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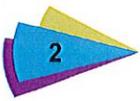
Application of IED Article 15(4) derogations

Final report



March 2018

Amec Foster Wheeler Environment
& Infrastructure UK Limited



Report for

European Commission
Directorate-General Environment
Directorate C – Quality of Life
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Doc Ref. 39465

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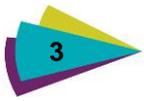
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Document revisions

No.	Details	Date
1	Draft final report	19/01/2018
2	Final report	13/03/2018



Abstract

Article 15(4) of the Industrial Emissions Directive allows competent authorities to set, under certain specific circumstances, less strict emission limit values in the permit than the emission levels associated with the best available techniques. Derogations are considered a pivotal component of the IED as the application of Article 15(4) directly affects the effectiveness and relevance of the IED, as well as wider competition in the Single Market. The objective of this study was to provide an overview of the use of Article 15(4) and of the approaches followed by Member States in their decision-making processes. The study compiled information on Member State derogation procedures and on a selection of derogation case studies, illustrating their application.

A total of 105 derogation requests, i.e. applications at the installation level, have been reported by Member States of which the majority have been granted (75). The study also identified 27 derogation principles that can be considered as high-level recommendations on the application of Article 15(4) and could assist Member States in the assessment of future derogation requests. The derogation principles are illustrated with exemplar practices from Member State derogation procedures.

Executive summary

Article 15(4) of the Industrial Emissions Directive (IED) allows for derogation from the requirements of Article 15(3) under certain specific circumstances. Emission limit values less strict than the emission levels associated with the best available techniques (BAT-AELs) may be set in the permit where all criteria in Article 15(4) are met, including an assessment showing that achieving the 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.

Derogations are considered a pivotal component of the IED as the application of Article 15(4) directly affects the effectiveness and relevance of the IED, as well as wider competition in the Single Market.

Member States experience in the development of procedures and guidance and their application in relation to Article 15(4) prior to this project had been somewhat limited to date. Ensuring the correct and consistent implementation of the provisions under Article 15(4) across the EU is important both for environmental reasons, as well as for ensuring a level playing field in the Union for operators' subject to the IED. Therefore, the objectives of the project were to provide an overview of the use of Article 15(4) derogations granted under the implementation of IED BAT Conclusions and the approaches followed by Member States in their decision-making processes. Furthermore, the project aimed to identify general principles and exemplar practices in the application of the derogation provisions that have the potential for wider EU dissemination.

In total, the project comprised four main tasks, i.e.:

- ▶ Task 1: the compilation and analysis of EU Member State derogation practices;
- ▶ Task 2: the analysis of a selection of EU Member State case studies, providing information on how the Member State derogation practices have been applied in actual cases;
- ▶ Task 3: the identification of derogation principles and of EU Member State exemplar practices for the evaluation of derogation requests; and
- ▶ Task 4: the presentation and discussion of the project findings at the IEEG workshop in Brussels, 19 October 2017 on IED implementation and at the IED Article 13 Forum meeting in Brussels, 20 December 2017.

The data collection under Tasks 1 and 2 was conducted through an online questionnaire sent to representatives of all EU Member States, complemented with more detailed questions on the Member State practices and selected derogation case studies via follow-up emails and interviews. Information already made available by Member States was taken into account in the data collection and analysis, including responses to the questionnaire set out in Annex I of the Commission implementing Decision 2012/795/EU (IED implementation) and IMPEL studies on the experience of derogations from IED BAT-AEL.

In total, 27 out of the 28 EU Member States responded to the invitation for the Article 15(4) questionnaire under this project. Representative competent authorities from 22 Member States provided input via the online questionnaire in this study, with a further five indicating that there is a lack of available information or experience in their Member State.

A total of 105 derogation requests, i.e. applications at the installation level, were reported by Member States in this study. In terms of the industrial sectors for which derogations had been requested, the largest numbers were for Manufacture of Glass (40), Cement, Lime and Magnesium Oxide Manufacturing Industries (30) and for Iron and Steel Production (15). When referring to the number of Article 15(4) derogations, Member States may have a different way of reporting. Some Member States reported the numbers as derogations from individual BAT-AELs, i.e. one derogation request corresponds to derogation from a single BAT-AEL. Other Member States reported the numbers as requests from industrial installations, i.e. one derogation request corresponds to a single application for permit variations (and therefore, can relate to

more than one BAT-AEL of the BATC). The number of derogations presented in this study reflect the situation at the time of reporting and are constantly evolving.

Guidance on Article 15(4) derogations has been developed in 14 Member States (BE, CZ, DK, ES, FI, FR, HR, IE, IT, PL, PT, SE, SK, UK). In the majority of cases, the guidance has been finalised and made publicly available. Some of the guidance developed covers all aspects of granting derogations, i.e. it considers the three criteria outlined in Article 15(4), the calculation of costs and benefits and the assessment of disproportionality. In other Member States, the guidance is either general or related to specific aspects of the decision-making process. The guidance document developed by PL is specifically related to derogation requests from the BATC for Large Combustion Plants.

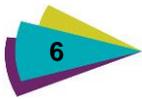
Member States provided some examples to illustrate their understanding of the Article 15(4) criteria to justify a derogation request, i.e. geographical location, local environmental conditions and technical characteristics of the installation concerned. Only a limited number of Member States have included these specific examples of the derogation criteria in the guidance and therefore, made available to operators (e.g. FR and UK). For the majority of Member States, these or other examples are not made publicly available. The assessment of a derogation request against these justifying derogation criteria is in some Member States considered as a prerequisite to conducting further analysis.

There seems to be a common understanding amongst Member States of the type of cost data needed for the assessment of a derogation request (both CAPEX and OPEX), as well as of the type of environmental benefits to be considered in the assessment of a derogation request. In terms of calculating environmental benefits, it was not clear for Member States how to value aspects such as emissions to water or pollutants to air where no damage costs are available. Only a few examples were reported where a different, more qualitative, approach was followed in the context of IED Article 15(4) derogations.

In order to assess disproportionality, i.e. to assess whether the costs for complying with the BAT-AELs are disproportionately higher than the environmental benefits, Member States use different approaches such as cost-benefit assessments (incl. the use of fixed cut-off values), cost-effectiveness calculations (incl. comparison to reference values) and considerations of additional information on the installation and the derogation request.

Based on the information collected on Member State derogation practices and case studies, the report identifies 27 general principles that are currently applied by Member States. The principles can assist Member States in their further application of IED Article 15(4) and it is recognised that the current list could potentially change in the future. Additionally, a list of (parts of) Member State practices that are in line with the derogation principles and have the potential for wider EU dissemination was identified. The derogation principles and exemplar practices cover general aspects of the decision-making procedure as well as aspects related to the Article 15(4) derogation criteria, the calculation of costs and benefits and the assessment of disproportionality.

Based on the data collected, it appears that in a small number of cases, Member States practices are not fully in line with the requirements of Article 15(4). This includes for example areas around the derogation criteria and the inclusion of wider socio-economic benefits in the decision process. More time would be needed to further understand how these Member States apply Article 15(4) and for Member States to make use of the principles for further developing or amending their practices.



List of abbreviations

Abbreviation	
BAT	Best Available Techniques (IED Article 3)
BAT-AEL	Emission levels associated with the BAT
BATC	Commission Implementing Decision establishing BAT conclusions, under Directive 2010/75/EU of the European Parliament and of the Council
BCR	Benefit Cost Ratio
BREF	BAT Reference Document
CA	Competent authority
CBA	Cost Benefit Analysis
CLM	Production of Cement, Lime and Magnesium Oxide
ECM REF	Reference Document on Economics and Cross-media Effects
ELV	Emission Limit Value
GLS	Manufacture of Glass
IED	Industrial Emissions Directive (2010/75/EU)
IS	Iron and Steel Production
LCP	Large Combustion Plants
MS	EU Member State
NPV	Net present value
PP	Production of Pulp, Paper and Board
REF	Refining of Mineral Oil and Gas
EU Member States	
AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia



Abbreviation	
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxemburg
LV	Latvia
MT	Malta
NT	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom



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1. Introduction

This introduction presents the project's objectives and tasks, background information and the structure of the report.

1.1 This report

This is the final report for contract 070201/2017/753742/SFRA/ENV.C4 between the European Commission and Amec Foster Wheeler Environment and Infrastructure UK Ltd ("Amec Foster Wheeler") in collaboration with the Regional Environmental Centre ("REC"). It concerns the "Application of IED Article 15(4) derogations".

This report presents our methodology and analysis of the EU Member State derogation practices and of a selection of Member State derogation case studies. The analyses are based on information previously provided by Member States and on additional data collection under this project. Furthermore, the report provides possible derogation principles and identifies Member State exemplar practices. The findings described in the intermediate report were presented and discussed at the IEEG workshop in Brussels, on 19 October 2017, jointly organised by the Commission and Belgian authorities.

In total, the project comprised four main tasks, i.e.:

- ▶ Task 1: the compilation and analysis of EU Member State derogation practices;
- ▶ Task 2: the analysis of a selection of EU Member State case studies, providing information on how the Member State derogation practices have been applied in actual cases;
- ▶ Task 3: the identification of derogation principles and of EU Member State exemplar practices for the evaluation of derogation requests; and
- ▶ Task 4: the presentation and discussion of the project findings at the IEEG workshop in Brussels, 19 October 2017 on IED implementation. The project was also presented at the IED Article 13 Forum meeting in Brussels, 20 December 2017. The feedback received during and after the workshop and Article 13 Forum meeting is taken into account to update the work under Tasks 1, 2 and 3 in this draft final report.

An overview of the work completed against each of the four tasks is presented in Table 1.1.

Table 1.1 Overview of project tasks and work completed

Task (section in final report)	Work completed
Task 1 – MS derogation practices (Section 2, 3 and Appendix A)	<ul style="list-style-type: none"> • Review of existing information on IED Article 15(4) • Primary data collection (survey with questionnaire to 28 Member States) • Selection of 10 Member States for detailed analysis • Interviews with selected Member States • Analysis of collected information • Task 1 updated based on feedback from the Commission, Member States and the IEEG workshop
Task 2 – MS case studies (Section 4 and Appendix B)	<ul style="list-style-type: none"> • Selection of derogation case studies • Developing of questionnaire • Interviews with selected Member States: BE (1), CZ (1), FR (1), IT (1), PL (1), SE (2), SK (1), UK (2) • Analysis of collected information • Task 2 updated based on feedback from the Commission, Member States and the IEEG workshop
Task 3 – Derogation principles and exemplar practices	<ul style="list-style-type: none"> • Approach to identify principles and exemplar practices described • Identification of possible derogation principles

Task (section in final report)	Work completed
(Section 5)	<ul style="list-style-type: none"> • Identification and description of exemplar practices • Task 3 updated based on feedback from the Commission, Member States, the IEEG workshop and the IED Article 13 Forum meeting (20 December 2017)
Task 4 – IED implementation workshop (Appendix C)	<ul style="list-style-type: none"> • Communication with the Commission and Belgian authorities for the preparation of the workshop • Preparation of presentation on the project • Delivery of workshop (presentation and discussion with Member State representatives) • Presentation at the IED Article 13 Forum meeting • Reporting on feedback and follow-up actions

1.2 Study context

1.2.1 Derogations in EU environmental legislation

European law is drafted and adopted to be binding on all Member States. However, some EU law may include provisions allowing Member States to grant derogations (either individual or more general and temporary or not, depending on the provisions). In general, they provide an exemption to implement a particular provision of a legislation, usually for a limited time, in order to either allow for additional time to meet the legislation's requirements or to account for specific conditions.

Derogations may be directly applicable (without Member States having to make use of the option in their transposition) by virtue of directly applicable provisions in Regulations. For example, in 2013 the EU banned neonicotinoid pesticides in the Pesticide Regulation 1107/2009/EC. However, the legislation allows for derogations (Article 53) so that farmers may use pesticides in emergency situations or where pest outbreaks posed an imminent economic danger that could not be treated any other way.

In environmental legislation, some of the earlier examples of derogations come from the wildlife protection legislation, in particular the Habitats and the Birds Directives (92/43/EEC). Article 16 of the Habitats Directive foresees that provided that there is no satisfactory alternative and that the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range, Member States may derogate from the provisions of the Directive for a number of specific reasons. This may include the prevention of serious damage to crops or for imperative reasons of overriding public interest¹.

Water legislation offers other valuable examples of derogation. The main objective of the Water Framework Directive (WFD, 2000/60/EC) is to ensure that all waters reach 'good status' by the year 2015; however, the WFD recognizes that reaching environmental objectives in all water bodies might not be feasible. The WFD describes circumstances when the deadlines stipulated by the Directive to achieve the environmental objectives could be extended or when the alternative objectives could be set (less stringent objectives or justification of the deterioration from "high status" to "good status"). In particular, Article 4 of the WFD envisages the possibility of such exemptions when objectives cannot be achieved due to natural processes/conditions, lack of technical feasibility or disproportionate costs of available measures. Even the most cost-effective set of measures could be disproportionately costly as a whole. Therefore, while not the sole argument, disproportionality is one of the key considerations (other conditions need to apply) in justifying the exemptions to the environmental objectives.

In particular, the WFD foresees a number of occasions when derogations can be justified on the basis of disproportionality analysis including among others:

- ▶ Deadlines established (2015) may be extended until the year 2021 or 2027 for the purposes of phased achievement of the objectives, if completing the improvements by 2015 would be disproportionately expensive (Article 4(4)); and

¹ ECJ, C-240/09

<http://curia.europa.eu/juris/document/document.jsf?text=derogation%2B96%252F61%252FEC&docid=80235&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=1005179#ctx1>

- ▶ Less stringent environmental objectives may be set if achievement of the required objectives would be infeasible or disproportionately expensive (Article 4(5)).

There are few general principles related to the applications of derogations in European environmental law. Nonetheless, rulings from the European Court of Justice have consistently indicated that criteria for derogations must be specified clearly and applied strictly (Case C-60/05², Case C-118/94). This was reiterated in a recent ruling on the application of derogations contained in the LCP Directive (2001/80/EC) where the ECJ indicated that a derogation from the general rule must be interpreted strictly. Furthermore, the ruling stated that ‘the subjective intention of particular actors within the legislative process is not a valid criterion of interpretation’³. In this case, the ECJ ruled that the UK failed to meet the requirements for using a derogation to ELVs. Finally, when interpreting conditions for derogations, the ECJ has referred to the practical objectives of the legislation. In another case, the court was asked to rule on the application of a derogation under the VOC Directive. The Advocate General in its opinion considered the need for evidence to support derogations. It indicated that when considering whether the conditions for the application of a derogation are met ‘the competent authorities make a complex scientific and economic forecast. They must, therefore, be afforded a wide margin of discretion which should be reviewed only to ensure that no manifest errors have been committed. They must none the less examine carefully and impartially all relevant aspects of each individual case and give adequate reasons for their decisions’⁴.

1.2.2 IED Article 15(4) derogations

Directive 2010/75/EU on industrial emissions (IED) requires around 50 000 installations to operate in accordance with permits issued by Member State competent authorities. The permits must include emission limit values (ELVs) for emissions of polluting substances based on best available techniques (BAT).

Article 15(3) of the IED requires the competent authority to set ELVs that, under normal operating conditions, ensure emissions do not exceed the BAT-AELs laid down in the BAT Conclusions adopted as Commission Implementing Decisions. In accordance with the IED, permit conditions for an industrial site must be reviewed and enter into force within four years of BAT Conclusions being published for the main activity.

However, there can be practical challenges in applying BAT to a particular installation and Article 15(4) of the IED allows for derogation from the requirements of Article 15(3) under certain specific circumstances. ELVs less strict than BAT-AELs may be set in the permit where the criteria in Article 15(4) are met, including that an assessment shows that implementing the 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.

In addition to the need for an assessment and the justification against the derogation criteria above, IED Article 15(4) also contains a number of other legal requirements (see text of IED Article 15(4) in the box below).

²<http://curia.europa.eu/juris/showPdf.jsf?jsessionid=9ea7d2dc30d65467e3d492994965b8b9acac60b9f742.e34KaxiLc3qMb40Rch0SaxyMbN50?text=&docid=55164&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=775914>

³ ECJ, C-304/2015

<http://curia.europa.eu/juris/document/document.jsf?text=derogation%2B96%252F61%252FEC&docid=183607&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=1005179#ctx1>

⁴ ECJ, Case C-81-14, Opinion from General Advocate,

<http://curia.europa.eu/juris/document/document.jsf?text=derogation%2B96%252F61%252FEC&docid=162831&pageIndex=0&doclang=en&mode=req&dir=&occ=first&part=1&cid=1005179#ctx1>

Article 15(4) of the IED

By way of derogation from paragraph 3, and without prejudice to Article 18, the competent authority may, in specific cases, set less strict emission limit values. Such a derogation may apply only where an assessment shows that the achievement of emission levels associated with the best available techniques as described in BAT conclusions 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.

The competent authority shall document in an annex to the permit conditions the reasons for the application of the first subparagraph including the result of the assessment and the justification for the conditions imposed.

The emission limit values set in accordance with the first subparagraph shall, however, not exceed the emission limit values set out in the Annexes to this Directive, where applicable.

The competent authority shall in any case ensure that no significant pollution is caused and that a high level of protection of the environment as a whole is achieved.

On the basis of information provided by Member States in accordance with Article 72(1), in particular concerning the application of this paragraph, the Commission may, where necessary, assess and further clarify, through guidance, the criteria to be taken into account for the application of this paragraph.

The competent authority shall re-assess the application of the first subparagraph as part of each reconsideration of the permit conditions pursuant to Article 21.

Derogations are considered a pivotal component of the IED as the application of Article 15(4) directly affects the effectiveness and relevance of the IED, as well as wider competition in the Single Market.

It is for the competent authority to judge the need for a derogation but the operator must ultimately make the case for a derogation to be granted.

As noted in the '**Assessment and Summary of the Member States' Implementation Reports for the IED, IPPC Directive, SED and WID**'⁵ under the first reporting period for implementation of the IED, Member States were asked specifically about the implementation of Article 15(4). Very little information was included in the responses with at best, in some cases links provided to the procedures followed in order to decide which value within the BAT-AEL range were to be included as ELV in the permit. Some additional information was also provided, such as:

- ▶ In Belgium, the general principle is that the upper limits of the BAT-AELs are adopted as ELVs in the national legislation; and
- ▶ Denmark, Germany and Sweden's guidance includes information on setting ELVs in relation to BAT-AELs and, for Denmark and Germany, which part of the BAT-AEL range should be used. Denmark noted that it is not automatic that new installations should meet the lower end of the BAT-AEL range.

On the implementation of the derogation provision included in Article 15(4), most Member States quoted their national legislation without providing further information about how they practically intended to implement this provision. Three Member States reported that a procedure for granting derogations had been adopted, and four Member States had issued some guidance on the topic. Only one Member State reported having experience with applying a specific procedure (date of the final report: March 2016).

Moreover, very little information was provided on what would be considered disproportionately higher costs compared to environmental benefits. Replies referred to the following:

- ▶ The cost which makes production uneconomical (Bulgaria);

⁵ Industrial Emissions Directive Final Report, March 2016. Prepared by Amec Foster Wheeler.
<https://circabc.europa.eu/sd/a/99b250aa-17db-40d0-b8f9-57f58a3465fe/IED%20implementation%20final%20report.pdf>

- ▶ Whether the ratio between the costs of undertaking the adjustments and the quantities of emissions that need to be reduced in order to meet the levels is greater than the reference values provided in the Economics and Cross-media Effects Reference Document (Croatia);
- ▶ The fact that compliance with BAT-AELs does not have a beneficial effect compared to compliance with the current set of permit conditions, achieving BAT-AELs has a positive effect which is not significant given the extremely high cost, or territorial constraints render the cost of meeting BAT disproportionate (Italy);
- ▶ The cost associated with the technological investment required to meet the BAT-AEL outweighs certain critical issues such as the environmental gains achievable should BAT be applied (Malta); and
- ▶ Cost of achieving the BAT-AEL is higher than the cost of harm caused (UK).

Furthermore, the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) has undertaken a project sharing information between Member States on implementing the derogation provision. The **IMPEL derogation project** consisted of two phases, i.e.:

- ▶ Phase I: Sharing of draft proposals between Member States for implementing derogations from BAT-AELs under Article 15 paragraphs (4) and (5) of the IED⁶; and
- ▶ Phase II: Experience of Derogations from IED BAT-AELs⁷.

