMPEL project on building up IMPEL nature conservation capacities\(^{32}\) identified particular challenges in carrying out ‘Appropriate Assessment’ (AA) required under Article 6(3) of the Habitats Directive. Examples where problems are being encountered include: assessment of cumulative impacts, analysis of the baseline condition, and drawing conclusions with respect to the assessment results.

IMPEL has recently carried out a project on nature protection in permitting and inspection of industrial installations\(^{33}\). The project aimed to identify best practices in countries in the regulation of industrial installations in areas that fall within the scope of Article 6(3) of the Habitats Directive. Areas that were highlighted by practitioners include:

• providing good guidance (general and sector specific) and supporting tools (databases and screening/evaluation tools) on screening and for Appropriate Assessment,
• prior discussion and early communication of Natura 2000 aspects in permit procedures and screening,
• setting good and enforceable permit conditions concerning Natura 2000 sites, (particularly for monitoring and reporting),
• maintaining good cooperation between competent nature conservation and permitting and inspection authorities, and
• providing good working material and training for competent authorities.

Although the project did not develop specific guidance it identified some key challenges, including:

• improving knowledge and awareness on the existence and use of existing EU guidance documents,

\(^{32}\) Building up IMPEL nature conservation capacities. IMPEL Report, December 2013.

• initiating the development of new EU guidance, especially on sector specific requirements,
• exchange of knowledge on screening and the criteria for ‘significant effects’ and assessment methodologies.

The project recommended that:

• Information about screening and AA should be integrated into the permit.
• Only clear and well defined conditions concerning Natura 2000 sites that can be inspected and enforced should become part of the permits.
• More information is need on dealing with activities without permits, such as small farms and the assessment of cumulative effects.

A further project is proposed that will look specifically at the evaluation of the applicability of the EU Guidance Document ‘Wind energy developments and Natura 2000’ and the development of a sector specific guidance document on dealing with Article 6(3) of the Habitats Directive in permitting of farm projects (pigs and poultry).

7.3 IED and Water Framework Directive

The Water Framework Directive34 (WFD) establishes a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which:

(a) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;

(b) promotes sustainable water use based on a long-term protection of available water resources;

(c) aims at enhanced protection and improvement of the aquatic environment, inter alia, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;

(d) ensures the progressive reduction of pollution of groundwater and prevents its further pollution, and
(e) contributes to mitigating the effects of floods and droughts

The objectives and requirements of the WFD and IED strongly interact. IED requires the permitting process to consider environmental objectives (such as those derived from the WFD) and the WFD requires action to be taken on pressures on water bodies (which may include provisions for IED installations). The nature, timing, scope and limitations of these interactions (and more specific interactions with the ‘supporting’ Directives) are not always clear and they present a major challenge for competent authorities in the Member States to address.

IMPEL has carried out a phased project IMPEL Project on linking the WFD and the IED. The first phase examined the nature of the interaction between these directives. The second phase brought together IMPEL members to examine the practical problems they face in addressing the interaction between the directives in decision making as well as the good practice solutions that have been developed. The third phase produced checklists and guidance for water management authorities and for IED competent authorities and on the sharing of information in different phases of their water management cycles and regulatory cycles.

The checklist for water management authorities is structured around the cycle of river basin planning:

- Understanding significant water pressures
- Establishing and implementing measures
- Monitoring

The guidance for IED competent authorities is structured around the regulatory cycle of the

IED:

- Permitting
- Monitoring
- Inspection planning
- Inspection
- Permit review

The checklists contain a series of actions the relevant authorities may take to aid in their work, including information they could request from another authorities or information they could supply.

7.4 IED and Seveso inspections

*This section needs more consideration. The IRAM methodology (covered in section 5.3 and the guidance for IED inspections (covered in section 5.4) are also relevant for installations covered in the Seveso Directive.*

7.5 IED and Air Quality Directive

*This section needs more consideration and is relevant to the work being taken forward by the IED Implementation Project on ‘going beyond BAT’ which will be covered in section 4.2.*

7.6 IED and Environmental Liability Directive (ELD)

*This section needs more consideration. IED installations are included in Annex III.1 as referred to in Article 3.1 of the Directive on Environmental Liability.*
Annex III. Note of project team meeting in Berlin

IMPEL Project on supporting Implementation of the Industrial Emissions Directive


1. Welcome, aims and objectives, and agenda of the project group meeting

Horst Büther welcomed those present to Berlin and to the meeting. (A list of participants, together with their choices for working groups, is attached in the Annex).

Josefine Betensted, working in the division for Immission Control legislation, welcomed the participants on behalf of the Federal Ministry. Josefine had been recruited to the Federal Ministry in 2012 to support the legislative process when the Ministry had already presented a first draft to transpose the IED into national law. In Germany at that time the legislative process was dominated by three main topics:

1. the obligatory emission limit values based on the BAT conclusions and especially the possible exemptions;
2. the baseline report and
3. the environmental inspections.

From the agenda for the meeting over the next two days it was clear that these were concerns not only in Germany.

The Federal Ministry for the Environment considered that the obligatory emission limit values based on the BAT-conclusions represented great progress for the prevention and control of air pollution on the EU-level. On the national level they did not expect many changes to result from obligatory European emission limit values, though. Emission limit values had already been obligatory in Germany for some time and were mainly in line with the existing BREF-documents.
The rules for environmental inspections had marked great progress for Germany on the national level. Before, the approaches on inspection had varied from Land to Land. In general, administrative inspections had been confined by financial and staffing restrictions. It seemed that afterwards some of the Länder authorities had increased their staff substantially to meet the new requirements for environmental inspections.

In addition to the operators’ own surveillance, administrative inspections were seen as indispensable. They played a key role for the effective implementation of environmental law. The IMPEL Network provided invaluable groundwork, preparing the way for the recommendation for minimum criteria for environmental inspections.

In 2013 the regulations transposing the IED into national law in Germany came into force. That meant that the Federal Ministry’s work was done. But in practice, the real work had just started as it was now time to implement those regulations. In Germany this is a task for the Länder authorities. To support the implementation on the national level, they have already developed or are developing a number of guidelines, for example, about how to write a baseline report. Nonetheless, there are still some questions unanswered on how to put the general legal requirements into practice. The Federal Ministry takes part in those discussions and supports the Länder authorities in developing a manageable and effective implementation.

At the European level, in addition to pollution prevention and control, another main goal of the IED is to provide a level playing field for industrial activities in Europe. To accomplish this goal it would seem essential to exchange and compare the experiences with implementing the IED in different states. This IMPEL project is a great support in doing so.

Kristina Rabe, National IMPEL Coordinator for Germany, added her welcome. She added a request for information on specific problems related to reporting to the Commission which would be helpful in current discussions.

Horst said that the project on IED Implementation 2016 had been adopted at the IMPEL General Assembly. He listed work done by the Air and Industry Team (and predecessors) relevant to the implementation of the IED, including:

- DTRT
- easyTools
- IED Inspections
- Transition to IED permits
- IED/IRAM Inspection Programme
- Derogations from BAT-AEL’s under IED
A topic missing from this list was Mutual Joint Visits. Horst gave a brief description of how these were carried out under Committee of Competent Authorities (Seveso Directive implementation). There was a Technical working group on inspections and the topics of the Mutual Joint Visits included: Country visits, Joint inspections, Special topics (e.g. safety reports) and Development of guidance.

The desired outcome of the project was a level playing field of IED implementation which would be achieved through:

- Identified risks for implementation gaps
- Mitigation of the most serious types of non-compliance with the IED
- Application of BAT conclusions
- Common understanding of inspections
- Use of electronic tools for inspection work
- Optimised cooperation between different competent authorities
- Appropriate public participation

The budget for the project in 2015 had been 63,500€, including 17,500€ for the first Project Meeting, 31,500€ for the Workshop/Conference and 14,500€ for second Project Meeting. There had also been 30 days of Consultant time paid for by Germany.

The results of the 2015 project included the identification of Implementation challenges. A work programme had been developed and six working groups had been set up: three of those groups produced final results and the work of the other three was ongoing. A draft IED Implementation Guidance Book had been produced drawing on the work of this and other projects. Project abstracts had been produced in different languages and the Project had been informed of the approaches to the implementation of IED in Bremen, Wallonia and Romania. In Bremen there had also been a site visit. It had been decided that no application would be submitted under Life+.

The priorities identified in 2015 were (with green as top priority, yellow as second priority and red as lowest priority: those in white were dealt with elsewhere):

<table>
<thead>
<tr>
<th>BREFs / application of BAT</th>
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<tr>
<td>Application of emission ranges</td>
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The Terms of Reference for 2016 envisaged continuing with the work programme. There would be 26 participants for Project Meetings 1 and 2 and 27 participants for the workshop/conference (if there were sufficient funding for that to go ahead). There would be 800€ for Transport/Communication and a total budget of 49,000€. There would be a consultant (22 days) paid for by Germany.

2. Presentation of the 2015 project results

2.1 Input of the results of the three working groups into the guidance book

Terry gave a brief description of the work that had already been done on the Guidance Book (mostly by John Seager). There had been a review of earlier relevant IMPEL projects and where possible the findings of those projects had been incorporated as guidance. The Guidance Book as it stood was considered to be a good starting point. There had been suggestions about the format that might be used for the guidance book but it was agreed that the initial priority would be to ensure that the content was right. John and Terry would look at the outputs from the three working groups in 2015 to see how that might be adapted to fit in the Guidance Book and would put their proposals to the leaders of the working groups.

2.2 Results from the first three working groups
• **Levels of non-compliance**

Hartmut said that his group had tried to give examples of the three levels of non-compliance, namely minor, relevant/significant and important since this could help in writing a report for the public after inspection. The guidance would be simple and there were no sharp definitions of the levels of non-compliance. Where non-compliance was detected during an inspection there was a requirement that the risk assessment should be adjusted.

About half of the regulating authorities were working with these levels and some were using them only for internal purposes. Cyprus and UK had a similar approach. They decide internally actions on levels of non-compliance and record this on a non-compliance system available to the public on request. Portugal’s internal law didn’t allow levels of non-compliance and they dealt with non-compliance by using administrative fines. Ireland had a ranking system. Galicia had internal rules but these were not well-defined and they were working on them.

• **Reporting to the public**

Marinus said that the group had sent out a questionnaire and put together common thoughts in the report on what IED says about reporting to the public. Austria said that they wanted to make an addendum to the template to make their section much shorter and more in balance with the other examples. Ireland had just begun putting inspection reports on the internet and the operator was given the opportunity to comment. It was agreed that it would be useful to include an example of the format of an Inspection Report in the guidance.

• **Dealing with installations closing down**

Florin reported that the group had looked at the articles in the IED relating to these issues. They had discussed the signs that a company was going bankrupt and the use of financial guarantees. Guarantees were used in some places, such as Galicia. The group had looked at the content of the cessation/decommissioning plan.

### 2.3 Working Groups in progress

• **BRefs**

This group had taken a test case as a starting point which was divided into three steps. In the first step, the emission levels had been translated into an exact number. Rules for normal and other than normal operating conditions had been considered in the second stage and self monitoring requirements had been considered in the third stage.
There appeared to be a clear link with the group looking at self monitoring. As previously proposed, it would be helpful to meet with someone from the Sevilla Committee working on BRefs. It would be useful to discuss reporting as a first stage. The most difficult thing was to set Emission Limit Values from BAT conclusions. It was suggested that the group should also look at the BAT narrative (BAT for which no emission limit values are set).

In further discussion on this topic, it was agreed that a note would be drafted for the narrative BAT section. They would circulate the questionnaire and should be ready by June (subject to progress on the BAT narrative section). Communication would be by email and on Basecamp.

- **Self-monitoring and operator reporting**

Martine spoke on behalf of this group and explained the methodology they had followed. They had found eleven principal topics connected with this subject and the results of their discussions on these would be included in the guidance book. There would be a volunteer for each topic to expand the text on the topics. IMPEL had produced an earlier report on Self Monitoring and the group would look at that too. Following a request from Ian, who said that Ireland wanted to give feedback, it was agreed that the questions would be circulated again.

In further discussion the group decided that they would use information from the earlier IMPEL project but would carry on with the new project. There were some aspects of self monitoring still to be looked at and they would prepare a time schedule in order to have the report ready by the end of June.

- **Tools**

Wulf explained that the IED imposed additional requirements and said that regulators were looking for tools to help in dealing with these. One of the requirements is for member states to set up a system of environmental inspections and a tool can assist with this. A smart tool can be motivating and can meet most needs and help answer most questions. The group had two main priorities:

- Find a good basic tool, describe it and explain why it is good (characteristics)
- Establish a list of other helpful tools, for example checklists

The group could present a kind of specification sheet for a basic tool. Use of a mobile device, for example, could bring about a reduction in media disruptions and would be helpful for data storage, for the simplification of administrative tasks, as a camera and with an app to identify waste.

There might be an overlap with a project being carried out by Simon Bingham in the cross-cutting team and Wulf would check on that. There was a concern about the use to which the software would be put and why the data was being collected (for example, for the inspector, for the next inspector or for lawyers). Horst said...
it was important to look at the content needed and the data needed to comply with IED and to look at what had already been developed.

Following on from this, the group looked at a database as a tool. They would examine the information in the database needed by inspectors, information needed to complete the report and information needed by operators and members of the public. They would seek to build up the database step by step. They would ask Nancy Isarin to open up a space on Basecamp called Tools. They reached a common understanding on the structure of the database and Vladimir would begin to populate it with a skeleton of information.

- **Water and land project on baseline report**

Horst was trying to find out how this project was progressing.

Following a discussion and a voting procedure it was agreed that the next three working groups would cover the following topics (with the lead person shown in brackets):

- Joint inspections (Marinus)
- Definitions (Richard)
- Horizontal aspects of permitting (Chrystalla)

### 3. Organisational matters

There had been a question in the IMPEL General Assembly about the size of the Project Team and a suggestion that it might be preferable to have a smaller project. Horst pointed out that part of the thinking behind setting up the Expert Teams had been to have projects on similar themes which worked more closely together and not in isolation. He raised the question of whether the IED project was structured in the right way.

There was agreement that the Working Groups had been very successful both in the Project Team meetings and in carrying on their work on Basecamp. This way of working also made it possible to identify, and tackle, potential overlaps. A possible alternative might be to do as before with small groups or to have a small preparatory group and one big meeting.

A major issue was the cost. For instance, there had been a proposal to involve more people responsible for permitting but could that be afforded? One possibility was to have one person from a member organization and additional people funded by IMPEL on a first come/first served basis. That would not be easy given that some organisations only knew at a late date whether they would be taking part.

There was a Seveso guide book for organizing Mutual Joint Visits which could provide some help for such visits under IED. It was important that the visits should not be too difficult to organize and should involve only a few people. Horst pointed out that Seveso is preventative and doesn’t only involve inspections.
The Workshop should include a day for the meeting of the Expert Team on Industry and Air. If a joint visit had taken place, it was suggested that it would be useful to have a presentation on it at the workshop. It would also be useful to look at the BRef cycle as topic at the workshop, including how they were implemented in the past and how they are implemented now. Another important question was how inspectors and permit-writers were able to feed back to the BRef process. It would be good to have a common understanding of what goes in to the BRef process. Martine offered to prepare a short text of what might be considered at the workshop and to circulate it for comments.

Another suggestion was to bring permitting in to the workshop, perhaps by having a discussion about what a permit should look like.

4. Communication

The Implementation abstracts had been translated into several different languages and would be translated into the other languages in the project team soon. They should appear on the homepage of the relevant authorities in each country since that was the main purpose for producing them.

It was agreed that the guidance book should include as an Annex any question and answer session as this could also provide useful guidance.

5. Next Project Meeting and Workshop

The next project meeting would be in Schiedam, near Rotterdam, on 30 June and 1 July at the kind invitation of Marinus. It was likely that the existing working groups would have completed their tasks by then and this would be the opportunity for the new working groups to start their work. The Joint Site visit would be on 29 June and Marinus would seek a company which was accustomed to speaking English. The countries wanting to take part were Estonia, Portugal and Spain.

Martine had kindly offered to host the workshop in Gent and it would be on 5, 6 and 7 October (subject to sufficient funds being available in IMPEL). Martine would kindly arrange for a presentation to be given on how IED was implemented in Flanders.
Annex

Participants at the project team meeting in Berlin, 10-11 March, 2016, and project groups selected

<table>
<thead>
<tr>
<th>Participant</th>
<th>Country</th>
<th>Project Groups</th>
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<tbody>
<tr>
<td>Robert Gross</td>
<td>AT</td>
<td>1 &amp; 5</td>
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<td>Martine Blondeel</td>
<td>BE</td>
<td>1 &amp; 4</td>
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<tr>
<td>Olivier Dekyvere</td>
<td>BE</td>
<td>1 &amp; 5</td>
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<tr>
<td>Chrystalla Stylianou</td>
<td>CY</td>
<td>2 &amp; 6 (Lead)</td>
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<tr>
<td>Tomáš Augustin</td>
<td>CZ</td>
<td>1 &amp; 5</td>
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<tr>
<td>Rikke Cochran</td>
<td>DK</td>
<td>1 &amp; 6</td>
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<tr>
<td>Britta Tinghus</td>
<td>DK</td>
<td>3 &amp; 4</td>
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<tr>
<td>Lone Kielberg</td>
<td>DK</td>
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<tr>
<td>Silva Prihodko</td>
<td>EE</td>
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<tr>
<td>Jaakko Vesivalo</td>
<td>FI</td>
<td>2 &amp; 5</td>
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<tr>
<td>Horst Büther</td>
<td>DE</td>
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<tr>
<td>Hartmut Teutsch</td>
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<tr>
<td>Wulf Böckenhaupt</td>
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<td>Sigridur Kristjansdottir</td>
<td>IS</td>
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<td>Ian Marnane</td>
<td>IE</td>
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<td>Nazzareno Santilli</td>
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<tr>
<td>Fabio Colonna</td>
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<tr>
<td>Muhamet Malsiu</td>
<td>KS</td>
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<tr>
<td>Marinus Jordaan</td>
<td>NL</td>
<td>3 &amp; 4 (Lead)</td>
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<tr>
<td>Joanna Stępień</td>
<td>PL</td>
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<td>Michał Chędziok</td>
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<td>António Quintas</td>
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<td>Vladimir Kaiser</td>
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<td>María Jesús Mallada</td>
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<td>Manuel Salgado</td>
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<td>Şenay Aslan</td>
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<td>Elen Strale</td>
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<td>Richard Chase</td>
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<tr>
<td>Terry Shears</td>
<td>IMPEL</td>
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</tbody>
</table>
1 = Self-monitoring and operator reporting
2 = BRefs
3 = Tools
4 = Joint inspections
5 = Definitions
6 = Horizontal aspects of permitting
Annex IV. Note of project team meeting in Schiedam (Rotterdam)

IMPEL Project on supporting Implementation of the Industrial Emissions Directive

Project Group Meeting held at the offices of the DCMR, Schiedam, The Netherlands, 30 June - 1 July 2016

1. Opening and DCMR presentation

1.1 Horst welcomed everybody to the meeting and thanked DCMR for kindly hosting it. He explained that the aims of the meeting were to make progress in the working groups and to prepare for the workshop in Ghent in October. He went through the agenda which was agreed and this was followed by a tour de table in which people introduced themselves and described their involvement in IED implementation.

1.2 The Director of the DCMR, Rosita Thé, welcomed participants on behalf of the DCMR and said how pleased she was to be able to offer the meeting facility to the IMPEL project. It was important to try to achieve a level playing field across Europe and exchanging information about practices in different countries was one of the ways in which this could be done. DCMR had had actual experience of how beneficial IMPEL could be when the IRI was carried out there in 2014 which had proved a useful way of challenging the practices in the organisation, in particular the remark ‘sophisticated but rigid.’ This had been used to develop a target group tool for identifying reasons for non-compliance. Ms Thé concluded by expressing the wish that the meeting would be successful.

1.3 Marinus gave a presentation on the work of the DCMR, Milieudienst Rijnmond. It was established in December 1971 and it is a joint environmental protection agency of the Province of Zuid-Holland, the city of Rotterdam and 15 municipalities in the Rijnmond area. It addresses issues spanning environmental, spatial planning and economic concerns: it monitors and safeguards the region’s environmental quality for 1.2 million residents and 27,000 companies in the Rijnmond area. DCMR’s key tasks include:

- Issuing and enforcing permits
- Responding to incidents and managing crises
- Monitoring & developing knowledge
- Providing advice

In 2015 there were 4,128 inspections, 1,903 follow up inspections and 426 violations after follow up inspections. There were 124 administrative penalties and 77 criminal penalties.
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There is an Emergency Response and Information Centre which is available day and night and which receives approximately 20,000 reports per year from residents concerning stench, dust, noise and soil pollution. It also receives reports from businesses concerning unusual incidents. There is a central incident report number which ensures joint response from emergency services.

Marinus described the development of the port of Rotterdam. As industry is moving further west new residential areas are replacing old port areas. Economic production had more than doubled while air quality had improved. The extension westward continues with the new 1,000-hectare industrial zone Maasvlakte 2.

The DCMR has a role in spatial planning and development of scenarios. It formulates standards for industry which are preferably based on international accepted standards (BAT). It provides a one stop shop for permitting, inspection and enforcement together with an emergency response room for complaints and incidents. It has a monitoring system for emissions and for ambient air quality and facilitates communication with all stakeholders.

There are several challenges for the sustainable development of industrial zones. These include keeping noise, smell, air quality and water discharges within limits and anticipating stricter limits in the future: the law is not enough. They have a zero tolerance policy for incidents and communicate actively and transparently with all stakeholders.

1.4 Terry presented the minutes of the last meeting in Berlin. On page 3, in the paragraph beginning ‘The results of the 2015 project included the identification of implementation challenges, the reference should be to the implementation of IED in Wallonia, not Flanders. With this correction, the minutes were agreed.

2. Presentation on ‘Managing industrial pollution in the Netherlands’ (Pieter Roos)

2.1 In opening his presentation, Pieter said he would look at three main areas. These were:

- Legal framework (including permits, general binding rules, spatial plans and environmental quality standards)
- Institutions (permit, inspection and spatial planning authorities, Ministry of Infrastructure and the Environment and European Union)
- Mechanisms (Best Available Techniques, Zones (for example accidents, noise, odour), public information and participation and support (communication, research and financial incentives)

Industry is an important source of pollution and also an important provider of (technological) solutions and innovations. The policy strategy for sustainable industry is to have legally binding
minimum requirements for all industrial installations while promoting and supporting front runners and innovators. There should be harmonisation in the European Union, at least.

There should be a permit obligation for high risk industry such as power plants, and use and storage of hazardous substances: there were around 10,000 of these in the Netherlands of which 3,000 were IPPC installations. For smaller industries, of which there were around 400,000, there should be general binding rules with environmental requirements in a national decree that apply directly to the operator. For high impact sectors such as intensive rearing, refineries etc., both will apply.

In the legal framework for locations, spatial plans should provide for the optimal development of areas and combination of activities, for example the distance between a residential area and a chemical plant. Permit applications are tested against spatial plans.

For environmental quality standards there are limit values and target values for environmental quality (air and water) to protect health and the environment. Permits and spatial plans are tested against environmental quality standards.

Local authorities are responsible for permitting, inspections and spatial plans: there are 12 provinces and 400 municipalities. The work is organised in 28 shared services, with 6 services specialised in the chemical industry. Shared services guarantee a level of expertise and are more efficient.