The IMPEL Phase I report (2015) concluded that out of the Member States consulted, only nine had guidance in place or forthcoming to assist in implementing Article 15(4). Furthermore, cost benefit methodologies were being looked into by several Member States. The report noted the following key messages:

- ▶ Gathering data on costs and benefits is not easy and in some cases, not possible, in particular considering costs of environmental damages. Due to the variety of methods existing (e.g. valuations and damage cost functions) it was clear that different values might be assigned to the same pollutants in different Member States;
- ▶ Linked to the first point, qualitative analysis and data may be more useful than quantitative analysis for some aspects of the assessment of derogations under Article 15(4);
- ▶ Assessing costs and benefits over time may require economic specialist skills that are not typically available within IED competent authorities, in particular use of discount rates, investment costs and other costs data that might require some economic expertise;
- ▶ Analysing costs and benefits is likely to be based on a small number of scenarios including do nothing, complying with the BAT-AELs and a partial BAT-AEL compliance; and
- ▶ Support might be sought from third parties to support derogation cost-benefit analysis.

The aim of IMPEL Phase II was to identify good practice in managing, assessing and granting or refusing derogations against BAT-AELs, under Article 15(4) of the IED; through sharing the experiences of regulators from different Member States (via a questionnaire and a workshop). Based on this exchange of experience and information three main recommendations for further work were developed, i.e.:

- ▶ It was recommended that the European Commission examine ways in which impact on the aquatic environment can be quantified, with a view to then developing and publishing aquatic cost of harm data, as well as values for a wider range of air pollutants;
- ▶ To prevent inconsistent interpretation of Article 15(4)(a) with regard to which factors can be considered as costs associated with geographic location or the local environmental conditions

⁶ IMPEL Phase I report (2015): <https://www.impel.eu/wp-content/uploads/2014/08/FR-2014-18-Implementing-derogations-from-BAT-AELs.pdf>

⁷ IMPEL Phase II report (2016): <https://www.impel.eu/wp-content/uploads/2017/04/FR-2016-02-Experiences-of-Derogations.pdf>

of an installation; it was recommended that the European Commission develop guidance or issue a direction specifying the types of costs which should and should not be considered; and

- ▶ Further work was needed to identify ways in which impacts such as noise, odour and amenity impact can be taken account of in a cost benefit analysis, as at present they cannot be monetised.

The existing reports described above indicated that Member States experience in the development of procedures and guidance and their application in relation to Article 15(4) had been somewhat limited to date. Given the importance of ensuring the correct and consistent implementation of the derogation of provisions under Article 15(4) across the EU both for environmental reasons, as well as for ensuring a level playing field in the Union for operators' subject to the IED (see recital 3 of the IED), the current project forms an important assessment to both inform the Commission with regards to progress in implementation as well as identifying principles and best practice in the application of the derogation provisions.

1.2.3 Development of the IED Article 15(4) derogation criteria

As noted above, derogations can only be granted if all conditions laid down in Article 15(4) are met. In particular, it has to be demonstrated that the costs of having to achieve the BAT AELs are disproportionately high as compared to the environmental benefits, taking into account one or more of the criteria laid down under IED Article 15(4), namely the geographical location or local environmental conditions of the installation concerned or the technical characteristics of the installation concerned. However, these criteria existed prior to the 2007 Commission proposal that led to the IED and it is important to consider the evolution of the criteria given:

- i) The role that the evolution has had in relation to the development of Article 15(4) of the IED; and
- ii) The experience of Member States of applying these criteria prior to entry into force of the IED that is likely to have influenced the procedures and guidance developed in order to implement Article 15(4) in practice.

A brief overview of the development of the derogation criteria under the IED is provided below.

Council Directive 84/360/EEC on the combating of air pollution from industrial plants⁸

This Directive was the first piece of EU legislation specifically targeting emissions from industrial plants. As well as introducing the concept of Best Available Technology Not Entailing Excessive Cost (BATNEEC – the predecessor to BAT), the Directive foresaw the need for BATNEEC to be gradually applied to existing plants to take into account both technical and economic considerations. In particular Article 13 made clear that in the light of an examination of developments as regards the best available technology and the environmental situation, Member States must implement policies and strategies, including appropriate measures, for the gradual adaptation of existing plants belonging to the categories given in Annex I to the best available technology, taking into account in particular:

- ▶ The plant's technical characteristics;
- ▶ Its rate of utilisation and length of its remaining life;
- ▶ The nature and volume of polluting emissions from it; and
- ▶ The desirability of not entailing excessive costs for the plant concerned, having regard in particular to the economic situation of undertakings belonging to the category in question.

It is useful to note, therefore, that Directive 84/360/EEC already considered the criteria of the technical characteristics of the installation as a determinant for the application of Best Available Technology. Furthermore, consideration of the nature of emissions and economics at the installation level was also provided for under this Article. Whilst this cannot be considered as requiring the same cost-benefit analysis as foreseen under the IED, it is apparent that Member States were expected to weigh up some of the

⁸ OJ L 188, 13.7.1984, p.20

elements that would naturally sit within a cost-benefit analysis for existing installations from the mid 1980's onwards.

Council Directive 96/61/EC concerning integrated pollution prevention and control⁹

Article 9(4) of the IPPC Directive (now repealed) foresaw that 'without prejudice to Article 10, the emission limit values and the equivalent parameters and technical measures referred to in paragraph 3 shall be based on the best available techniques, without prescribing the use of any technique or specific technology, but taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions. In all circumstances, the conditions of the permit shall contain provisions on the minimisation of long-distance or transboundary pollution and ensure a high level of protection for the environment as a whole'. Furthermore, recital 18 made clear that it was for the Member States to determine how the technical characteristics of the installation concerned, its geographical location and local environmental considerations could, where appropriate, be taken into consideration. It is these three criteria that effectively formed the foundation for the criteria found under Article 15(4) of the IED.

In assessing the application of the three criteria under the IPPC Directive the Commission issued a number of Communications and performed a number of studies that highlighted particular difficulties:

- ▶ In its 2003 Communication 'On the Road to Sustainable Production – Progress in implementing Council Directive 96/61/EC concerning integrated pollution prevention and control'¹⁰ the Commission identified shortcomings in relation to all Member States except the UK in transposing legislation requiring that authorities take account of the technical characteristics of the installation concerned, its geographical location and the local environmental conditions when determining the conditions of the permit. Section 6 of the Communication stated that '*Since authorities are also expected to take account of the technical characteristics of the installation, its geographical location and the local environmental conditions, BREF documents cannot be the only basis for emission limit values and other permit conditions*'.

The 2003 Communication also considered the issue of economic viability in relation to the implementation of BAT whereby in Section 5.2 of the Communication it was emphasised that '*The determination of BAT involves an assessment of the estimated net costs of implementing a technique in relation to the environmental benefits achieved through its implementation. A second economic test relates to whether the technique can be introduced in the relevant sector under economically viable conditions. This affordability test can only be legitimately applied on a European sectoral level, not to individual installations. If the techniques are considered too expensive for the sector as a whole, then they are not BAT. However, by taking the sector and not the individual installation as a basis for this test, there can be no perverse effect whereby installations in a difficult financial situation are allowed to continue to pollute because they cannot afford to take the required measures.*'

- ▶ In its 2005 report to the Council and the Parliament on the implementation of Directive 96/61/EC concerning integrated pollution prevention and control¹¹ the Commission emphasised once again that '*all installations should operate according to conditions fixed in a permit based on BAT, taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions*'.
- ▶ In the Commission Staff Working Document accompanying the proposal for a Directive on industrial emissions¹², Section 2.3 indicated that in relation to Article 9(4) that the legal interpretation of the Commission was that the BAT requirement came first in terms of weight with 'local factors' as a secondary consideration and limited to specific circumstances. Furthermore, as was indicated in the same section of the Impact Assessment, the Commission considered that conditions in permit different from the normal application of BAT (such as less strict ELVs) should be limited to the specific local factors mentioned in the Directive and be

⁹ OJ L 257, 10.10.96, p.26; codified by OJ L 24, 29.1.2008, p.8

¹⁰ COM(2003) 354, 19.6.2003

¹¹ COM(2005) 540, 3.11.2005

¹² SEC(2007) 1679, 21.12.2007

allowed only if determined on the basis of an assessment of costs and benefits as noted in COM (2003) 354.

- ▶ In the Commission Study 'Assessment of the Implementation by the Member States of the IPPC Directive' published in February 2007, Entec UK Limited (subsequently part of Amec Foster Wheeler) examined in detail 30 permits for IPPC installations. 13 of the 30 installations examined had permit conditions for the main emission sources demonstrably based on BAT and consistent with BREF BAT-AELs. As a general remark, it was noted that where permit conditions were not demonstrably based on BAT, no clear justification had generally been provided explaining how conditions had been set and how derogation from BAT could be justified on the basis of the criteria set in the Directive. Whilst 17 of the 30 installations examined had conditions that considered specific technical, geographic or local conditions there were few cases where those aspects appeared to provide a clear justification for derogation from BAT-based permit conditions.
- ▶ In the Commission Study 'Assessment of the implementation of the IPPC Directive published in February 2010, Entec UK Limited (subsequently part of Amec Foster Wheeler)¹³ examined permits for 31 installations. For the majority of the installations (25) there was evidence of consideration of specific technical characteristics of the installation, its geographical location or local environmental conditions in the setting of emission limit values and equivalent technical parameters. In some cases, this led to ELVs in permit that were less strict than the BAT-AELs.

For five installations, there appeared to be evidence of factors influencing permit conditions not compatible with the Directive (e.g. the operator's economic circumstances.) For only two of the installations, all ELVs contained in permits were consistent with the range of BAT-AELs in the BREFs. The remaining 29 had some but not all permit ELVs in line with the BAT-AEL ranges. There were four cases where ELVs had not been set for pollutants for which BAT-AELs exist, for all or parts of the installation. In terms of actual levels of emissions and based on the monitoring data available, emissions from the installations appeared to comply with all permit emission limit values for 16 installations, with mixed compliance for 12 installations and for three installation monitoring data was missing to allow a complete assessment. For six installations, all emissions data were consistent with BAT-AELs, with a mixed picture for 20 and an unclear picture for five.

- ▶ In the Commission Study 'Assessment of the Implementation of the IPPC Directive Phase 3' published in June 2011, Entec UK Limited (subsequently part of Amec Foster Wheeler) assessed 50 permits. 14 (28%) of the installations had all ELVs set within the BAT-AEL ranges, 23 had a mixed set of ELVs, some BAT-AEL compliant and others not, 9 had no ELVs set within the BAT-AEL ranges, 3 had no relevant BAT-AELs (shipyards) and 1 permit was unclear. The majority of reasons given for not setting ELVs in line with the BAT-AELs fell under one of the following bases – a relevant sectoral Directive limit applied (Solvents Emissions Directive, Large Combustion Plant Directive and Waste Incineration Directive), BAT-AELs were not mandatory, emissions were insignificant and/or the operator had demonstrated that the installation was currently applying BAT and that stricter ELVs would have no direct impact on the level of pollution.

In 25 of the 50 permits there was evidence to suggest that the main conditions relating to permit ELVs or technical measures had been set on the basis of consideration of the technical characteristics, local environmental conditions and/or geographic location of the installation concerned. Specific examples included the setting of lower limits than BAT-AEL upper values because a lower emission level was achieved through the application of BAT and the setting of ELVs higher than BAT-AELs because of high levels of dispersion due to location and prevalence of strong coastal winds.

- ▶ Finally, a Commission study 'Assessment and Summary of the Member States' Implementation Reports for the IED, IPPC Directive, SED and WID – IPPC Directive Final Report' published in March 2016, was carried out by Amec Foster Wheeler as part of the final implementation report for the IPPC Directive. In this all Member States indicated that *'in setting permit conditions,*

¹³ In partnership with Arcadis Belgium

consideration must be given to the technical characteristics of the installation concerned, its geographical location and the local environmental conditions (in keeping with Article 9(4) of the Directive)', with these provisions remaining unchanged since the previous reporting period.

The wording found under Article 9(4) of the IPPC Directive is very close to the wording used in Article 15(4) and it is reasonable to assume that competent authorities would have had to gain an understanding of how to apply it beforehand as demonstrated in the abovementioned sources.

1.3 Structure of the report

This final report is structured as follows:

- ▶ Section 2 provides the methodology for collecting the information on the Member State derogation practices. The section presents an overview of Member State participation, the available guidance on derogations in Member States and the number of derogations requested and granted at the time of reporting.
- ▶ Section 3 provides an analysis and discussion of the Member State derogation practices, with a focus on three derogation criteria, calculation of costs, calculation of benefits and assessment of disproportionality. The detailed information of each of the Member State practices is presented in Appendix A.
- ▶ Section 4 provides the methodology and analysis of the selected Member State case studies. Similar to section 3, the analysis and discussion in the report focusses on the main aspects of derogation requests and evaluations. The detailed information of each case study is presented in Appendix B.
- ▶ Section 5 presents the identification and description of possible principles for the application of IED Article 15(4). Based on these principles exemplar Member State derogation practices are identified.
- ▶ Section 6 presents the main conclusions and recommendations for further work on the application of IED Article 15(4) as identified under this study.
- ▶ Appendix A provides the detailed information of all Member State derogation practices.
- ▶ Appendix B provides the detailed information of the selected derogation case studies.
- ▶ Appendix C provides the presentations at the IEEG workshop on IED implementation on 19 October 2017, Brussels and at the IED Article 13 Forum Meeting on 20 December 2017, Brussels.

2. Member State Participation and Derogations

This section describes the approach and information collected on the Member State derogation practices and number of derogations. The primary objective of this part of the study was to compile detailed information on, and conduct a thorough analysis of, the procedures and guidance for the application and evaluation of IED Article 15(4) derogations in all EU Member States.

The data collection approach is outlined in section 2.1. The subsequent sections describe the Member State participation and number of derogations at the time of reporting, providing a broad overview of the responses received from Member States on the procedures and guidance available for the application and evaluation of derogations under Article 15(4) of the IED.

2.1 Methodology

The four key stages involved in the collection and review of information on the Member States' derogation practices and guidance were as follows:

- ▶ Assessment of existing materials on IED derogation practices;
- ▶ Questionnaire development and launch;
- ▶ Detailed Member States analysis (selection of Member States and follow-up interviews); and
- ▶ Review and analysis of information from questionnaire and interviews.

The sections below describe the detailed approach for the collection and analysis of Member State practices and guidance.

2.1.1 Assessment of existing materials on IED derogation practices

Existing information on the application of IED Article 15(4) derogations was thoroughly reviewed prior to the development of a data collection questionnaire, to ensure that the data gathered in the current study would complement rather than duplicate the findings of previous work on this subject. The review of existing data was integral to build on the previous experiences and to form the basis for preliminary identification of gaps, key trends, and inconsistencies to be addressed during the development of the data collection questionnaire.

Two key existing sources of information on the application of IED Article 15(4) derogations across the EU were identified:

- ▶ **Reporting obligation for MS implementation of IED (Annex I Decision 2012/795/EU)**

IED Article 72 states that 'Member States shall ensure that information is made available to the Commission on the implementation of this Directive on representative data on emissions and other forms of pollution, on emission limit values, on the application of best available techniques in accordance with Articles 14 and 15, in particular on the granting of exemptions in accordance with Article 15(4)'. Article 1 of the Commission implementing decision 2012/795/EU¹⁴ states that MS have an obligation to reply to the questionnaire set out in Annex I by 30 September 2014.

¹⁴ Commission implementing decision (2012/795/EU) establishing the type, format and frequency of information to be made available by the Member States for the purposes of reporting on the implementation of Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions.

There are three specific questions in the questionnaire set out in Annex I of the Commission implementing decision 2012/795/EU that provide information on Article 15(4) derogations:

- ▶ Question 3.2 – How are derogations from Article 15(3) granted (Article 15(4))?
- ▶ Question 3.3 – How is the cost-benefit assessment to allow such derogations undertaken and what are considered to be 'disproportionately higher costs compared to the environmental benefits'? (Article 15(4))?
- ▶ Question 3.4 – Are there any limitations on the magnitude or duration of derogations (Article 15(4))?

The Member State responses to these questions are included in the final report on the assessment of IED implementation reports, covering the first reporting period under the IED, i.e. the year 2013¹⁵.

▶ **IMPEL studies on the experience of derogations from IED BAT-AEL's**

A study of the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL)¹⁶ has assessed the Member State IED derogations and aimed to identify good practise and help regulators in IMPEL to develop a more consistent approach to IED derogations. As part of this work, a survey was conducted across IMPEL Members on their Article 15(4) derogation practices.

The information already issued in the European Commission responses and presented in the existing IMPEL project reports was assessed and helped inform the structure and content of the questionnaire developed in this study. It has previously been noted in relation to information collected by IMPEL and the questionnaire on MS implementation of IED that data remains relatively limited. This study therefore provides an update and more comprehensive coverage of information on Member State derogation practices and guidance.

A review of existing literature was also undertaken to provide additional (secondary) data on Member State guidance and practices in relation to the application of Article 15(4). Documents reviewed included assessments of derogation practices and/or specific derogation case studies performed by third parties. The identification of sources was carried out through systematic web search.

2.1.2 Questionnaire development and launch

The primary source of information on derogation practices in this study was a direct consultation with representatives from Member States.

The consultation strategy comprised the following steps (discussed in more detail below):

- ▶ Identification of stakeholders to be contacted and communication strategy;
- ▶ Development of data collection questionnaire;
- ▶ Launching and conducting the first round of the consultation; and
- ▶ Initial review and analysis.

Identification of stakeholders to be contacted and communication strategy

Representatives from the appropriate Member State competent authority were contacted in the first instance. As an initial starting point, the members of the IEEG were invited to complete the survey. Additional contacts were then established through the competent authorities and were utilised in the follow-up discussions and interviews, where appropriate.

¹⁵ <https://circabc.europa.eu/sd/a/99b250aa-17db-40d0-b8f9-57f58a3465fe/IED%20implementation%20final%20report.pdf>

¹⁶ <http://www.impel.eu/projects/proposals-derogations-best-available-techniques-associated-emission-levels-bat-aels/>

Development of questionnaire

A targeted consultation questionnaire was then designed to gather information mainly related to:

- ▶ The derogation application and evaluation procedure;
- ▶ The three derogation criteria;
- ▶ The calculation of costs;
- ▶ The calculation of environmental benefits; and
- ▶ Methods for assessing disproportionality.

The questionnaire, and responses from Member States are presented in Appendix A. The questionnaire was developed in Survey Monkey.

Launching and conducting the first round of consultation

The distribution of the questionnaire and invitation for IEEG members to participate was preceded with a general email explaining the background to the work and the basis of the stakeholder's selection to contribute. This was to ensure that the objectives of the project were well understood by relevant stakeholders and to allow them to prepare and allocate resources for its completion.

The invitation and link to the questionnaire were sent out on 16 May 2017. The consultation period lasted approximately six weeks, including an extension allowed for some Member States that asked for additional time to gather the necessary information and where follow-up was required to gather additional information after the initial survey response. Survey responses were monitored regularly and reminder emails (in native languages) regarding the completion of the questionnaire were sent out when appropriate.

Initial review and analysis

An analysis of the outcomes of the first consultation round was conducted to determine whether a sufficiently complete population of 'sense-checked' responses was received from Member States, and to identify any gaps in information or topics, where further research was required. The responses to each question of the questionnaire in this study and the relevant information from previous IMPEL surveys and questionnaire on MS implementation of IED (Annex I to Commission decision 2012/795/EU), and other data sources (see above) were compiled in an Excel spreadsheet. This allowed a relatively simple assessment of the completeness and quality of the information gathered and gaps remaining.

A second round of targeted stakeholder consultation was then carried out to fill gaps identified in the previous steps of data collection and confirm preliminary findings.

The responses received in the questionnaires and follow up data collection have been used as input in selecting the sample of ten Member States for a more detailed analysis (see Section 2.1.3).

2.1.3 Detailed Member State analysis

Following the review and analysis of Member State responses to the survey questionnaire, ten EU Member states were selected for a more detailed analysis based on the following criteria:

- ▶ Member State size (area and population);
- ▶ GDP (and share of industry);
- ▶ Geographical location in the EU;
- ▶ Information found in primary data collection: literature review and responses to questionnaires;
- ▶ Sectoral composition across Annex I of IED;
- ▶ Number of IED installations - for sectors where BAT conclusions have been adopted:
 - ▶ Availability of official guidance or procedure on IED Article 15(4) derogations;

- ▶ Number of derogations;
- ▶ Centralised or regional competent authority; and
- ▶ Availability of information in previous tasks.

The ten Member States were selected in order to represent a wide range over the criteria listed. After agreement with the Commission, the following ten Member States (or regions) were selected for a more detailed analysis: Belgium (Flanders), Croatia, Czech Republic, France, Italy, Portugal, Spain (Catalonia), Sweden, Slovakia and the United Kingdom (England). These ten Member States represent 10 out of 14 who indicated in the initial survey that guidance is available on derogations.

For each of the ten Member States a tailored set of supplementary questions was developed, building on the information available from the previous steps.

The stakeholders who had contributed to the primary data collection were again the first point of contact in this detailed information collection. However, in this phase of the project we also enquired about potential other stakeholders to provide (part of) the additional requested information. The information gathering for this stage of the study was primarily carried out via telephone interviews (in native language) with additional follow-up emails and conversations conducted when required to clarify or query information provided or request further details.

2.1.4 Review and analysis of collected information

All the information collected through the review of existing materials, the initial online survey and the follow-up interviews with selected Member States has been compiled and analysed in detail. Throughout the data collection phase, gaps have been identified and actions were taken to fill these information gaps where possible. The overview and analysis of all the EU Member State derogation practices is described in the section below.

2.2 Overview of Member States participation and guidance

This section provides a broad overview of the responses received from Member States on the procedures and guidance for the application and evaluation of derogations under Article 15(4) of the IED.

2.2.1 Overview of Member State participation

Table 2.1 provides a summary of information from each EU Member State, providing their situation in terms of their participation in the questionnaire in the current study, the previous IMPEL studies and the formal IED reporting obligation (Annex I to Commission decision 2012/795/EU).

Representative competent authorities from 22 of 28 Member States responded to the online questionnaire in this study, with a further four (EE, NL, LV, SI) declining to participate due to a lack of available information or experience. AT also declined to participate, commenting there was a lack of additional value in the study and there had been no cases of derogations to date in AT. There was no input to the study from RO. For some Member States (e.g. ES), multiple responses were provided for different regions. The UK and BE have also provided multiple inputs to previous IMPEL projects and IED reporting obligation for different regions. Therefore, the number of responses to specific questions within the online questionnaire, discussed in subsequent sections, is variable and often greater than 22. Member States did not always respond to all the questions in the questionnaire and therefore the total responses to each question may vary as well.

Table 2.1 Summary of input on derogations provided by Member States to this study, IMPEL projects and via the formal IED reporting obligation.

	Input to this study (Survey Monkey)	Input to IMPEL projects	Input via formal IED reporting obligation (Annex I to Commission decision 2012/795/EU)
Austria	NO*	NO	YES
Belgium (Flanders)	YES	YES	YES
Bulgaria	YES	YES	YES
Croatia	YES	NO	YES
Cyprus	YES	NO	YES
Czech Republic	YES	YES	YES
Denmark	YES	YES	YES
Estonia	NO**	NO	YES
Finland	YES	YES	NO
France	YES	YES	YES
Germany	YES	YES	YES
Greece	YES	NO	YES
Hungary	YES	NO	YES
Ireland	YES	YES	YES
Italy	YES	YES	YES
Latvia	NO**	NO	YES
Lithuania	YES	NO	YES
Luxemburg	YES	NO	YES
Malta	YES	NO	YES
Netherlands	NO**	NO	YES
Poland	YES	YES	YES
Portugal	YES	NO	YES
Romania	NO	NO	YES
Slovakia	YES	NO	YES
Slovenia	NO**	NO	YES
Spain	YES	YES	YES
Sweden	YES	NO	YES
United Kingdom	YES	YES	YES

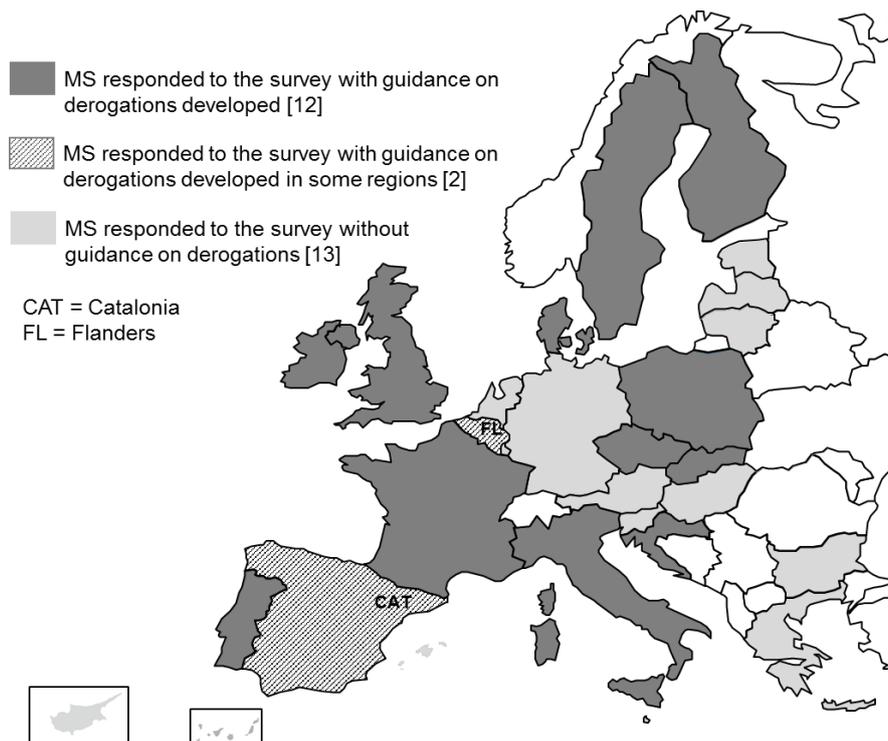
* provided statement that there was a lack of additional value of the study.

** provided response via email that no information is available in the Member State and/or there is no experience on derogations under IED Article 15(4).

2.2.2 Member State guidance on IED Article 15(4) derogations

Of the 22 Member State responses to the online survey, 14 (BE, CZ, DK, ES, FI, FR, HR, IE, IT, PL, PT, SE, SK, UK), indicated that guidance on IED derogations has been developed. The guidance document developed by PL for the evaluation of IED Article 15(4) derogations is specifically related to requests for derogations from the LCP BATC. For an overview and further details provided by each country, see Figure 2.1 and Appendix A.

Figure 2.1 Overview of responses to the online questionnaire in the present study and Member States that have developed guidance on derogations.



In the majority of cases, the guidance had been finalised and made publicly available (see Table 2.2). In HR, the specific guidance for derogations is not publicly available and is only provided when an operator initiates the procedure for requesting derogations. A general guidance document was available in HR for economic evaluation of BATs, most of which could be used in evaluating derogation requests.

Table 2.2 Status, type and link to Member States guidance on IED Article 15(4) derogations.

Member State	Status of guidance	Format	Link to guidance**
BE (Flanders)	Publicly available	PDF Document	https://navigator.emis.vito.be/mijn-navigators?wold=61193&woLang=nl http://emis.vito.be/sites/emis.vito.be/files/pages/1142/2017/Leidraad%20BBT%20p%20bedrijfsniveau_definitief.pdf
CZ	Publicly available	PDF Document	http://www.mzp.cz/ippc/ippc4.nsf/xsp/.ibmmodres/domino/OpenAttachment/ippc/ippc4.nsf/0E783DE513877FC2C12580110023AFB9/files/Metodika%20vyjimky%20BAT%20%2815.04.14%29%20FINAL.pdf
DK	Publicly available	Web page	http://miljogodkendelsesvejledningen.dk/opslag/mere-om-bat/fravigelser-fra-bat/
ES (Catalonia)	Publicly available	Web page	https://www.boe.es/buscar/act.php?id=BOE-A-2016-12601

Member State	Status of guidance	Format	Link to guidance**
FI	Publicly available	Not specified	No link provided Existing IED Article 15(4) documentation previously received
FR	Publicly available	PDF Document	http://www.installationsclassees.developpement-durable.gouv.fr/Publication-du-Guide-de-demande-de.html
HR	Internal use only	n/a	n/a General guidance on economic assessment of BAT: http://www.mzoip.hr/doc/studija_o_smjernicama_za_ekonomsko_vrednovanje_izb_ora_najboljih_raspolozivih_tehnika_nrt_u_skladu_sa_zahjevima_postojece_legislative_1.pdf
IE	Publicly available	PDF Document	http://www.epa.ie/pubs/advice/licensee/Draft%20Guidance%20on%20IED%20alternate%20ELVs%20or%20derogation%20from%20BAT%20AELs.pdf
IT	Publicly available	Section/annex of national legislation	'Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014, published in the Italian Official Journal)
PL	Publicly available	PDF Document	http://www.ekoportal.gov.pl/fileadmin/Ekoportal/Pozwolonia_zintegrowane/Podrecznik_dotyczacy_udzielania_odstepstw_-_Konkluzje_BAT_dla_LCP.pdf
PT	Publicly available	PDF Document and Excel based tool	http://www.apambiente.pt/index.php?ref=17&subref=151&sub2ref=321&sub3ref=330
SE	Publicly available	Section/annex of national legislation	No link provided In the Member State implementation report, reference has been made to the motives of the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy (FM 2013:1 p. 38-39). Guidance on derogations is given on page 38-41.
SK	Publicly available	Web page	http://www.minzp.sk/sekcie/temy-oblasti/integrovana-prevencia-kontrola-znecistovania/informacie/informacie-usmernenia.html
UK (England)	Publicly available*	PDF Document + Excel-based tool	https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool

* Partially available - there are elements of the guidance that are published (Defra guidance, Treasury guidance, cost benefit analysis tool and guidance), and there are others that remain internal only. This is largely due to the government digital policy.

** All of the guidance is available in the MS official languages.

The UK's questionnaire response indicated that the situation with guidance varied across its different regions. In England and Northern Ireland, the government's cost benefit tool and comprehensive guidance on how to complete it was published and are publicly available. However, a full step by step guidance advising operators how to apply derogations was not yet available. In Wales, guidance was in draft form, and in Scotland, it was indicated that details would be provided later.

Six Member States (CZ, FI, IE, SE, SK, UK) indicated that their guidance covered all aspects of granting derogations i.e. it considers the three criteria outlined in the IED Article 15(4), the calculation of costs and benefits and the assessment of disproportionality. By contrast, seven Member States (BE, DK, ES, FR, HR, IT, PT) indicated that their guidance is either general or related to specific aspects of these criteria.

BE (Flanders) specified that they provide general guidance to determine BAT on an installation level, not specific to IED 15(4) derogations. DK also indicated their guidance covers general aspects. HR noted that their guidance covers only choosing the option for which derogation could be granted. Similarly, IT noted their guidance details typical criteria and circumstances under which derogations may be granted. PT indicated that their guidance covers economics and cross-media effects.

ES (Catalonia) specified that their guidance covers the following:

- ▶ Whether the economic cost endangers the viability of the company;
- ▶ Assessment of the capacity of the local environment;
- ▶ Assessment of economic cost estimation;
- ▶ Comparison of emission values of the activity with BAT associated emission levels, to assess whether the economic costs compared to environmental benefits are disproportionate; and
- ▶ Other installations of the same sector in the same situation.

PL has developed guidance for submitting and evaluating derogation requests specifically related to the BAT-AELs from the LCP BATC. The guidance specifies the exceptional nature of IED Article 15(4) derogations, the need for an assessment of the cost and benefits of achieving the BAT-AELs, as well as the need for a statement on disproportionality due to geographical location, local environmental conditions or technical characteristics of the installation concerned. In addition to the guidance, a spreadsheet is available for operators to populate, including data on costs and environmental benefits, in order to perform a cost-benefit analysis.

2.3 Overview of Article 15(4) derogation requests

This section provides an overview of the sectors and BAT conclusions for which Article 15(4) derogations have been requested, granted or rejected in Member States as reported under this study.

Table 2.3 provides an overview of the derogation requests made to date¹⁷ in each EU Member State, according to the information provided in the questionnaire responses and follow up interviews. This indicates how many derogation requests have been made, for which specific sectors and BAT conclusions these applications relate to, and the outcome of these applications (granted/rejected/pending). A number of data gaps still exist for this information, as for example some Member States did not report the number of derogations that are currently under evaluation. Furthermore, information on the number of derogations from two Member States is missing (DE and RO).

The number of derogations presented in this study reflect the situation at the time of reporting. The number of derogations requested by operators, evaluated and decided by the Member States are constantly evolving.

When referring to the number of Article 15(4) derogations, Member States may have a different way of reporting. Some Member States reported the numbers as derogations from individual BAT-AELs, i.e. one derogation request corresponds to a derogation from a single BAT-AEL of the BATC. Other Member States reported the numbers as requests from industrial installations, i.e. one derogation request corresponds to a single application for permit variations (and therefore, can relate to more than one BAT-AEL of the BATC).

In total, 105 derogation requests are reported in this study. At the time of reporting 19 applications at installation level have been reported by the UK (3 in Wales and 16 in England) and 19 by FR. The information from the UK relates to the determined derogations. The 16 applications in England originate from 12 installations (two installations submitted two separate derogation requests and one installation submitted three requests). The Environment Agency (England) only allows operators to group their derogations into a single application if compliance with BAT-AELs for all derogations within the application can be achieved by using the same solution. There could also be other valid reasons for grouping derogation applications together, for example if there are multiple requests from the same plant for the same pollutant. The derogations in England relate to 37 individual BAT-AELs.

The number of derogations requested in other Member States are fewer (there are also fewer installations), for example compared with the next highest numbers, FI (10), CZ (8), PL (8), IT (7), SK (7). The vast majority (73) of derogation requests reported in this study have been granted. Relatively few (6) have been rejected. Some of the requests reported are still under evaluation (26).

¹⁷ Member State consultation period: Q2 2017; further clarifications were provided after the IED implementation workshop (October 2017) and the IED Article 13 Forum meeting (December 2017).

Figure 2.4 Number of derogations requested (applications at installation level) for each sector relative to the number of installations covered by each set of BAT conclusions.

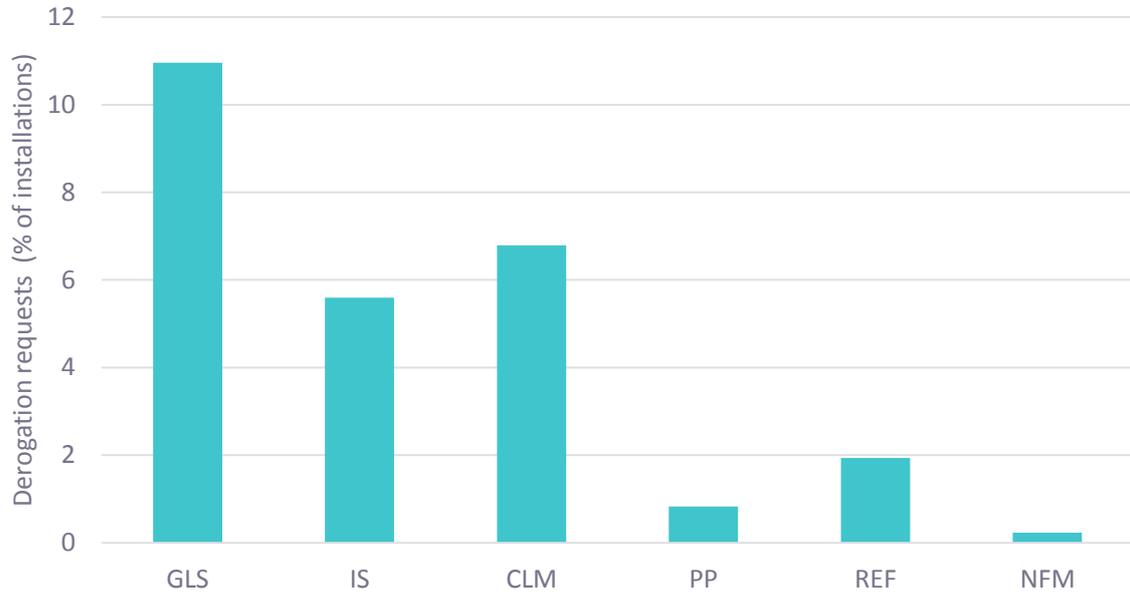


Figure 2.5 Number of derogations requested (applications at installation level) in EU Member States (MS with no information provided are not shown on the graph).

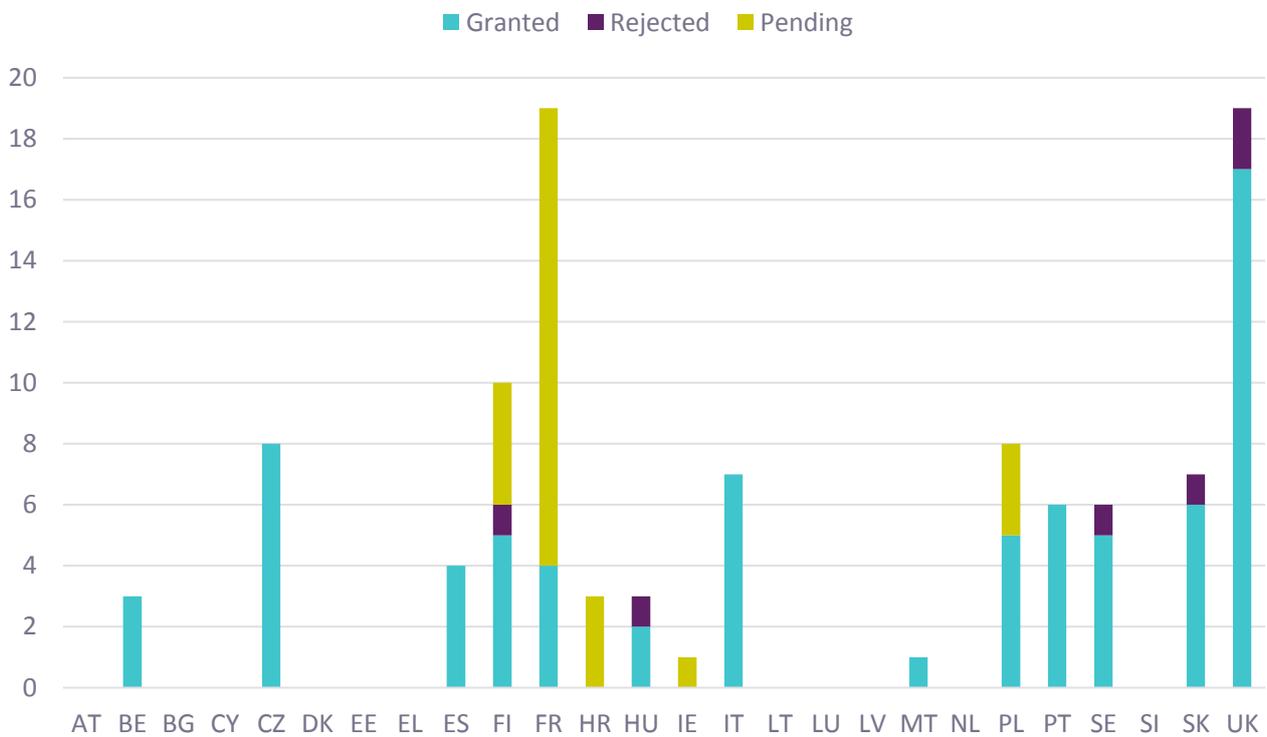


Table 2.3 Overview of derogations in EU Member States. Each line represents an individual derogation application at installation level.