There are 25 Water Boards responsible for managing water quality and water quantity. The Ministry for Infrastructure and Environment looks after water management for large rivers and the sea. Permits are issued and inspections carried out for water discharges in coordination with the provinces and municipalities.

For Best Available Techniques there are stakeholder groups on industrial emissions, a shadow Article 13 forum. There is input into the European Information Exchange and BREFs. There are also Best Available Techniques at a national level.

There are zones in spatial plans for safety, noise and odour where certain relevant activities are limited. Mechanisms for public information and participation include environmental performance reports and impact assessments, public participation in permit procedures and access to justice.

Permit applications can be made online and there is support such as a helpline and websites. There are also scientific research and fiscal and subsidy programmes.

3. Update on progress and results of the working groups and discussion
3.1 A common joint inspection had taken place at the Kock Refinery (Kock HC Partnership B.V.) in which Manuel Salgado Blanco and Silva Prihodko had participated. They had spent time preparing for the visit and then almost a full day at the refinery. The site visit had been quite complex and the inspection had focussed on air conditions. The visit had been conducted in an atmosphere of mutual trust which facilitated an enriching exchange of ideas.

Lessons learned from the inspection were:

- The good atmosphere helped achieve a better quality of inspection
- Previous information was needed to ensure a good inspection
- The more information obtained, the better the quality of the inspection
- Quality written permits make the inspection easier
- Feedback from inspectors to permit writers is essential
- Environmental data inputs to comply with the permit and PRTR requires a lot of effort for companies.
- It was good to share any doubts with a specialist inspector

Although the permits were in Dutch it was possible to get a good overall picture. The accompanying Dutch inspectors knew the site well and were specialists in refineries. The focus was on air but they also considered diffuse emissions.

Those who had taken part would write a short report for the report on the project. The focus should be on how the inspection was carried out rather than on what was wrong.

3.2 Discussions on implementation of BAT Conclusions were nearly completed though it was not yet clear what would be needed to put into the Guidance Book. Richard said that the English Environment Agency had produced draft internal guidance on different types of BAT narrative which he would circulate when he could. Pieter suggested that there could be two stages with guidance on the BAT narrative being added later.

3.3 Horst had given a presentation on minimum IED Inspection Requirements to the Commission. He had begun by listing impact criteria which included:

- Kind of installation
- Emissions to air
- Emissions to water
- Waste processing
- Soil and groundwater protection
- Sensitivity of the environment
- Risk of accidents
Horst looked at each of these in turn and identified what he described as black and white in each case and the areas in between. Some installations needed no permit while others required a permit under a Directive or Directives other than IED. Some might have an IED permit or an IED permit with EIA and/or Seveso.

Emissions to air/water can range from no emissions to an important case of non-compliance. In between would be emissions below PRTR threshold value and above PRTR threshold value. Some emissions would be at a level where abatement technology was necessary and some would be in a case where there was a permit with BAT derogations.

Waste processing could also range from a situation where there was no waste to one where there was an important case of non-compliance. Apart from being below or above the PRTR threshold value there could be offsite transfer of hazardous waste or transfrontier shipment of such waste.

Soil and groundwater protection could range from no relevant hazardous substances to an important case of non-compliance. In between that were cases where no baseline report was necessary through ones where such a report was necessary to cases where protection technology was necessary or contingency measures required.

Sensitivity of the environment could be in a spectrum from where there was no contribution from the installation to where there was a threat to the environment. There might be a case where there was a contribution from the installation or where an Environmental Quality Standard was kept, or even violated. The next stage would be a case where Article 18 of the IED needed to be applied.

For risk of accidents, there might be no dangerous substances or a serious case of non-compliance. In between there might be dangerous substances below the Seveso threshold or above the first or second Seveso threshold. Finally, there could be a case where there had been an accident in the last ‘x’ number of years.

These factors combined could be used to decide the frequency and content of inspections. Only the criteria with high risk to the environment should have priority during the site visit. Criteria with low risk should not be considered during every site visit.

Other factors that could be taken into account for deciding the frequency of routine inspections and site visits include whether the installation is in compliance (which could result in a lower frequency). The frequency could be unchanged where there has been a minor non-compliance and a higher frequency where there was a relevant non-compliance. Participation in EMAS could also result in a lower frequency.
Under IMPEL’s Integrated Risk Assessment Method (IRAM) the inspection frequency is determined by the highest impact score. The inspection frequency is reduced by one step if the set number of highest scores is not met. The inspection frequency can be changed by one step up or down based on operator performance. The more criteria are scored high the more inspection effort is needed. IRAM is (considered to be) used in the Inspection Authorities of the following countries: Austria, Belgium, Bosnia and Herzegovina, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Iceland, Italy, Kosovo, Luxembourg, Macedonia, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain and Turkey.

4. Progress on related IMPEL projects

4.1 Rob Kramers gave a presentation on the project on ‘Doing the right things for Permitting.’ This project was being carried out because of the importance of permits in the regulatory cycle. Permits should be clear, univocal, unambiguous and transparent and address environmental risks in a proper way. There were clear expectations for permit holders and inspection authorities. There was experience but it was fair to ask whether there was a level playing field.

The project was based on IMPEL’s concept of the Environmental Inspection Cycle. There would be step-by-step guidance to help design an optimised environmental permitting process. The ultimate goal of the project was to produce ‘permits of required quality and a level European playing field with regard to permit writing.’

Within the regulatory cycle there are the following steps:

- Policy planning
- Defining goals and objectives
- Legislation
- Permitting
- Inspection and enforcement
- Evaluation and feedback (both to lawmakers and permit writers)

This will be a three-year project in which procedures that are used within Europe will be collected and compared. This information will be used to develop guidance flexible enough for authorities to use when issuing permits. As a result of the project, training sessions will be organised and gaps in tools and methodologies identified so that new IMPEL training sessions can be identified.

The project will be led by The Netherlands and the project team consists of Czech Republic, Iceland, Ireland and Slovenia. A questionnaire has been prepared and a pilot carried out to
see whether it works. The questionnaire has been disseminated and feedback will be analysed. A workshop is due to be held in September and a report will be written.

4.2 Horst had contacted Jean-Pierre Janssens about the project on Baseline Reporting. A questionnaire had been prepared and circulated and Jean-Pierre would be giving a presentation on the project at the workshop in Ghent.

4.3 For the project on BAT Derogations a questionnaire had been prepared and a workshop had been held in June in England. There was considerable interest in the project from both NGOs and the Commission. Draft guidance had been prepared and it would be possible to have a presentation on this project at the Ghent workshop.

5. Guidance book update

5.1 John said that a further three chapters of the Guidance book had been almost completed on Levels of non-compliance, Reporting to the public and Site closure and bankruptcy. He still needed to clarify some points with Hartmut on Levels of non-compliance.

On application of BAT, John had identified the following areas, namely translation of BAT Air Quality Standards into emission limit values, derogation from BAT Air Quality Standards, going beyond BAT and application of BAT within four years of BAT conclusions. Pieter confirmed that his group had covered only translation of BAT Air Quality Standards into emission limit values.

There had been an IMPEL project on Permitting in 2012 which included recommendations for further work including:

- Concentration standards limits versus mass emission limits
- Defining other than normal operating conditions
- Implementing decisions into national policy and legislation

The results of the project on DTRT for Permitting would form part of the guidance.

There was already Commission guidance on baseline reporting and a decision would be needed on whether the results from the current IMPEL project should be used to supplement the Commission guidance.

Guidance existed on how to carry out inspections including site visits routine/non-routine, unannounced inspections.
It would be necessary to identify which outputs from the group on Tools would be included in
the Guidance.

Romano’s group had covered a great deal on reporting obligations of operators including
reporting on incidents, accidents, non-compliance and emissions.

There had been an IMPEL project on IED and Reach but the conclusions were not really suitable
as guidance.

On IED and Habitats it would be necessary to decide what could be included as guidance.
There had been previous work on IED and the Water Framework Directive but no discreet
guidance. IED and Seveso were covered by the IRAM methodology.

Other areas to be considered were IED and Air Quality Directive and IED and Environmental
Liability Directive.

John would circulate the latest version of the Guidance Book and invited comments on it as
soon as possible after that.

It would be important to maintain contact with those working on BAT Derogations, Habitats
and Baseline Reporting to see what outputs might be included.

6. Plenary discussion on work priorities

6.1 Romano reported that on operator self-monitoring the document was almost finished
and was just awaiting some contributions. There were 12 chapters and 5 annexes now and
there was already a template for the final report on operator self-monitoring and a template
form for the self-monitoring plan. There were 60 pages in the document and the question
would be how this should fit into the guidance book. This would be a topic to be considered in
the Break out group.

John suggested that the full document could be included in the report on the project and that
the content for the guidance book should be short, simple and clear.

6.2 Vlado and Manuel both gave short presentations on Tools. Vlado gave an example of a
Tool he had drawn up in connection producing a report for the public, incorporating a checklist
for use before inspections to assist inspectors during the inspection. It would also be helpful to
have a pdf connection to the environmental permit. In the discussion there was a suggestion
that it would be more important to identify the criteria, characteristics and subjects of a tool: it
probably wasn’t necessary to develop new tools as most inspectorates already had them.
In his presentation Manuel explained that he was looking at the concept of tools. He mentioned the principles on information in the ‘Inspire’ Directive, namely that information should be:

- Managed as closely as possible to its source
- Collected once
- Available to the public
- Accessible to end users and be compatible

In the discussion it was suggested that the first priority was the need to have a common data set needed for inspection work which could be the start of a database. The tools necessary would follow on from that. A further suggestion was that the Tools group should focus on content and a common language.

The Tools group would consider this further.

6.3 Richard spoke about Definitions. It would be necessary to collect the terms that needed to be defined, possibly using a spreadsheet. This could include the issues related to the terms concerned and there would need to be practical solutions to the problems of definition.

6.4 On the question of Horizontal aspects of permitting, Andreas explained that he was standing in for Chrystalla. A questionnaire was being prepared on the issues connected with this by means of which it should be possible to discover what member states were doing at present. The questionnaire would be finalised and circulated for feedback by the end of September. They wanted to propose a single procedure for all member states.

6.5 Horst spoke about the meeting between the IMPEL Board and the Commission on 27 May. Horst had raised the question of whether there might be more funding for the project (since it had already been agreed that LIFE+ would not be appropriate). It looked as though there may be some possibilities (but there would need to be ⅓ matching funding from IMPEL members).

The Commission asked IMPEL to explore the possibility of doing more work on air pollution (especially NOx), which would not be for this project, and industrial waste water. There was a link between air pollution and Article 18 of IED (going beyond BAT).

It was important to explain better how projects benefitted stakeholders. There was much anecdotal information about benefits but little quantitative information. For instance, individuals took part in projects but did this lead to any changes in their organisations? Any suggestions on how to assess that would be welcome. Marinus suggested that there needed to be good links with regions in the different countries.
Horst pointed out that the Commission was interested to learn how many countries had put information on inspections on the internet.

The Commission had observed that most Project Managers were from UK, The Netherlands, Germany and Italy and wanted a wider spread. Perhaps it would be possible to have two project managers for projects.

6.6 ToR for the IED Implementation project in 2017 Horst said that the intention was to carry on in a similar way as with the first two projects. There would be two project meetings and a workshop. The budget for the two workshops was planned as being 17,700€ x 2 (30 participants) and for the workshop 24,675€ (35 participants). There would be plans for three joint inspections (3 x 2,375€) and 20,000€ would be needed for technical and administrative support. The total budget required was 82,450€.

7. Break out group reports

7.1 Joint inspections – list of recommendations The organisation had been good but there was a need to add on time at the end for reporting. The host inspectorate and the visiting inspectors needed to prepare a report so that it would be possible to compare what had been seen and what written down. It was helpful to have the agenda beforehand which should be sent to the visiting inspectors a week before the inspection. It would be useful to have information on the trend of emissions.

The focus is on the inspection rather than how good the operator is. Martine would check the possibilities for a joint inspection before the Ghent meeting. There should be a maximum of three visiting inspectors. It would be useful to have a word copy of the permit since it could be translated using Google. Preparation (such as the plan and checklist) should be shared in advance. Volunteers to take part were (in order):

- Marinus
- Romano
- Sigrud
- Robert
- Maria (Sweden)
- Manuel
- Silva

7.2 Definitions The group had discussed whether there should be a spreadsheet on basecamp or an individual write board for each issue. It would also be possible to have a link to the Commission’s question and answer section.
7.3 **Self-monitoring and operator monitoring** There were three chapters still to be written and these had been divided between The Netherlands, Spain and Finland. In addition, group members had been asked to have a further look at the other chapters. Romano would take care of the main points in the guidance (Chapters 5 and 6). He would start including the main results in the draft guidance and reckoned that about 90% of the overall task had been completed.

7.4 **Horizontal aspects of permitting** The questionnaire had been developed and sent to the sub-group. It was divided into two parts. The first part is preliminary questions concerning the person completing the questionnaire, their organisation, legal framework, whether they use general binding rules etc. The second part is Technical Questions. When member countries have given feedback they would want to prepare suggestions for a template that could be used and also input to the guidance book. IMPEL had access to the Survey Monkey which was a good way of writing presentations and also made it easier to collate information from them.

The work on this topic had links to the narrative BAT conclusions (odour, noise etc.)

7.5 **Tools** The group had not reached a common conclusion on the goal of the group. There was no clear agreement on why this was needed given that people were already using tools. It could be a good starting point to define the requirements of the IED. John suggested that the group might want to contact Simon Bingham who headed the Crosscutting expert team since he had done some work on the use of new technologies. It could be useful to obtain information on what different countries are doing. Horst suggested that the group ask the Crosscutting team whether what they had found could be developed into useful tools to help with the implementation of IED.

8. **Workshop on IED Implementation 2016**

8.1 The budget for the workshop was 19,000€ for 27 participants over 3 nights. An additional 5,000€ had been allocated to the project but this had already been used. The result was that it would not be possible to fund the participation of everybody who wanted to attend. It was agreed that Jean-Pierre Janssens should also be invited (who was leading the project on Baseline reporting). The project manager for the Derogations project should also be invited.

It would not be possible to fund the travel costs of people attending the Industry and Air expert team meeting. There was a suggestion that one person per member country should be funded under the project costs: if any money were left then it would be possible to fund more
people. It was agreed that people would need to say whether they were planning to attend by 15 September so that any spare funds could be reallocated.

In the workshop there would be two Working Groups, one on going beyond BAT and one on waste water. Group leaders should give the results of their work and there should be feedback from the Working Groups as well as presentations from other projects. The Commission had indicated that they would be interested in attending the Workshop and the Industry and Air meeting. The joint inspection would be on 4 October, the workshop on 5 and 6 October and the Industry and Air meeting on 6 and 7 October.

Martine said that the workshop would include Inspectors’ feedback on the BREF cycle and a presentation on IED implementation in Flanders.
<table>
<thead>
<tr>
<th>Participation at the Schiedam meeting</th>
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<tbody>
<tr>
<td>Robert Gross                         AT</td>
</tr>
<tr>
<td>Martine Blondeel                      BE</td>
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<tr>
<td>Annelies Baert                        BE</td>
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<tr>
<td>Olivier Dekyvere                      BE</td>
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<td>Dubravka Pajkin Tuckar                HR</td>
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<td>Andreas Athanasiades                  CY</td>
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<td>Tomáš Augustin                       CZ</td>
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<td>Jaakko Vesivalo                       FI</td>
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<td>Horst Büther                          DE</td>
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<td>Hartmut Teutsch                       DE</td>
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<td>Marinus Jordaan                       NL</td>
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<td>Francisco Negrão                      PL</td>
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<td>António Quintas                      PL</td>
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<td>Florin Homorean                       RO</td>
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<td>Vladimir Kaiser                       SI</td>
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<td>María Jesús Mallada                   ES</td>
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<td>Manuel Salgado Blanco                ES</td>
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<td>Maria Enroth                          SE</td>
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<tr>
<td>Richard Chase                         UK</td>
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<tr>
<td>Terry Shears                          IMPEL</td>
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<td>John Seagers                          IMPEL</td>
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Annex V. Note of workshop in Ghent

IMPEL Project on supporting Implementation of the Industrial Emissions Directive

Workshop held at the Flemish Environmental Inspectorate, Ghent, Belgium, 5 and 6 October 2016

1. Welcome by Paul Bernaert, Head of the Environmental Inspectorate Division

1.1 Paul Bernaert welcomed the members of the IMPEL workshop from the project on the implementation of the Industrial Emissions Directive to Flanders and to Belgium and especially to the beautiful city of Ghent. He particularly welcomed Horst (Buether) and the co-chair Florin (Homorean) who both had the challenging task of leading the group through the interesting landscape of IED implementation and to help overcome the various obstacles, gaps and bottlenecks in the implementation to help achieve a level playing field across all member states.

1.2 He had been head of the Environmental Inspectorate Division of the Flemish Government for two years, having previously been head of the Environmental Permitting Division. He was, and is, in a privileged position to implement the Industrial Emissions Directive from several sides, as a policymaker, as a permit writer and as an inspector. His environmental inspectorate division has 135 employees: 115 of them are inspectors and 20 are administrative staff.

1.3 In total they have to inspect about 20,000 large companies with high environmental risk potential, the so-called class 1 companies. In those 20,000 companies, there are about 826 IED installations in the industrial sector and 875 in the agriculture sector. 26 of their 115 inspectors are involved with the inspection of IED installations.

1.4 Paul was happy to announce that Annelies, a previous staff member of his, would explain the way the Flemish environmental authorities cooperate to transpose the BREFs into Flemish legislation and into permits. He was also glad that Martine, who had founded the system, would give an introduction to the Flemish Environmental Inspection System for IED installations and also how she manages the process of feedback from inspectors to policy makers through the BREF cycle. This aspect of inspectors' work was often neglected as the result of a lack of time but in his view it would become more and more important in the future to improve the quality of legislation and make it more enforceable.

1.5 Every year they prepared an IED inspection plan that was risk-based and in line with the requirements of the directive. There were however weaknesses such as the sustainable use of energy and raw materials, whether it was necessary to go beyond BREF conclusions, and by how much, in the vicinity of a company where
environmental quality standards are not met, and which data the company should provide to make a cross-check of the permit conditions.

1.6 Paul expressed his strong wish that the workshop would have fruitful and profitable discussions.

2. Welcome by Horst Buether and Tour de Table of introductions

2.1 Horst thanked Paul for his kind words and also the Flemish Environmental Inspectorate for hosting the meeting. He gave a short introduction to the project and listed the related IMPEL projects, both past and present. The projects included:

- Doing the Right Things – Inspection Cycle (DTRT) 2007-2009
- Easy Tools
- IRAM (risk assessment)
- Air Quality Standards/Industrial Emissions
- Water Framework Directive/IPPC
- IED Inspections – Guide Book for IED Inspections
- Transition to IED Permits
- IED/IRAM inspection programme
- IED and Nature Protection
- Derogations from BAT
- IED Baseline reporting project
- Doing the Right Things (Permitting)

2.2 The desired outcome of the project was information to help create a level playing field by identifying challenges in implementation and learning from other countries. So far the project had learned about IED implementation in Bremen, Wallonia and Rotterdam and would learn about implementation in Flanders.

2.3 Horst asked whether there were any comments on the note of the meeting in Schiedam (Rotterdam) but there were none.

2.4 There was a Tour de Table in which those present introduced themselves.

3. Topics of the workshop
3.1 Horst gave a brief summary of the topics to be considered at the workshop. They included:

- Flemish involvement in the BREF cycle
- Inspectors’ feedback in policy making through the BREF cycle
- Flemish inspection system for IED inspections
- Report from the Joint Inspection

4. Flemish involvement in the BREF cycle (Annelies Baert)

4.1 Annelies explained that the member state of Belgium was divided into three regions – Brussels, Flanders and Wallonia. In Flanders there were more than 2,000 IPPC activities of which 1,140 were industry and 860 were poultry and pigs. The relevant organisations in Flanders were the Department of Environment, Nature and Energy (in particular the Environmental Inspectorate Division, the Environmental Air Division and the Environmental Permitting Division), the Flanders Environment Agency (water and air) and the Public Waste Agency of Flanders.

4.2 Flanders has a Technical Working Group as there is for BREFs at the European level and this can coordinate the views of the various interested bodies, including industry. There are some difficulties in this process. Internally, there is the fact that Belgium has complex structures and externally there are the short, strict guidelines to be met and the very powerful voice of industry.

4.3 Flanders seeks to put BAT conclusions into General Binding Rules which they seek to publicise within a year and the permit evaluation is carried out within two years. BAT not translated into GBR are those dependent on local conditions (odour, noise).

4.4 Difficulties include the fact that BAT can be too general or unclear, the broad ranges of BAT-AEL and questions over applicability and unclear footnotes. There is also the question of concentrations versus loads and interpretations in other member states. Internally, there is the issue of gathering knowledge and information from different institutions.

4.5 In conclusion there is a need for intensive and early follow-up during the BREF process. Cooperation at all levels from the regional to the European is essential.

5. Inspectors’ feedback in policy making through the BREF cycle (Martine Blondeel)

5.1 This is a specific example of the feedback loop from inspection to policy making and permitting in Flanders. The principal roles of inspectors are surveillance, inspection and enforcement but they also have a role in providing feedback to policy makers and permit writers. Since they are experts in the field they are in a
privileged position to do this. They can verify the feasibility and enforceability of draft legislation and permits and also give feedback on their experiences in the field to policy makers and permit writers. They can also help in formulating proposals for environmental legislation and permits.

5.2 BREFs become legislation as they are adopted by the EC and have to be translated into the environmental legislation of member states as general binding rules and into permits (evaluation of permits). The Environmental Inspectorate Division (EID) of the Flemish Government also applies the inspectors’ feedback role to the BREF cycle.

5.3 The context for this is a monitoring system with an ‘Overview table’ which provides an up-to-date overview of the status of each BREF within the revision and implementation process. The full revision cycle consists of 15 consecutive steps. The table helps to streamline and coordinate the follow-up of the BREF developments since the BREF cycles of the different sectors do not run in parallel.

5.4 A table ‘Steps and Tasks EID’ shows all 15 steps and gives a description of the relevant tasks for the EID. It also indicates those responsible for these tasks within the EID together with the level at which decisions are to be made.

5.5 Charlotte said that there was a similar system in UK for sector groups. Romano said that the problem was the lack of resources and the need to convince senior managers that this was important. There was a question about how many inspectors Flanders had for IED installations: Martine said that 50 had been requested and the allocation was 26 full time equivalents (FTE’s).

5.6 Heino Falke, who was seconded to the JRC in Seville, said that from their point of view it was an ideal scenario to involve inspectors in BREFs.

6. Flemish Inspection System for IED Inspections (Martine Blondeel)

6.1 There is a risk analysis approach based on IRAM but adapted to the Flemish situation.

6.2 The impact criteria are:

- Impact on surroundings (~ complaints, incidents...)
- Emissions to air (~ PRTR)
- Emissions to soil (~ PRTR)
- Quality of PRTR-data
- Emissions to water (not PRTR but mass flow, receiving water body, dangerous substances)
- Output of waste
- Input of waste
• Environmental Quality concerns (~ problems with quality standards or high requirements in permit for EQ...)
• Risk of accidents (system of Seveso risk analysis)
• Emissions of noise (~ BREF topic?)