Member State	BATC / Sector	BAT conclusion(s)	Granted	Rejected	Pending
BE	GLS	BAT 28	√		
	GLS	BAT 74	√		
	REF	BAT 52	√		
CZ	GLS	BAT 17, BAT 18	√		
	GLS	BAT 38, BAT 40, BAT 42	√		
	GLS	BAT 24, BAT 25, BAT 28	√		
	GLS	BAT 59, BAT 63	√		
	GLS	BAT 9, BAT 17	√		
	GLS	BAT 9, BAT 18	√		
	GLS	BAT 20	√		
	GLS	BAT 74	√		
ES (Catalonia)	GLS	BAT 17 and BAT 18 (NOx)	√		
	GLS	BAT 17 and BAT 18 (NOx)	√		
	GLS	BAT 17 and BAT 18 (NOx)	√		
ES (Basque)	GLS	BAT 24	√		
FI	PP	BAT40	√		
	GLS	BAT 38	√		
	GLS	BAT 40	√		
	GLS	BAT 63	√		
	IS	BAT 56	√		
	GLS	not specified		√	
	IS	not specified			√
	IS	not specified			√
	GLS	not specified			√
	Unknown	not specified			√
FR	GLS	not specified (NOx, Pb)			√
	GLS	not specified (NOx, Pb)			√
	IS	not specified (dust)	√		
	CLM	not specified (dust)	√		
	CLM	not specified (dust)			√

Member State	BATC / Sector	BAT conclusion(s)	Granted	Rejected	Pending
	CLM	not specified (dust)			√
	CLM	not specified (dust, SO ₂)			√
	CLM	not specified (SO ₂)	√		
	CLM	not specified (SO ₂)			√
	CLM	not specified (SO ₂)			√
	CLM	not specified (SO ₂)			√
	CLM	not specified (SO ₂)			√
	PP	not specified (NO _x , S gas, SO ₂)			√
	PP	not specified (NO _x , S gas, SO ₂)			√
	PP	not specified (NO _x , S gas, SO ₂)			√
	REF	BAT 52	√		
	WBP	not specified (dust and formaldehyde)			√
	NFM	not specified (TVOC and dust)			√
	NFM	not specified (TVOC and dust)			√
HR	Unknown	not specified			√
	Unknown	not specified			√
	Unknown	not specified			√
HU	GLS	BAT 17	√		
	GLS	BAT 17		√	
	IS	BAT 20	√		
IE	CLM	BAT 19			√
IT	GLS	BAT 16, BAT 17, BAT 19	√		
	GLS	BAT 16, BAT 17	√		
	GLS	BAT 17, BAT 19	√		
	GLS	BAT 16, BAT 17/18, BAT 20 (HCl)	√		
	GLS	BAT 17	√		
	GLS	BAT 9; BAT 24; BAT25/26	√		
	GLS	BAT 13 (TSS), BAT 24; BAT 25; BAT 28; BAT31 (SO _x)	√		
MT	CWW	Not specified	√		

Member State	BATC / Sector	BAT conclusion(s)	Granted	Rejected	Pending
PL	CLM	BAT 21 (SOx)	√		
	CLM	BAT 21 (SOx)	√		
	CLM	BAT 21 (SOx)	√		
	CLM	BAT 42 (dust), BAT 43 (dust), BAT 45 (NOx), BAT 47 (SOx)	√		
	CLM	BAT 42 (dust), BAT 43 (dust), BAT 45 (NOx), BAT 47 (SOx)	√		
	Unknown	not specified			√
	Unknown	not specified			√
	Unknown	not specified			√
PT	GLS	BAT16 (dust); BAT17 (NOx)	√		
	GLS	BAT16 (dust); BAT17 (NOx)	√		
	GLS	BAT17 (NOx); BAT20 (HCl)	√		
	GLS	BAT17 (NOx)	√		
	GLS	BAT17 (NOx)	√		
	GLS	BAT17 (NOx); BAT19 (SOx)	√		
SE	IS	BAT 34	√		
	IS	BAT 49, BAT 64	√		
	IS	BAT 51, BAT 56	√		
	IS	BAT 64, 65	√		
	PP	BAT 23	√		
	GLS	BAT 63		√	
SK	IS	BAT 49 ; BAT 50 ; BAT 21	√		
	IS	BAT 20 ; BAT 25 ; BAT 26	√		
	CLM	BAT 63	√		
	CLM	BAT 63	√		
	CLM	BAT 48 ; BAT 50	√		
	GLS	BAT 59	√		
	CLM	BAT 50			√
UK (England)	IS	BAT 48 (H2S), BAT 49 (SOx and dust)	√		
	IS	BAT 50 (dust), BAT 51 (dust)	√		
	IS	BAT 56 (total N)			√

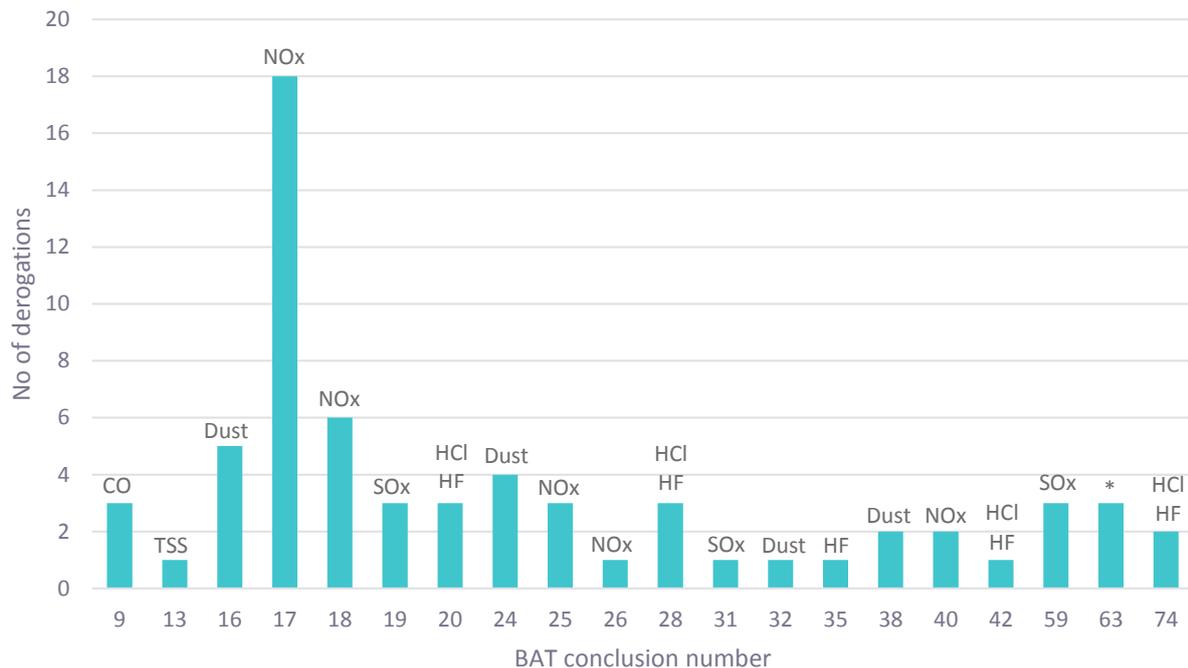
Member State	BATC / Sector	BAT conclusion(s)	Granted	Rejected	Pending
	GLS	BAT 32 (dust), BAT 35 (HF)	√*		
	PP	BAT 40 (COD), BAT 50 (TSS)	√		
	CLM	BAT 21 (SOx)	√		
	CLM	BAT 48 (CO)	√		
	CLM	BAT 18 (dust)	√		
	CLM	BAT 43 (dust)	√		
	CLM	BAT 43 (dust)	√		
	CLM	BAT 17 (dust)	√		
	CLM	BAT 17 (dust), BAT 18 (dust), BAT 21 (SOx)	√		
	CLM	BAT 17 (dust), BAT 18 (dust)	√		
	CLM	BAT 21 (SOx)	√		
	CLM	BAT 18 (dust)	√		
	CLM	BAT 18 (dust)	√		
UK (Wales)	IS	BAT 26 (dust), BAT 48 (HS), BAT 49 (SO ₂ and dust)	√		
	REF	BAT 52	√		
	GLS	BAT 59		√	

* Original derogation request was rejected

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/558695/Decision_Documents.pdf)

Where this information was reported, the table above includes the individual BAT conclusion(s) (and BAT-AELs) of each derogation application. The number of derogations requested from the BAT-AELs linked to these BAT conclusions are summarised in Figure 2.6, Figure 2.7 and Figure 2.8 for the GLS, IS and CLM BAT conclusions, respectively. These numbers refer to the individual BAT conclusion numbers and not to the number of derogation applications. Some applications (at installation level) relate to only one BAT conclusion number, while other applications relate to more than one.

Figure 2.6 Number of derogations requested from the GLS BAT conclusions.



[* BAT63: BAT-AELs for air emissions from downstream processes in the mineral wool sector, when treated separately]

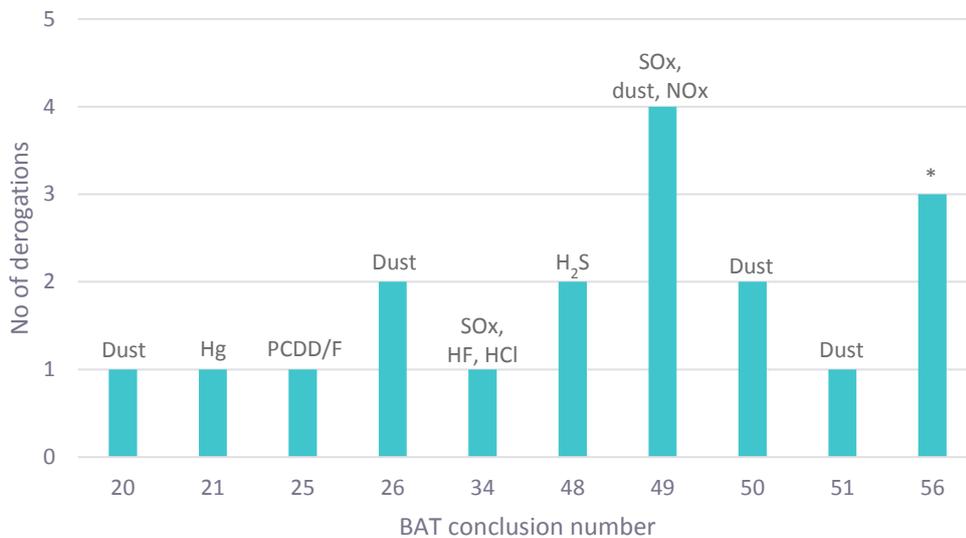
Chapter 7 of the final GLS BREF (2013)¹⁸ describes the concluding remarks and recommendations for future work based on the TWG information exchange process. During and following the final meeting of the TWG, a consensus was reached within the TWG for the whole GLS BREF document. Dissenting views were expressed on a limited number of BAT-AELs, two of which have been recorded in chapter 7 of the GLS BREF. i.e.:

- ▶ **GLS BAT 17** (IT and PT): The two Member States consider that the upper value of the BAT-AEL range concerning the application of combustion modifications for the reduction of NO_x emissions is not achievable in the case of existing installations, in particular for cross-fired, gas-fired, regenerative furnaces.
- ▶ **GLS BAT 19** (The European container glass federation, FEVE): The industrial organisation considers that the upper value of the BAT-AEL ranges for both natural gas and oil-fired furnaces are difficult to achieve in particular when a complete recycling of filter dust and high external cullet rates are used in the batch formulation.

Those dissenting views all indicated that the upper value of a specific BAT-AEL range is not achievable under certain situations and therefore argued for a less stringent upper BAT-AEL value.

¹⁸ http://eippcb.jrc.ec.europa.eu/reference/BREF/GLS_Adopted_03_2012.pdf

Figure 2.7 Number of derogations requested from the IS BAT conclusions.



[* BAT 56: BAT-AELs based on a qualified random sample or a 24-hour composite sample and referring only to single coke oven water treatment plants]

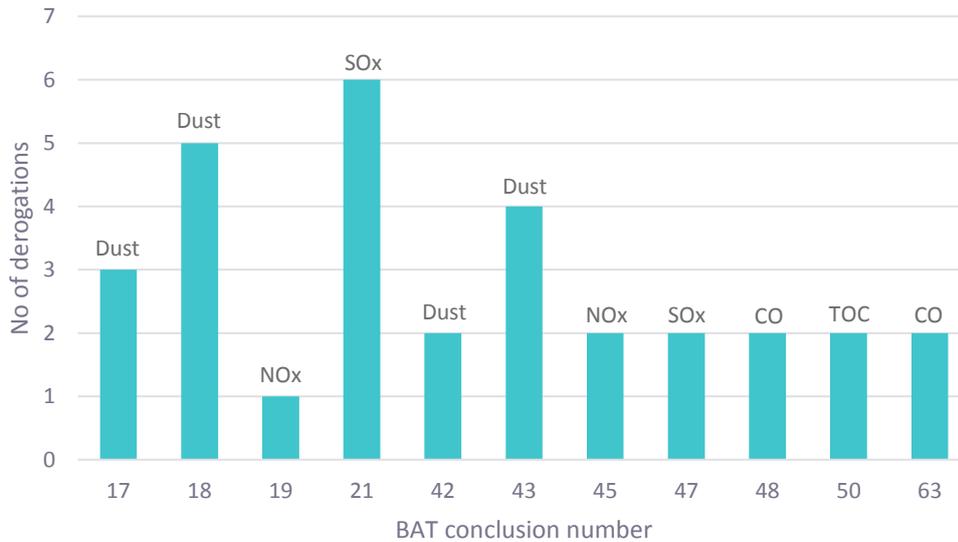
Chapter 12 of the final IS BREF (2013)¹⁹ indicates that at the final TWG meeting, a high level of consensus was achieved on the BAT conclusions. Three split views are recorded in the IS BREF, i.e.:

- ▶ **IS BAT 20** (AT and one NGO): BAT for sinter plants should be to reduce dust emissions from the sinter strand waste gas by means of a bag filter only and the BAT-AEL for dust should be <math><10 \text{ mg/Nm}^3</math>, determined as a daily mean value. Several installations in the EU have installed bag filters and achieve dust emission levels below 10 mg/Nm^3 on a daily average basis.
- ▶ **IS BAT 25** (AT and one NGO): BAT should be to reduce PCDD/F and PCB by applying injection of adequate adsorption agents into the waste gas duct of the sinter strand before dedusting with a bag filter. Based on the information of this document, the BAT-AEL for PCDD/F should be $<0.05 - 0.2 \text{ ng ITEQ/ Nm}^3</math> for a 6 – 8-hour random sample with steady-state conditions.$
- ▶ **IS BAT 49** (DE and one NGO): A dust emission level of $<10 \text{ mg/Nm}^3</math> should be considered BAT-AEL for coke oven under firing based on the information provided. The high number and the size of cracks in the oven walls of very old coking plants (up to >40 years) should not be used as a basis for the higher BAT-AEL.$

Those dissenting views all indicated that evidence is available to support certain lower BAT-AEL values and therefore argued for more stringent BAT-AELs in these cases.

¹⁹ http://eippcb.jrc.ec.europa.eu/reference/BREF/IS_Adopted_03_2012.pdf

Figure 2.8 Number of derogations requested from the CLM BAT conclusions.



The final CLM BREF (2013) indicates that a high level of consensus was achieved on the BAT conclusions for the cement and lime industry, with no split views recorded. For the BAT conclusions of the MgO industry a general level was achieved. After the final CLM TWG meeting (2008) Euromines and the MgO industry expressed their concerns about the BAT-AELs for SO_x emissions (BAT 65), the applicability of the available abatement techniques and the associated cross-media effects (overall environmental protection). The MgO industry argued for a less strict BAT-AEL due to raw material compositions leading to higher SO_x emissions. After discussions during the CLM TWG meeting in 2012 a final conclusion was reached concerning the BAT for SO_x emissions in the MgO industry, with a high level of consensus.

3. Member State Derogation Practices

This section provides an overview of Member State practices for deciding on an IED Article 15(4) derogation request. The section focusses on the initiation and application for derogations (section 3.1); the three derogation criteria referred to in IED Article 15(4) (section 3.2); the calculation of costs (section 3.3), the calculation of environmental benefits (section 3.4) and the methods for assessing disproportionality (section 3.5).

3.1 Application for IED Article 15(4) derogations

Derogation applications, in nearly all Member States and regions, are initiated by the operator. In five responses (CZ, ES, HR, MT and UK), it was indicated that the competent authority can make an initial determination that a derogation may be warranted before contacting the operator.

ES (Catalonia) indicated that if an operator does not agree with an ELV in accordance with the BAT-AEL in the draft environmental permit the competent authority assesses if a derogation may be possible. ES (Murcia) noted that derogations are initiated by competent authorities.

In CZ and SK there are 2 possible initiation scenarios, (1) initiated by operator (for both new and existing installations); or (2) initiated by competent authorities when reconsidering permit conditions within the 4 years window after publication of the BAT conclusions (existing installations). For new installations only an initiation by the operator is possible. The initiation by the competent authorities should be considered as an invitation for the operator to comply with the BAT conclusions. It is then up to the operator to assess the need to apply for a derogation.

In the UK, the situation varies between different regions. In England and Northern Ireland, the competent authorities presume that all operators will fully implement BAT conclusions. If the operator cannot meet a particular BAT-AEL the onus is on them to apply for a derogation. The process starts by asking operators to provide evidence to demonstrate compliance with the BAT conclusions and to identify those BAT conclusions for which a derogation will be sought. In Scotland, the merits of derogation are considered after undertaking a site-specific BAT assessment.

In some Member States the available guidance or procedure specifies the information that needs to be submitted by the operator for an IED Article 15(4) derogation request. Examples of such information requests are provided in Box 2.1 for BE, CZ and PT.

Box 2.1. Information requested from operators when applying for an Article 15(4) derogation

BELGIUM – Flanders²⁰

The request for derogation should contain the following information:

- ▶ name, role and address of the requester;
- ▶ name, and registration number of installation/company;
- ▶ Identification of the installation or activity;
- ▶ reference to the relevant BREF, BAT conclusion and if applicable, BAT-AELs;
- ▶ an assessment showing that the achievement of emission levels associated with the best available techniques as described in BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to:

²⁰ VLAREM III, Article 1.4. <https://navigator.emis.vito.be/mijn-navigator?wold=61193>

- ▶ (a) The geographical location or the local environmental conditions of the installation concerned; or
- ▶ (b) The technical characteristics of the installation concerned;
- ▶ a proposal for ELVs indicating that these are not higher than:
 - ▶ (a) the relevant ELVs in VLAREM II (as far as no derogation from these VLAREM II ELVs is allowed);
 - ▶ (b) the applicable emission limits outlined in Annex II of VLAREM III (*technical provisions of Annex V to VIII of the IED*).
- ▶ a proposal of measures to ensure a high level of protection for the environment as a whole is achieved; and
- ▶ a note indicating that the proposed measures respond to the BAT, with special attention to the criteria outlined in Annex 3.3 of VLAREM II (*criteria for determining BAT*).

CZECH REPUBLIC

For granting of any derogation, processing a permit application by the operator is required. The following information is therefore requested:

- ▶ Operator identification;
- ▶ Installation identification;
- ▶ Emission limits:
 - ▶ Emission levels associated with BAT;
 - ▶ Proposed emission limits by operator.
- ▶ Description of the technical solution:
 - ▶ Description of the technical solution necessary to achieve the BAT-AEL;
 - ▶ Justification for not meeting the BAT-AEL;
 - ▶ Proposed scenario.
- ▶ Evaluation in relation to the environment:
 - ▶ Basic environmental information (emission quantification, emission significance, dispersion study, etc.)
 - ▶ Estimation of environmental pollution and level of environmental protection if derogation was granted.
- ▶ Cost evaluation (basis for cost comparisons as a separate economic assessment, including info on annual depreciation, operating costs - energy, work, material, licences, services etc., indirect costs – in case of change in manufacturing process parameters, tax effects and subsidies, costs of compensatory measures - If there is a possibility to make compensatory measures to reduce emissions of other sources, avoided costs - cost savings, revenues);
- ▶ References used for assessment.

PORTUGAL²¹

It should be noted that the guidance and derogation requests in PT relate to the assessment of costs of BAT in general. But this approach is also used for any derogation requests under IED Article 15(4). Annexes A to E of the guidance provide details of the information to be submitted by the operator when requesting derogations. In summary, the following information is requested:

²¹ <http://www.apambiente.pt/index.php?ref=17&subref=151&sub2ref=321&sub3ref=330>

▶ Annex A: Content of the technical report:

Detail of the content of the technical report supporting the application. This includes Excel files where data and calculations should be provided. Any calculations should be shown as full formulae in Excel so they can be validated by the competent authority.

▶ Annex B: Scope and identification of alternative options:

Application form which includes the following items: IPPC installation reference; Dimension/capacity of the proposed technique; Environmental impacts expected by the proposed BAT; Table with details for reference case and BAT assessed; Table with BAT assessed and not considered technically feasible; Costing approach used.

▶ Annex C: Supporting files for the assessment of cross-media effects:

The supporting Excel files which should be used in the assessment of cross-media effects (these files can be downloaded from the CA website). Guidelines are available for the user and require justification and reference to the source of the data used.

▶ Annex D: Supporting files for the cost calculations:

The supporting Excel files which should be used in the costing (these files can be downloaded from CA website). Two files are available depending on the approach used for calculating the total annual costs of an investment (whether or not inflation is taken into account). Both files have guidelines for the user and require justification and reference to the source of the data used. For each BAT assessed, details are required on the investment cost, operation/maintenance cost, environmental benefits and cost-benefit.

▶ Annex E: Checklist of application documents:

Checklist for the operator to ensure all required documents are provided with the BAT assessment.

3.2 Three derogation criteria

This section assesses how the three different derogation criteria specified under IED Article 15(4) (geographical location, local environmental conditions, and technical characteristics of the installation concerned), are considered in the evaluation of derogations across the EU Member States. In particular, this looks at which of these three criteria are taken into account in Member States derogation practices, the relative importance or weighting of the three criteria, where these criteria fit into a step-by-step derogation assessment process, specific examples or conditions of what are considered as valid criteria for justifying a derogation request, and cases where additional factors have been considered beyond the three main criteria.