6.3 The performance criteria are:
• Level of compliance (~ enforcement actions needed...)
• Reaction of operator on enforcement actions of inspector
• Implementation of Environmental Management System

6.4 The Inspection types (43) are clustered into 6 blocks:

**General inspection types:** permit fit (coverage), energy management system, environmental management system, prevention and control of nuisance and accidents

**Inspection of requirements related to air:** restriction of emissions, self-monitoring, PRTR (quality), stack emission measurement, end-of-pipe treatment, VOC from process and storage, diffuse dust action plan, LDAR, VOC-balance, cooling gasses/systems, special permit conditions for air

**Inspection of requirements related to waste water:** restriction of water input, sustainable use of water, sampling and analysis of waste water at discharge, sampling and analysis of waste water in the process, restriction of emissions, water treatment, self-monitoring, PRTR (quality), special permit conditions for waste water

**Inspection of requirements related to waste and materials:** sustainable use of materials, materials chain, administrative aspects of waste treatment, waste management, waste treatment, waste register, PRTR (quality), sampling and analysis of materials, special permit conditions for waste and materials

**Inspection of requirements related to soil and groundwater:** sustainable use of groundwater, management of groundwater wells, management of risks of soil contamination, sampling and analysis of groundwater or soil, PRTR (quality), self-monitoring, special permit conditions for soil and groundwater

**Administrative inspections:** actualisation of risk analysis and IPPC status, PRTR fit (quantity)

6.5 Inspection types cover all kinds of inspection relevant for IED installations falling within the responsibility of the EID: inspections of other issues of IED companies, for example Reach regulation, are not in the IED system. A checklist has been developed for almost all inspection types. The inspection report contains an assessment of compliance for inspection type that has been undertaken during the inspection.

6.6 The relevance scores are 0 or 1. 1 means it is relevant and 0 means not relevant (not in permit, beneath legal threshold etc.). Within each block some inspection types might be relevant and others not. In the near future there will be prioritisation of inspections and workload by fine tuning the relevance scores of
inspection types. For example, in the beginning there was a 1 for IT cooling gases/system if the permit has a cooling system but now a 1 for permitted cooling systems above a threshold decided by management.

6.7 The principles of the inspection plan are that each year all IED installations to be inspected annually will be inspected together with half of those to be inspected every two years and a third of those to be inspected every three years. So there is full coverage of all inspection types every six years. Just over a quarter of the total time for IED inspections is available for follow up inspections. A separate block of time (20%) is available for reactive inspections.

7. Report from the joint inspection (Robert Valaderes)

7.1 The joint on-site inspection took place on 4 October 2016 at Gallo Group, Menen. Participants from IMPEL included: Roberto Valadares, Chief inspector, IGAMAOT, Portugal; Antonio Quintas, Inspector, IGAMAOT, Portugal; Bobby Verhagen, Inspector, DCMR, The Netherlands; Iñaki Bergareche Urdaipilleta, Inspector, Xunta de Galicia, Spain; and Martine Blondeel, Inspection Coordinator, Flanders, Belgium.

7.2 This is an IED installation, category 5.3 (b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving (iv) treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components. It has a processing capacity of 350,000 tonnes per year of ferrous and non-ferrous metal waste from scrap metal and WEEE and 18,000 end of life vehicles. The water treatment capacity is 1600 m3/day and there is a staff of 250 people.

7.3 There are 25,000 tonnes per year of waste for disposal in landfills which comes from saturated activated carbon from the abatement system of ducted air emissions, light fraction from the shredder and dehydrated sludge from the waste water treatment plant.

7.4 The Flanders Environmental Agency (VMM) calculated threshold values for the deposition of dioxins and PCBs. In 2014, 15 of the 24 VMM ambient air quality monitoring stations were located in agricultural areas and residential zones, having a link with the food chain. The results for 2014 indicate that the measured values of PCBs in dust deposits were higher than the threshold values at half of the measuring locations. Higher PCB depositions were occasionally recorded in the vicinity of many scrap processing installations. This is particularly problematic where such activities adjoin residential or agricultural areas. Over the last 10 years, a slight decrease of PCB-levels in dust producing substances has been observed. Nevertheless, these figures illustrate that the presence of PCB is still a potential environmental issue for the whole scrap recycling sector.

7.5 The topic of the inspection was Air Quality and PCB and diffuse emissions are not so well known as a problem in some member states. The company have taken an impressive number and variety of measures but there is an issue over when further investment in these does not bring about improvement. They use a large
amount of water though water sprinkling is seen as more of an emergency measure. It would be good to monitor the amount of waste that was refused and to show the trends over the years for that.

7.6 Good practices identified included that a checklist with key points was available for inspection and that waste sampling and sealing procedures are implemented. There was verification of measures implemented by the operator to prevent diffuse dust emissions during the site visit. There was a good level of cooperation with the monitoring agency and all updated data regarding air quality monitoring were available beforehand. Inspections are carried out by a team of 2 inspectors, one of which is the experienced in the installation. There is a procedure to qualify inspectors for sample collection of waste water, waste, air emissions, noise and odour and a manual for inspectors with the procedure for sample collection, calibration of equipment.

7.7 Challenges and opportunities included the location of the site close to residential areas and close to the French border and the need to keep good communication between the inspectorate and the operator.

7.8 The added value of the joint inspection is the opportunity for the exchange of good practices between inspectorates and inspectors, the exchange of procedures between inspectorates and inspectors and the contribution to a level playing field in the EU. There is a very thin line between site visit and inspection, though the waste sampling was real inspection. The ideal number for a group is not more than 3 or 4 persons. There was a good focus on diffuse emissions – PCB. More preparation would have been helpful and also more documents to help better prepare the inspection. It can also be useful to see photos in advance which can sometimes be more informative than words.

7.9 Language can be a bit of a problem. It is useful to translate documents beforehand so that the inspection can go deeper but then there is the question of how many documents to translate as this is a time-consuming process. There should be a clear focus for the inspection and more preparation and contact beforehand. This was an inspection of a good compliant company but it might also be useful to go to a non-compliant one.

7.10 There was a question over whether the source of the PCBs was known, but it was not. One of the challenges of IED was to carry out integrated inspections and how to do this could be one of the objectives of the joint inspections. There was a word of caution in that there needed to be clarity about the role of inspectors and care taken to avoid causing upset to operators. The goals needed to be clear but not too ambitious as joint inspections seemed to require a lot of work. (Further information included in the Annex to this note).

8. Seville process: BAT for Waste Water from LVOC Installations (Heino Falke, JRC, Seville)
8.1 Heino began by describing the products from the European IPPC Bureau and their impact. The products were the Best Available Techniques (BAT) reference documents (BREFs) and the BAT conclusions published in the Official Journal. These were a driver for improved environmental performances with binding legal effects which helped create a level playing field.

8.2 Eleven BAT conclusions have already been adopted (Iron and Steel; Glass; Tanning of Hides and Skins; Cement, Lime and Magnesium Oxide; Chlor-Alkali; Pulp Paper and Board; Refining of Mineral Oil and Gas; Wood-Based Panels; Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector; Non-Ferrous Metals; Intensive Rearing of Poultry and Pigs). Eight BREFs are currently being worked on (Monitoring of Emissions; Large Combustion Plants; Waste Treatment; Food, Drink and Milk; Waste Incineration; Surface Treatment using Organic Solvents, including Wood and Wood Products Preservation with Chemicals; Ferrous Metal Processing). Work is shortly to begin on three further BREFs (Common Waste Gas Treatment in the Chemical Sector; Textiles; Slaughterhouses and Animal by-products).

8.3 BREFs are available to the world (http://eippcb.jrc.ec.europa.eu/reference/) and are used throughout the world. Among the top ten countries for downloading BREFs are China, United States, India, Thailand and United Arab Emirates: indeed, China is the top country for downloads.

8.4 The elaboration of a BREF involves the Technical Working Group with input from industry, environmental NGOs, Member States (and EFTA and Accession Countries) and the Commission and EIPPCB. Information is collated, including from questionnaires, and drafts are produced. The actors involved in the exchange of information on BAT include the EU Member States Committee (IED Article 75) who vote on the BAT conclusions, the Forum (IED Article 13) led by the Commission with representatives from industry, Member States and environmental NGOs and the European IPPC Bureau (EIPPCB) which leads the TWGs, validates and checks information and presents BREFs to the forum.

8.5 Data collection is crucial for determining BAT. The information on key environmental issues is obtained through plant specific questionnaires covering emissions to air and water, generation of residues (by-products and waste), use of resources (for example, energy, water) and techniques that are potential BAT candidates. Contextual information is important such as details on the techniques used (characteristics, historical data), other than normal operating conditions, link between the fuel characteristics and generated pollutants and consumption (for example, water, energy, chemicals).

8.6 BAT is defined in the IED. Best - Most effective in achieving a high general level of protection of the environment as a whole. Available – Developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions. Techniques - Both the technology used and the way in which the installation is designed, built, maintained, operated and commissioned.

8.7 The TWGs determine BAT conclusions through a pragmatic and iterative process. It involves reviewing current performance with respect to key relevant environmental issues and identifying techniques used to achieve the ‘best’ current performances. The economic and technical conditions under which the techniques

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are applicable are examined as is whether the technique fits the definition of BAT. Expert judgement by the European IPPC Bureau and by the TWG plays a key role in each of these steps.

8.8 Plenary TWG meetings can be very large in scale and involve between 50 and 140 experts with meetings lasting from 3 to 7 days (8-12 hours per day). There will be a detailed background paper (100-300 pages) and 90-300 concluding slides.

8.9 Heino then spoke about BAT and BAT-AEL/AEPL for wastewater: LVOC BREF. LVOC Generic BAT Waste Water (LVOC BAT 22) says that in order to reduce the waste water volume, the pollutant loads discharged to a suitable final treatment (typically biological treatment), and emissions to water, BAT is to use and integrated waste water management and treatment strategy that includes an appropriate combination of process-integrated techniques, techniques to recover pollutants at source, and pre-treatment techniques, based on the information provided by the inventory of waste water streams specified in the CWW BAT conclusions.

8.10 In summary, the focus of the LVOC BREF – Waste Water is on process-integrated techniques and pre-treatment. This is linked to CWW BREF: Waste water management, description of treatment techniques, BAT for final treatment. Process-integrated techniques often have applicability constraints and monitoring reference conditions are defined individually (BAT, parameter), with harmonisation where possible.

9. Open topics of IED implementation

9.1 The work on Joint Inspections would continue. Marinus led the Working Group discussion on this topic and potential solutions to issues raised were identified. There should be a maximum of three guest inspectors per inspection and no more than one from any country. As had already been mentioned, there was a thin line between a site visit and an inspection. Perhaps there should be half a day of inspection rather than a full day. There needed to be adequate preparation of time and a week before the telephone conference there should be a sharing of documents, the previous inspection results and information on the focus of the next inspection.

9.2 It would be helpful to have a checklist of tools used and procedures. There should be a checklist for the visiting inspectors to complete before, during and after the inspection. In terms of choice of installation, it might be better to have something smaller and thus easier to have a clear focus. It would be useful to have a collection of lessons learned. Follow up could be left till later: there was a need to think about what the strategy would be if a violation were identified: for example, would the host inspectors want the visiting inspectors present? Over a longer period, it be possible to arrange an exchange of inspectors.

9.3 Richard headed the group looking at narrative BAT. He said that the UK was putting together a manual for applying BREFs but the project was slightly delayed. Narrative BAT conclusions are any that do not contain BAT-AELs so they can be:

- “Stand-alone”
- BATCs and related BATCs with BAT-AELs
- BATCs as headline objectives
- BATCs and associated environmental performance levels (BAT-AEPLs)

They have a different status to BAT-AELs under IED as there is no derogation under Article 15(4); however, the Competent Authority may decide implementation is not required for a particular installation. All BAT Conclusions will contain narrative BAT statements and Technical Working Group members should work to optimise the wording and requirements, always with a view to how the requirement will be implemented in permits.

9.4 On **horizontal aspects of permitting** Chrystalla had prepared a questionnaire which was discussed by the group she led and, as a result, several changes were to be made. The intention was to identify some best practices and it should be possible to send out the amended questionnaire by the end of the month. There was a suggestion that it would be good to include a definition of ‘horizontal aspects of permitting’ in case it was unclear what that meant. The outcome of this work could be part of the guidance book or could be part of the project on DTRT Permitting.

9.5 On **Tools**, Wulf said that his group had a fruitful discussion which sharpened the focus. They were only concerned with Tools needed to implement IED, for example the assessment tool for IRAM. There would be a draft proposal on basecamp until the end of this year which would be circulated next year giving examples of good tools.

9.6 The Commission had said that there were many problems with **industrial waste water**. Horst considered that treatment of water within a process was part of the remit of the Industry and Air group. The following people would be willing to take part in such a group: Antonio, Annelies, Charlotte, Romano, Maria (Sweden), Britta, Maria Jesus Mallada and Judite/Tomas. Charlotte said that the group had attempted to frame the problem and had looked at how IED could be used to improve water quality.

9.7 There should be a focus on what could be done through BREFs but there were issues with doing that. There was good practice in some BREFs (for example, Pulp, Paper and Board and Waste Treatment) which could help in the production of guidance on emissions to water. In some competent authorities there were different authorities responsible for industrial processes and water courses and there was a question of how to ensure liaison between these authorities. There was also the question of what should be done where effluent is non-compliant and how might a consistent approach be achieved? Charlotte was willing to do the initial work to set up a working group through basecamp.

9.8 It was agreed that the topic of inspectors’ involvement in the BREF cycle would be left for now.

9.9 The Commission had also asked the IED project team to look at going beyond BAT to deal with air pollution. This could sometimes be regarded as gold plating and it would be useful to have a basis for going beyond BAT.

10.1 The IMPEL General Assembly is on 1 and 2 December and the deadline for submitting reports is four weeks before that. The report would contain the latest version of the guidance book, any available reports (such as on self-monitoring and joint inspections) from working groups together with notes of the meetings of the project team and the working group.

10.2 On the guidance book, the chapters on levels of non-compliance, reporting to the public and site closure and bankruptcy were already completed. New chapters would be included on BREFs/Application of BAT and self-monitoring. The report from the sub group on Self-Monitoring is at Annex VII of this report: the report from the sub group on BREFs/Application of BAT was included directly into the Guidance Book. The subgroup also produced recommendations on BEFs and BAT associated demission levels (AELs) and these can be found in Annex 2 to the note of this meeting. Future potential topics included Tools (depending on the outcome of discussions in the group), Baseline reporting, Permitting (from the project on DTRT Permitting), Definitions and Horizontal aspects of permitting.

10.3 As a result of the new IMPEL website some of the links from the guidance book to IMPEL documents had become corrupted. John Seager would be looking into that. John had included a navigation panel on the left hand side of the document so that users could be easily taken to the relevant chapter.

11. How to further develop risk criteria (Wulf Böckenhaupt)

11.1 IRAM is based on criteria and criteria are often based on regulations. Sometimes these regulations are outdated and definitions may not be clear enough. The revision of criteria should focus on the current regulations, a sharpening of the definitions to reduce the range of scoring and improve the explanations that IRAM provides. This will increase the acceptance of IRAM by users.

11.2 In North Rhine Westphalia there is a group consisting of IRAM coordinators from 5 regional governments that is looking into this question. There is due to be a test phase of three to four months and the new system should come into force in June 2017.

12. Mutual joint visits of the Seveso Expert Group (Dagmar Draeger, TW II)

12.1 Technical Working Group (TWG) II is a technical working group of the European Commission under the Management of Major Accident Hazards Bureau (MAHB), Ispra (Italy). It has members from all Member States, EFTA Countries and representatives from MAHB and the European Process Safety Centre (EPSC). The Plenary
has participants from Member States, EFTA countries and EPSC. There is a steering committee with 2 Chairs and 2-3 additional countries representatives and there is also the Technical Advisory Group (TAG).

12.2 There is a mandate under Art.20 (10) Seveso III (Directive 2012/18/EU). ‘Member States shall encourage the competent authorities to provide mechanisms and tools for exchanging experience and consolidating knowledge, and to participate in such mechanisms at Union level where appropriate.’

12.3 The MJV Programme is aimed at fostering exchange between working inspectors and to serve as a platform for communicating the highlights of those exchanges to all Seveso inspectors. Its overall objective is to support common approaches to Seveso inspections across Europe by maintaining dialogue between Seveso inspection programmes. It is managed by the European Commission’s Joint Research Centre in consultation with the Technical Working Group on Seveso Inspections (TWG 2). It was conceived as a workshop hosted by Member States in rotation. The Mutual Joint Visit Workshop Programme for Seveso Inspections was launched in 1999 with a workshop in the Netherlands. Following the original MJV workshop model (now called Phase 1), the Dutch agenda included various presentations on its inspection programme.

12.4 In 2005 the Phase 2 MJV workshop model was introduced, allowing host countries to focus on a special topic. After 2007 it was determined that all workshops would be Phase 2 workshops. Phase 2 workshops also introduced the MJV workshop report which is written as a summary of good practice reflecting workshop exchanges. In 2013 the MJV “short report” was added as a quick reference document. In accordance with the MJV Phase II format the MJV workshop will be organised to highlight good practices and tools for inspections for investigating and analysing accidents and resources for obtaining information on past accidents for use in enforcement and other safety related tasks. Participants should have expertise/experience related to this topic and be prepared to participate actively in the discussions. Participants will be asked to contribute some materials or information in preparation for the meeting.

12.5 The visit is organised by the competent authorities of a host country and a TAG (Technical advisory group of EU experts organized by TWG II). Usually the visit is planned to start around 09:00 at the first day and finish around 12:30 on third day. The working language of the visit is English.

12.6 There is a call for MS nominations to participate and the MJV workshop will be focused on specific considerations of a specific topic. The results of the workshop will be summarised in a JRC Seveso Inspection Series publication and as short Good Practice report. Preference for second (and even third) places will be given to countries who provide a participant willing to play a more active role in the workshop. Individuals should be willing to cover at least two work group sessions of the MJV. Rapporteurs need only be able to take good understandable notes in English – mother-tongue quality not required.

12.7 The MJV accommodates approximately 30 participants + host country participants. Participants will receive an official invitation from the European Commission with a reimbursement offer and accompanying conditions. The Commission expects to meet the travel costs (not accommodation) of one participant per member state and candidate country. Second participants have to meet their own travel expenses.
12.8 As time has gone by barriers and also solutions have become apparent. There is a need to find a host willing to help with financing the cost of meals, social events and a venue, to provide personnel to help with organisation and be rapporteurs and to write the report. In practice, people can pay for their own meals and the TAG can help with the organisation, the Chairs and rapporteurs and can help find an expert to write the report.

12.9 There was a question over whether there had been attempts to combine IED and Seveso Inspections. This was already happening in Germany (Hesse) because of a lack of resources. There were in fact many overlaps between inspections for IED and Seveso

13. IED Baseline report project (Aurélie Dulière)

13.1 The Baseline report is fairly new in European environmental law though on the other hand there have been mandatory soil investigations in member states for many years so there is a large amount of experience within IMPEL. This project aims to exchange best practices for the benefit of all members and to help to achieve a level playing field.

13.2 The expected outcome of the project is a list of existing procedures implementing the IED baseline report to be achieved by means of a questionnaire. The workshop will provide examples of good practice aimed at efficiency and representativeness of investigation procedures leading to the establishment of the Baseline Report. The workshop and questionnaire will identify the key challenges and responses to them that already exist. There will also be an identification of focus of interest for the future work of IMPEL.

13.3 The project team is led by Jean-Pierre Janssens from Belgium and includes members from Cyprus, Germany and Italy. The questionnaire was drawn up using EC Guidance 2014/C136/03 as a starting point. It contained 64 questions about the context of implementation and the different stages of a baseline report. In reply 30 questionnaires were received from 16 countries. Comparisons are being made between Member States according to the level of competent authority for issuing guidelines concerning the baseline report whether at a national level or where there might be joint responsibilities of authorities at different levels.

13.4 Six main topics appeared from the replies to the questionnaire which are to be considered at the workshop to be held shortly. These included the definitions of ‘site’, ‘installation’, ‘site limits, extension’, and ‘significant (level of) pollution.’ There were issues over identification of hazardous substances, analysis protocols and relevance. Monitoring was an important question as were the baseline reporting quality check, accreditation, assessment and approval. There was also a question about the definitive closure of activities, definition and procedure and the relationship between the Baseline Reporting Directive and soil legislation. It was suggested that work being done in the IED Implementation project would assist with some of these topics.
13.5 In the discussion which followed the presentation the point was raised that some companies were addressing the requirements with a study saying that they didn’t need a baseline report. It was a step in the process to decide whether a baseline report was needed and for instance some Member States took the local geology into account. The project was looking into the question of ‘significant contamination’ when a site was closed.

14. DTRT permitting project (Terry Shears for Rob Kramers)

14.1 This project arises from the importance of environmental permits in the regulatory cycle. Permits should be clear, univocal, unambiguous and transparent and address the environmental risks in a proper way. There should be clear expectations for permit holders and inspection authorities. It is based on the IMPEL concept of the Environmental Inspection Cycle and will result in step-by-step guidance to help produce an optimised environmental permitting process. The ultimate goal of this project is ‘permits of required quality and a level playing field with regard to permit writing…’

14.2 The project will collect and compare procedures used within Europe and clarify the needs. This information will be used to develop guidance that is flexible enough to accommodate the authorities when issuing permits. Training sessions will be organised and gaps in tools and methodologies identified so that new IMPEL projects can be initiated.

14.3 The Netherlands is leading the project and others include Iceland, Ireland, Czech Republic and Slovenia. So far they have prepared a questionnaire, performed a pilot to see whether it works, disseminated the questionnaire and analysed the feedback and organised a workshop.

15. Former IMPEL project on linking the Water Framework Directive and IPPC Directive (Christof Planitzer)

15.1 This was the first water-related IMPEL project and part of the aim was to involve water managers in IMPEL. The Directives had similar goals and there were presumed interactions and there were implementation problems with both. The objectives were to define the relationship (whether complementary or contradictory) between IPPC implementation and WFD implementation in terms of permitting and enforcement and to have an inventory of best practices thus contributing to better enforcement of both directives.

15.2 The project was divided into three phases. In Phase 1 the relationship between IPPC and Water Framework Directives was examined. Phase 2 identified views and practices and interpretations and problems, largely through the use of a questionnaire. Phase 3 was the production of guidance.
15.3 Guidance was produced for IED competent authorities and for water managers. For IED authorities it was divided into the IED regulatory cycle (Permitting/ Monitoring/ Inspection/ Permit review) and looked for information from water management that was useful for IED implementation and also what information should be given proactively to water managers. A similar approach was taken for water managers. All documents from the project are on the IMPEL website and guidance from it is also included in the IED Guidance Book.

16. Former Industry and Air Quality Project (Marinus Jordaan)

16.1 The objective of this project was to identify best practices in the application of EU industrial Air Quality Directives. The main conclusions of the project were that there is full implementation of AQ directives and that improving AQ is best done by reducing the emission of pollutants. It is possible to go beyond BAT with the voluntary involvement of industry. Not all countries use available measured data for enforcement purposes and there are large differences in enforcing AQ investments.

16.2 The five best practices identified in the project were, in order:

- Tailor-made enforcement
- Reduce emission from others sources
- Administrative penalty: production reduction after repeated non-compliance
- Prevention of non-compliance in permit application procedure
- Code of operation, with mutual agreements on reference techniques

16.3 Finally, most national legislation used for permitting and enforcement does not have a direct link to ambient AQ. The BAT for emission prevention has a large margin between minimum and maximum. A follow up project needed to define the ‘best practices’ in each country.

17. Derogations from BAT (Charlotte Sholl)

17.1 The first IMPEL derogations project was in 2014 led by the Scottish Environment Protection Agency. This project focussed on members’ understanding of article 15(4) and how Competent Authorities would approach assessment of derogation applications. There was limited practical experience and the project recommended follow up work when more practical experience had been gained. The current project is led by the Environment Agency for England with participation from Czech Republic, Finland, Germany, Lithuania and Scotland.
17.2 The project team first met in April 2016 and produced a questionnaire on derogation experiences that was circulated to all IMPEL members. There were 18 responses from competent authorities and a workshop was held in Manchester in June 2016 to discuss the findings and compare and share guidance and tools.

17.3 Most participants had assessed or were assessing derogations and there was agreement that they are challenging. The process is resource intensive and there is a need for specialist expert knowledge and guidance and tools for regulators and operators. There are difficulties with cost/benefit analysis and uncertainty in BAT conclusions. There are also concerns about multinational companies using derogation granted in one region to support cases elsewhere.

17.4 The different regulatory structures in countries can lead to different approaches within as well as between member states. Ten member states have so far granted derogations and two more have received derogation requests. Eleven time limited derogations have been approved (one for emerging techniques) and two long term (indefinite) derogations have been approved. The bases for time limitation include investment cycles greater than four years, lead time to obtain specialised plant, availability of specialised contractors, age of plant (delay until renewed) and emerging technique or technique not evaluated in BREF. So far only Spain has received an application under Article 15(5) for a temporary derogation for an emerging technique (use of an alternative fuel for an iron and steel arc furnace).

17.5 As yet only two derogation requests have been refused. It seems likely that operators only invest resource in the derogation process if they are confident they have a strong case. Advice and guidance from competent authorities ensure that operators understand the criteria and evidence needed for derogations.

17.6 The Commission has not produced guidance on derogation. About one third of member states have produced national guidance on assessing and granting derogations and about one third of competent authorities have produced their own guidance. Links to this guidance are on IMPEL basecamp.

17.7 Operators are often unclear what information they need to provide and in how much detail. The result is repeat requests for further information or the information provided is irrelevant or too detailed. Assessing officers need support from experts, particularly on hydrology, geology, economics, equipment design and alternative technologies and ability to retrofit. Where limited experience is available in house there might be an opportunity for collaboration.

17.8 Assessing costs and benefits is a very specialised subject and it is difficult to quantify and monetise benefits. Agreed damage costs are available for only a few air pollutants and no damage costs are available for releases to water: it is difficult to quantify or qualify the impact of odour or noise. About half of member states have developed a cost/benefit analysis (CBA) for derogations but some require the operator to identify the method. Some competent authorities assess derogations qualitatively not quantitatively so no CBA is required. There are differing views on what can and can’t be included in the CBA.
17.9 There are issues with BAT conclusions. Those identified include that applicability criteria need to be used more effectively and wording needs to be more precise. There is also the question of the cross pollutant effects of control techniques. The use of a technique to significantly reduce one pollutant can result in breach of an emission level associated with the best available techniques (BATAEL) for another. Also, what is ‘other than normal operating conditions’ which means a BATAEL does not apply. Footnotes sometimes make it unclear whether a BATAEL applies or not or which one applies. Sometimes it is not apparent whether it is a BATAEL or a BATAEPL (BAT associated environmental performance levels) and therefore whether a derogation is allowed.

17.10 Ongoing work includes maintaining a register of problematic BAT conclusions which can be shared with IPPCB to influence future BAT conclusions. The creation of the Technical Working Group on the refineries BREF gives an opportunity to share interpretation issues, stop multinational operators and trade associations from playing one member state off against another and achieve consistency.

17.11 Proposals for future work include the examination of ways in which the environmental impact on the aquatic environment can be quantified to produce standard damage costs or develop a method for use by the Competent Authorities for developing local costs. There could also be the development of guidance on factors that can be considered when assessing disproportionate costs due to the geographical location or the local environmental conditions of the installation concerned.

18. Results of other 2016 Industry and Air projects: Regulating Onshore Oil and Gas Operations (Charlotte Sholl)

18.1 Charlotte apologised that Jane Durling was not able to be present to give the presentation herself. The background to this project was the review of the 2014 EC Recommendation on Principles for regulating shale gas and the Technical Working Group on unconventional fossil fuels (now the Hydrocarbons TWG). There was also the review of the Mining Waste Extractive Industry BREF.

18.2 There was an IMPEL project in 2015 on Sharing best practice in regulating the exploration and production of onshore oil and gas industry, including unconventional fossil fuels and high volume hydraulic fracturing. A questionnaire was sent to IMPEL member countries and 10 member countries (plus Scotland and Northern Ireland) took part together with a representative from the Commission. There were site visits and workshops in London (June 2015) and Gdańsk (September 2015).

18.3 The findings from the 2015 project were that a number of issues were identified where sharing best practice would benefit all. There was a shared understanding of uncertainties and a recognition that discussion within IMPEL could make a significant contribution to other ongoing work. There was also enthusiasm for a further project for 2016.
18.4 The purpose of the 2016 project was to have a more coherent understanding of the Onshore Oil and Gas industry’s environmental record together with a fuller picture of best practice on key issues for regulators and a better understanding of proportionate regulation of the industry. The aim would be to have consistency in regulation across IMPEL members and more knowledge for regulators which should lead to better public trust in regulators and their decisions. There would also be useful and reliable information for policy makers.

18.5 There are 12 participating countries plus a Commission representative. The agreed topics were the structure of regulation in participating countries, the management of wastes and addressing the public’s concerns. There will be two workshops with site visits to discuss issues in more detail. The first was in Budapest in July on ‘extractive wastes’ and the second will be in Cheshire, England, on ‘addressing public concerns.’

18.6 It is proposed to have a further project in 2017 which will take a similar approach. The agreed priority topics are:

- Risk-based regulation – including monitoring and compliance
- Chemicals - pre-approved lists, disclosure
- Reinjection – for production/disposal
- Closure – procedures for closure and decommissioning of wells

19. IED Implementation (Horst Buether)

19.1 Horst said that the results of the 2016 IED implementation project would be written into a report to be drafted by Terry and John. The report would be submitted to the General Assembly for adoption and in this way the results would be shared with the wider IMPEL network.
An inspection at Galloo

(Valadares, R., IGAMAOT; Quintas, A.; IGAMAOT; Bergareche, I., Xunta de Galicia; Verhagen, B; VCMR)

On 4th October 2016, an inspection was carried out in an IED installation, located at Menen, in Belgium, near the French border. Galloo is one of Europe’s leading recycling firms of ferrous and non-ferrous metals. Galloo cannibalizes and recycles 1,400,000 tons of ferrous metals, 80,000 tons of non-ferrous metals, 20,000 tons of plastics and 150,000 tons of shredder residue per annum, and its activity is included in category 5.3 b) of annex I of Directive 2010/75/EU, of the European Parliament and of the Council, of 24 November 2010, also designated IED Directive. In the installation in Menen, around 350,000 tons of metals are treated, including scrap metal, WEEE and 18,000 end-of-life vehicles.

The Flemish Government has identified a problem in the neighbourhoods of Galloo, regarding the contamination of food chain with Polychlorinated biphenyl (PCB).

The Flemish Government passed an environmental permit on 16 October 2014 with conditions in order to ensure the prevention and control of pollution, and asked the operator for an action plan focusing on the reduction of diffuse emissions from dust particles within this installation. The main goal of the inspection was to verify the measures applied by Galloo in order to reduce dust emissions from point and diffuse sources.

During the preparation stage that took place on the 3rd October special attention was given to air emissions and the main permit conditions were presented concerning air emissions as well as the Order of the Flemish Government of 1 June 1995 concerning General and Sectoral provisions relating to Environmental Safety, especially section 4.4.7. that defines the measures to control of non-ducted dust emissions.36

The Flemish Government has carried out since 1995 a monitoring programme on 14 sites throughout the Region of Flanders. One of those sites is Menen, where the air concentration of PCB and Dioxin has been measured systematically since 2002. The main findings on this study show that for iPCB, values (sum of 7) ranged between 0.2 and 32 mg/kg DM; for dl-PCB, values were between 40 and 660 ng TEQ/kg DM. Over the last 10 years, a slight decrease of PCB-levels in these substances can be observed; nevertheless, the WT BREF does not define any limit value for PCB concentration.

According to WT BREF (draft 2015), some types of waste contaminated with PCBs are electrical transformers, capacitors, transformer oils and waste oils, and Table 5.202 shows some specific treatments for waste

36 For more information see https://navigator.emis.vito.be/mijn-navigator?wold=263
containing PCBs and/or POPs. In section 5.8.1.3. of WT BREF, the main Techniques to consider in the determination PCB are:

1) Design measures to prevent dispersion of PCBs from the storage and treatment area: dedicated storm and run-off water collection system; resin coating applied to the whole concrete floor of the storage and treatment area (since most standard concrete floors absorb PCBs);
2) Implementation of staff access rules to prevent dispersion of contamination;  
3) Monitoring of PCB emissions to air;  
4) Prevention of liquid PCB dispersion during the decontamination process  
5) Control of emissions to air:  
   a) the ambient air of the decontamination workshop is treated by activated carbon filters  
   b) the vacuum pump exhaust is connected to a high-temperature kiln (PCB) or activated carbon filters;  
6) Management of waste treatment residues.

So, the main goal of the inspection was to verify the application of the BAT as well as Section 4.4.7. Controlling non-ducted dust emissions of the Order of the Flemish Government of 1 June 1995 concerning General and Sectoral provisions relating to Environmental Safety.

During the inspection, and after a presentation of Galloo and its main activity, the Flemish inspectors requested evidence in order to verify the application of the conditions mentioned in the documents above. During the site visit it was possible to verify that the ducted emissions from the shredder are abated by an ultrafiltration system, with a set of activated carbon filters, and that all the installation has a concrete floor, although the treatment and storage areas are not resin coated. Diffuse emissions are reduced with several techniques, like water spray or water mist, and a dedicated storm and run-off water collection system that drains runoff water to a waste water treatment plant.

The operator has implemented ISO 9001 and ISO 14001 system and retains all monitoring documents of the activity in a quality management system.

The last phase of the inspection consisted of a waste collection sample carried out by the Flemish Inspectorate in cooperation with an external laboratory.

The main results of the inspection were:

- A new concerning approach to the diffuse emissions regarding in particular waste recycling plants;
- A view over other practices concerning sampling collection;
- A practical approach to the BAT applicable to this sector.

The opportunities to improvement for future MJV’s may be related to:

- 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 items on a check-list in the field);
- Stressing clearly what are the main objectives of the inspection on site, splitting it into sub-objectives or hypotheses 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 the information that would be written in the report and how it’s done in each country.

In the annex are included the main documents in regard the inspection.
Recommendations Brefs / BAT-AELs reviews based on discussions among / contributions from participants of the IMPEL project Supporting IED Implementation

Examples from competent authorities and member states show that Brefs have gaps that complicate setting reliable, practicable and enforceable ELVs.

**Balance costs and benefits in BAT-AELs**

Data supplied for reviewing Brefs also come from installations with stricter controls than BAT (e.g. because they are in an area of poor air quality) requiring the use of additional measures. This implies that some techniques may be “better than best” if the BAT are properly formulated – that is to say, taking into consideration the costs and benefits. BAT-AELs could be narrowed easing the implementation when balance of costs and benefits were more adequately addressed when determining BAT-AEL ranges.

**Relate BAT-AEL ranges to techniques**

In many cases, the BAT identified for a process is identified as an “either / or” BAT, reflecting current practices at existing installations. For example, in the Cement BAT Conclusions, BAT for control of dust emissions to air is to use either a bag-filter or electrostatic precipitator to reduce dust emissions. The BAT-AEL is given as “<10 – 20 mg/m³”, with a footnote that use of a bag-filter will achieve the lower level. Such a BAT-AEL formulation is difficult for regulators to determine, as it inevitably invokes arguments with the operator about whether an installation using a bag filter should have an ELV of 10 or “something in the range 10-20” to put them on a level playing field with plants using ESPs. In the cases where a range of techniques leads to a range of BAT-AELs, it may be preferable to say: “BAT for controlling the release of dust from cement kilns is to use a bag-filter (in which case the BAT-AEL is 10 mg/m³) or in existing installations an electrostatic precipitator (in which case the BAT-AEL is 20 mg/m³).”

**Clarify BAT-AEL ranges**

There are other examples where a single BAT is described, but the BAT-AEL is still quoted as a range, presumably to reflect the range of performances based on the range of products, the plant capacity, etc. This is also unhelpful since it doesn’t give the regulator an insight into what factors control where in the range of BAT-AEL a particular installation should appear. It could be useful where BATs are expressed as a range to provide guidance on the factors that determine where within the range an individual installation should be placed.

**Specify applicability BAT-AELs**
Many of the Brefs and BAT Conclusions apply to a wide range of possible installations, where the nature and quantity of the product can have a significant effect on the processing techniques that are possible, their performance and the economics of using different techniques. For example in the chemicals industry, the requirements for making pharmaceuticals may be much more demanding than making fertilizers. In the Lime industry, the performance characteristics of making dolomitic lime for refractory bricks are very different from the manufacture of lime used in the food industry. It is essential when considering individual BATs to ensure that sufficient thought is given to define where the BATs are applicable and, more importantly, to define where they are not applicable – in the latter case, thought needs to be given as to whether an alternative BAT should be proposed.
Participants

Participants at the IMPEL workshop on IED Implementation, Ghent, Belgium, 5-6 October, 2016

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<tr>
<td>María Jesús Mallada Viana</td>
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<tr>
<td>Deniss Pavlovs</td>
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<tr>
<td>Dagmar Dräger</td>
<td></td>
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<tr>
<td>Sandra Pezelj Meštrić</td>
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</tbody>
</table>
Mutual Joint inspections

So far three joint inspections have been carried out under the IED Implementation project. The first one in 2015 in Bremen was more like a site visit but the second one at a refinery in Rotterdam and the third one in a metal scrap yard in Ghent started to look like “real inspections”. A small inspection team consisting of one inspector from the host country and two or three inspectors from different European countries prepared and executed these inspections on site.

The aim of these joint inspections is to identify good practices and points for improvement in performing an effective and efficient IED inspection. The complementary aim is to identify specific compliance problems and solutions. It is organised back to back with the IED project meetings and workshops and lessons learned are presented in the meeting to all participants. The lessons learned are incorporated into a procedure on how to organise this type of joint inspection in such a way that it offers the maximum learning experience with as little as possible extra effort from the host and visiting inspectors. The most important lessons learned during these inspections will be put in a report so that all EU inspectors can benefit from this project.

Overview joint inspections

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Country</th>
<th>Participants (host, visiting inspectors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Bremen</td>
<td>Germany</td>
<td>All IED project participants</td>
</tr>
<tr>
<td>2016</td>
<td>Rotterdam</td>
<td>The Netherlands</td>
<td>The Netherlands, Spain, Estonia</td>
</tr>
<tr>
<td>2016</td>
<td>Ghent</td>
<td>Belgium</td>
<td>Belgium, The Netherlands, Portugal, Spain</td>
</tr>
</tbody>
</table>

The joint inspection in The Netherlands

![Image of inspectors in The Netherlands](image-url)
The joint inspection in Belgium
Annex VII. Report of sub group on Self-Monitoring

IMPEL Project on Supporting IED Implementation

Subgroup “Self-Monitoring”

FINAL REPORT
Preface

This document gives an overview of the topic of self-monitoring and how Inspectorates may deal with its results. It looks at both the current behaviour and situation in different Member States, and the proposal for a common approach that can be easily afforded by each Member State. Best practices are pointed out as well. The contents of the document should be included in the Guidance Book developed within the IED Implementation Project.

The topic discussed in the “Self-monitoring” subgroup was the focus of the IMPEL project “Operator self-monitoring (February 1999).

Core group

<table>
<thead>
<tr>
<th>Name</th>
<th>Member State</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Gross</td>
<td>Austria</td>
<td>Regional administration of the Land Salzburg</td>
</tr>
<tr>
<td>Olivier Dekyvere</td>
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<td>Police and Control Department Public Service of Wallonia</td>
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<tr>
<td>Martine Blondeel</td>
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<td>Environmental Inspectorate Division of the Environment Nature and Energy Department of the Flemish Government</td>
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<tr>
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<td>Czech Republic</td>
<td>Czech Environmental Inspectorate and Regional Inspectorate Brno</td>
</tr>
<tr>
<td>Silva Prihodko</td>
<td>Estonia</td>
<td>Estonian Environmental Inspectorate</td>
</tr>
<tr>
<td>Jaakko Vesivalo</td>
<td>Finland</td>
<td>Environmental Inspectorate</td>
</tr>
<tr>
<td>Hartmut Teutsch</td>
<td>Germany</td>
<td>Inspectorate Land Bremen</td>
</tr>
<tr>
<td>Ian Marnane</td>
<td>Ireland</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>Fabio Colonna</td>
<td>Italy</td>
<td>Lombardy Regional Environmental Protection Agency</td>
</tr>
<tr>
<td>Romano Ruggeri</td>
<td>Italy</td>
<td>Sardinian Regional Environmental Protection Agency (ARPAS)</td>
</tr>
<tr>
<td>Nazareno Santilli</td>
<td>Italy</td>
<td>ISPRA</td>
</tr>
<tr>
<td>Joanna Stepień</td>
<td>Poland</td>
<td>Voivodship Inspectorate for Environmental Protection in Lodz</td>
</tr>
<tr>
<td>Roberto Valadares – Francisco Negrao</td>
<td>Portugal</td>
<td>IGAMAOT Portugal</td>
</tr>
<tr>
<td>Florin Homorean</td>
<td>Romania</td>
<td>National Environmental Guard</td>
</tr>
<tr>
<td>Vladimir Kaiser</td>
<td>Slovenia</td>
<td>Inspectorate of the Republic of Slovenia for Agriculture and the Environment</td>
</tr>
<tr>
<td>Maria Milagros Pereira Carneiro</td>
<td>Spain</td>
<td>Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia</td>
</tr>
<tr>
<td>Maria Jesus Mallada</td>
<td>Spain</td>
<td>Environmental Quality and Water Management, Regional Government of La Rioja</td>
</tr>
<tr>
<td>Iñaki Bergareche</td>
<td>Spain</td>
<td>Ministry of Environment and Spatial Planning of the Regional</td>
</tr>
<tr>
<td>Name</td>
<td>Member State</td>
<td>Organization</td>
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<td></td>
<td></td>
<td>Government of Galicia</td>
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</tbody>
</table>
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1. LEGISLATIVE REFERENCES

DIRECTIVE 2010/75/EU (IED Directive)

The IED Directive contains provisions concerning the monitoring of emissions and associated parameters. Self-monitoring (including monitoring undertaken on behalf of operators by contractors) is based on repeated measurements or observations, at an appropriate frequency in accordance with documented and agreed procedures, to obtain the intended information on emissions. This information may range from simple visual observations (e.g., visible emissions to air from doors, flanges or valves, or the alteration of the colour of a discharge) to precise numerical data (e.g., concentration or load of a pollutant).

The main articles of the IED Directive dealing with self-monitoring requirements are the following:

Recital 26

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. Member States should ensure that the operator and the competent authority each take necessary measures in the event of non-compliance with this Directive and provide for a system of environmental inspections. Member States should ensure that sufficient staff are available with the skills and qualifications needed to carry out those inspections effectively.

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 [...]:

(b) appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;

(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;

(d) 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 conditions; and

   (ii) where Article 15(3)(b) is applied, a summary of the results of emission monitoring which allows a comparison with 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.
2. The frequency of the periodic monitoring referred to in Article 14(1)(e) shall be determined by the competent authority in a permit for each individual installation or in general binding rules. Without prejudice to the first subparagraph, periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

Article 24 Access to information and public participation in the permit procedure

3. The competent authority shall also make available to the public, including via the Internet at least in relation to point (a): b) the results of emission monitoring as required under the permit conditions and held by the competent authority.

4. Paragraphs 1, 2 and 3 of this Article shall apply subject to the restrictions laid down in Article 4(1) and (2) of Directive 2003/4/EC.

RECOMMENDATION 2001/331/EC providing for minimum criteria for environmental inspections in the Member States

The articles of the Recommendation 2001/331/EC dealing with self-monitoring requirements are the following:

Scope and definitions:

2. For the purposes of this recommendation, ‘environmental inspection’ is an activity which entails, as appropriate […]

(c) the carrying out of activities for the above purposes including […]:

consideration of environmental audit reports and statements,

consideration and verification of any self-monitoring carried out by or on behalf of operators of controlled installations

Plans for environmental inspections:

4. Plans for environmental inspections should […]:

(b) take into account relevant available information in relation to specific sites or types of controlled installations, such as reports by operators of controlled installations made to the authorities, self-monitoring data, environmental audit information and environmental statements.
2. SELF MONITORING PRINCIPLES

The BREF “General Principles of Monitoring” (July 2003) recommends permit writers to take into account the following seven considerations when establishing optimised permit monitoring conditions:

<table>
<thead>
<tr>
<th>BOX 1: COMPLIANCE MONITORING: KEY STAGES IN BEST PRACTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. REASONS FOR MONITORING</td>
</tr>
<tr>
<td>Why Monitor?</td>
</tr>
<tr>
<td>2. RESPONSIBILITY FOR MONITORING</td>
</tr>
<tr>
<td>Who Monitors?</td>
</tr>
<tr>
<td>3. MONITORING ASPECTS OF LIMIT SETTING</td>
</tr>
<tr>
<td>How to set limits which can be monitored?</td>
</tr>
<tr>
<td>4. PRINCIPALS OF PRACTICAL MONITORING</td>
</tr>
<tr>
<td>How best to monitor?</td>
</tr>
<tr>
<td>5. MONITORING ASSESSMENT</td>
</tr>
<tr>
<td>How best to judge compliance?</td>
</tr>
<tr>
<td>6. ENFORCEMENT ACTIONS</td>
</tr>
<tr>
<td>How best to respond to compliance findings?</td>
</tr>
<tr>
<td>7. REPORTING OF MONITORING</td>
</tr>
<tr>
<td>How best to summarise and communicate?</td>
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</table>

Achievement of best practice in compliance monitoring requires careful consideration of 7 key stages. These are shown in sequence together with the question(s) to be answered at each stage.

The first two questions stated in the BREF help to understand the importance of monitoring and the key role of the operator:

1. "Why" monitor? There are two main reasons why monitoring is included in IPPC requirements: (1) for compliance assessment, and (2) for the environmental reporting of industrial emissions. However, monitoring data can often be used for many other reasons and objectives and indeed it is often more cost effective when monitoring data obtained for one purpose can serve other purposes. In all cases, it is important that the objectives for undertaking the monitoring are clear for all the parties involved.