3.2.1 The three valid criteria for derogations

This subsection provides an overview and discussion of the different derogation criteria considered in each Member State, based on responses to the questionnaire and previous IMPEL projects and the formal IED implementation questionnaire. Table 3.1 indicates whether Member States consider the three criteria as valid for granting derogations. This is based on the responses to the questionnaire and a more detailed discussion is provided below.

Table 3.1 Valid derogation criteria

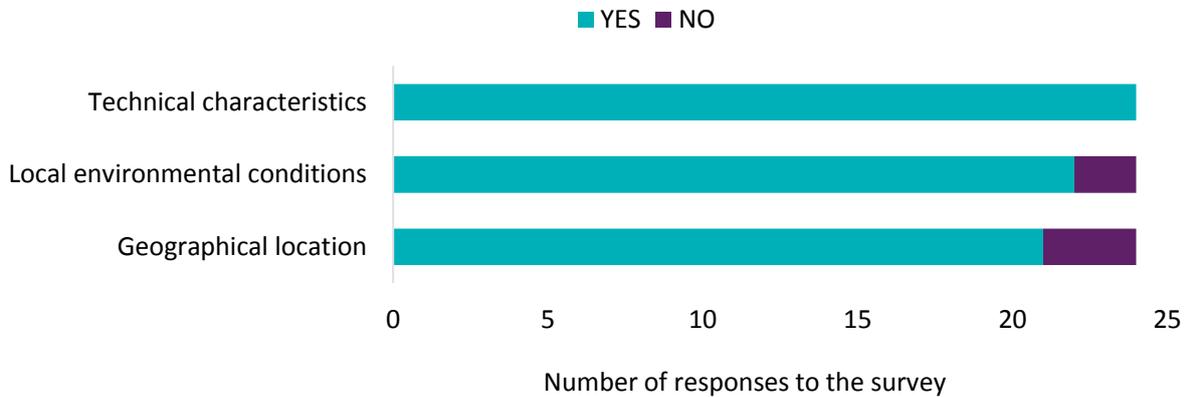
	<i>Responded to questionnaire?</i>	<i>Responded to Q4 on derogation criteria?</i>	<i>Geographical location</i>	<i>Local environmental conditions</i>	<i>Technical characteristics</i>
AT*					✓
BE (Flanders)	✓	✓	✓	✓	✓
BG	✓	✓	✓	✓	✓
CY	✓	✓	✓	✓	✓
CZ	✓	✓	✓	✓	✓
DE	✓	✓			✓
DK	✓	✓	✓	✓	✓
EE					
EL	✓	✓	✓	✓	✓
ES (Basque)	✓	✓	✓		✓
ES (Catalonia)	✓	✓	✓	✓	✓
ES (Extremadura)	✓	✓	✓	✓	✓
ES (Madrid)	✓	✓	✓	✓	✓
ES (Murcia)	✓				
FI	✓	✓	✓	✓	✓
FR	✓	✓	✓	✓	✓
HR	✓	✓		✓	✓
HU	✓	✓	✓	✓	✓
IE	✓	✓	✓	✓	✓
IT	✓	✓	✓	✓	✓
LT	✓	✓	✓	✓	✓
LU	✓				
LV					
MT	✓	✓	✓	✓	✓
NT					
PL	✓	✓	✓	✓	✓
PT	✓	✓	✓	✓	✓
RO*			✓	✓	✓

	<i>Responded to questionnaire?</i>	<i>Responded to Q4 on derogation criteria?</i>	<i>Geographical location</i>	<i>Local environmental conditions</i>	<i>Technical characteristics</i>
SE	✓	✓	✓	✓	✓
SI					
SK	✓	✓	✓	✓	✓
UK	✓	✓	✓	✓	✓

*based on previous submission to IMPEL and formal IED implementation questionnaire

In the survey under this study it was asked whether the three derogation criteria of IED Article 15(4) are considered as valid to grant derogations in each of the Member States. The results are presented in Figure 3.1, and discussed in the sections below.

Figure 3.1 Valid criteria in derogation decisions



Geographical location

Of 24 responses, 21 indicated that geographical location of the installation concerned is, or would be, considered a valid criterion for granting derogations under IED Article 15(4), while three responses (DE, ES (Basque), HR) indicated that this is not considered a valid criterion (see Figure 3.1). It should be noted that, while some Member States consider this a theoretically valid criterion, some also highlighted that it is unlikely to be applicable in their country or region (e.g. BE (Flanders), ES (Catalonia), UK (Wales)).

A number of responses to the questionnaire in this study (in addition to responses noted in previous IMPEL projects and formal IED implementation questionnaire)) provided specific examples of what aspects of the geographical location have been or could be considered valid in derogation assessments. These are summarised in Table 3.2.

Table 3.2 Overview of geographical location examples that are considered valid in specified Member States for IED derogations

Consideration	Member State(s) input
Installation location leads to insufficient water resources e.g. for wet cooling.	SK
An installation is located on an island with high costs for transport or waste treatment.	FR
Availability of local raw materials e.g. the extra costs associated with transport from deposits outside the region/country; the unique physico-chemical characteristics [of] local raw materials.	CZ, FR

Consideration	Member State(s) input
Land use constraints lead to an installation not being in a position to install certain abatement technologies.	MT, SK, CZ
Overseas locations where raw materials / consumables supply or waste treatment are more expensive.	FR
Remote location of a facility leads to higher construction or energy supply costs than would normally be encountered.	UK, HU
Remote location could mean the environmental benefits of meeting the BAT-AEL would be disproportionate to the costs.	UK
Added costs if the installation is in a built-up location.	UK
Limited space for new equipment required to comply with the BAT conclusions*.	PT

* the example from PT originates from an actual derogation request for the glass sector. The glass manufacture sector in Portugal is characterised by historical installations which have been surrounded by industrial/residential developments over time. The lack of space is interpreted as a reason for derogation due to the geographical location of the installation. Equivalent scenarios in other MS appear to have been treated as 'technical characteristics of the installation concerned' (see analysis below).

Local environmental conditions

Of 24 responses, 22 indicated that the local environmental conditions of the installation concerned is considered as a valid derogation criterion, while two (DE, ES (Basque)) do not (see Figure 3.1).

A number of responses to the questionnaire in this study (in addition to responses noted from previous IMPEL projects and formal IED implementation questionnaire) provided specific examples of what aspects of the local environmental conditions have been/could be considered valid in derogation assessments. These are summarised in Table 3.3.

Table 3.3 Overview of 'local environmental conditions' examples that are considered valid in specified Member States for IED derogations

Consideration	Member State(s) response
The BAT-AEL emission level for particular pollutant causes higher pollution of other component of environment e.g. due to insufficient inflow of surface water as a recipient for waste water.	SK
Installation is located in a dry area and which has to implement a BAT requiring a lot of water to operate.	FR
Increasing hazardous waste production.	CZ
Production of hazardous pollutants related to implementation of primary and secondary measures.	CZ
Legislative priority of waste production prevention.	CZ
Source has a minor influence on air pollution in local environment.	CZ
Higher emission impact when changing input substances in production line.	CZ
The ability of the local receiving environment to assimilate the emissions of pollutants e.g. inflow of surface water as a recipient for waste water.	ES (Catalonia)
The characteristics and current suspended solid load of a river, when discharge is to water - a receiving water with a naturally high suspended solids load differs from a river with a small suspended solid load. Thus, making the effect of an emission on the environment insignificant in some circumstances.	UK (Wales)

Technical characteristics

All Member States that responded indicated that technical characteristics of the installation concerned is considered as a valid criterion in their evaluation of derogation requests.

A number of responses to the questionnaire in this study (in addition to responses noted from previous IMPEL projects and formal IED implementation questionnaire)) provided specific examples of what aspects of technical characteristics have been/could be considered valid in derogation assessments. These are summarised in Table 3.4 and can be broadly grouped into considerations of the plant's emissions, the impact on the capacity/production/efficiency, the age and type of installation, the previous or future investment in the plant's operations.

DE, in their response to the IMPEL projects, highlighted a specific example where technical characteristics were considered in the manufacture of special glass. The recycling of sulphate-rich filter dust and the unavoidable use of sulphates in the batch formulation causes emission levels above the SO₂ BAT-AEL from the BAT conclusion for this type of glass. Similarly, ES (Catalonia) in their IMPEL response, also highlighted a derogation case from the glass industry. It is noted that the glass industry started building the corresponding BAT conclusions filter in order to comply with the deadline date. However, there were delays caused by external reasons (delay in permit issue by the public railway operator for works in the protection area).

Specific derogation case studies are discussed in Section 4 and provided in Appendix B.

Table 3.4 Overview of 'technical characteristics' examples considered to be valid in specified Member States for IED derogations

Aspect	Specific consideration	Member State(s) response
Emissions	BAT-AEL results in an insignificant emission reduction of given pollutant.	SK
	Reduction of emissions of one pollutant causes increase in emissions of other pollutant, or it impacts transfer of emissions to another component of the environment.	SK
	Reduction of emissions of one pollutant causes higher consumption of resources (energy, water, fuel) or generation of waste.	SK, UK
	The unique nature of effluent discharged from the installation means the BAT AELs cannot be achieved.	FR
Production capacity/efficiency	The practicability and feasibility (particularly bearing in mind Health & Safety and other relevant legal obligations) of interrupting the activity so as to install improved emission control upon the pollutant(s).	SK, UK
	If the achievement of BAT AELs would require suspension of a long-term production campaign, i.e. technical improvements require shut down production for several days or a recently installed device to be rebuilt – could lead to reduced production capacity.	CZ
	When the process is used only during a very short period of time each year (high costs for the operator compared with a small environmental benefit).	FR
	Absence of adequate substitution to ensure required quality of the wide-spectrum production.	CZ
Age/type of installation	Site land use makes it impossible to build new units to improve emissions abatement.	PL
	Tailor-made plants, designed to use local raw materials / fuels with specific properties, e.g. in cement & lime production.	DE
	If ensuring compliance with the limits when occasional changes in production portfolio occur, these requests by the customer may lead to higher fluctuations in emissions.	CZ
	Technical condition of equipment, age of plant, location of plant at the industrial site, space constraints – mean installation cannot implement BAT AELs.	HU, IT, FI, FR
	The intended remaining operational lifetime of the installation as a whole or of the part of it giving rise to the emission of the pollutant(s), where the operator is prepared to commit to a timetable for closure.	UK

Aspect	Specific consideration	Member State(s) response
	Specific character of given production (e.g. medicinal or military purpose) or specific qualitative parameters of local resources.	SK
Investment	The recent history of pollution control investment in the installation in respect of the pollutant(s) for which the derogation is sought.	UK, SK
	The configuration of installation on a given site makes it more technically difficult and costly to comply with BAT e.g. in the case of retrofitting of plants that do not yet meet the newly published BAT AELs and where there is therefore a need for an upgrading or replacement of already existing abatement technologies.	SK, DE, UK
	Installation reaching breaking point of economic lifetime with regard to investments already spent on implementation of BAT in given installation,	SK

The examples presented in the tables above were provided as part of the Member State responses to the online survey and represent Member States understanding of the derogation criteria. Only in a limited number of Member States these specific examples of the derogation criteria are included in the guidance and therefore, also available to operators (e.g. FR and UK). For the majority of Member States, these or other examples are not made publicly available.

From the examples provided above it is clear that in some cases Member States have a different interpretation of what is covered by each of the criteria. For example, under the geographical location of the installation concerned, the example reported by PT makes reference to space constraints for installing new equipment. This is however, similar to the examples reported by e.g. HU, IT, FI, FR and PL under technical characteristics of the installation concerned. Similarly, the land use constraints reported by MT, SK and CZ under geographical location of the installation concerned could be considered by other Member States as an example of local environmental conditions.

Some of the examples provided above are unlikely to be accepted on their own, but often will need additional information or justification. For example, *'Remote location could mean the environmental benefits of meeting the BAT-AEL would be disproportionate to the costs'*, reported by the UK under geographical location of the installation concerned, will only be considered in conjunction with an argument detailing the extra cost of compliance in comparison to a 'typical' plant.

Some of the examples reported seem to relate to aspects which are part of or considered in the determination of BAT, such as cross media effects: *'Reduction of emissions of one pollutant causes higher consumption of resources (energy, water, fuel) or generation of waste'* (SK, UK) or *'Production of hazardous pollutants related to implementation of primary and secondary measures'* (CZ). Although these are very relevant issues, these might not be the best examples to justify IED Article 15(4) derogations.

In their response to the survey ES (Basque) noted that it is a region with a very high population density and that has an influence on the criteria for derogation that they consider. This may not be the same in other territories so they understand that they may prioritise different criteria. This is the reason why local environmental conditions of the installation concerned is unlikely to be accepted as a valid reason. This explanation seems to contradict to the example reported by the UK *'Added costs if the installation is in a built-up location'* as a valid example for geographical location of the installation concerned, indicating the potentially additional costs for installations in a built-up location as a valid reason for a derogation request.

3.2.2 The relative weight of each derogation criterion

This subsection discusses the weighting given to the three IED derogation criteria in Member States, i.e. whether they are equal or one criterion is given more significance than others:

- ▶ In terms of **geographical location**, 17 of 20 responses to this question indicated that this criterion is of equal importance to the other derogation criteria. Two responses (BE (Flanders) and HR) indicated this criterion was of lesser importance, HR noting that to date, cases are not recognised where this criterion could be applied. One response (ES (Murcia)) indicated

geographic location was of greater importance than other criteria, noting that the location is key to determine the exceptions due to the public health factors by proximity of the population.

- ▶ In terms of **local environmental conditions**, 20 of the 22 questionnaire responses indicated this criterion of equal importance with the other derogation criteria. One response (BE (Flanders)) indicated local environmental conditions was of less importance, while one response (ES (Murcia)) indicated this criterion is of greater importance.
- ▶ In terms of **technical characteristics**, 20 of the 24 responses to this part of the questionnaire indicated that the technical characteristics are of equal importance to the other derogation criteria. Four responses (BE (Flanders), DE, ES (Basque), ES (Murcia)) indicated that technical characteristics are given more importance than the other criteria.

BE (Flanders) indicated that technical characteristics of the installation concerned is the main criterion and that local environmental conditions and/or geographical location are less important. Given the location and homogenous environmental condition in BE (Flanders) the competent authority only expects derogation requests referring to the technical characteristics. As indicated in their IMPEL submission, DE noted that derogations are considered as limited to exceptional cases, i.e. when the technical characteristic of the installation would clearly lead to disproportionate costs or when the BAT-AELs are even not possible. It does not mention the other derogation criteria in its submission. ES (Extremadura) noted that technical characteristics will be much more important than geographical or local environmental conditions.

A number of responses (e.g. BE, DK, ES (Catalonia)) noted, that it is likely that more derogation requests will be received based on technical characteristics than the other criteria and therefore more consideration of this criterion has been and/or will be made compared to the others for this reason. HU noted that the criteria of geographical location and local environmental conditions are evaluated on a case by case basis, and in themselves cannot be considered as a valid reason for derogation; they must be evaluated together.

All of the derogation requests received so far in IT have been based on technical characteristics, and IT highlighted a lack of clear, overarching guidelines in terms of derogations based on geographical location or local environmental conditions (see Appendix A). IT also noted that, in the future, when national and regional competent authorities will be required to outline what criteria should be considered when assessing the geographical location of an installation for the purpose of granting a derogation, their assessment of which criteria should be considered might be different.

3.2.3 Initial screening of derogation criteria

Of 24 responses to this section of the questionnaire, nine responses (DE, EL, ES (Basque), ES (Catalonia), FR, HU, MT, PT, UK) indicated that the derogation process is a multi-step process, i.e. involving an initial screening process for derogation requests. In a number of cases, Member States indicated that this multi-step process involves consideration of the three derogation criteria as a prerequisite to conducting further analysis of the derogation application.

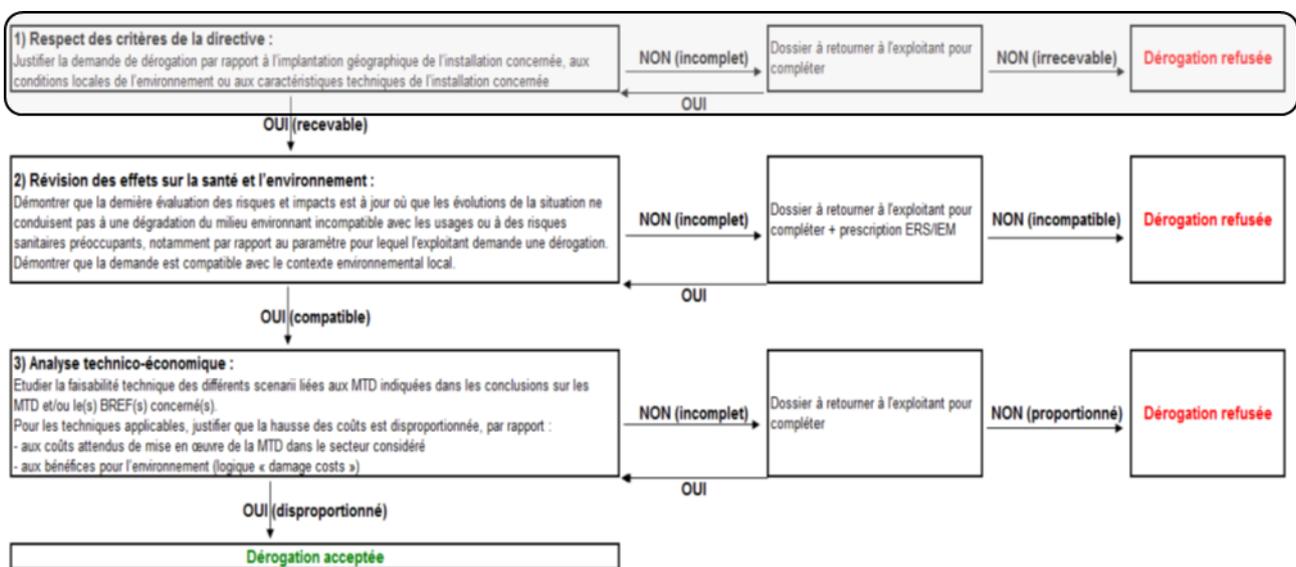
The UK (separate responses from England, Wales, Northern-Ireland and Scotland) indicated that the initial stage of the derogation process, is for the operator to demonstrate that the installation is different to other 'typical' sites in the sector, ensuring the request complies with the criteria listed in Article 15(4), and to explain how these differences translate into significant additional costs of achieving a BAT-AEL. It is noted that in England, at this stage, the potentially reduced benefits that can be a direct result of, for example, remote location or low population density, are not considered. If the operator provides sufficient information and successfully passes the first stage assessment, the full cost-benefit analysis will be carried out.

In Wales the option to request a derogation is thoroughly scrutinised before an official application. The assessment of the BAT conclusions is discussed with all installations in that sector to understand which conclusions might be problematic, often even before the publication of the BAT conclusions. The initial assessment covers aspects such as costs, high level of environmental protection and any air quality or other standards possibly affected. It involves a discussion with the operators and allows operators to evaluate their investment strategy. Only after this "broad brush approach" can a formal derogation request be submitted.

In the UK (England and Wales), the rationale behind justifying an Article 15(4) derogation is published as part of the permit variation and accompanying decision documents²². The information in these decision documents provide specific details on how the derogation criteria have been considered and interpreted (some are discussed in section 4 as a derogation case study). No information is available for the cases where after this initial step of screening against the derogation criteria it is decided not to proceed and perform a cost-benefit assessment.

FR indicated that they have a multi-step process for considering and granting derogations (see Appendix A). This includes the requirement for justifying the origin of the request (with reference to the three derogation criteria), before the risk assessment, and technical and economic studies are carried out. This step in the process is clearly presented in the guidance as a separate step in the evaluation process and needs to be decided before progressing to any further assessments²³. The flow diagram below illustrates how the initial screening step sits in the entire process.

Figure 3.2 Flow diagram of the Article 15(4) evaluation and decision process in FR illustrating the initial screening of the derogation criteria.



The initial assessment in BE (Flanders) involves a screening of the derogation criteria referred to in the application. In case the reference is not clear or even missing in the application, the competent authority will request the operator to provide more information. The evaluation of the derogation only starts when this additional information is provided.

In other Member States, it is not explicitly indicated that the three derogation criteria are considered as an initial screening. For MT and PT, for example, the initial consideration of the application is based on the consideration of the techniques (BAT) already applied in the installations. EL indicates that a multi-step process might be followed but there is no formal obligation to do this.