2. "Who" carries out the monitoring? The responsibility for monitoring is generally divided between the competent authorities and the operators, although competent authorities usually rely to a large extent on "self-monitoring" by the operator, and/or third party contractors. It is highly important that monitoring responsibilities are clearly assigned to all relevant parties (operators, authorities, third party contractors) so that they are all aware of how the work is divided and what their own duties and responsibilities are. It is also essential that all parties have appropriate quality requirements in place.

The BREF on “Monitoring of emissions from IED-installations” (Final Draft 2013) covers topics which are related to the monitoring of emissions in connection with Article 14(1)(c) ‘emission monitoring requirements’ of the IED.

The monitoring of emissions represents an important and critical issue for the assessment of the environmental performance of industrial installations and for verification of the emission levels associated with the implementation of Best Available Techniques (BAT-AELs) under the IED.
All BAT reference documents (BREFs) and, in particular, BAT conclusions include references to monitoring in association with BAT-AELs. Additionally, the EIPPCB has observed that monitoring is increasingly being discussed during the elaboration process of each of the BREFs.

One objective of monitoring is to provide information on achieved emission levels associated with the application of BAT and to allow comparison of monitoring these results with defined (established) BAT-associated emission levels (BAT-AELs) for a specific industrial sector.

Monitoring of emissions for assessing the performance of a BAT and associated emission levels (BAT-AELs) can also be based (or include) on the control of surrogate parameters

Operators and competent authorities should have a clear understanding of the objectives of monitoring before monitoring begins. The objectives and the monitoring system should also be clear for any third party involved, including accredited testing laboratories, any other external contractors and other possible users of the monitoring measurement data. The objectives should be clearly stated and be taken into account in the monitoring/measuring planning and in the reporting of the monitoring results.

Usually, the number of parameters to be monitored exceeds the ones indicated in a permit or in the BAT conclusions for a given industrial sector. All parameters necessary to describe emissions and the related circumstances such as normal operating conditions (NOC) should be mentioned in the monitoring plan or sampling programme and should be part of the monitoring report.

Monitoring is a valuable source of information, which can also be used, beside assessing whether industrial installations are operating according to BAT, to:

- monitor emissions for assessing compliance with permit requirements;
- provide help to analyse the causes of certain types of emission behaviour (e.g. to detect reasons for variations in emissions under normal operating conditions (NOC) or other than normal operating conditions), provide feedback on the performance of abatement systems by continuous monitoring systems;
- determine the relative contribution of different sources to the overall emissions;
- provide measurements for safety checks;
- report emissions for specific inventories (e.g. local, national and international, such as E-PRTR);
- provide data for assessing environmental impacts (e.g. for input to models, pollutant load maps, assessment of complaints);
- assist in finding the optimal balance between process yield, energy efficiency and resource input and associated emission levels.
3. DEFINITIONS

In the BREF on “Monitoring of emissions from IED-installation”, Monitoring is defined as a systematic surveillance of the variations of a certain chemical or physical characteristic of an emission, discharge, consumption, etc. at the source.

The IED include self-monitoring in the definition of environmental inspection:

(22) ‘environmental inspection’ means all actions, including site visits, monitoring of emissions and checks of internal reports and follow-up documents, verification of self-monitoring, checking of the techniques used and adequacy of the environment management of the installation, undertaken by or on behalf of the competent authority to check and promote compliance of installations with their permit conditions and, where necessary, to monitor their environmental impact.

Consequently, in the present document, the Self-monitoring report is considered as the document produced by the operator containing information foreseen in Art. 14 and Art. 3 clause 22.

The IED uses the term ”self-monitoring plan” not literally, but in the sense of Art. 12 subparagraph 1 (j):

“Member States shall take the necessary measures to ensure that an application for a permit includes a description of the following: [...] (j) measures planned to monitor emissions into the environment”.

An interesting definition of Self-monitoring plan is given in the “Technical guide on environmental self-monitoring in countries of Eastern Europe, Caucasus, and Central Asia (OECD)”: “Environmental self-monitoring”: based on international practice, “environmental self-monitoring” can be defined as the system of organisational and technical measures put in place and financed by those who are regulated subject to environmental permitting or general binding rules, in order to ensure their compliance with regulatory requirements, including:

- Monitoring of: (i) operations; (ii) emissions and other impacts regulated by permits or general binding rules; (iii) ambient conditions in the vicinity of the facility concerned with a scope that would optimally balance environmental effectiveness with costs of monitoring;
- Record keeping of data obtained through monitoring of any unforeseen circumstances, non-compliance episodes, corrective measures, and complaints from the general public;
- Providing reports to the competent authorities – in mandated cases – with a specified regularity, and in a duly aggregate form;
- Other internal measures, such as providing basic environmental training and conducting self-inspection.

The operator will regularly compare self-monitoring data with the compliance objectives and environmental objectives and targets set by the industry to check whether they are being met. This self-diagnostic element will be complemented by self-correction actions.

In the IMPERL project “Operator Self-Monitoring” it is 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*.”
4. SELF MONITORING PLAN: WHAT IS IN THE PERMIT

4.1 Actual situation in MS

(Describe what is included in the permit about self-monitoring under responsibility of the operator. Indicate whether the self-monitoring plan is included in the permit. The question has two meanings:

(a) Conditions for the self-monitoring itself (pollutants, frequencies, standards, etc.);

(b) Conditions for reporting (what / level of detail, how often, using which format / template, etc.);

“Permit” means both the letter / level of detail, how often, using which format / template, etc.;

If a self-monitoring plan is used, is it: (a) developed by the operator and approved by the competent authority / inspector or (b) specified by the competent authority?)

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>AUSTRIA</td>
<td>There is no self-monitoring plan mentioned in the Austrian material laws. If general binding rules are not applicable or do not contain relevant provisions, then permits (in general, i.e. not only those in accordance with IED) should include the key data for self-monitoring (e.g. pollutants/parameters, measurement and data processing standards, continuous or frequency of periodic measurements, sampling points, averaging periods, number of repetitions, units and reference conditions for assessment values).</td>
</tr>
<tr>
<td>BELGIUM</td>
<td>In the Flemish region: self-monitoring requirements are set up at sectorial (all companies belonging to that sector), general (all companies) and specific (tailor made to the company, they are in the permit). Requirements are about emissions and not about consumptions. Frequencies, parameters and methods are included. The operator does not send a report, just on request. Results should be available in the company and every time the inspection authority requires them. In the Walloon Region: self-monitoring requirements are fixed in the permit (frequencies and parameters). In IPPC sectorial conditions, it is requested to the operator to present a plan including info about methods. Operator draft a plan approved by the inspectorate.</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Permits contain: - the monitoring activities to be performed by the operator:  ▪ Emissions measurement includes: media (air, water, noise, waste), frequencies (how often), parameters (pollutants, emission limit value (concentration, mass emission flow)), type (continual/single measurement), reference condition (for example: during normal operation), sampling points  ▪ calibration frequency for Continuous Monitoring System,  ▪ consumption of water and energy  - obligation to draw up annually a self-monitoring report (includes information about compliance with all permit conditions and includes chapter compliance with set emissions limits). Self – monitoring obligations in the permit are specified by the competent authority. These requirements are established during the permitting phase taking into account the provisions of BREFs and legal requirements. Template for self-monitoring report is stated in national legislation.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>A permit contains self-monitoring plan, data of monitoring practice, frequency and scope. It contains</td>
</tr>
</tbody>
</table>
measurements of emissions (air, water), pollution monitoring of surface and groundwater, regular monitoring of soil pollution, and volume of generating and management of waste. Permit also contains a control plan of pollution reduction equipment and requirements for laboratories and measuring equipment (the measurements should be carried out by accredited laboratory). Frequency of summary reports – annually.

<table>
<thead>
<tr>
<th>FINLAND</th>
<th>Conditions for monitoring and reporting (emissions, not consumptions). Parameters to be checked are defined. Big plants (IED): prepare a self-monitoring plan approved by inspection authority.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERMANY</td>
<td>A self-monitoring plan exists in general binding rules for large combustion plants and waste incinerations. Self-monitoring plans for other installations are written in the permit.</td>
</tr>
</tbody>
</table>
| IRELAND | The permits issued in Ireland typically include the following details for self-monitoring:
- For each emission point the permit specifies the pollutant to be measured, the frequency of measurement and the ELV;
- The permit also, in general terms, specifies the method to be used as a hierarchy of methods, e.g. CEN methods must be used where available;
- Reference conditions for reporting of the data, e.g. for air emissions the reference temperature, pressure, oxygen and moisture content (where required);
- How compliance with the ELV should be interpreted, e.g. all values must meet the ELV, or 95 % of measured values must meet the ELV.
- The permit also allows for the methods and frequency of monitoring to be changed with the agreement of the EPA.

It is not specified in the permit, but all operators must use ISO17025 accredited laboratories for completion of air emissions self-monitoring. There are limited circumstances where an operator can measure air emissions themselves but they must have an equivalent quality system, procedures, etc... but don’t actually have to be accredited to ISO 17025 (note that only 3 operators choose to carry out the measurements themselves).

In terms of reporting of data, the permit specifies the following:
- In all permits the operator is required to report all ELV breaches immediately via the EPA electronic reporting tool (web-based).

Some permits require periodic submission of monitoring reports (typically monthly or quarterly), but most require only summary data to be submitted annually. A template is available for annual reporting; however, this is currently under review to ensure that the data meets the IED requirements. |
| ITALY | Permits contain a detailed Self-Monitoring Plan that includes the monitoring activities to be performed by the operator. The self-monitoring plan contains measurements of the environmental components such as air emissions, water discharge, noise, waste (input and produced) as well as consumption of raw materials, water, and energy and performance indicators. It sets parameters, frequencies and analytical methods. Furthermore, it includes information about the plant management as maintenance actions, setting and calibration of the analytical devices (Continuous Monitoring System), tanks seal control, validation data procedures etc. The Self-Monitoring Plan is usually drawn up following a guideline and template published by the national environmental agency (ISPRA, ex APAT) “Minimum content of the Self-Monitoring Plan”. |
| POLAND | The operator of the installation is obliged to conduct monitoring/measurements in reference with permit (contained scope of monitoring) and regulations. The permit shall lay down parameters about air emissions of gases and particulates, volume of generated waste, noise emission, and water and sewage management. In some cases, the frequency and the manner in which the measurements carried out shall be recorded and |
submitted to competent authority are also comprised in permit or permit indicates obligations to comply with referred regulations.

The reference methods for the performance of the measurements and templates for results of measurements are laid down in regulations.

Operator of installation has to provide other required data (specified in templates of reports) for example type and amount of used energy, water, materials and fuels in report (templates in regulations).

The emission measurements should be carried out by an accredited laboratory – liability indicated in the Act of Environmental Protection.

| PORTUGAL | The permit contains a detailed Self-Monitoring Plan with the definition of parameters, frequency, threshold values, and analytical methods, based on national legislation, BREFs and historical data (reported both in PRTR and annual environmental reports, under the environmental permit). Azores: The permit contains the description of monitoring activities to be performed by the operator, for each of environmental components, such as air emissions, water discharge, noise, waste, as well as consumption of raw materials, water, energy and performance indicators. For each monitoring activity, it sets, when applicable, parameters, frequencies, and analytical methods. There is not a unique “Self-Monitoring Plan” which includes all the monitoring activities to be performed by the operator. |
| ROMANIA | There is a chapter in the permit regarding self-monitoring requirements that set up the parameters, the frequencies and the methodologies for air emissions, water emissions, noise, soil quality, groundwater, waste production and management. These requirements are established during permitting phase taking in account the provisions of sectorial BREFs and BREF on monitoring. Other particular conditions, such as state of environment and location of concerned installation, are also considered. |
| SLOVENIA | The permit set up the parameters about emissions in air, water, soil, etc., frequencies for sampling but the methodologies for monitoring these emissions are not in the permit. |
| SPAIN | The self-monitoring plan is included in the permit; emissions are included. The permit set up obligations to submit online database the emissions of air emission are set as well as the PRTR report. Frequencies parameters and methods are included in the plan. In Galicia, the report on self-monitoring is submitted biannually (summary data), although regarding some media (typically air, waste water and groundwater) may require a periodic submission of monitoring reports (typically monthly or quarterly). |

4.2 Proposal for a common approach

The implementation of IED self-monitoring requirements differs largely across the EU member countries. Even so a common approach has been identified after group discussion. A self-monitoring plan is developed and often included in the permit. Mostly the plan includes information on parameters, frequencies of monitoring the emissions to air, water, soil, etc. and in some cases the methodologies for measuring (determination) of the emissions. In a few countries, the requirements on monitoring of the consumptions are included in the self-monitoring plan.

Based on these findings a common approach could be draw up. This approach is referring to the content of the plan itself but also to how competent authorities shall make use of the self-monitoring data reported by operators.
**Content of self-monitoring plan**

The self-monitoring plan should contain at least the following information:

- Data on emission monitoring: concentration and mass flow for each pollutant/polluting substances released into the environment (Air, Water, Soil, Groundwater, Odour, Noise, etc.)
- Description of emission points (for each environmental compartment)
- The frequency for emission monitoring (monthly, quarterly, annually, etc.)
- Methods for emission monitoring (EU/national standards)
- Data on operation performance (waste production; energy, fuel and water consumptions) – annually
- Templates for reporting of data on emission monitoring and data on operation performance
- The frequency for reporting of self-monitoring data

There should be a direct link with the BREF on monitoring as well as with suitable sectorial BREF.

**How to use the self-monitoring data?**

The self-monitoring data are used mainly for checking the compliance with permit conditions and follow up enforcement actions. But other possible actions were identified:

- Cross check with other information: check if changes in the site (known from outside sources) are consistent
- Performance assessment (comparing with previous year’s performance; trends analysis: increase/decrease of self-monitored data; comparing with previous year’s performance; comparing performance with similar plants, etc.)
- Measurements assessment (check qualification of the third certified lab - methods used by the lab are checked; audit in the laboratory). In case of CMS (air emission) check if calibration etc. are performed by certified lab and if the operator fulfills the requirements of certified lab, etc.)
- Determine the parameters that should be measured because of the industrial process (input raw materials, product): check if permit covers all aspects (in terms of parameters, frequencies etc.) and ask the permit writer to reconsider the permit according to the findings
- Increasing the frequency for self-monitoring (if the measured emissions overcome 75% of ELVs)
- Check of performance of industrial sectors.

To make the best use of the self-monitoring data the competent authority shall check every single report after its submission by the operator. If this is not possible, for example because of the lack of personnel, then the self-monitoring reports should be taken into consideration:

- During the preparation of a site visit
- In case of complaints, incidents, accidents, non-compliance occurrences
- In case of sectorial / thematic campaigns
- In case of annual compliance assessment for large / important installations.
4.3 Desired tools/template

- Templates for self-monitoring plan
- Databases for managing the self-monitoring data submitted by operators that should “signal” the exceedance of ELVs, the failure to meet reporting deadlines; allow extract trends; etc.
- The Italian Environmental Agencies network drew up the document “The minimum content of the self-Monitoring Plan”, that is used by operators to build the Self-Monitoring Plan to be submitted to the Competent Authority.

Link to the document:
- The content of the document is reported in Annex II.
5. CONTENTS OF SELF MONITORING REPORT

5.1 Actual situation in MS

(Whether the permit sets obligations on reporting of the self-monitoring activities, indicate which is the content of the report and the frequency to be submitted. Does a template exist?)

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>AUSTRIA</td>
<td>According to the literal transposition of the IED into national material laws. There is no template. Only in the case of steam vessels (all installations with power ratings from 2 or 10 MW on, depending on fuel type) emission declarations must be reported into a federal database (EDM) via user interface.</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>A list of permits, A list of controls, the results of controls</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>The operator has to submit to the competent authority a yearly self – monitoring report which includes information about compliance with all permit conditions and includes chapter compliance with set emissions limits. Template for self-monitoring report is stated in national legislation. Reports from periodical measurements of the emission levels from measurement carried out on installation during the year certified laboratory can be in annex of the self-monitoring report.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>Obligation of the operator is to save all emissions monitoring documents containing the information of the monitoring results, which enables the competent authority to verify compliance with the permit conditions. On the basis of self-monitoring results/data operators make an annual report (summary). Contents of the self-monitoring annual report’s results are detailed in the report template (databases or paper formats). The operator has to submit the report to the permit issuing authority annually.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>Every report contains the raw data and a summary. It comes automatically, not on demand. There is no template. Normally, the reporting frequency is every 3 years.</td>
</tr>
<tr>
<td>IRELAND</td>
<td>All operators have to submit summary data on an annual basis and a template report is provided for this (see <a href="http://www.epa.ie/pubs/advice/aerprtr/aerguid/#.VvqMx2z2bWM">http://www.epa.ie/pubs/advice/aerprtr/aerguid/#.VvqMx2z2bWM</a>). This template is currently under review. Some operators are required to submit monitoring reports more frequently, but no specific template is provided for these reports. Guidance published by the EPA for air emissions monitoring indicates the required content of a report, hence the quality of air emissions monitoring reports is generally good. No similar guidance exists for water emissions monitoring and the content of these reports is not as good.</td>
</tr>
<tr>
<td>ITALY (Sardinia)</td>
<td>The operator has to submit to the competent authority a yearly report including the results of all the monitoring activities foreseen in the Self-Monitoring Plan (included in the permit) and a report with a general overview of compliance to the permit conditions. Analytical bulletin has to be included in the report too.</td>
</tr>
<tr>
<td>POLAND</td>
<td>Contents of self-monitoring report result from the permit and are detailed in templates of reports (paper formats or databases). Templates of reports are contained in regulations or operator has an access to database to provide data. Templates require indication of a lot of detailed information for example on data of an operator, an installation, a permit, a location of sampling points, measurement results (methods, type of samples), contractor of measurement (certificate), as far as periodical measurement results on noise emissions: also, acceptable noise levels, a description and characteristic of source of noise, areas surrounding an installation, a situation and altimetric map. Self-monitoring report (operator) doesn’t include analysis of the permit compliance and no-compliance,</td>
</tr>
</tbody>
</table>
then inspector makes analysis of the operator’s report, establishes correctness and violations and generated report (pdf format) from ISK (Information Control System) database.

PORTUGAL
Under the environmental permit operators must submit an annual environmental report, in accordance with the dispositions of the permit. The self-monitoring plan is divided by environmental components (air, water, waste, noise and energy).
Azores:
The operator annually submits an Annual Environmental Report (RAA) which contains all the information about the self-monitoring activities requested by the permit (air emissions, water discharge, noise, waste, raw materials consumptions, etc.). If any monitoring activity was carried out by an external contractor the report or the analytical bulletins are attached to the RAA.
There is a template to submit the RAA.
Some self-monitoring reports (e.g. air emission and water discharge) are submitted independently throughout the year and the results are summarised in the RAA.

ROMANIA
The self-monitoring report is designed in accordance with self-monitoring prescription in the permit. In some cases (complex installations), the self-monitoring report is an annex of the permit. In general, it consists of emissions monitoring results and waste management data.

SPAIN
The operator must submit an annual environmental report in accordance with the permit and the report is also according to Spanish sectorial environmental laws on air, waste, packaging, water.
The environmental report can be based on paper but also in electronic format, such as excel files templates. Some regions have developed applications to store the data in digital format, others give the possibility to submit the reports via the tweb.
Reports are stored by the Regional Environmental Authority
All operators send via web application to the regional competent authority the environmental data according to the PTRT register.
Data about waste and transboundary waste are usually also sent in electronic format to the competent authority.
Air emissions data can also be sent in electronic format in some regions.
In Galicia, the report on self-monitoring is submitted biannually.

5.2 Proposal for a common approach
The self-monitoring report content is very different between the EU regions as is its required frequency by competent authorities. The summary report is usually based on the self-monitoring plan and/or permit conditions.

The content of the report is often included in the permit, and in some cases there is also a template to submit the reports. The monitoring report should include information about compliance with all permit conditions. Nevertheless, emissions monitoring results and waste management data are also necessary to comply with PRTR register.
It should be convenient to collect monitoring report templates from the different countries.
Based on these findings a common approach could be drawn up. This approach is referring to the content of the summary report but also to how to use the self-monitoring report by the competent authorities.
**Content of summary report**

The reporting of monitoring results involves summarising (executive summary) and presenting monitoring results (raw data), related information and compliance findings in an effective way.

- Reporting frequency
- Executive summary, including information about compliance with permit conditions
- Raw data.

**How to use the summary report**

Self-monitoring report is useful to competent authorities for:

- Planning and programming annual inspections
- Checking the compliance with permit conditions, before going to a site for doing an environmental inspection
- Verify data sent by operators to PRTR register.

**5.3 Desired tools/template**

- Minimum content and frequency for the self-monitoring report
- Self-monitoring report templates
- Identify necessary data to comply with PRTR register

A template for the reporting of the self-monitoring results has been produced by:


ARPA Veneto (IT):

[http://www.arpa.veneto.it/servizi-ambientali/ippc/file-e-allegati/report_format%20generale_rev0.xls](http://www.arpa.veneto.it/servizi-ambientali/ippc/file-e-allegati/report_format%20generale_rev0.xls)


Furthermore, a template for the Report on the compliance to the integrated permit conditions is stated in Czech Republic national legislation; its content is reported in Annex IV.
6. RECORDING OF DATA AND DOCUMENTS

6.1 Actual situation in MS

(Describe here where the self-monitoring reports submitted by the operator are collected and stored. Reports can include environmental data (emissions, consumptions, as well as technical documents (noise reports etc.). Describe if reports are submitted in paper or digital version and if a database exists to store them).