3.2.4 Additional criteria used in the evaluation of IED Article 15(4) derogation requests

Factors other than the three criteria specified in IED Article 15(4) are also considered in the submission and assessment of derogations in some Member States. Seven respondents to this section of the questionnaire (DE, ES (Catalonia), ES (Murcia), IT, MT, PT, SK) indicated that other criteria are used in their derogation processes.

²² <https://www.gov.uk/government/collections/industrial-emissions-directive-ied-environmental-permits-issued>

²³ Logigramme de la procédure, p. 13: http://www.installationsclassees.developpement-durable.gouv.fr/IMG/pdf/Guide_de_demande_de_derogation_v1.pdf

One factor raised by a number of respondents is a specified time limit by which derogation applications must be submitted by the operator or reassessed by the national authority. For example, the UK (England and Wales responses, to the current study and the previous input to IMPEL) indicated that if the operator is unable to comply with BAT-AELs within the 4-year period after BATC publication, then a derogation submission should be made by the operator. It is also assumed that any derogation granted will be reconsidered and a further derogation request required when the next BREF and BAT conclusions are published, which is likely to be 8 years after the current BREF and BAT conclusions. Other responses to the questionnaire in this study and the IMPEL study (e.g. BE (Flanders), ES (Catalonia) and PT) also specified a maximum time period to achieve the expected ELVs, after which a derogation request will be required.

The UK indicated that for a number of smaller installations, the responsibility for granting derogations is placed on local authorities, and it is unclear if these will follow the same derogation procedure as the Environment Agency (see Appendix A for further details). Furthermore, the UK also indicated that in some cases, a secondary consideration in addition to the three derogation criteria specified under IED Article 15(4), is the extent to which operators have taken steps to make improvements prior to the submission of a derogation. An example case study where this has been considered is discussed in Section 3 and Appendix B.

In its regulation²⁴ for an IED Article 15(4) derogation request, in addition to the derogation criteria of Article 15(4) and the provision to ensure a high level of protection for the environment as a whole, BE (Flanders) requires that the ELVs are not higher than:

- ▶ the relevant ELVs in VLAREM II (as far as no derogation from these VLAREM II ELVs is allowed); and
- ▶ the applicable emission limits outlined in Annex II of VLAREM III (technical provisions of Annex V to VIII of the IED).

A number of other respondents outlined additional factors that are taken into account. ES (Murcia) indicated they consider synergistic effects and accumulated impacts with other industries or historically highly industrialised areas. IT noted in their submission to the formal IED implementation questionnaire that derogations must comply with other applicable legislation, such as measures laid down in Italian air quality plans.

The additional criteria used by some of the Member States in their decision procedures can be applied in different steps of the process, i.e.:

- ▶ as a prerequisite to any further assessment: for example, in the case of BE (Flanders) where the relevant ELVs in VLAREM II are not exceeded if not allowed; or
- ▶ as information or criteria used in addition to the initial screening and the cost-benefit assessment to make a final decision on the derogation request: for example, in the case of ES (Catalonia), PT or UK.

3.3 Calculation of costs

3.3.1 General approach for calculating BAT costs

Of the responses to the questionnaire in this study, ten responses (CZ, ES (Catalonia) ES (Extremadura), FR, HR, HU, IE, PT, SK, UK) indicated their competent authority has a standard methodology in place for calculating the costs of implementing BAT.

The UK noted they have developed a cost benefit analysis tool and guidance²⁵ for carrying out the necessary calculations in an IED Article 15(4) derogation request. IE and HU indicated they base their approach on the UK Environment Agency's cost benefit analysis tool.

²⁴ VLAREM III, Article 1.4. <https://navigator.emis.vito.be/mijn-navigator?wold=61193>

²⁵ <https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool>

Similarly, FR stated that they have developed a cost sheet to be used by operators in preparing derogation requests²⁶. The spreadsheet tool specifically guides the operator in calculating cost-effectiveness values (i.e. annual costs vs. annual avoided emissions, k€/t avoided) for a number of BAT and derogation scenarios. The formula used for calculating the total annual costs is as presented in the ECM REF (2006)²⁷:

$$\text{Total annual costs} = C_o \left[\frac{r(1+r)^n}{(1+r)^n - 1} \right] + OC$$

Where:

C_o = investment cost at year 0 (base year)

r = discount rate per period (year)

n = estimated economic lifetime of the equipment in years

OC = total operating costs

HR indicated that they use a standard economic methodology for the investment project.

Five questionnaire responses (CZ, ES (Catalonia), HR, IE, UK), indicated their approach to assess costs and benefits is based on an existing methodology. In the UK (England) the methodology was adapted from the amended guidance H1 Annex K methodology²⁸, but has been significantly developed to be fit for the purpose of assessing derogation requests under the IED. The original version of Annex K was designed purely to help identify BAT from a series of options and place a cost against the achievement of each option, to identify the most cost-effective solution. The new version covers BAT and IED derogations and so broadens the scope to include proposals that are not BAT (more details can be seen in the UK (England) response to the IMPEL project).

CZ, ES (Catalonia) and PT noted that their methodology is based on the ECM REF.

The details of the general approaches used to calculate costs are described in Appendix A. Box 2.2 below provides some examples of the approaches applied in SK and the UK.

Box 2.2. Examples of approaches to calculate costs of implementing BAT.

SLOVAKIA

The methodology developed by SK (The Ministry of Environment) is standardized for each operator and industry. Operators need to fill in the tables with internal company data. This includes economic data related to the current situation, the situation after implementing BAT, and for the situation after implementing other techniques to reduce emissions (revenue, costs - investment, annual accounting depreciation, operating costs divided in separated categories, taxes and fees). Data for the 15-year financial plan is requested. The average of the input data is then calculated. If operators include information for fewer years the calculations are standardised by the competent authority to enter into the 15-year plan of the tool. All data required to make these calculations are requested from the operator (e.g. assumed lifetime of abatement technique, costs etc.).

²⁶ Outil de présentation des coûts et calcul des RCE: <http://www.installationsclassees.developpement-durable.gouv.fr/Publication-du-Guide-de-demande-de.html>

²⁷ http://eippcb.jrc.ec.europa.eu/reference/BREF/ecm_bref_0706.pdf

²⁸ <https://www.gov.uk/government/publications/h1-annex-k-cost-benefit-analysis>

Partial financial analysis																
current state - maintenance investment																
Year	annual average	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Revenues	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.1. Revenues	0															
2. Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment costs	0															
2.1. Annual accounting deprec	0															
2.2. Operating costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.2.1. Material costs	0															
2.2.2. Maintenance costs	0															
2.2.3. Energy costs	0															
2.2.4. Payroll costs	0															
2.2.5. Overheads	0															
2.3. taxes and fees	0															
3. Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

BAT																
Year	annual average	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Revenues	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.1. Revenues	0															
2. Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment costs	0															
2.1. Annual accounting deprec	0															
2.2. Operating costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.2.1. Material costs	0															
2.2.2. Maintenance costs	0															
2.2.3. Energy costs	0															
2.2.4. Payrolls	0															
2.2.5. Overheads	0															
2.3. taxes and fees	0															
3. Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Other technics																
Year	annual average	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Revenues	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.1. Revenues	0															
2. Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment costs	0															
2.1. Annual accounting deprec	0															
2.2. Operating costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.2.1. Material costs	0															
2.2.2. Maintenance costs	0															
2.2.3. Energy costs	0															
2.2.4. Payrolls	0															
2.2.5. Overheads	0															
2.3. taxes and fees	0															
3. Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Operators are also requested to include further information about the company, such as number of employees, other important investments in last 5 years, and other BAT that has to be installed. This information is used by the competent authority to assess the operator’s historic investment in abatement techniques and is used as additional input to the decision process. The Ministry has developed key performance indicators (KPIs) forms to evaluate all of the information submitted by operators. Two primary types of economic analyses are used in the assessment of proposed environmental investments to comply with the BAT and search for feasible and financially available solutions:

- ▶ Cost effectiveness analysis (CEA); and
- ▶ Cost benefit analysis (CBA).

These approaches are described in Appendix A (SK).

UNITED KINGDOM

In the methodology developed by the UK (Environment Agency (England)), the operator navigates an Excel-based form, filling in their relevant data on current and future operations, costs and benefits. This requires the provision of three main types of data:

- 1) Background information – information about the processes and technologies being considered and how these impact on each option, including an assessment of the costs and benefits of implementing BAT within the four-year period required under Article 21(3) of the IED.
- 2) Qualitative information – an assessment of the environmental impacts under different options being considered (including the BAU scenario, the BAT-AEL and proposed derogation options) and the relative significance of an impact (LARGE, MEDIUM, LOW).
- 3) Quantitative data on key costs including:
 - ▶ Upfront investment costs;
 - ▶ Financing costs;
 - ▶ Operating costs; and

- ▶ [As well as data on emissions and energy consumption – see Appendix A].

In other Member States (e.g. BE (Flanders), FI, IT, SE) it was indicated that there are no standardised evaluation methods and each case is individually investigated by competent authorities on a case-by-case basis. IT noted that the different authorities have a level of discretion about which data to request and to evaluate in order to formulate the response. In BE (Flanders) guidance is available for determining BAT at an installation level (2017)²⁹, including an assessment of the costs and benefits. This guidance is used as reference only and is not considered as a standard methodology in the evaluation of derogations under IED Article 15(4).

3.3.2 Costs considered in the evaluation of IED derogation requests

The aspects considered in the calculation of the overall cost of compliance with BAT can consist of both capital and operational costs. A total of 17 responses were received to the question in the survey concerning the different costs considered in this calculation in different Member States. For specific details of the costs considered by individual Member States, an overview is provided in Table 3.5 with full questionnaire responses in Appendix A.

In terms of capital costs (CAPEX), responses indicated that the cost of new equipment (e.g. for monitoring, abatement, technology) is considered in nearly all cases (94%). Additional examples of capital costs were also specified, including the cost of purchasing new land to accommodate the abatement equipment, cost of any civil works (UK); financing costs (FR, UK); costs of retiring/decommissioning another technique or equipment (FR, UK); and contingency costs (FR).

In terms of operational costs (OPEX), a range of different costs are considered by Member States, including costs of operating the new equipment e.g. raw materials / utilities (82%); maintenance costs (88%); time spent e.g. labour costs (65%); training costs for staff to carry out the new activities / techniques (65%); costs of external services (e.g. consulting and verification services) (71%). Additional examples of operational costs were also specified by some responses, including the cost of recovery, treatment or disposal of waste generated (HU, UK); costs of product quality or efficiency loss, and temporary or permanent production loss (FR, UK).

In terms of other costs (i.e. costs other than CAPEX or OPEX), costs of production loss due to changes to the installation (59%) and insurance costs associated with the new equipment (47%) are considered in some Member States. Additional examples of such other costs were also specified, including patent royalties, overhead costs, grants, energy savings, sales of utilities, residues, recycled chemical products (FR), and avoided taxes (ES (Catalonia), FR). FI noted that the assessment of derogation requests is carried out on a case by case basis, with cost data presented to the permitting authority in a way that it can be verified.

²⁹ VITO (2017). Guidance for a BAT assessment at an installation level.

https://emis.vito.be/sites/emis.vito.be/files/pages/1142/2017/Leidraad%20BBT%20op%20bedrijfsniveau_definitief.pdf

Table 3.5 Costs considered in the total cost calculations

	Responded to questionnaire? Responded to Q5.4 on costs?		CAPITAL		OPERATIONAL					OTHER		
			New equipment	Set-up/installation costs	Costs of operating the new equipment (raw materials / utilities)	Maintenance costs	Time spent on undertaking the changes needed to comply with the BAT conclusion	Training costs for staff to carry out the new activities / techniques	Costs of external services (e.g. consulting and verification services)	Costs of production loss due to changes to the installation	Insurance costs associated with the new equipment	Other costs
AT												
BE (Flanders)	✓											
BG	✓											
CY	✓											
CZ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DK	✓											
EE												
EL	✓											
ES (Basque)	✓											
ES (Catalonia)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ES (Madrid)	✓											
ES (Murcia)	✓	✓	✓		✓	✓						
FI	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HR	✓	✓	✓	✓	✓	✓	✓	✓	✓			
HU	✓	✓	✓	✓	✓	✓			✓	✓		
IE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IT	✓											
LT	✓	✓	✓		✓							
LU	✓											
LV												
MT	✓	✓	✓	✓	✓	✓				✓		

	CAPITAL		OPERATIONAL					OTHER		
Responded to questionnaire? Responded to Q5.4 on costs?	New equipment	Set-up/installation costs	Costs of operating the new equipment (raw materials / utilities)	Maintenance costs	Time spent on undertaking the changes needed to comply with the BAT conclusion	Training costs for staff to carry out the new activities / techniques	Costs of external services (e.g. consulting and verification services)	Costs of production loss due to changes to the installation	Insurance costs associated with the new equipment	Other costs
NL										
PL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PT	✓	✓	✓	✓						
RO										
SE	✓	✓	✓	✓	✓	✓	✓	✓		
SI										
SK	✓	✓								
UK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.3.3 Comparing and validating costs

A range of different approaches to comparing and validating costs associated with complying with BAT is observed across Member States, with differing levels of detail and clarity provided. Eleven responses to the questionnaire in this study provided details of the approaches taken.

Comparing costs

In terms of comparing costs, the approach of some Member States (or regions) involves the use of present values, while others do not. SK indicated that the comparison of costs is expressed in terms of key performance indicators.

Several responses (ES (Catalonia), HR, HU, LT, PT, UK) specified that calculations should be made using net present values. A method for the calculation of net present values (NPV) is set out in the ECM REF (2006); the Net Present Value is calculated as a sum of discounted future payments minus the initial investment cost:

$$NVP = -(investment) + \sum_{t=0}^n \left(\frac{net_revenues_t}{(1+r)^t} \right)$$

Where:

t = year 0 to year n

n = the project lifetime

r = the discount (interest) rate

ES (Catalonia) and PT, for example, specified that they use the methodology set out in the ECM REF (see Appendix B for more details). Other responses did not specify the method for calculating the present values.

Furthermore, some Member States are also accounting for the cost of capital to reflect the risk that private companies are facing when borrowing or investing capital. For instance, FR noted that when costs are annualised, an interest rate is applied to take into account the cost of the capital (insurance cost included). Similarly, SE noted that the capital costs are assessed with regards to depreciation and interest rate. HU specified that they use a Discounted Cash Flow method which incorporates capital costs into the calculations but discounts it with social discount rate.

In the UK, the approach involves incorporating the cost of accessing financial capital (company's Weighted Average Cost of Capital (WACC)) in the total financial costs and then discounting costs (and benefits) using the social discount rate set out in the HMT's Green Book.

Validating costs

In terms of validation of costs, a number of different approaches are specified in the Member State responses to the questionnaire. In some cases, Member States indicated the use of external experts, either at the request of the operator or authority. Others rely on the competent authority to validate costs themselves, in some cases requesting additional information from external parties.

The approach in CZ is an evaluation based on the latest relevant sectoral or aggregate data and actual project data. It is noted that the source of the data must always be part of the application and to enable validation of the costs by the CA. CZ noted that validation of the entire application (including economic assessment) is done by an expert body (CENIA, the Czech Environmental Information Agency). If the competent authority decides not to use the competent authorised person, it must evaluate those aspects themselves. HR also stated that, if necessary, external experts could be consulted in cost validation. In HU, while there is no specific methodology other than the reference to the UK CBA tool, the cost data and calculations are prepared by experts commissioned by the applicant, and these are evaluated by the competent authorities.

By contrast, SK noted that the validation of data is not necessary as the calculation is performed by the competent authority. It is up to the operators to provide cost data (see above), such as revenue, investment, annual accounting depreciation, operating costs divided in separated categories, taxes and fees. The comparison of the cost data (and environmental benefits – see below) is expressed in terms of key performance indicators, e.g. a KPI on average annual costs, average payback period, additional investment payback. According to these calculations points are awarded for each KPI, based on the data included to the submission form (see Appendix B for a derogation case study in SK).

SE specified that the burden of proof is placed on the operator. Descriptions and calculation must be transparent with given values on for example different types of costs. Also, ES (Catalonia) noted that the operator is required to present budgets to implement the techniques selected. The economic data provided by operators are validated through the submission of the budget / fees to be charged for the investments and the balance sheets from companies. FR noted that when available, external quotes or internal detailed costings have to be submitted to justify costs.

In the UK, the Environment Agency (England) indicated that validation of costs is mostly achieved by:

- ▶ using previous experience;
- ▶ comparing all installations within a sector that have asked for a derogation;
- ▶ using common sense; and
- ▶ checking any appropriate reference material, e.g. the Treasury Green Book³⁰, the cost data in section 4 of sector specific BREFs, ECM REF etc.

The English Environment Agency can also request formal quotes from technology providers but has so far not resorted to asking for formal quotes as obtaining them can be costly as well as time consuming. In

³⁰https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

Scotland, it is noted that SEPA seeks evidence that the costs are based on sound principles and assumptions. In Wales it is noted that technical experts make use of data from BREFs and internet sources. An economist also scrutinises the figures if required. IE specified that costs should be supported by evidence such as price quotes from commercial providers of the technologies considered or references to costs in the BREFs which can be verified.

As noted elsewhere in this report, FI indicated they carry out the assessment of derogation requests on a case by case basis, with cost data presented to the permitting authority in a way that it can be verified (no further details are specified). DE have also noted that the evaluation is determined by the competent authority and environment agencies of the Federal States. In IT and BE (Flanders) the cost-benefit analyses are evaluated by the competent authorities on a case-by-case approach.

3.3.4 Summary of cost calculations

Based on the information collected on the MS practices, there seems to be a common understanding of the type of cost data needed for the assessment of a derogation request. Both CAPEX and OPEX (and in some cases reference to other costs) are considered in the evaluations.

The way total costs are calculated, however, is only explicitly indicated and made publicly available by some Member States. Member States with such a standard methodology for calculating the costs in place most often refer to the calculation of total costs as presented in the ECM REF (2006). Even though other Member States who have not such a standard methodology made available or published (and reported a case-by-case approach), often made reference to a similar calculation of total costs in their response to the questionnaire.

Different approaches are applied between Member States to validate the costs provided by the operators, incl. the use of external experts, data from similar plants and information from BREFs. However, Member States did note that it is often very time consuming and costly to validate all of the cost information provided by the operator.

3.4 Calculation of environmental benefits

3.4.1 Overview of approach for calculating environmental benefits of BAT

Of the responses to the questionnaire in this study, five responses (CZ, ES (Catalonia), FR, SK, UK) indicated their competent authority has a standard methodology in place for calculating the benefits of implementing BAT.

As discussed in section 3.3, the UK (Environment Agency, England) has developed a cost benefit analysis tool and guidance for this purpose. It is indicated that in Scotland, a methodology exists for some pollutants to air and a more qualitative methodology for other pollutants where it is not currently feasible to calculate damage costs (e.g. to water). It is indicated that in Wales, calculation of benefits includes an assessment of damage costs per unit emission. Similarly, FR noted their methodology considered the tonnes of pollutant avoided multiplied by a reference cost for the pollutant, with the benefits compared with the costs for implementing the BAT. CZ indicated that the calculation is based on a comparison between the effects of the BAT scenario and the derogation scenario on the environment (amount of pollution, dispersion studies etc.)

Two responses to the questionnaire (ES (Catalonia) and UK) indicated their methodology was adapted from a method in existence prior to the IED. Other countries (e.g. FR and SK) indicated they have a methodology designed specifically for the IED.

The UK provided a detailed description of what aspects are considered in their CBA tool (see Appendix A for a full discussion). It is noted that in England, the Environment Agency's method is a standard CBA framework based on the UK Treasury's Green Book³¹, with several elements specially developed for the derogations process. For example, it was indicated the CBA approach was adapted to consider the following aspects:

³¹https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

- ▶ **The baseline** – it was noted that determining the ‘baseline’ situation for an installation is complex and highly variable between individual cases. For example, the standard ‘business as usual’ scenario is not applicable in most IED derogation requests as, a) it is established that a business as usual approach will not be suitable to achieve BAT-AELs, and b) many plants have undertaken at least some measures to reduce emissions prior to a derogation application. The baseline must therefore be assessed on a case-by-case basis for the characteristics of each site.
- ▶ **The costs and benefits are accrued by different ‘parties’** – It is noted that, in the compliance of operators with BAT-AELs, the cost is private (i.e. investment by industry) and the benefits are public (i.e. environmental improvement). There is a lack of guidance in the Treasury Green Book on how to take this into account in the CBA methodology. The Environment Agency note that they take the ‘Spackman’ Approach³², which includes using a weighted average cost of capital before applying the social discount rate of 3.5% which declines after 30 years. Human health benefits (expressed in terms of the VPFs, SLYs and QALY effects) are discounted at the health rate of 1.5% (also declining after 30 years).
- ▶ **The appraisal period** – the Treasury Green Book notes the requirement to take into account the ‘lifetime of the longest-term asset’ when assessing appraisal periods. However, it is noted that industrial plants typically make continuous ‘ad-hoc’ improvements. Therefore, the Environment Agency comment that their approach considers the point of major refurbishments (typically 10-30 years). However, there is a degree of ambiguity in terms of what is meant by ‘major refurbishment’.