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>The operators upload their reports into the national DB named “EDM” (electronic data management for the environment).</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>Just on paper</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Operator sends the electronic version (pdf or doc file) of the annual self-monitoring report to the Regional Authority (permitting authority). Regional authority uploads it to the publicly available information system IPPC (web page).</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>Operator’s obligation is to save/store data of monitoring. Data of summary reports are saved in national environmental monitoring database.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>Every report is sent to the authority on paper. They are stored in paper archive.</td>
</tr>
<tr>
<td>IRELAND</td>
<td>No paper reports are received by the EPA, all reports are received electronically. The annual environmental report (summary data) and any more frequent reporting of self-monitoring data are published on the EPA website and are freely available, including air, water, groundwater, noise, etc... The operators used a web tool to submit data and the reports are stored in a database.</td>
</tr>
<tr>
<td>ITALY (Sardinia)</td>
<td>Operators annually submit a self-monitoring report usually in a digital form. Reports are stored by the Environmental Agency in an internal server but no environmental database exists to collect the environmental data in order to elaborate them. In addition, the operator has to send to the competent authority the environmental data according to the PTRT register.</td>
</tr>
<tr>
<td>POLAND</td>
<td>Annual self-monitoring reports or reports from periodical measurements of the emission levels (air, waste water and noise) from installation are submitted to the Inspectorate in a paper version (except PRTR: paper format plus providing data to register – obligation of operator). Inspector summarises the operator’s report, establishes correctness and violations and generated report (pdf format) from ISK (Information Control System) database. Only Inspectorate has access to this database. [ISK, based on experience of Norwegian from Climate and Pollution Agency, was invented to create uniform, repeatable and identifiable principles of carrying out inspections and the database also contains necessary information about inspected plants. This system contains five main tabs: registers of plants, inspections’ plans, inspections, follow-up and system of documentation – guidance, patterns of letters, reports.] Moreover, the operator of an installation is bound to submit an annual report on waste management and a report containing information and data on the extent of the use of the environment to competent Marshall’s Office. The Inspectorate has access to the register of Marshall’s Office concerning the second, above report. By contrast the annual report on waste management is verified by the inspector during site-inspection. Inspectorate doesn’t keep a separate register concerning for instance information/results of measurements only IPPC installations.</td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>Operators submit data on an annual basis in pdf format (annual environmental report). Furthermore,</td>
</tr>
</tbody>
</table>
there is also environmental data collection under the EPRTR obligations, that is stored at the national PRTR database Azores:
The annual report is filled in and submitted online, in a web form. The digital reports are stored by the permitting authority (pdf file format). There is not a database to store the results.

| ROMANIA | Annual reports on self-monitoring are sent in both electronically and hard paper versions. The paper versions are stored in installation folders that are kept safely. Some information (emissions monitoring results, waste management data, etc.) is submitted directly in databases that are managed by the National Environmental Protection Agency. |
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| SPAIN | Annual self-monitoring reports are submitted to the permitting authority both in electronic (mostly pdf) and in paper versions. Electronic versions are stored in folders of servers whose access is open to environmental inspectors. Reports of periodical measurements of the emission levels (air, waste water, groundwater, soil and noise) are also submitted to the permitting authority both in electronic and paper versions. Electronic versions are kept in folders accessible to environmental inspectors. In Galicia 3 environmental online databases exist (REGADE CAPCA, REGADE PRTR and REGADE COVs) for the reporting and recording of air emissions, PRTR reporting obligations and VOC emissions respectively. All IPPC/IED operators (and other operators whose installations are included in the list of activities likely to pollute the atmosphere regulated by a National Law) fill out the data of periodic air emission monitoring on the database REGADE CAPCA. Data are validated by the Environmental Laboratory of Galicia). |

6.2 Proposal for a common approach

The tools used for the recording of data and documents differ substantially across the Member States. In some Member States, only paper versions are submitted by the operators. In others, both paper and electronic (mostly pdf) versions are used. In one case, paper versions are not received by the competent authority. Databases for recording the monitoring data are used in some Member States but only a few of them have web tools available which allow operators to submit the data. Additionally, as shown in Chapter 11, not in all Member States are the results of emission monitoring made available to the public as provided in Article 24.3(b) of the IED, or at least not in an active way and only on written official request from citizens.

It is not easy to propose a common approach in this field since different organisations may have different capacities to check and to analyse the data and documents, and have different tools for recording them, but a common approach can be proposed:

- Although in some Member States the submission of paper copies, both of data and documents, may be a legal request for administrative procedures, the use of electronic formats is recommended over paper copies.
- The use of web tools is recommended. The tools (basically an on-line database or better a GIS) should have the following characteristics:
  - They should allow the submission of raw data by operators and/or by the external accredited laboratories contracted by them using on-line templates
Based on the raw data stored in them, they should allow operators to automatically elaborate, and submit the self-monitoring report.

They should include data validation procedures by the competent authorities.

They should be accessible to permit officers and environmental inspectors.

They should include controls to check compliance with the following items:
- Positioning of the sources (including graphic information, which means that a GIS would be required) as included in the permit
- Frequencies, sampling and measurement methods set in the permit or in the general binding rules
- Deadlines for the submission of the monitoring reports set in the permit
- Accreditation of laboratories for each of the sampling, measurement and analytical methods for all the parameters to be monitored set in the permit
- ELV exceedances
- Other aspects to be controlled in relation to monitoring such as relevant modifications of consumption of raw materials, water, power, reagents or performance and output indicators.

They should include tools for the analysis of the results and the elaboration of the reports by permit writers and/or environmental inspectors.

As written in Chapter 11, the active publication of the results of emission monitoring (or the entire self-monitoring) via internet is recommended. The web tools mentioned in the previous point should therefore include the tool to elaborate and publish the corresponding report.

### 6.3 Desired tools

- Electronic data management systems (for instance the EDM of Austria and the ISK of Poland)
- Spreadsheets, databases and GIS used by permit officers and environmental inspectors to record the raw data and the documents

In Galicia, an Environmental DB for air emission data has been set; in the answers to the questionnaire included in Annex V, details about REGADE CAPCA, the environmental database on air emission, are given.

In the Lombardy Region, the transmission of the self-monitoring data occurs through the application of AIDA, run by ARPA Lombardia. Environmental data are directly stored in AIDA by the operator.
7. **ANALYSIS OF THE REPORT**

7.1 **Actual situation in MS**

**(Driving questions:**

- **Who is going to analyse the self-monitoring report submitted by the operator? Is only one or more than one authority or inspection body involved?**

- **Which kind of analysis is performed? A determination of exceedances of emission limit values or a comparison of the performance of the installation with BAT or an analysis of the trend of environmental parameters (consumptions, emissions etc.) in order to check the operational state of the installation?**

- **What is the level of detail of the analysis (only a check for plausibility of the results or also an examination of measurement methods, the person who or institution which performed the measurements, etc.)?**

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>An analysis is carried out by the experts of the competent authorities, if requested by the competent authorities or in the course of environmental inspections. The report is analysed regarding the completeness and plausibility of the data and their compliance with limit values that are valid for the installation. In the case of steam vessels, the process is handled over to the technical experts via the federal database EDM.</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>Plant manager has to send it every year to the environmental inspectorate; the data analysis is not systematic.</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Regional authority generally checks self-monitoring report and puts it into database (information system IPPC). CEI use self-monitoring report during preparation inspection (site – visit) and detailed check self-monitoring report during the site-inspection (verify compliance with ELV, other required data set in permit, frequencies, whether the measurement were made at the site and extent specified in permit, accreditation of the laboratory, the manner in which the measurements are presented (appropriate templates)) and compare with inspection findings. Emission monitoring is done during the year by an external certified laboratory and the operator sends emissions reports from periodical measurements done by the certified laboratory (from each emissions measurement to air, and if is stated in permit from other kind of measurement too) to the inspectorate for checking (compliance with limit values, parameters (frequency, time, methods, authorization,...), whether the measurement were made at the site and extent specified in permit, accreditation of the laboratory).</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>Permit authority analyses and confirms report annually, inspectors review self-monitoring data and licence compliance. An analysis is carried out in the course of environmental inspections (on-site control), where permit issuer is involved. Inspectors can check the emission limit breach, compare the performance of the plant with BAT. Permit issuer can assess a need for the amendment of a permit. The Inspectorate can involve an accredited laboratory for making measurements.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>Every competent authority checks the report for its own scope (water, emissions, waste...) Every single</td>
</tr>
<tr>
<td>Country</td>
<td>Process Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ireland</td>
<td>The measuring result is compared with the permit, except the report of the continuous measurements, which are checked only for plausibility. The reports submitted by the operator will be checked by an inspector in the EPA. In some cases, a detailed assessment of the report will be completed to review calculations, methods, etc., particularly for more complex reports such as QAL2 reports required under the EN14181 standard. The EPA also completes independent monitoring of licensee emissions including air, water, noise, vibration, etc., to cross-check operator self-monitoring. More detailed assessments of reports are often carried out as part of site inspections, especially where an operator may use their own internal laboratory for analysis of effluent samples as this has been found to be a source of error (e.g. where equipment is not properly maintained or calibrated).</td>
</tr>
<tr>
<td>Italy (Sardinia)</td>
<td>Inspectors check self-monitoring reports in terms of:  - Assess emission values breaches.  - Assess the respect of parameters, frequencies and analytical methods adopted in self-monitoring.  - Compare performance (specific consumptions, specific emissions etc.), with the ones foreseen in BREFs and BATs (where available).  - Overall compliance with the permit provisions. The report of the inspectors, including the results of the analysis, indicates the necessary amendments to the permit and to the self-monitoring plan if necessary. Non-compliances with the permit can be found during the analysis of the report.</td>
</tr>
<tr>
<td>Poland</td>
<td>Inspector checks whether the operator’s report is up to date, except the other reports (sending to the other competent authorities for example concerning waste management), which are analysed only during site-inspection of installation. Firstly, inspectors check a deadline of submit the report (after deadline – administrative fine - decision (without site-inspection), from the beginning of year 2016 – fine during site visit). After the inspector has to verify compliance with ELV, other required data set in permit, frequencies, whether the measurements were made at the site and extent specified in permit/regulations, accreditation of the laboratory, the manner in which the measurements are presented (appropriate templates). All findings (summary of compliance/ non – compliance) are put into ISK database to generate inspector’s report.</td>
</tr>
<tr>
<td>Portugal</td>
<td>The annual environmental report is submitted to a random control by the licensing authority. Furthermore, the licensing authority checks the EPRTR data (data quality control). The inspection preparation process requires the analysis of operators self-monitoring data in order to verify the compliance with the permit conditions. Azores: The self-monitoring reports are analysed by the permitting authority. During inspection, the inspector checks the self-monitoring data to verify the compliance with the permit conditions and the national legislation.</td>
</tr>
</tbody>
</table>
| Romania      | The self-monitoring reports are used for preparation and performing of site visits. The inspector shall check if the report is prepared in accordance with permit prescriptions: parameters, frequencies, measurement methods, etc. and if it is submitted with the frequency required by the permit. The emissions monitoring results are compared with ELVs in order to determine the compliance with the
permit. In general, if an ELV breach is detected a site visit is performed in order to enforce the permit conditions (in most cases a penalty report is issued and the suspension of permit is requested from the permitting authority, but in some cases, even the suspension of operation could be imposed). The frequency for emission monitoring is increased if monitoring results overcome 75% of ELVs.

<table>
<thead>
<tr>
<th>SPAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>The self-monitoring report is sent to the permit writers and checked by an expert on the issue, for example expert on air emissions or waste. A copy can also be sent to the inspectorate. Data analysis is not systematic, and not all the reports are checked. Not all the regions make reports of self-monitoring data. Sometimes the non-compliances are communicated to the inspectorate; in this case the inspectorate takes into account the non-compliances in the next inspection programme. The competent authority for inspection and permitting is the same authority in some regions, but not in all of them.</td>
</tr>
</tbody>
</table>

7.2 Proposal for a common approach

The methodology for analysing IED self-monitoring reports differs considerably across the EU member countries. As a result of the different legal systems and administrative structures in the Member States, the involved institutions may be the competent authority and/or an inspectorate or environmental protection agency. Apart from this fact there are differences in terms of the date of the analysis (after each submission of a report or during the next inspection including an on-site visit), the level of detail of the analysis (e.g. depending on the type and complexity of the report), the nature and scope of the analysis and the tools used.

Even so a common approach has been identified:

The assessment of the self-monitoring report submitted by the operator usually covers the following aspects:

- whether the submission was in time and the frequency of reports meets 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 data reduction methods (especially in more complex reports)

The nature and scope of the analysis includes at least the check of compliance with emission limit values. In addition, the analysis may include:

- a check of overall compliance of the installation with environmental permit conditions
- an analysis of the trend of environmental parameters (e.g. consumptions, emissions, amount of waste) in order to check the operational state of the installation to prevent in a timely way from drifting away from BAT
- a search for 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.

In The Netherlands, DCMR (Environmental Protection Agency of local and regional authorities in the Rijnmond region) uses the self-monitoring data to perform a cross-cutting evaluation of the performance of plants belonging to the same industrial sector.

7.3 Desired tools/template

Useful tools for the analysis may be:
- appropriate templates for the self-monitoring report reporting (see section 5) to simplify and standardise the analysis
- use of a (national) database (see section 6) 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.
8. AUDIT AND VALIDATION

8.1 Actual situation in MS

(Describe here whether the activity of inspectors foresees being present at the sampling of water/waste/air/noise performed by a contractor on behalf of the operator and if a validation of the procedures used is produced).

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>The presence of inspectors during the sampling or emission measurements is quite unusual. However, in many cases general binding rules or permits specify the use of qualified contractors (accredited or notified bodies).</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>Not required</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>The operator of an installation is obliged to carry out measurements by accredited laboratory. The operator has usually to communicate in advance the foreseen data when performing samples (sampling of air, water, waste etc.). Inspectors can decide whether attend the sampling or not. The presence of inspectors during the sampling or emission measurements in problematic cases or at problematic installation is usual. If is necessary CEI is able perform its own emission measurement to the air (CEI have own air emission measuring group) and CEI has competency to take samples (water, waste) for analyses.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>The operator is not required to notify the competent authority of the dates of sampling/analysis and it would only be in unusual circumstance. A permit issuing authority analyses and confirms report annually, inspectors review the self-monitoring data and licence compliance. In case of suspicion the inspectors have a right to take reference samples. Inspectors have licence to take samples of water, soil and waste. Analyses provider is the accredited laboratory of the Environmental Research Centre.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>Measurements are carried out by third party contractors. There are very hard requirements to the measuring laboratories according to general binding rules. They have to accreditate at a central authority in Berlin and then have to be notified in one of the 16 German Bundesländer. This has to be renewed after a few years. The method of measurement is strictly predefined by general technical binding rules.</td>
</tr>
<tr>
<td>IRELAND</td>
<td>The operator is not required to notify the EPA of the dates of sampling/analysis and it would only be in unusual circumstances that the EPA would request these dates to be notified, generally where there is a specific concern about the validity or quality of the data.</td>
</tr>
<tr>
<td>ITALY (Sardinia)</td>
<td>Operator has usually to communicate in advance the foreseen data when performing samples according to the Self-Monitoring Plan (sampling of air, water, waste etc.). Inspectors can decide whether attend the sampling or not. When they are present at the sampling performed by the operator or a third party, they check the validity of the procedure according to the standard (ISO etc.). Usually no final report is produced, but just the minutes signed by inspectors and operator. Inspectors can also take samples by their own that will be analysed by internal laboratories.</td>
</tr>
<tr>
<td>POLAND</td>
<td>The operator of an installation and the user of equipment are obliged to carry out measurements by accredited laboratory – verification of accreditation by inspector on Polish Centre od Accreditation’s website – lack of accreditation is equal with no measurements – administrative fine.</td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>Water and air sampling and data analysis are carried out by certified laboratory according to permit conditions. Inspection has an annual sampling collection plan in order to confirm reported data in the</td>
</tr>
</tbody>
</table>
environmental annual report.

Azores:
Usually inspectors do not attend the sampling activities and there is no validation of the procedures.

| ROMANIA | In most cases the self-monitoring of emissions is done by external certified labs. If the self-monitoring is carried by the operator himself than at least one per year of these measurements has to be done by a certified lab. The sampling is done at the same time by the operator and by the external certified lab in order to determine if the results are comparable or not (validation of measurement methods used by the operator). Up to now the inspector does not have an obligation to check whether the operator is using the best practices regarding laboratory activities (sampling, analysis, recording of results, etc.) on its own labs or by external contractors. |
| SPAIN | The self-monitoring control of air emissions is usually done by external certified labs. Sometimes an expert can be present during the sampling process. Sampling of water emissions is sometimes carried out by the operator. Some regions have their own laboratories and can take samples of air, water, waste or noise. |

8.2 Proposal for a common approach

Self-monitoring activities for which the operator is in charge (sampling, lab analysis) are widely performed across Member States by a certified laboratory on behalf of the operator; strict rules for accreditation are usually imposed as a guarantee of the quality of data.

As a general provision in the permit, in many MS it is mandatory for the operator to communicate in advance, to the competent authority, the foreseen data when performing samples. Nevertheless, it is very unusual, across the EU member countries, to have the inspection authority auditing the sampling activities in order to assess the relevant procedures are being followed (ISO standards); the accreditation of the third party contractor is enough to be able to trust the quality of data included in the annual self-monitoring report.

However, in some MS, inspection authorities have their own laboratories and can be present at the sampling activities performed by the operator or external laboratories, and at the same time, take a sample of their own to be analysed in the internal lab and compare the results.

Whatever the internal organisation of the inspection authority may be, and whether an internal public lab is available or not, a common approach can be identified to enhance the effectiveness of the inspection activity:

- Include a provision in the permit requiring the operator to communicate in advance, to the inspection authority, the date of the samplings;
- Participate, randomly, in the sampling activities performed by the operator or certified lab on behalf of the operator, in order to assess the right application of the ISO standards during the activities;
- Ask for the Sampling Plan (in case of waste/soil sampling activities);
- Inspection authority taking a sample by their own (or by means of a qualified lab) to be analysed by internal laboratory or third party laboratory. This is essential in the case of suspected non-compliances.

Auditing of sampling activities can be considered as part of an inspection strategy and is a deterrent against the poor quality of data.
8.3 Desired tools/template

Inspectors should develop a wider knowledge of the sampling procedures (ISO Standards). The use of checklists as a tool to check the main points of the procedures during sampling in different environmental matrices (air, soil, waste, ground water) is recommended.

Internal procedures can help the inspectors to take samples by their own as well.
9. WHAT TO DO WHEN A NON-COMPLIANCE IS DETECTED

9.1 Actual situation in MS

(Describe here the follow up of the inspectors’ activity when a non-compliance is detected in the self-monitoring report submitted by the operator.

The question has two meanings:
(a) a non-compliance stated in the self-monitoring report;
(b) a non-compliance discovered by the inspector analysing the operator’s report;

This question is linked to the results of “levels of non-compliance”. Self-incrimination aspect: does an operator, who reports a non-compliant result of self-monitoring, accuse himself and does the law regard it as sanctionable or not? Do you have experiences with it? How do you get along with this aspect?).

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>According to the usual administrative procedures by the competent authorities (e.g. notes, warning letters, administrative fines)</td>
</tr>
</tbody>
</table>
| BELGIUM (Wallonia) | Inspectors have to look for and to note environmental offences. Inspectors can use any documents to fulfil that task and establish evidence of noncompliance. So, self-monitoring results can be used to start prosecution or administrative fees.  
  The environmental permit requires operators to inform immediately the competent authorities of any incidents, accidents or non-compliances. That information can also be used to start prosecution or administrative fees.  
  Inspectors have different tools to monitor and regularise the infringement:  
  • Plan a site visit.  
  • Request the actions implemented to solve incidents, accidents or non-compliances.  
  • Request new analysis.  
  • Make new analysis.  
  • Send a warning letter.  
  • Start infringement procedure.  
  In fact, the latter two means will depend on the level of non-compliance.  
  Competent authorities can also stop the process if environmental impact presents a danger to health or the environment. |
| CZECH REPUBLIC   | 1. During the year – CEI check periodical measurements reports performed by certified labs  
  Operator submit during the year emission reports from emissions measurements (performed certificated laboratory) to the inspectorate (frequency is stated in the permit). Responsible inspectors check the emissions reports (desk inspection). If non-compliance is detected from the emission report (breach ELV) - responsible inspector can make site-inspection and initiate administrative proceedings for non-compliance (according to IPPC act it is possible impose fine, corrective measures, partial or complete closure of the installation).  
  2. During site-inspection  
  Inspection authority during site inspection checks self-monitoring report. |
<table>
<thead>
<tr>
<th>Country</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESTONIA</td>
<td>In case of important or relevant non-compliance: the Inspectorate sends a letter of caution and initiates administrative proceedings. It also conducts proceedings and imposes fines for environmental violations, makes a plan for a new inspection. In case of non-compliance inspectors take into account the risk assessment for inspection prioritisation.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>A phone call, notes, warning letters, administrative fines.</td>
</tr>
</tbody>
</table>
| IRELAND      | Operators are required to notify the EPA of all ELV non-compliances immediately. If an inspector identified a new non-compliance when reviewing a report then the operator would initially be requested to provide further information, including why they failed to report the non-compliance. In significant cases of non-compliance, the EPA would escalate the investigation by opening a formal 'compliance investigation' which may lead to prosecution. The actions taken by the EPA would depend on a number of factors such as:  
  - The compliance history of the site;  
  - The significance of the non-compliance (e.g. is it 5% above the ELV or 200% above the ELV);  
  - If the company was trying to hide the results of the monitoring.  
  The matter of self-incrimination is not an issue in Ireland and we have prosecuted operators based on their reported non-compliances.  
  An example of a recent prosecution for breach of ELV would be a company manufacturing foam insulation for buildings. The company was fined approximately €11,000 for exceeding a VOC ELV on two occasions. |
| ITALY (Sardinia) | A breach of the emission limit values (ELVs) indicated in the self-monitoring report is not enough to open the infringement procedure. When a breach of the ELVs is detected by the operator, he is obliged to immediately communicate it to the competent authority that has the possibility to assess the reasons of the breach and possibly take samples. Whether the exceeding of the limit is confirmed by the analysis of the sample or no acceptable justification has been found for the non-compliance, the infringement procedure can be open.  
In case another non-compliance is detected during the analysis of the report, such as, for example, different frequencies, parameters and methods adopted or lack of data or other breach of the permits, the infringement procedure is open.  
The report is sent to the operator and the competent authority indicating the non-compliances and the relevant injunction is suggested to the competent authority. |
| POLAND       | The type of disciplinary tools used depends on the detected non-compliance. The inspector can commence administrative proceedings to impose administrative fine (for example the emission standards |
have been exceeded) – it’s the most severe enforcement action when it comes to non-compliance detected in the self-monitoring report. Moreover, the inspector can make a site-inspection or in case of waste management report: impose a fine during site visit for unreliable data or untimely forwarding of report. [Self-incrimination aspect: A confession by an operator does not change an action which an inspector takes to punish him.]

Regarding incidents occurring during the operation of an installation, the operator is obliged to immediately notify thereof the Inspectorate, but isn’t obliged to carry out an inspection to measure the results if the failure is removed. When it comes to conducting constant measurement, the regulations define time deviations in emission limit values in a year, which may emerge from specific circumstances.

### PORTUGAL

An infringement procedure is opened, and the environmental risk of the operator is elevated due to the risk analysis tool and the time between inspections should be reduced.

**Azores:**
Depending on the situation, it is possible to impose corrective measures, warning letters or administrative fines.

### ROMANIA

In general, if an ELV breach is detected a site visit is performed in order to enforce the permit conditions and in most cases a penalty report is issued and the suspension of permit is requested from the permitting authority, but in some particular cases even the suspension of operation could be imposed. The frequency for emission monitoring is increased if monitoring results overcome 75% of ELVs.

### SPAIN

Depending on the non-compliance detected, and according to the usual administrative procedures by the competent authorities (e.g. notes, warning letters, administrative fines).

9.2 Proposal for a common approach

Even if the follow-up of a non-compliance stated or detected by the Inspector in the self-monitoring report sent by the operator to the competent authority varies from one EU member country to another, self-monitoring report is already a tool:

- to plan a site visit;
- to review the environmental risk evaluation of a plant;
- to take measures like suspension of permit or suspension of operation;
- to start penal or administrative procedures to punish operators.

To go forward and make a proposal for a common approach, it is necessary to make a difference between two kinds of non-compliance in the self-monitoring report. First one, a non-compliance stated by the operator and second one, a non-compliance noted by the inspector.

For non-compliances identified by the operator, in most EU member countries, operators have to inform immediately the competent authorities when an incident or accident occurs or when emission limit values are exceeded. In this case, the competent authority has already received information about breaches and reacted to follow-up the non-compliance. So, the self-monitoring report should include a compilation of accidents or breaches recorded during a fixed period. This compilation could be used to make a new environmental risk evaluation.
For non-compliances noted by the inspector when he/she analyses self-monitoring report, some countries have different ways to follow-up breaches when emission limit values are exceeded and when a self-monitoring system is not implemented in the rules.