The methodology in Scotland and Wales is adapted, at least partially from existing methodology, the latter using Interdepartmental Group on Costs & Benefits (IGCB) damage costs.

ES (Catalonia) and PT indicated that their methodology is based on the European Commission (2006) ECM REF, where different terminology is used for the values that are derived for the polluting effects, including ‘shadow prices’, ‘reference costs’, ‘benchmark prices’ and ‘levies’. Once a value that can be attributed to an environmental effect is defined, then this value can be used to calculate the benefits of implementing a BAT. The ECM REF furthermore provides some examples of how ‘shadow prices’ are derived and used in a number of Member States.

In FR the benefits are expressed as emission reductions for each scenario and are used to calculate cost-effectiveness values. In a subsequent step, these cost-effectiveness values are compared with available reference values, such as sectoral cost-effectiveness values or damage costs.

3.4.2 Environmental benefits considered

A total of 14 responses were received to the question in the survey concerning the different environmental benefits considered in the calculation in different Member States. An overview of the benefits considered by individual Member States, is provided in Table 3.6 and full details can be seen in the questionnaire responses in Appendix A.

The vast majority of responding Member States consider the avoided or reduced emissions to air (93%) and avoided or reduced emissions to water (86%). A large number of responding Member States also consider avoided or reduced raw material use (79%), avoided or reduced waste generation (71%) and avoided or reduced odour levels (64%). A smaller number of responses indicated the consideration of avoided or reduced energy use (57%) and avoided or reduced noise levels (57%). Relatively few responding Member States consider the avoided or reduced impact on biodiversity (36%). Five Member State responses also noted that additional benefits to those specified in the questionnaire are also considered. For example, the UK noted that the impact on future ability to comply with other legislation i.e. NECD, cross media effects, and amenity value are also taken into account in their consideration of derogations. Although these are rather considered as factors in addition to the cost-benefit analysis (see section 3.5.3).

³² https://www.ofcom.org.uk/data/assets/pdf_file/0029/37856/jrg_statement.pdf.

Table 3.6 Benefits considered in the derogations

Member State	Responded to questionnaire?	Responded to Q6.4 on environmental benefits?	Avoided/reduced emissions to air	Avoided/reduced emissions to water	Avoided/reduced noise levels	Avoided/reduced odour levels	Avoided/reduced waste generation	Avoided/reduced raw material use	Avoided/reduced energy use	Avoided/reduced impact on biodiversity	Other
AT											
BE (Flanders)	✓										
BG	✓										
CY	✓										
CZ	✓	✓	✓								
DE	✓										
DK	✓										
EE											
EL	✓										
ES (Basque)	✓	✓									
ES (Catalonia)	✓	✓	✓	✓			✓	✓	✓		
ES (Extremadura)	✓										
ES (Madrid)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
FR	✓	✓	✓	✓			✓	✓	✓	✓	
HR	✓										
HU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IE	✓										
IT	✓										
LT	✓	✓	✓	✓		✓			✓		
LU	✓										
LV											
MT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
NL											
PL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
PT	✓	✓	✓	✓			✓		✓		
RO											
SE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Member State	Responded to questionnaire?	Responded to Q6.4 on environmental benefits?	Avoided/reduced emissions to air	Avoided/reduced emissions to water	Avoided/reduced noise levels	Avoided/reduced odour levels	Avoided/reduced waste generation	Avoided/reduced raw material use	Avoided/reduced energy use	Avoided/reduced impact on biodiversity	Other
SI											
SK	✓										
UK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.4.3 Comparison of benefits

A total of ten responses were submitted to this section of the questionnaire. As with the comparison of costs (see Section 3.3) the approach of some Member States (or regions) involves the use of present values, while others do not.

Several responses (ES (Catalonia), LT, UK) specified that calculations should be made using net present values (see section 3.3.3 for details on the calculation of NPVs). ES (Catalonia) noted that environmental benefits are evaluated by comparing present values and values of selected techniques to achieve the BAT-AEL. In the UK, the competent authorities in England, Wales and Scotland specified the use of present values. However, SEPA noted that the methodology being developed may not include damage costs for emissions to water, and therefore a different method to compare benefits may be required (such as a method similar to the approach used by SEPA for qualitatively assessing derogations under the Water Framework Directive³³).

FR indicated that they express benefits as emission reductions (for emissions to air and water). Other benefits (waste generation, energy use, etc.) are only discussed with the competent authority in case there is a significant difference between the technique options. CZ indicated that they express benefits as emission reduction (only for emissions to air) rather than cost. Subsequently, costs and benefits (impact on the environment) of BAT and other proposed scenarios are compared. Similarly, HU noted that, depending on the case, comparisons of benefits are made based on evaluation of different scenarios for an individual plant (see Appendix A for examples).

3.4.4 Use of damage costs in IED derogations

Damage cost is the cost incurred by repercussions (effects) of direct environmental impacts (for example, from the emission of pollutants) such as the degradation of land or human-made structures and health effects³⁴.

Nine responses to the questionnaire (ES (Catalonia), FI, FR, HU, IE, PL, SE, SK, UK) indicated that damage costs of pollutants are used in the determination of a derogation request. The pollutants considered for which damage costs are available or used in this assessment were specified by a small number of Member State questionnaire responses. The pollutants considered and the type of sources used to derive damage cost values are summarised in Table 3.7.

³³ https://www.sepa.org.uk/media/149762/wat_rm_34.pdf

³⁴ OECD – Glossary of statistical terms

Table 3.7 Pollutants for which damage costs are available/used.

Member State	NO _x	SO _x	PM	NH ₃	VOC	EEA damage costs	ECM REF damage costs	Other sources/ methods
HU	✓					✓		
FR	✓	✓	✓	✓			✓	✓
UK	✓ ¹	✓ ¹	✓ ¹	✓ ²	✓ ³	✓		✓
ES (Catalonia)	✓	✓	✓	✓		✓	✓	

1 – England, Scotland, Wales; 2 – England and Wales; 3 – Wales

A number of questionnaire responses outlined the source of the damage cost unit values used in calculating BAT benefits. In a number of cases, use is made of the European Environment Agency (EEA) damage costs³⁵, which provide standardized values.

The EEA approach uses a simplified modelling approach to quantify, in monetary terms, the damage costs caused by emissions of air pollutants from industrial facilities reported to the E-PRTR pollutant register. The EEA approach is based on existing policy tools and methods, such as those developed under the EU's Clean Air for Europe (CAFE) programme. The damage cost values derived by the EEA for the nine Member States that indicated the consideration of damage costs in the questionnaire, are presented in Table 3.8. In addition to the pollutants listed in Table 3.8, damage costs are also derived by the EEA for the following pollutants: CO₂, PM₁₀, arsenic, cadmium, chromium, lead, mercury, nickel, benzene, PAHs, dioxins and furans.

Table 3.8 Damage costs of pollutant emissions derived by the European Environment Agency for selected Member States

Member State	Damage costs (EUR/tonne) for pollutant emission in 2020									
	NO _x		SO ₂		PM _{2.5}		NH ₃		NMVOC	
	Low	High	Low	High	Low	High	Low	High	Low	High
ES	2 551	6 054	5 586	15 393	20 170	56 459	1 970	5 518	133	132
FI	2 005	5 303	3 229	8 995	6 862	19 207	3 233	9 052	77	97
FR	10 291	27 098	11 105	30 550	32 330	90 495	6 608	18 501	461	803
HU	14 287	38 540	9 633	26 775	29 199	81 731	10 217	28 602	51	-58
IE	3 574	9 250	6 107	16 958	16 229	45 426	1 327	3 715	281	464
PL	9 450	25 607	8 928	24 754	22 268	62 332	7 418	20 767	220	363
SE	2 688	6 960	3 560	9 880	11 383	31 863	3 385	9 478	155	233
SK	12 937	34 857	9 207	25 585	22 853	63 968	10 761	30 124	75	-11

³⁵ <https://www.eea.europa.eu/publications/cost-of-air-pollution>

Member State	Damage costs (EUR/tonne) for pollutant emission in 2020									
	NO _x		SO ₂		PM _{2.5}		NH ₃		NMVOC	
	Low	High	Low	High	Low	High	Low	High	Low	High
UK	5 999	16 663	10 309	28 571	32 764	91 710	10 457	29 277	510	840

Data source: European Environment Agency, Revealing the costs of air pollution from industrial facilities in Europe, <https://www.eea.europa.eu/publications/cost-of-air-pollution>; Value ranges based on Low Valuation of Mortality (VOLY) estimate and High Value of Statistical Life (VSL) estimate.

Note: damage costs are also derived for a range of other pollutants

As noted above, the UK bases its standard CBA framework on the UK Treasury's Green Book, but with several elements that had to be specially developed for the derogations process. For example, the damage costs provided by the Treasury only consider the UK-specific impacts. The EEA provide damage costs for a wider range of pollutants (e.g. VOCs) and will be more relevant as pollutants emitted from the UK can potentially have transboundary impacts across Europe. In England, the Treasury's Green Book values are used by default for the benefit calculations and the EEA damage costs are used in the subsequent sensitivity analyses. Feedback received from the Environment Agency indicates there has been only one case so far where the use of EEA damage cost has had a tangible difference in the CBA outcome compared to the use of the Treasury's Green Book values. For comparison, the damage cost values from the UK Treasury Green Book are presented in Table 3.9. The damage costs for NO_x and PM are derived for three different sources, i.e. transport, industry and domestic. The values for industry, listed in Table 3.9, are lower compared to those from domestic and transport.

Table 3.9 Air quality damage costs (for industry) derived in the UK Treasury Green Book

Pollutant	Air quality damage costs (EUR per tonne), 2015 prices		
	Central	Low	High
NO _x	18 094	7 239	28 951
PM	41 650	32 610	47 330
SO _x	2 695	2 179	3 065
NH ₃	3 256	2 540	3 700

Data source: UK Treasury Green Book, <https://www.gov.uk/guidance/air-quality-economic-analysis>, converted from GBP to EUR based on average 2015 exchange rate.

IT and PT have previously indicated in their input to IMPEL projects and the formal IED implementation questionnaire, that their cost benefit assessment is conducted on the basis of the ECM REF and national cost-effectiveness methodology. Damage cost values from the ECM REF relevant to the nine relevant Member States are presented in Table 3.10.

Table 3.10 Damage costs of pollutant emissions used in the Economics and Cross-Media Effects REF for selected Member States

Member State	Damage cost values (EUR/tonne), 2010 prices									
	NO _x		SO ₂		PM _{2.5}		NH ₃		NMVOC	
	Low	High	Low	High	Low	High	Low	High	Low	High
ES	2 600	7 200	4 300	12 000	19 000	54 000	4 300	13 000	380	1 100
FI	750	2 200	1 800	5 200	5 400	16 000	2 200	6 300	160	490
FR	7 700	21 000	8 000	23 000	44 000	130 000	12 000	34 000	1 400	4 200
HU	5 400	15 000	4 800	14 000	25 000	72 000	11 000	32 000	860	2 700
IE	3 800	11 000	4 800	14 000	15 000	42 000	2 600	7 400	680	2 000
PL	3 900	10 000	5 600	16 000	29 000	83 000	10 000	29 000	630	1 900
SE	2 200	5 900	2 800	8 100	12 000	35 000	5 900	17 000	330	980
SK	5 200	14 000	4 900	14 000	20 000	58 000	14 000	41 000	660	2 000
UK	3 900	10 000	6 600	19 000	37 000	110 000	17 000	50 000	1 100	3 200

Data source: The Economics and Cross-Media Effects REF, results are taken from the Cost-Benefit Analysis of Air Quality Related Issues, carried out in particular in the Clean Air for Europe (CAFE) Programme (CAFE CBA), see <http://europa.eu.int/comm/environment/air/cafe/activities/cba.htm>

As noted previously, HU refers to the UK's approach, and uses the EEA Damage costs. It is also indicated that SK and FI use the EEA damage costs, however, FI noted that sometimes the EEA damage cost values are difficult to use as information is limited to certain pollutants. ES (Catalonia) indicated that in their calculation of environmental benefits, data are taken from both the EEA damage costs and the ECM REF. FR indicated they make use of the ECM REF as well as data from Institut National de l'Environnement Industriel et des Risques (INERIS)³⁶. The damage costs are used in FR as reference values to compare with the calculated cost-effectiveness values.

3.4.5 Summary of environmental benefit calculations

There seems to be a common understanding of the type of environmental benefits to be considered the assessment of a derogation request.

In terms of calculating the benefits, however, it should be noted that the sections above relate to damage costs for air pollutants only. As shown in Section 3.4.2, there are a variety of other environmental benefits that Member States indicated are considered in the IED derogation process.

In their previous input to the IMPEL study, FR for example noted that 'ideally we would like to be able to create reference costs for pollution per tonne of pollutant for a wide range of pollutant'. However, FR suggested this is a complex task 'considering that the references are mainly on "air pollutants", and that these references differ widely from one another'. Furthermore, environmental benefits are only taken into account for the assessment if they are considered significantly different between the technique options.

³⁶ INERIS (2007). Guide pour l'analyse du volet technico-économique. N° INERIS–DRC 07–85842–12011A

Also, CZ noted that, in the case of direct discharge of waste water to water recipients, the procedure according to Article 15(4) cannot be applied because of national legislation. This related to Government Regulation No. 401/2015 Coll, effective from January 1st, 2016, on the indicators and values of permissible pollution of surface water and wastewater treatment, detailing the permit to discharge wastewater into surface water and sewerage systems and sensitive areas, and setting limits on the discharge of wastewater at the level required by the [Urban Waste Water Treatment] Directive and, in some respects, even more severely.³⁷

For aspects such as emissions to water, noise, odour, biodiversity, energy and natural resources, it is not clear to Member States how these can be valued and included as part of the assessment.

There are a few examples where other, more qualitative, approaches appeared to be used in the context of IED Article 15(4) derogations:

- ▶ In the UK (as discussed in the UK case study, see Appendix B) the estimation of benefit costs for emissions to water was based in a single case on the willingness to pay values for improvements in water quality, assuming an improvement in water quality according to Water Framework Directive classifications i.e. assuming an improvement from one classification to another. This gives an upper limit of what the damage cost would be (i.e. the benefits). This is likely to be an overestimate of what the benefit will be, although this can be communicated to decision makers during the derogation process.
- ▶ In Scotland, the qualitative derogation assessment procedure as it currently exists for assessing derogations under the Water Framework Directive³⁸, might also have benefit for evaluating IED Article 15(4) derogations. This procedure makes use of matrices to assess the magnitude and importance of a proposal on the environment (a range of effects) and to weigh up the significant positive and negative effects.

3.5 Assessing disproportionality

3.5.1 Methods for determining disproportionality

A relatively small number of Member State responses indicated a specific definition or methodology has been defined for assessing disproportionality in IED derogation requests. Detailed information on the assessment of disproportionality was provided by CZ, FR, PL, SK, and UK. In most cases Member States use a combination of quantitative assessment (i.e. cost benefit analysis, cost-effectiveness analysis) and additional qualitative information about the site and operation in question to make a final decision. PL developed an approach to assess disproportionality for derogation requests specifically related to the LCP BATC.

In the UK, the Environment Agency (England) indicated that the assessment of what constitutes 'disproportionate' is provided by the difference in NPV between costs and benefits. However, disproportionality is assessed, only partially, by using the cost benefit analysis tool. The final judgement on disproportionality is made on a case by case basis, taking into account a full consideration of the merits, including evidence on both cost and benefits that can only be assessed qualitatively. In Scotland, SEPA follows a similar approach, noting that the monetisation of the costs and benefits have high uncertainty, therefore sensitivity analysis is important. However, the Welsh competent authority NRW indicated that disproportionality is based only on the benefit to cost ratio. A benefit to cost ratio of less than 0.75 is considered disproportionate.

FR noted that they do not have a definition of what is considered to be disproportionate, noting that, given the uncertainties on costs and environmental benefits (especially for water pollutants), it is difficult to strictly apply a cost-benefit methodology. FR indicated that they compare three different scenarios, i.e.:

³⁷https://www.unece.org/fileadmin/DAM/env/water/Protocol_reports/reports_pdf_web/2016_reports/Czech_R_public_Protocol_report_3rd_cycle_13Apr16.pdf

³⁸ Regulatory Method (WAT-RM-34): https://www.sepa.org.uk/media/149762/wat_rm_34.pdf and Supporting Guidance (WAT-SG-67): https://www.sepa.org.uk/media/149801/wat_sg_67.pdf

- i) the "business as usual";
- ii) techniques which have been demonstrated as technically feasible; and
- iii) the alternative solution proposed by the operator.

For each scenario, a cost-effectiveness ratio is calculated. In order to make a decision on disproportionality, the cost-effectiveness is then compared with available reference values, such as abatement costs relevant for the installation or sector concerned and damage cost when available (see step 3 in the flow diagram of the decision process in FR, section 3.2.3). Depending on this comparison with reference values, the implementation of a technique is then assessed as proportionate or not.

CZ also indicated that they have no specific limit of disproportionate costs that is necessary to achieve for granting a derogation. They assess disproportionality on the basis of two semi-independent analyses comparing two or more scenarios (from the point of view of cost and impact on the environment). If the operator gets close to the BAT-AELs by series of "low cost" measures (or compensatory measures on another source in the site) and the investment in the BAT scenario would not lead to additional significant emission reductions (within a year or longer), then granting a derogation is possible.

As described in Section 3.3, SK bases its cost-benefit analysis on the definition of a number of key performance indicators (KPIs). A value is defined for each KPI and each indicator has a specific weight. Based on this, the operator is awarded points (based on the data included to the submission form). A derogation can then be awarded according to the following categories:

- ▶ 0-40 point = derogation not recommended
- ▶ 40-70 points = individual evaluation
- ▶ 70-100 = derogation recommended

If an individual evaluation is required (40-70 points awarded), then all information from the installation, region, regional unemployment, local environmental situation, fees for the company, investments for the region provided by the operator, the technical options, is taken into account.

The approach developed by PL for the evaluation of derogations from the LCP BATC makes reference to a fixed cut-off value, i.e. a benefit to cost ratio of 0.7. After quantifying and monetising the costs and benefits for achieving the BAT-AELs, derogations can be considered for a benefit to cost ratio of less than or equal to 0.7. This value is used as a reference value only. If clear arguments exist or other factors are to be considered, a different cut-off value could be applied.

In their previous submission to the IMPEL study, HR noted that for cost-benefit assessment, a cost-effectiveness analysis will be undertaken by: a) calculating the ratio between the costs of undertaking adjustments or modifications and the reduction in emissions needed to achieve the emission limit values; b) comparing the resulting ratio with the values from ECM REF. If the resulting cost ratio is greater than the reference values, granting of a derogation would be considered justified. This approach is similar to the approach applied in FR.

A number of other Member States also provided details. HU indicated that disproportionality is determined by technical evaluation. For different scenarios, total annual emissions, investment costs, operating costs and benefits from pollution reduction are considered. Based on the results the scenarios are ranked by qualitative and quantitative risk evaluation. ES (Catalonia) indicated that their assessment uses a semi-qualitative method to assess disproportionality, considering the result of the cost-benefit assessment and the overall economic impact for the company. IE noted that it is recommended that the operator should use standardised methodologies e.g. cost benefit analysis.

3.5.2 Consideration of uncertainty

Of the survey responses in this study, ten (DE, FI, FR, HR, HU, IE, MT, PL, SE, UK) indicated that the uncertainty of cost and benefit calculations is addressed in the evaluation, for example by conducting a sensitivity analysis in their assessment of disproportionality.

FR noted that their methodology includes a sensitivity analysis to evaluate what cost parameters are the most significant in cost-effectiveness ratio calculation.