Italy considers emission limit values exceeded in the self-monitoring report is not enough to open the infringement procedure and recommend making new samples and new analyses to note the breach.

Nevertheless, other countries have the opportunity of prosecuting operators on the basis of self-monitoring values.

So, in choosing what to do when a non-compliance is detected, Inspectors have to take into account at least the following criteria:

- A non-compliance stated in the report by the operator or detected by the Inspector.
- The level of the non-compliance.
- The assessment of the reason of the breach (in situ visit or ask for further documentation).

9.3 Desired tools/template
## 10. REPORTING OF THE EVALUATION

### 10.1 Actual situation in MS

(Describe here which is the result of the analysis of the inspectors. Does a final report is produced and sent to operator and competent authorities? Does a template is used for that?)

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>An expert report is sent to the competent authority (free text, no template). In the case of steam vessels (see Question 5) the technical experts comment on evaluation via the user interface of the federal database (EDM).</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>Not implemented</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Not required. Only during site-inspection the inspector writes the report from the inspection, where fulfilment of permit conditions is described, including the self-monitoring report. This report from inspections is sent to the operator.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>Site control report of the inspection (template form) consists of data measurements (if they are taken) and decisions. A report is disclosed, inspector sends the control report to the operator and to the competent authority.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>The evaluation of the report by the authority is only an internal note and will not be sent to the operator. No template.</td>
</tr>
<tr>
<td>IRELAND</td>
<td>The operator may be issued with a formal non-compliance notification by the EPA where an ELV breach occurs. This would happen in most cases unless there is a good reason, e.g. where the result is just above the ELV and the measurement uncertainty indicates that it is possible the actual value may be less than the ELV when the measurement uncertainty is taken into account.</td>
</tr>
<tr>
<td>ITALY (Sardinia)</td>
<td>A template is used for final report of the analysis of the Self-Monitoring Report submitted by the operator. The report includes the non-compliance detected, suggestions to amend the permit and the self-monitoring plan. The proposal of an injunction is indicated as well.</td>
</tr>
<tr>
<td>POLAND</td>
<td>The operator of the installation submits a paper version of the report to the Inspectorate. The inspector analyses the data in the report and draws up an inspection report as an annotation in the ISK database. This inspection report concerns compliance and non-compliance. A scan of the results of measurement is attached to ISK database only in case of non-compliances.</td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>Self-monitoring data is made available for the inspection, by the licensing authority in pdf format. The licensing authority, as the national EPRTR competent authority, also grants access to PRTR database. Azores: There is not a specific report. The evaluation of the self-monitoring data is included in the general inspection report, which addresses the full range of relevant environmental impacts.</td>
</tr>
<tr>
<td>ROMANIA</td>
<td>An ELV breach triggers a site visit when a report is drafted. In any other cases, no reports are drafted.</td>
</tr>
<tr>
<td>SPAIN</td>
<td>Not required, no template, some regions make evaluations of the reports.</td>
</tr>
</tbody>
</table>
10.2 Proposal for a common approach

The Industrial Emissions Directive (IED) leaves room for a summary of the results of analysis of the self-monitoring report. According to Article 3 (22) of the Directive, environment inspection means all actions, including verification of self-monitoring, without indication of preparing a report of the evaluation by competent authority. Moreover, there are no set requirements for an inspection’s final report in the Article 42(3), which states that the competent authority is obliged to make available to the public, including via the Internet, the results of emission monitoring as required under permit conditions. Therefore, there is a different approach throughout the EU member states in summarising the result of the analysis of the operator’s self-monitoring.

On the basis of experience and information shared by the EU member countries on this issue, the following questions have been identified:

- result of the analysis by the inspectors,
- requirement of producing a final report, if there is such obligation – the necessity to forward the report to the operator and competent authorities,
- the obligation to produce the report on a required template.

These above considerations allowed to make a conclusion that across the EU member states:

- final report is produced on the required template or has free form (no template, free text),
- self-monitoring/final report is not a separate document, established without a site-inspection. It forms a part of a report from on-the-spot inspection,
- or reporting of the evaluation is not implemented/required.

The result of the analysis by the inspectors mostly depends on whether a non-compliance is detected. However, during the research it was apparent that some competent authorities prepare a report just in case some non-compliances have been detected from the analysis of the report; others prepare a report with the outcome of the analysis regardless of whether any non compliance is detected or not. It’s a document confirming plausibility with permit and regulations requirements (such as: compliance with ELV and other required data set in permit, appropriate site and extent of measurements, accreditation of laboratory, time limit, frequency, required template).

One country produces a final report including only non-compliance detected and suggestions to improve the permit and self-monitoring.

Some competent authorities, when they detect non-compliance in the operator report, do not prepare any final report but decide to perform a site visit to check the irregularity. Other member states say that, as a consequence of a non-compliance in the operator report a final report should be drafted by inspectors in order to start the administrative fine procedure. There is also the situation in which the competent authority, where an ELV breach occurs, sends a formal non-compliance notification to the operator.
The last but not least aspect is to whom to address the inspection report. It may be only confirmation of a verification of the self-monitoring report (storage in inspection database, without providing to operator or other competent authorities). From the other side, the inspection report is submitted to the operator or to the competent authority (in certain cases – the technical experts have access to the federal database to comment on a content of reports).

10.3 Desired tools/template

- Templates for report of the self-monitoring analysis

Italy (ARPA Sardegna) and Poland drafted a form of Report to be used by inspectors when the operator self-monitoring report is analysed (usually on a yearly basis).

The content of the documents is reported in Annex I(a) and I(b).
11 PUBLICATION OF THE RESULTS OF EMISSION MONITORING (Art. 24 (b))
(The “results of emission monitoring” according to Art. 14 and 24 IED means the emission measurement data itself / the operators summary of these and not the outcome of the assessment of the inspector).

11.1 Actual situation in MS

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>The specific part of the EDM DB for operator monitoring reports (see section 6.1) is open to the public. 6.1. The operators upload their reports into the national DB named “EDM” (electronic data management for the environment).</td>
</tr>
<tr>
<td>BELGIUM (Wallonia)</td>
<td>Only on request</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Electronic version (pdf or doc file) annual self-monitoring report (includes information about compliance with all permit conditions and includes chapter compliance with set emissions limits) operator sends to the regional authority. Regional authority puts it on IPPC information system (web page). IPPC information system is publicly available. Annual self-monitoring report including data from emission measurement (values and comparison with ELV, frequency...). Reports from periodical measurements of the emission levels from measurement carried out at an installation during the year by a certified laboratory can be in an annex of the self-monitoring report.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>The competent authority shall make the results of emission monitoring available to the public as required under the permit conditions. Reports of the self-monitoring of the operator are available on official request. Continuous monitoring results of a plant are partly disclosed in the national monitoring database. Summaries of the environmental monitoring (ambient air, surface and ground water) are disclosed in the national monitoring database.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>There is no active publication of the self-monitoring results. Exception: waste incinerators publish their summary once a year.</td>
</tr>
<tr>
<td>IRELAND</td>
<td>All reports submitted by the operator are available on the <a href="http://www.epa.ie">www.epa.ie</a> website. The interpretation of Article 24 by the EPA is that if we have a report then we make the entire report available. Where only summary data is submitted then this is also made available.</td>
</tr>
<tr>
<td>ITALY</td>
<td>Ministry of Environment publish the self-monitoring reports submitted by IED plants (at a national level) in the institutional website. At a regional level, usually, self-monitoring reports are not web published and are available after official request.</td>
</tr>
<tr>
<td>POLAND</td>
<td>Neither operator report nor inspection report (annotation) is available for all persons. Moreover, the public doesn't have access to ISK database. Complete information concerning installation/site-inspection is made available with written request.</td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>The licencing authority publishes on an annual basis the operator self-monitoring data that exceeds the EPRTR threshold’s. Other environmental data may be granted upon request Azores: The operator’s self-monitoring report is not publicly available unless it is requested.</td>
</tr>
<tr>
<td>ROMANIA</td>
<td>The operators holding an environmental permit have to publish on their own webpage the results of self-monitoring of emissions and any other information regarding the impact on the environment of their own activities. Breaching these requirements is considered an offence and a penalty of EUR 500 shall be imposed.</td>
</tr>
</tbody>
</table>
11.2 Proposal for a common approach

According IED

- operators should regularly report to the competent authority on compliance with permit conditions.
- an obligation to supply the competent authority regularly, and at least annually, with information based on the results of emission monitoring and other required data that enables the competent authority to verify compliance with the permit conditions;
- the competent authority shall also make available to the public the results of emission monitoring as required under the permit conditions and held by the competent authority.

The implementation of the IED requirements regarding publication of the results of emission monitoring differs across the EU member countries. It is the results of the different legal systems and administrative structures in the Member States, the involved institution may be the competent authority and/or an inspectorate, Environmental Protection Agency or Ministry of the Environment.

The results of emission monitoring (or entire emission monitoring, or self – monitoring report) shall be submitted by the operator to the various involved authorities in Member States (permit authority, inspection authority, the Ministry of the Environment).

The IED establishes an obligation to make available to the public the results of emission monitoring as required under the permit conditions and held by the competent authority, but did not establish the way in which this should be done.

The results of emission monitoring are publicly available across the IMPEL members. The method of publication of the results of emission monitoring is different across the member states. In some countries, the results of emission monitoring (or self – monitoring report) is published via the website (institutional website, national databases, operator website), and in some countries, it is only available on request.

Conclusions:

- What is published:
  - As a minimum, the results of emission monitoring should be published.
  - Some member states publish the entire self-monitoring report (including other information regarding on the impact on the environment; fulfilment of permit conditions; raw material consumption and energy; ...).

- How it is published:
  - As a minimum the results of emissions monitoring should be published on request.
  - Some member states publish it actively via internet.
Publish the results of emission monitoring (or the entire self-monitoring) actively via internet is surely recommended.

11.3 Desired tools/template

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12 PROPOSAL FOR GUIDANCE BOOK

The content of the present document and the related Annexes can be used to amend and complete the following paragraphs of the proposed “Guidance book on IED Implementation”:

5.5 Environmental Inspections

5.5.2 Checks of internal reports

5.5.3 Verification of self-monitoring

During the meeting in Bucharest, the following amendments has been proposed:

5.5.2: **Minimum content of self-monitoring report** (Templates, Measurements - parameters, frequencies, methods, Consumptions, Maintenance etc.)

5.5.3: **Analysis of self-monitoring report to be performed by inspectors** (Breaches - ELV, frequencies, etc., Environmental performance trends, Critical issues, Adequacy of self-monitoring - equipment, management, frequencies etc., Follow up - enforcement, input for risk assessment, non-routine inspection, Final report: templates and DB storage)

5.5.4 **Audit of operator measurements (external lab)** (Audit of water, air, odour, noise, waste sampling, Audit of EMS calibration)
Annex I(a): Template of Final Report on operator self-monitoring (ARPA Sardegna – IT - example)

INSPECTION ACTIVITY: VERIFICATION OF SELF-MONITORING REPORT - YEAR 2016 OPERATOR: XXXX

1. PREFACE

The present report has been drafted according to art. 3 (22) of the Industrial Emission Directive, following the analysis of the documentation submitted by the company xxxx.

The present inspection aims to verify:

- compliance with the requirements contained in the Self-Monitoring Plan contained in the permit (methods, parameters, frequencies etc.);
- the regularity of self-monitoring, with reference to measures of pollution prevention equipment as well as compliance with the emission limit values;

The analysis also aims to provide an action of feedback to the Competent Authority in order to improve both the permit and the Self-Monitoring Plan, and to the operator, as an action of compliance promotion, for an improvement of the information to be included in the Report of the Self-monitoring.

2. LAW REFERENCES

2.1. Operator’s obligations

2.2. Competent Authority’s obligations

3. DESCRIPTION OF THE PLANT

3.1. Identification data and territorial framework

<table>
<thead>
<tr>
<th>Process of the plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>IED Classification</td>
</tr>
<tr>
<td>n. of the permit</td>
</tr>
<tr>
<td>Name of the company</td>
</tr>
<tr>
<td>Contacts (email-phone)</td>
</tr>
</tbody>
</table>
3.2. Description of the production cycle

4. PROGRESSIVE CHANGES IN THE PERMIT

<table>
<thead>
<tr>
<th>LIST OF PERMIT'S CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>n. of permit</td>
</tr>
<tr>
<td>--------------</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>UPDATE OF THE SELF MONITORING PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>n. of permit</td>
</tr>
<tr>
<td>--------------</td>
</tr>
</tbody>
</table>
5. Analysis of the report
5.1. Situation of the plant
5.2. Raw material consumptions
5.3. Water consumption
5.4. Energy consumption
5.5. Fuel consumption
5.6. Air emissions
5.7. Water emissions
5.8. Noise
5.9. Waste
5.10. Soil and groundwater
5.11. Management of the plant
5.12. Performance indicators
6. Results
6.1. Non-compliances
6.2. Critical issues
7. Conclusions
7.1. Suggested amendments to the Self-Monitoring Plan
7.2. Proposals for the Competent Authority
7.3. Suggestions to the operator

<table>
<thead>
<tr>
<th>Self-Monitoring Plan</th>
<th>Chapter</th>
<th>Pag.</th>
<th>Suggested amendment</th>
</tr>
</thead>
</table>


Annex I (b): Template of Final Report on operator self-monitoring (Polish example)

Report of inspection based on documentary from self-monitoring

<table>
<thead>
<tr>
<th>Voivodship Inspectorate for Environmental Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Phone number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Branch of Voivodship Inspectorate for Environmental Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Telephone number:</td>
</tr>
</tbody>
</table>

Report of Documentary Inspection No......../Year

<table>
<thead>
<tr>
<th>File number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal basis:</td>
</tr>
<tr>
<td>Controlled (main) company:</td>
</tr>
<tr>
<td>Name, address:</td>
</tr>
<tr>
<td>Type of activity:</td>
</tr>
<tr>
<td>Address controlled activity:</td>
</tr>
<tr>
<td>ID:</td>
</tr>
</tbody>
</table>
**Controlled entity:**

<table>
<thead>
<tr>
<th>Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact address:</td>
<td></td>
</tr>
<tr>
<td>ID:</td>
<td></td>
</tr>
</tbody>
</table>

**Information of inspection:**

<table>
<thead>
<tr>
<th>Start date:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>End date:</td>
<td></td>
</tr>
<tr>
<td>Nature of inspection:</td>
<td>Based on self-monitoring analysis</td>
</tr>
<tr>
<td>Purpose of inspection:</td>
<td>Assessment of the compliance with limit values and monitoring requirements.</td>
</tr>
</tbody>
</table>

**Component of environment:**

| Select: air / surface water / groundwater / waste water / noise / waste / electromagnetic radiation |

**Inspector:**

<table>
<thead>
<tr>
<th>Name, surname and position:</th>
<th>Date of monitoring analysis:</th>
<th>Date concerning single result (for example: air):</th>
<th>Annex:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The subject of an analysis (for example measurement result from 15.01.2015)</td>
<td>Findings:</td>
<td>*Scan of measurement result</td>
</tr>
</tbody>
</table>

**Inspector:**

<table>
<thead>
<tr>
<th>Name, surname and position:</th>
<th>Date of monitoring analysis:</th>
<th>Date concerning single result (for example: waste):</th>
<th>Annex:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The subject of an analysis (for example measurement result from 15.01.2015)</td>
<td>Findings:</td>
<td>*Scan of measurement result</td>
</tr>
</tbody>
</table>

Next rows of the table depend on the quantities of environment components and analysed documents.

Signature and stamp of competent inspector
Note: In case of non-compliances detected and make the site visit decision, this report isn’t prepared, however findings are treated as an information to prepare the site visit.

* Scan of the measurement results are enclosed to ISK system in case of non-compliances.
Annex II: Minimum content of the Self-Monitoring Plan

INTRODUCTION

1 - PURPOSE OF THE PLAN

2 - GENERAL CONDITIONS FOR THE EXECUTION OF THE PLAN
   2.1 - OBLIGATIONS OF THE PLAN IMPLEMENTATION
   2.2 - AVOID mixing
   2.3 - OPERATING SYSTEMS
   2.4 - MAINTENANCE SYSTEMS
   2.5 - AMENDMENTS TO THE PLAN
   2.6 - OBLIGATIONS OF EQUIPMENT INSTALLATION
   2.7 - ACCESS TO SAMPLING POINTS
   2.8 - MEASUREMENT OF INTENSITY AND WIND DIRECTION

3 - OBJECT OF THE PLAN
   3.1 - ENVIRONMENTAL COMPONENTS
      3.1.1 - Consumption raw materials
      3.1.2 - Consumption water resources
      3.1.3 - Energy Consumption
      3.1.4 - Fuel Consumption
      3.1.5 - Air emissions
      3.1.6 - Emissions to water
      3.1.7 - Noise
      3.1.8 - Waste
      3.1.9 - Soil
   3.2 - MANAGEMENT SYSTEM
      3.2.1 - Checking the critical phases, maintenance, deposits
      3.2.2 - Performance Indicators

4 - RESPONSABILITIES IN THE EXECUTION OF THE PLAN
   4.1 Operator activities
   4.2 Inspection Authority activities
   4.3 Cost of the Plan

5 - MAINTENANCE AND CALIBRATION

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Document "Minimum content of Self-Monitoring Plan" drafted by the Italian Environmental Agencies network
6 - NOTIFICATION OF RESULTS OF MONITORING

6.1 - VALIDATION OF DATA

6.2 - MANAGEMENT AND PRESENTATION OF DATA

   6.2.1 - Data retention mode

   6.2.2 - Procedures and frequency of transmission of the results of the plan
Annex III: Useful documents

- IMPEL Project: Operator self-monitoring (February 1999)
  http://files.gamta.lt/aaa/Tipk/tipk/4_kiti%20GPGB/65.pdf

- IMPEL Project: Best practice in compliance monitoring (June 2001)


- JRC Reference Report on Monitoring of emissions from IED-installations (FD 2013)

- Technical guide on environmental self-monitoring in countries of Eastern Europe, Caucasus, and Central Asia
  (http://www.oecd.org/env/outreach/39462930.pdf)

- Minimum content of the self-monitoring plan

- Template for self-monitoring report – excel file
  (http://www.arpa.veneto.it/servizi-ambientali/ippc/servizi-alle-aziende/report-annuale)

  http://www.epa.ie/pubs/advice/aerprtr/aerguid/#.VvqMx2x2bWM
Annex IV: Template for operator report on the compliance to the integrated permit conditions

Report on the compliance to the integrated permit conditions

PART A
IDENTIFICATION OF OPERATOR, IDENTIFICATION OF INSTALLATION

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
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1. Identification of operator

<table>
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<tr>
<td>Address for correspondence</td>
<td></td>
</tr>
<tr>
<td>Operator ID</td>
<td></td>
</tr>
<tr>
<td>VAT number</td>
<td></td>
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2. Identification installation

<table>
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<th>Name of installation</th>
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<tbody>
<tr>
<td>Address installation</td>
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<tr>
<td>Change IPPC - reference number</td>
<td>Description of changes</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>KUJCK/10643/2010/OZL/9/Je</td>
<td>Changed description installation, binding conditions for operation and the process of evaluating fulfilment of the integrated permit conditions</td>
</tr>
<tr>
<td>KUJCK/18761/2011/OZL/2/Je</td>
<td>Changed description installation</td>
</tr>
<tr>
<td>KUJCK 22907/2013/OZL</td>
<td>Changed description installation and expanding the list of wastes accepted into the installation</td>
</tr>
<tr>
<td>KUJCK/5423/2014/OZL</td>
<td>Remedial decision</td>
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3. Report author

<table>
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</thead>
<tbody>
<tr>
<td>Telephone (or fax)</td>
</tr>
<tr>
<td>E-mail address</td>
</tr>
<tr>
<td>Date</td>
</tr>
</tbody>
</table>

Signature of operator
PART B
INFORMATION ABOUT FULFILMENT OF INTEGRATED PERMIT CONDITIONS

The IP conditions

Set limits (emission limits, other limits, the limit value)

<table>
<thead>
<tr>
<th>Labelling IP condition (emission limit, limit)</th>
<th>Labelling installations part (source)</th>
<th>Substance / Group of substances / Indicator</th>
<th>The value stated in the IP</th>
<th>Measured / calculated value</th>
<th>IP conditions fulfilment</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emission limit</td>
<td></td>
<td>TZL</td>
<td>&lt; 30 mg/m³</td>
<td>0.33 mg/m³</td>
<td>Yes</td>
<td>See Reporting F_OVZ_SPE: ISPOP_641076</td>
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<tr>
<td>1.1 Air</td>
<td></td>
<td>SO₂</td>
<td>260 mg/m³</td>
<td>18.5 mg/m³</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>NOₓ</td>
<td>&lt; 500 mg/m³</td>
<td>316.1 mg/m³</td>
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<td></td>
<td></td>
<td>TOC</td>
<td>25 mg/m³</td>
<td>1.74 mg/m³</td>
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<tr>
<td></td>
<td></td>
<td>HCl</td>
<td>&lt; 10 mg/m³</td>
<td>0.43 mg/m³</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>HF</td>
<td>&lt; 1 mg/m³</td>
<td>0.013 mg/m³</td>
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<tr>
<td></td>
<td></td>
<td>Cd+Tl</td>
<td>&lt; 0.05 mg/m³</td>
<td>0.00087 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hg</td>
<td>&lt; 0.05 mg/m³</td>
<td>0.0031 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Rotary kiln num. 2 (1 measurement)</strong></td>
<td>Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V</td>
<td>&lt; 0.5 mg/m³</td>
<td>0.0031 mg/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>PCB</td>
<td>&lt; 0.2 mg/m³</td>
<td>0.7 mg/m³</td>
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<tr>
<td></td>
<td></td>
<td>PAH</td>
<td>&lt; 0.2 mg/m³</td>
<td>7 ng/m³</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>PCDD/DF</td>
<td>&lt; 0.1 ng TEQ/m³</td>
<td>0.0031 ng/m³</td>
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<td></td>
</tr>
<tr>
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<td>TZL</td>
<td>&lt; 30 mg/m³</td>
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<td>SO₂</td>
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<tr>
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<td>NOₓ</td>
<td>800 mg/m³</td>
<td>397.2 mg/m³</td>
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<td>TOC</td>
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<tr>
<td></td>
<td></td>
<td>HCl</td>
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<td>HF</td>
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<td>Substance / Group of substances / Indicator</td>
<td>Measured / calculated value</td>
<td>IP conditions fulfillment</td>
<td>Explanation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
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<tr>
<td>Cd+Tl</td>
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**Labeling IP part**

**1.2 Groundwater**

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<th>Explanation</th>
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<td>Water borehole J1 pH</td>
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<tr>
<td>NH$_4^+$</td>
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<tr>
<td>NO$_3^-$</td>
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**1.1 Air**

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<th>Explanation</th>
<th>Reference to annex</th>
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<td>Labelling IP condition (other conditions)</td>
<td>IP condition wording</td>
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<td>1.2 Water</td>
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<td>Explanation</td>
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<tr>
<td>Labelling IP condition (other conditions)</td>
<td>IP condition wording</td>
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<td></td>
</tr>
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<td>----------------------</td>
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<td>9. Emission monitoring</td>
<td>IP conditions fulfilment</td>
<td>Explanation</td>
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<td>10. minimizing the movement of pollution</td>
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<td>IP condition wording</td>
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<td>11 evaluation of IP conditions</td>
<td>IP conditions fulfilment</td>
<td>Explanation</td>
<td>Reference to annex</td>
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<td></td>
<td>Yes/No/Partly</td>
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**PART C**

INPUT FOR COMPARE LEVELS OF EMISSIONS FROM THE INSTALLATION AND EMISSION LEVELS ASSOCIATED WITH BAT

Comparison with the emission levels associated with the best available techniques (BAT)

Marking installation parts
## BAT conclusions

### Comparison with the emission levels associated with BAT

<table>
<thead>
<tr>
<th>Substance / Group of substances / Indicator</th>
<th>Emission level associated with BAT</th>
<th>Emission level of installation</th>
<th>Reference conditions</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Assessment</td>
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## Used documents

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<th>Name</th>
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## Annexes

<table>
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<th>Annex name</th>
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Annex V: RESULTS OF THE SURVEY

A survey has been handed out at the first stage of the project containing preliminary questions to MS about self-monitoring.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Organization</th>
<th>Drafter</th>
<th>Role of the drafter</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Regional administration of the Land Salzburg</td>
<td>Robert Gross</td>
<td>Environmental inspections coordinator</td>
<td><a href="mailto:robert.gross@salzburg.gv.at">robert.gross@salzburg.gv.at</a></td>
</tr>
<tr>
<td>Germany</td>
<td>Regional administration of the Land Bremen</td>
<td>Hartmut Teutsch</td>
<td>Environmental inspector and coordinator</td>
<td><a href="mailto:Hartmut.teutsch@gewerbeaufsicht.bremen.de">Hartmut.teutsch@gewerbeaufsicht.bremen.de</a></td>
</tr>
<tr>
<td>Romania</td>
<td>National Environmental Guard</td>
<td>Florin Homorean</td>
<td>Commissar (inspector)</td>
<td><a href="mailto:florin.homorean@gnm.ro">florin.homorean@gnm.ro</a></td>
</tr>
<tr>
<td>Czech rep.</td>
<td>Czech environmental inspectorate</td>
<td>Tomáš Augustin</td>
<td>Environmental inspections coordinator</td>
<td><a href="mailto:augustin_tomas@bn.cizp.cz">augustin_tomas@bn.cizp.cz</a></td>
</tr>
<tr>
<td>Slovenia</td>
<td>Inspectorate of the Republic of Slovenia for the Environment and Spatial Planning</td>
<td>Vladimir Kaiser</td>
<td>Environmental inspector</td>
<td><a href="mailto:vladimir.kaiser@gov.si">vladimir.kaiser@gov.si</a></td>
</tr>
<tr>
<td>Estonia</td>
<td>Environmental Inspectorate</td>
<td>Reeli Sildnik</td>
<td>Environmental inspector</td>
<td><a href="mailto:reeli.sildnik@kki.ee">reeli.sildnik@kki.ee</a></td>
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<tr>
<td>Portugal</td>
<td>Environmental Inspectorate</td>
<td>Roberto Valadares</td>
<td>Environmental inspector</td>
<td><a href="mailto:rvaladares@igamaot.gov.pt">rvaladares@igamaot.gov.pt</a></td>
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<td></td>
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<td></td>
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<td>Francisco Negrão</td>
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<tr>
<td>Spain</td>
<td>Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia</td>
<td>Iñaki Bergareche</td>
<td>Environmental Inspector</td>
<td><a href="mailto:inaki.bergareche.urdampilleta@xunta.es">inaki.bergareche.urdampilleta@xunta.es</a></td>
</tr>
<tr>
<td>Netherland</td>
<td>DCMR</td>
<td>M. Jordaan</td>
<td>Policy staff officer</td>
<td><a href="mailto:Marinus.jordaan@dcmr.nl">Marinus.jordaan@dcmr.nl</a></td>
</tr>
<tr>
<td>Italy</td>
<td>Sardinian Regional Environmental Protection Agency (ARPAS)</td>
<td>Romano Ruggeri</td>
<td>Environmental inspecter</td>
<td><a href="mailto:rruggeri@arpa.sardegna.it">rruggeri@arpa.sardegna.it</a></td>
</tr>
</tbody>
</table>
LEGISLATIVE REFERENCES

IED Directive

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:

(b) appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;

(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;

(d) 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 conditions; and
   (ii) where Article 15(3)(b) is applied, a summary of the results of emission monitoring which allows a comparison with 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.
2. The frequency of the periodic monitoring referred to in Article 14(1)(e) shall be determined by the competent authority in a permit for each individual installation or in general binding rules.

Without prejudice to the first subparagraph, periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

Article 24 Access to information and public participation in the permit procedure
3. The competent authority shall also make available to the public, including via the Internet at least in relation to point (a):

   b) the results of emission monitoring as required under the permit conditions and held by the competent authority.

4. Paragraphs 1, 2 and 3 of this Article shall apply subject to the restrictions laid down in Article 4(1) and (2) of Directive 2003/4/EC.

Documents to take into account


All documents are available on the website of European IPPC Bureau of the Joint Research Centre. Institute for Prospective Technological Studies (IPTS), European Commission.

**QUESTION1:**

1. Is the annual report (containing the results of emission monitoring) produced by the company using a template commonly used and made available by the competent authority?

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>So far, there are no such reports, mainly because no relevant permits have been issued for installations in our region since 7 January, 2013.</td>
</tr>
<tr>
<td>Germany</td>
<td>No</td>
</tr>
<tr>
<td>Romania</td>
<td>Yes, it contains.</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Template for annual report is stated in Czech legislation and for the operator it is a requirement to use this template.</td>
</tr>
<tr>
<td>Slovenia</td>
<td>In Slovenia regular monitoring is performed for: air emissions, water emissions and noise immissions. Monitoring is done by accredited laboratories and they prepare a report. Monitoring for water emissions is performed every year (number of measurements depends on quantity of waste water) and every third year for air emissions and noise immissions. An electronic copy of a report is sent by a laboratory to the Environmental Agency and to an operator. The Inspectorate gets it from an operator.</td>
</tr>
<tr>
<td>Estonia</td>
<td>There are reporting forms of pollutant emissions available. The operator highlights in the report as to what their data is based on - either random or continuous measurement or calculations. This data is made available to the public. Some operators have publicised their results of continuous measurement. Public disclosure is merely done on a voluntary basis.</td>
</tr>
<tr>
<td>Portugal</td>
<td>The operator produces an annual environmental report with a defined content according to the environmental permit and is delivered by paper or email. In regard to the monitoring of emissions and PRTR data the competent authority has a specific template available. There is also another template for the continuous emission report. Public disclosure of data is merely done upon request.</td>
</tr>
</tbody>
</table>
| Spain           | 1.1. Emissions of substances into the atmosphere. The template used by the operator is the one included in the online application containing the REGADE-CAPCA (Regional catalogue of activities likely to pollute the atmosphere which is adapted to uniform formats following PRTR tables models) in which the data are uploaded by the operator usually with the assistance of an authorised control body (OCA in its Galician acronym), which also carry out self-monitoring actions on behalf of the operator. The access to the application is given to the operator by the Galician Environmental Laboratory (LMAG in its Galician acronym) which is a public body ascribed to the Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia. (See the attached document with screenshots of the application). Installations operating with continuous automatic measurement systems submit monthly reports to the LMAG with the daily (hourly and daily ELV exceedances must be reported) and monthly abstracts. They are not uploaded to the REGADE-CAPCA database which is a database for periodic measurements not for continuous measurement. Compliance with ELV must be evaluated by the operator in the monthly reports as established in the IEP.  
1.2. Other emissions, including release of substances, vibrations, heat or noise into atmosphere, water, ground water or soil, as well as waste transfers: The biannual (every six months) reports are submitted to the IPPC Service (permit writing Service of the Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia) in both hard copy and digital format. There is not a template, only the obligation to include all the information required in the IEP. In addition to the data uploaded to the REGADE-CAPCA database, data on emissions of substances to the atmosphere are also included in these reports. |

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38 Annual report: document produced by the company, containing the results of emission monitoring, and sent to the Competent Authority.
<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETHERLAND</td>
<td>Yes and Yes</td>
</tr>
<tr>
<td>ITALY</td>
<td>The Environmental Agencies’ network drafted a template containing the Minimum Content of the Self-Monitoring Plan; the permitting authority ask the operator to use this template to draft the Self-Monitoring Plan, that will be included in the permit. The Self-Monitoring Report itself has consequently to follow the structure and content of the template.</td>
</tr>
<tr>
<td>FINLAND</td>
<td>Numeric data is delivered through electronic platform, which is directly connected with the inspection database programme. In addition to that a paper copy is sent including the numeric data and narrative part.</td>
</tr>
</tbody>
</table>
**QUESTION 2:**

2. Where are the annual reports stored? Are the monitoring data included in the report, stored in an environmental database?

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUSTRIA</strong></td>
<td>The reports will be stored in the national EDM (Electronic Data Management) database in PDF: <a href="https://secure.umweltbundesamt.at/edm_portal/cms.do?get=/portal/informationen/ie-richtlinie-und-ippc-anlagen/emissionsberichte-IPPC_main">https://secure.umweltbundesamt.at/edm_portal/cms.do?get=/portal/informationen/ie-richtlinie-und-ippc-anlagen/emissionsberichte-IPPC_main</a> (currently an empty page) The same or similar monitoring data included in other reports (e.g. PRTR reports, emission declarations, waste balance reports) are stored in the same EDM database (not accessible to the public).</td>
</tr>
<tr>
<td><strong>GERMANY</strong></td>
<td>The reports will be stored in the archive of our administration. These are the well-known reports on continuous measurements, the PRTR-data, reports on single measurements and so on.</td>
</tr>
<tr>
<td><strong>ROMANIA</strong></td>
<td>The annual reports shall be submitted to Environmental Protection Agency on both paper and in electronic format. The electronic data are stored in a database managed by EPA. An IED operator is connecting to this database through the internet using its ID and password.</td>
</tr>
<tr>
<td><strong>CZECH REPUBLIC</strong></td>
<td>Annual report drawn up in an electronic template which the operator sends to the permitting authority. The permit authority checks this template and puts it on IPPC information system (web page). The IPPC information system is publicly available and is available for the inspection authority (CEI).</td>
</tr>
<tr>
<td><strong>SLOVENIA</strong></td>
<td>An electronic copy of reports including monitoring data are stored on a database of the Environmental Agency but these data are not available directly to Inspectorate.</td>
</tr>
<tr>
<td><strong>ESTONIA</strong></td>
<td>Annual Reports are kept in the national environmental monitoring database. Emission monitoring reports and individual test results are recorded in the system of public records management (DMS-s). Results of the national and continuous measurements of the operator are deposited separately in the database of management system of Estonian Air Quality.</td>
</tr>
<tr>
<td><strong>PORTUGAL</strong></td>
<td>The Annual Report is kept by APA – Environmental Protection Agency. The Portuguese competent authority (APA) also has a database designated by SILIAM, available at <a href="http://siliamb.apambiente.pt">http://siliamb.apambiente.pt</a> that collects part of the data integrated in the annual report. This database is accessible to inspections, operators and other competent authorities, and contains data regarding the Integrated Waste Registration Chart, pollutant emissions under PRTR and water use permits.</td>
</tr>
</tbody>
</table>
| **SPAIN**        | 2.1. Emissions of substances into the atmosphere. The data containing the biannual (every six month) reports are stored in the REGADE-CAPCA database operated by the LMAG.  
2.2. Other emissions, including release of substances, vibrations, heat or noise into atmosphere, water, ground water or soil, as well as waste transfers: The biannual (every six months) reports are stored in the environmental database operated by the IPPC Service. In addition to the data stored in the REGADE-CAPCA database, data on emissions of substances to the atmosphere are also included in these reports. |
| **NETHERLAND**   | The data are stored in a national database. The summary of the monitoring data is put into the digital report into a website. All communication between company and authority is accommodated via a nationwide database on internet. The authority assesses the compulsory data and asks questions to the company if something is unclear. Before 1 July the companies have to provide the monitoring data of the previous year and after this the authorities have to assess these data and finish the assessment and give an approval. After successful assessment, all this data is available to the public via a national website. |
| **ITALY**        | Self-monitoring reports are submitted in hard copy and digital form but are not stored in a database (Sardinia). In other Italian regions (Lombardia), operators store directly their reports in an environmental database of the Environmental Agency. |
| **FINLAND**      | The numeric data of Annual Reports is stored in the database and the paper copies in the archives of inspection authority. |
**QUESTION 3:**

3. Which kind of analysis is performed by the Inspection Authority on the annual report and which frequency is followed for that?

<table>
<thead>
<tr>
<th>Country</th>
<th>Analysis Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>See answer no. 1. Future annual reports will be routinely assessed for plausibility.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>All reports on emissions will be routinely assessed for plausibility.</td>
</tr>
<tr>
<td>ROMANIA</td>
<td>The data contained in annual reports are assessed by inspectors in order to check the compliance with IED permit conditions. If the reports highlight the overcoming of ELVs than a site visit is performed for endorse permit conditions. The annual reports are also taken in account on Annual reports on state of environment released by EPAs (41 counties EPAs).</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>The permitting authority check Inspection reports after delivering and put it to the information system IPPC. Inspection authority (CEI) at each site -inspection regularly check permit conditions fulfilment and compare their findings with operator reporting (minimum inspection frequency according IED is once per 3 years).</td>
</tr>
<tr>
<td>SLOVENIA</td>
<td>Inspection Authority checks if the limit values are exceeded.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>We mainly check the accuracy of the data in annual reports, also compliance with the requirements of the permit. The monitoring results stipulated in the permit will be evaluated during the supervision process. What we will look at especially depends on the case, such as: a) overrun of the limit values; b) changes in the components to be analysed, if there is a hint of pollution; c) emission quantities.</td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>During inspection, the annual report is evaluated in three main aspects, which are the required content of the annual report, the accomplishment of submission date defined in the environmental permit and the compliance with the permit conditions regarding the parameters, ELV and frequency of monitoring. The analysis of the annual report by the inspection authority is done on site inspections whose frequency is based on the IRAM principles.</td>
</tr>
</tbody>
</table>
| SPAIN         | 3.1. The Environmental Inspectorate (the Intervention Service of the Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia) has a previous communication on the dates in which emission monitoring actions will be carried out by the OCAs (there are 14 private OCAs authorized in Galicia by the authorizing Spanish national authority ENAC). Regarding emission of substances to the atmosphere, L MAG officers and environmental inspectors attend a sample of monitoring actions carried by the OCAs in order to check compliance with the IEP regarding sample collection, measurement methodology etc. Regarding other kinds of emissions, environmental inspectors, in the same monitoring actions or in another sample of monitoring actions, check compliance with the IEP regarding the same items.  
3.2. Once the controls are carried out, the next step includes the data validation. Regarding emissions of substances into the atmosphere, the operators with the assistance of the OCAs, must upload all the data on REGADE-CAPCA database within the deadline of 40 days after performance of controls. In this case validation is performed by the LMAG. If there are no exceedences, the role of LMAG ends here. Data regarding all emissions are included in the biannual report to be submitted to the IPPC Service for validation. If there are ELV exceedences the operator and the OCAs must include in the biannual report measures to reduce emissions and comply with ELV.  
3.3. Once data are validated, the next step includes the previous analysis of compliance with emission limit values (ELV) established in the IEP. The biannual report submitted by the operator includes an evaluation of compliance with ELV as established in the IEP. The analysis of compliance is carried out by the IPPC Service. The data and the previous analysis are forwarded to the Environmental Inspectorate for additional analysis of compliance.  
3.4. Once the previous analysis is carried out by the IPPC Service, the next step includes the additional analysis carried out by the Environmental Inspectorate. |
| NETHERLAND    | See above, yearly assessment with every year certain focus points. Additionally, there are on site checks if the calculated or measured data are acquired correctly. Additionally, all the emissions of all companies are put together and analysed. This report gives an overview of the way all different emissions of different sectors are... |
The data is also used in risk assessment.

Actually, the frequency of the check of the self-monitoring reports is not fixed. Self-monitoring reports are checked with particular attention to the following points:
- compliance with Self-Monitoring Plan (included in the permit) requirements (parameters, frequencies, consumptions etc.);
- compliance with ELV;
- trend of performance (waste production, emissions, energy consumption etc.).

The annual reports must be delivered to the inspection authority by the end of February the following year. The inspection authority has then 90 days to check the report. The monitoring results are compared with the permit conditions; the waste categorisation and treatment are checked.

**QUESTION 4:**

4. Do the annual report findings give feedback and input in the routine environmental inspections provided in Article 23.4 of IED and how?

<table>
<thead>
<tr>
<th>Country</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>See answer no. 1. Future annual reports will be used in the preparation of inspections.</td>
</tr>
<tr>
<td>Germany</td>
<td>Yes. They are evaluated and possibly change the inspection frequency. That depends on the single inspector.</td>
</tr>
<tr>
<td>Romania</td>
<td>The data contents from annual reports are taken into account in our risk assessment for inspection prioritisation. Base on risk category the inspection frequency is set up.</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>In the case of non-compliance, the inspector takes into account in risk assessment for inspection prioritization</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Usually the Inspection Authority does not get a report prior to routine environmental inspection but on the inspection itself.</td>
</tr>
<tr>
<td>Estonia</td>
<td>Yes. If annual report or monitoring reveals that there is an environmental pollution or breach of licence conditions, then we will carry out an on-the spot inspection of the operator</td>
</tr>
<tr>
<td>Portugal</td>
<td>Yes, the PRTR it’s one input for the risk analysis tool that defines the inspection frequency.</td>
</tr>
<tr>
<td>Spain</td>
<td>Yes. The last step mentioned in the answer to the previous question (section 3.4) includes the additional analysis performed by the Environmental Inspectorate. It may have as an outcome the change of the inspection frequency, following an update of the risk assessment based on IRAM methodology.</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Yes, see also above</td>
</tr>
<tr>
<td>Italy</td>
<td>No, it can produce non-routine inspections.</td>
</tr>
<tr>
<td>Finland</td>
<td>Yes, not in the frequency but in the emphasis of inspections.</td>
</tr>
</tbody>
</table>

**QUESTION 5:**

5. Is there any formal procedure for the validation of the results of emission monitoring in which the inspectors participate?

<table>
<thead>
<tr>
<th>Country</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>The inspectors are also the technical experts, who routinely assess the plausibility of the emission data mentioned in answer 2 and 4 for the competent authority.</td>
</tr>
<tr>
<td>Germany</td>
<td>The inspectors have to check the risk assessment of our IRAM system.</td>
</tr>
<tr>
<td>Romania</td>
<td>No.</td>
</tr>
<tr>
<td>Czech</td>
<td>CEI have measuring group for measurement emission to air and CEI has competency to take samples (water,</td>
</tr>
</tbody>
</table>
REPUBLIC waste) and from these samples certified laboratory carry out analyses.

SLOVENIA No.

ESTONIA No, there is not.

PORTUGAL Yes. According to the results of a previous inspection or risk value given by the risk analysis tool, may be performed physical analysis on water, soil or air emissions, in order to validate operator’s performance.

SPAIN As mentioned in the answer to question 3, data validation is formally carried out by the IPPC Service and the LMAG (for emission to substances into the atmosphere). The Environmental Inspectorate performs an additional analysis on compliance with permit conditions (see section 3.4) which may have as an outcome the formal procedure of enforcement actions and/or change of the inspection frequency, following an update of the risk assessment based on IRAM methodology, as mentioned in the answer to question 4. The procedure is not strictly formal in the time: Environmental Inspection may sometimes react before IPPC Service and the LMAG have performed their evaluation of the data and reports submitted by the operators as there is not an obligation to wait for them.

NETHERLAND There is a national method how the authorities should validate the emissions and what legal measures they have to take actions if something is not ok or if monitoring data is not send (in time).

ITALY The Agency drafted an Operative Instruction on inspection and control of air emission.

FINLAND No

**QUESTION 6**

6. Which actions are taken by the Inspection Authority in case a non-compliance is detected from the annual report?

<table>
<thead>
<tr>
<th>Country</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA</td>
<td>In Austria, the competent authority is responsible both for permitting and for the inspection of installations. According to national law the competent authority shall take appropriate measures (e.g. warning letter, official order, partial or complete closure of the installation) to enforce the correction of any non-compliance.</td>
</tr>
<tr>
<td>GERMANY</td>
<td>In Bremen, the competent authority is responsible both for permitting and for the inspection of installations. According to national law the competent authority shall take appropriate measures (e.g. warning letter, official order, partial or complete closure of the installation) to enforce the correction of any non-compliance.</td>
</tr>
<tr>
<td>ROMANIA</td>
<td>As I mentioned above, if through annual report analysis a non-compliance is detected then a site visit is performed in order to endorse permit conditions. At the same time the suspension of the permit is also possible.</td>
</tr>
<tr>
<td>CZECH REPUBLIC</td>
<td>Inspection authority performs site- inspection and check report. If an operator states in a report that there is non-compliance – the inspection authority imposes a fine for non-compliance and takes into account as a mitigating factor non-compliance the reporting (according IPPC act is possible impose corrective measures, partial or complete closure of the installation). If an operator states in a report that there is no non-compliance and the inspection authority finds non-compliance – the inspection authority imposes a fine for non-compliance and take into account as an aggravating factor false reporting (according to the IPPC act it is possible to impose corrective measures, partial or complete closure of the installation).</td>
</tr>
<tr>
<td>SLOVENIA</td>
<td>The Inspection authority shall take appropriate measures (official order, partial or complete closure of the installation) to enforce the correction of any non-compliance. Besides that an administrative fines procedure will take place.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>That depends, if the results of emission monitoring are determined under the permit condition or by legislative act, then we will start an offence proceeding. When it comes to the operator’s self-monitoring, then we will analyse from the results of the environmental pollution if there is a need for additional measurements</td>
</tr>
</tbody>
</table>
to be taken. Other monitoring results will be considered as informative.

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORTUGAL</td>
<td>All actions, mainly legal action, are carried out after an inspection. If a non-compliance is detected in an inspection or reported in the annual report of the inspected operator legal action will be taken. So, actions over the operator will occur only in the sequence of an inspection.</td>
</tr>
<tr>
<td>SPAIN</td>
<td>In this case, usually a non-routine inspection is performed and as a consequence, enforcement measures may follow, started by the IPPC Service and the Legal Services of the Ministry of Environment, Spatial Planning and Infrastructures of the Regional Government of Galicia.</td>
</tr>
<tr>
<td>NETHERLAND</td>
<td>The regular sanctions can be used. A fine or a conditional bond depending on the breach.</td>
</tr>
<tr>
<td>ITALY</td>
<td>In a case where an ELV has been breached, inspectors have to perform measurements in the plant to assess the violation; the breach in the report is not enough to prosecute the operator. In case of non-compliances on parameters, frequencies or others provisions of the Self-Monitoring Plan included in the permit, the Environmental Agency (that analyses the report) has to inform the Permitting Authority about administrative/penal breaches.</td>
</tr>
<tr>
<td>FINLAND</td>
<td>If non-compliance is detected only from the annual report, the operator must have kept it secret. Normally the operator must inform about non-compliance immediately. If a non-compliance is detected in an inspection or reported in the annual report of the inspected operator administrative action will be taken in order to find out the reasons for the non-compliance and how the situation can be improved. The inspection authority also considers, if legal action should be taken.</td>
</tr>
</tbody>
</table>