For the UK, the Environment Agency (England) indicated that a sensitivity analysis is built into the cost benefit analysis tool and the tool guidance also provides additional sensitivity tests that must be carried out if the operator and the regulator cannot agree on a particular cost, benefit or other input. It is indicated that the operator's claim is tested by inflating the costs and decreasing the benefits, and vice versa, performed for a range of different parameters, to check if the outcome from the CBA tool changes substantively (e.g. the NPV changes from negative to positive, or moves close to zero). If the results from the sensitivity testing do not change the outcome, there is more trust in the robustness of the result. If the sensitivity analysis substantively changes the result, the data will be scrutinised more closely. The Welsh competent authority noted that depending on the benefit to cost ratio, the level of sensitivity analysis increases. A benefit to cost ratio above 0.75 is generally not considered disproportionate. In Scotland, the SEPA response also confirmed a sensitivity analysis is used.

Other Member State responses provided a more general consideration. For example, DE indicated that data on costs and benefits are interpreted very cautiously bearing in mind the uncertainty of numbers and calculations presented, especially with regard to cost data. IE noted that the costs and the benefits (where they have been monetised) should be expressed in a cash flow framework, which shows separately the costs and benefits.

3.5.3 Additional considerations in the final decision

Of the questionnaire responses received, two (BE (Flanders) and UK (Wales)) indicated the final decision is solely based on the NPV calculations. A further 14 responses indicated that the cost-benefit analysis forms part of the overall assessment and additional qualitative factors are also taken into consideration. An overview of the additional factors taken into consideration is provided in Table 3.11.

Table 3.11 Additional factors taken into consideration in the evaluation of derogations

Consideration	Member State response(s)
Compliance with other relevant European and National legislation and environmental quality standards	DE, IT
The socio-economic conditions of the region in which the installation is located, e.g. employment, social and economic aspects	FR, SK
Substantially greater investments required overall in comparison to other installations in the sector.	UK
The operator's history of investment, for example if they have invested heavily in resolving another important environmental issue at their installation.	FR, PT, UK
The benefits might be overestimated for low population areas.	UK
The benefits might be underestimated for habitats.	UK
The age and previous refurbishments of equipment, environmental interactions were also considered.	HU
Availability of specialist contractors to do the required work (for example provide and install the abatement)	UK
Consistency with other operators in the sector - fairness to others, especially in the context of other derogations previously granted or rejected	UK
The history of complaints	UK
Potential development of higher product prices	DE, FR

FR noted that, except situations where the cost-effectiveness decision is clear, discussions can take place because other regulatory texts may impose other environmental investments. A final decision is made by the

Prefet³⁹ taking into account other considerations such as employment, social and economic aspects. FR also noted that historical investment is already taken into account (through consideration of depreciation costs, decommissioning costs, scenario "business as usual"). The methodology also allows the operator to provide information on the potential higher product prices resulting from BAT compliance, which may impact on competitiveness of the company. DE noted in their submission to the IMPEL study that they also consider this factor.

In the UK, the Environment Agency (England) and SEPA (Scotland) indicated they use a range of aspects and will consider other factors in addition to the outcome of the CBA in making the final decision (see Table 3.11). They stress they are careful not to let the CBA 'tell' them what the final decision should be. The operator is encouraged to give as much contextual information as possible. This includes impacts that are difficult to assess quantitatively, for example from noise, odour or cross-media effect. However, the Environment Agency will not take into account affordability (can the operator afford to meet BAT-AEL), effect on employment or local economy. In contrast, the Welsh competent authority makes the final decision solely based on the NPV calculations. The Environment Agency (England) indicated that they will verify the information by checking with experienced regulatory, permitting and policy staff and also through basic desk research. The onus for providing the information, including suitable justification, is placed on the operator.

SK noted that they will only consider additional criteria beyond the CBA when the final assessment reaches 40-70 points (see Section 3.5.1), and the extent to which these are considered will vary between individual sites and is dependent on many variables. Other Member States (e.g. DE, FI) indicated the assessment is made on a case-by-case basis. AT indicated in the previous IMPEL study that the cost/benefit assessment and the assessment as to whether costs are disproportionately high compared to the environmental benefits is carried out on a case-by-case basis. Only one Member State response (DK) indicated that internal guidance was available on how such additional information to the CBA is considered in the process.

3.5.4 Overlap with other policy areas

Three survey responses in this study (IE, SE, UK) indicated that the methodology used for determining disproportionality for IED Article 15(4) derogations is similar to that used in other policy areas.

As discussed in Section 3.4.4, in the UK potential benefits of BAT compliance in terms of emissions to water were assessed in a single case based on consumers' willingness to pay for improvements to water body status based on the Water Framework Directive (WFD) classification. Therefore, some overlap is noted in terms of water-based derogations where the National Water Environment Benefits Survey (NWEBS) data is used in this case. However, the CBA framework used in the UK for IED derogations is quite different in terms of baseline, appraisal period etc. A link with the WFD is also noted in the intention to apply a qualitative derogation assessment approach in Scotland, similarly as under the WFD, for pollutants where no damage costs are available.

3.5.5 Summary of disproportionality assessment

Member States use different approaches to assess disproportionality, i.e. to assess whether the costs for complying with BAT-AELs are disproportionately higher than the environmental benefits, such as cost-benefit assessments, cost-effectiveness calculations (including comparison to reference values) and consideration of additional information on the installation and the derogation request.

Fixed cut-off values, as reported by UK (Wales) and PL, are used to give a direction of the disproportionality and to make a final decision on the derogation request. These values can be useful as they can ensure consistency in decision-making over time, between sectors and regions. It also helps in increasing the transparency of the decision-making process towards operators and external parties. Since the use of such fixed cut-off values relies only on the outcome of the CBA and the data used to make the calculations, it may be questioned whether setting such a value close to one adequately takes account of other factors.

It is reported that a range of additional factors, in addition to the quantified costs and benefits, are important to take into account in the final decision. These additional factors, as listed in Table 3.11, can for example relate to uncertainty of the data used ("benefits over or underestimated") or to the history of the installation in

³⁹ State representative in a department or region in France



terms of investment and/or complaints. Therefore, several Member States reported that the outcome of the CBA (or cost-effectiveness comparison) should not be the only factor to take into account and should not dictate the final disproportionality decision.

4. Member State Derogation Case Studies

This section describes the approach and information collected on the Member State derogation case studies. The objective of this part of the study was to analyse and present how the Member State derogation practices (described in Section 3) have been applied in actual case studies. A selection of derogation case studies for a range of BAT conclusions and in a range of Member States have been analysed.

The data collection approach is outlined in section 4.1. The overview of the selected case studies is presented in section 4.2 and the discussion is provided in section 4.3, focussing on the initiation, application, evaluation and decision of the derogations.

The detailed information of all derogation case studies is presented in Appendix B.

4.1 Methodology

Following the analysis of the responses to the questionnaire on the Member State derogation practices, 11 derogation case studies were selected using the following criteria, i.e. ensuring:

- ▶ a range of industrial sectors / BATC;
- ▶ a range of Member States (location, size, [number of] IED installations);
- ▶ a range of environmental aspects and pollutants;
- ▶ a selection of case studies in Member States with and without developed guidance for evaluating derogations;
- ▶ a selection of granted and rejected derogation case studies; and
- ▶ a selection of derogations of the same BAT-conclusions in different Member States.

The selection of case studies was discussed and validated with the Commission. The competent authorities of the Member States of these case studies were invited to participate using the contact list gathered during the initial consultation on the Member State practices. A list of questions on how the derogation process had been applied for these specific case studies was sent to the competent authorities together with an invitation for a phone interview (in the native language).

This list of questions is provided in Appendix B, but broadly covered the process starting from initiation to evaluation and decision:

- ▶ Case study details (identification of installation and BAT conclusion(s));
- ▶ Initiation of derogation;
- ▶ Application of derogation (description of the request, arguments, data and calculations used);
- ▶ Evaluation of the derogation request (validation, additional research);
- ▶ Derogation decision (outcome, communication, follow-up); and
- ▶ Further information (available documents).

The consultation was run in parallel with the detailed analysis of the selection of ten Member State practices. Finally, the derogation documents that were publicly available and/or provided by the competent authorities, such as derogation decisions, have also been reviewed.

4.2 Derogation case studies

The derogation case studies selected for further analysis are listed in Table 4.1. In total 11 case studies have been analysed.

Table 4.1 Selection of 11 derogation case studies

Member State (region)	GLS BATC	IS BATC	CLM BATC	REF BATC	PP BATC
BE (Flanders)				BAT 52	
CZ	BAT 17/18				
ES (Catalonia)	BAT 17/18				
FR				BAT 52	
IT	BAT 16, 17, 18, 19, 20				
PL			BAT 17, 21		
SE	BAT 63 (rejected)	BAT 56			
SK			BAT 50 (rejected)		
UK (Wales)		BAT 48/49 (26)			
UK (England)					BAT 40/50

4.3 Discussion

This section assesses how the practices identified in previous sections have been applied in the 11 case studies, describing the practical application of Member State procedures and guidance and highlighting similarities and discrepancies between Member States.

4.3.1 Initiation and application for derogation

Initiation of a derogation request

The initiation and application for a derogation had similarities for all Member States and sectors.

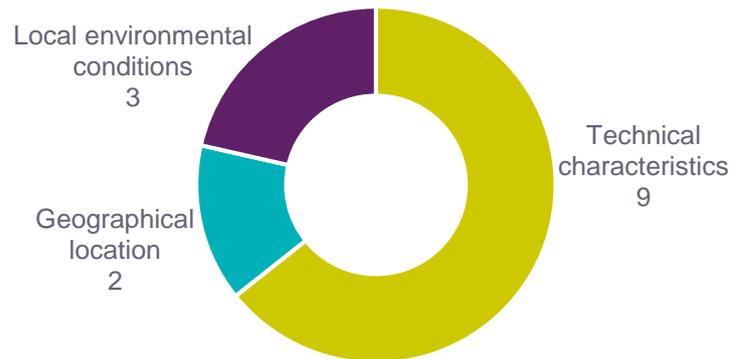
According to the data received, the initiation process involved conversations between the competent authority and the operators in almost all cases. However, the discussions were initiated and held in slightly different ways. In CZ, IT and SK discussions were initiated by the operator either to clarify the requirements or in connection with their (then) future application for derogation. In other cases, the competent authority approached the operator first as they were pre-empting a derogation request from that installation (UK (Wales) and UK (England)). In one case (BE (Flanders)), the competent authority has ongoing discussions with all operators once the BAT conclusions are published (not necessarily those that subsequently submit a derogation request). In one case (FR), the operator was in contact with the competent authority even before the publication of the BATC. In the SE case study there was no evidence of prior contact between the competent authority and operators. PL also did not provide any information about any contacts or discussions between the operator and the competent authority.

In six of the case studies it was reported that the operator was somehow involved in the BREF review process, i.e. in advance of the publication of the BAT conclusions (FR, IT, PL, SK, UK (England), UK (Wales)). This has been through the relevant industrial association and it is unclear to what extent these operators provided any input to the process.

Application for derogation

As shown in Figure 4.1, technical characteristics of the installation concerned was the most commonly used criterion under IED Article 15(4) to justify the derogation request. In several cases (BE (Flanders), CZ, ES (Catalonia), IT, SK, UK (Wales)), technical characteristics was also the only criterion used in the application. In an additional case (UK (England)), it was the primary reason for requesting the derogation but it was used in conjunction with another criterion (geographical location).

Figure 4.1 IED Article 15(4) criteria used in the derogation case studies to justify a derogation request



From the arguments used by operators in the case studies, it is clear that overall the cost calculation and statement on disproportionately high costs is the main focus of the application and of the justification for a derogation.

Only in four of the case studies (CZ, FR, PL, UK (England)) was the technical argument highlighted by the operator prominently, i.e.:

- ▶ **CZ:** The operator intended to install a new furnace a few months after the deadline. The cost of retrofitting the equipment required to meet the ELV at the time of the request is 40% of that of the new furnace. The power outage needed to do that was going to lead to disproportionate costs and would have also prevented the installation of the new furnaces, which were going to meet the BAT-AEL after their installation.
- ▶ **FR:** For historical reasons (there used to be two refineries and the companies merged), the installation consists of 2 piers with a relatively large distance in between. Due to the geographical characteristics of the area (tidal constraints), it is not possible to use one of these piers and therefore they have to work with higher filling rates.
- ▶ **PL:** The operator noted the high amount of sulphur in fuels (coal and co-incineration with coal) and in the raw material, as well as the dynamics of the changes taking place during the production of the clinker. The very high cost of constructing and exploitation of wet desulphurization devices was also noted.
- ▶ **UK (England):** The operator has a multi-million investment plan that will reduce emissions significantly. The operator has already invested 15% and will comply with the BAT-AELs once the plan is completed.

As a result of the above, the data used to justify the requests in the selected case studies was mainly related to the costs of implementing BAT, with the use of some additional arguments in some of the case studies (Table 4.2).

Table 4.2 Data and arguments used to justify the derogation requests.

Case study	Data used to justify the derogation request	Source of data
GLS BATC		
CZ	Expert assessment Economic assessment, which included: Economic calculations: all capital, operational and other costs (as described in the Czech methodology). Benefits not included (not required in the national methodology) AQ assessment with dispersion modelling (undertaken by independent company).	The competent authority states that it complies with the national methodology but the exact calculations are confidential
ES (Catalonia)	The operator provided data on the technical viability on the possible techniques that could theoretically be applied. This was validated by the competent authorities, although it is recognised that not every single possible option has been assessed (only those in the BAT conclusions). The operator stated that these options would also imply the redesign and rebuild of the furnace, which would also imply considerable costs. In order to justify this, it provided the costs of the previous significant rebuild of the furnace, which was undertaken in 2011. The emissions reductions estimates were based on the ELV that the installation would need to comply with, and the volume of flue gas of a typical year of operation. The benefits were calculated using damage cost functions and compared to the costs. According to the operator, the furnace is due for replacement at the end of 2019, and it would be replaced with a new furnace with optimised emission reduction technology that will make the installation compliant with the ELV after the derogation.	Technical viability: Information from the operator and expert assessment from the committee evaluating the derogation request. Costs of technology: quotes made of the operator to manufacturers of abatement technology on what the costs of such equipment would be. Damage cost functions: Costs of reconstructing the furnace: Previous works undertaken on the furnace. Damage cost functions: Specific DCF for NOx in Spain according to a report from the EAA quoted in the application for derogation.
IT	The operator claims that, given the current plant design (i.e. without the possibility of substituting the furnace), it would be possible to achieve compliance with BAT AEL levels only for limited periods and under certain operating conditions of the furnace which, in turn, would lead to reduced emissions. The latter would not be always possible to maintain over time due to oven instability and due to the need to search for optimal settings, aimed at reducing energy consumption and ensuring the quality of the glass produced. Info provided: CBA based on ExternE, CAFÉ and NEEDS methodologies. 5 scenarios developed with costs and benefits presented	There is little information available on the individual data inputs or source
SE (rejected)	An old court case has determined that the installation's emission standards are in line with local environmental conditions and the geographical setting. Maintaining these emissions does not pose any drastically changes to the environment. The company argues that it is important that the installation can remain productive until a new smoke gas burner has been installed and request an exemption from the BAT 63 until the 31st of August 2016. Emission data is provided. Jurisprudence. 6-month derogation would not change the environmental situation of the area	-
IS BATC		
SE	Operator provided costs and benefits but the competent authority estimated it was not sufficient. The competent authority made their own calculations on benefits.	Source of operator's data is unclear
UK (Wales)	Capital costs of achieving BAT in 2 scenarios, with net present cost. Cost-effectiveness and sensitivities	Unclear. However, they made various sensitivities for the price of fuel and for the capital cost of buying a new plant
CLM BATC		
SK (rejected)	Company performance indicators, annual costs, payback period, ratio of investment value in BAT, overview of investments in the last 5 years	Not indicated
PL	For BAT 17:	Source of operator's data is unclear

Case study	Data used to justify the derogation request	Source of data
	<p>The cost of replacing filters as well as costs for using of dust extraction systems and the knock-on effects that affect the technological processes carried out in rotary kilns and raw mills including:</p> <ul style="list-style-type: none"> • reduced cost-less efficiency, • quality regimes for clinker, • ecological regimes referring to the gas emitted from the installation. <p>For BAT 21: Annual increase in sulphur dioxide emissions compared to the volume of the existing integrated permit; The capital cost of construction of wet flue gas desulphurisation plant in the furnaces as well as associated costs of operation of the wet flue gas desulphurisation plant (e.g. the wastewater from the desulphurisation plant, and new noise sources with relatively high acoustical power (sorbent preparation, desulphurisation fans and others).</p>	
REF BATC		
BE (Flanders)	Costs: capital costs of implementing BAT Benefits: cost-effectiveness using reduction estimates	NEC reduction programme (CE criteria), VITO report, technology supplier
FR	Detailed capex. Opex are estimated at 4% of capex (CONCAWE). Capex is taken from internal expert judgment, info from supplier. Benefits: Specialists within the company calculated emission reductions.	CONCAWE, operator internal experts, technology supplier, REX
PP BATC		
UK (England)	Capex, Opex, cost of waste disposal, energy consumption, impact on GHG. Benefits: Monetised using the National Water Environment Benefits Survey. The CBA tool from EA was used in the application.	Operator estimates on capital investment. NWEBS used to monetise benefits.

The source of the data provided is not always indicated in the publicly available documents or in the information provided by the competent authorities during the consultation. According to the available information, the source of the cost data has been the technology providers or based on the knowledge and understanding of the operator.

Benefits were monetised in three of the case studies (ES (Catalonia), IT and UK (England)). In all the other case studies cost effectiveness (cost per tonne abated) was calculated to estimate disproportionality.

For the IT case study, the conclusions of the CBA provided by the operator in the request were that the yearly cost increase for managing the plant (in case of compliance with BAT-AEL) outweighs the yearly environmental/healthcare benefits (costs = 250,000 EUR/year; benefits = 100,000 EUR/year).

In the UK (England) case study the benefits have been monetised using the National Water Environment Benefits Survey (NWEBS) willingness-to-pay survey produced for assessing bundles of measures under the Water Framework Directive.

Disproportionality was mentioned in the majority of cases (all but CZ). This was justified quantitatively in most cases (all but the two case studies in SE, where the explanation of how costs were disproportionate was qualitative). The quantitative methods to calculate disproportionality were very diverse, with BE (Flanders), FR and the UK (Wales) providing the cost effectiveness ratio and justifying how it was disproportionately high compared to the costs. In the case of FR this was performed by comparing it with the values in the ECM REF. In all other case studies, the costs were compared with the benefits using other methods (CBA in IT and UK (England)), and an explanation of the cost increase (SK). Details of the disproportionality statements are included for each case study in Appendix B.

4.3.2 Evaluation of derogation requests

In this section, the following elements of the evaluation of the derogation requests by the competent authorities are addressed: validation of the cost data, additional research/consultation, assessment of disproportionality and the consideration of any additional aspects in the evaluation.

Validation of costs

Three main approaches are applied by competent authorities to validate the cost data provided by operators in derogation requests. In some cases, these approaches are used in combination:

- ▶ **Reliance on operator's data in the derogation request.** This data is then sense-checked by internal experts within the competent authority or other public authorities at national level: BE (Flanders), CZ, PL, SE (rejected), SE (accepted), SK.
- ▶ **Comparison of the data** provided by the operator with information within the relevant **BREF and other publicly available information**: FR, IT, UK (England), UK (Wales).
- ▶ Comparison with other similar plants in the sector: FR, SK, UK (Wales).

There was an additional approach that was unique for one case study (UK (England)), which was to assess the actual investment data, as the operator had already started upgrading its installation.

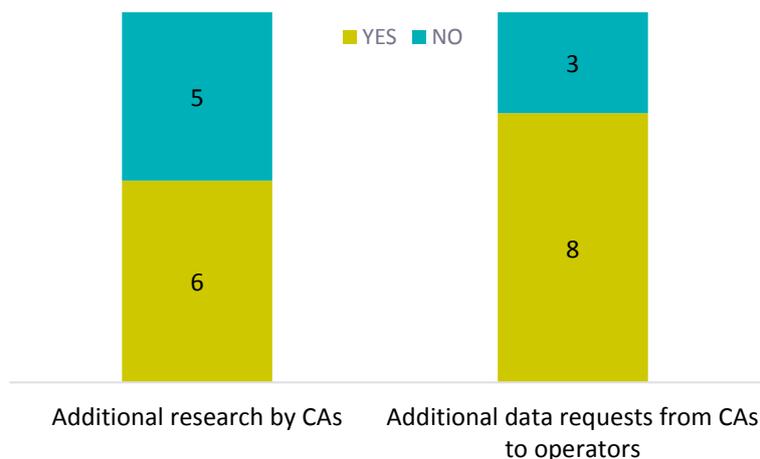
Additional research/consultation and data requests

As shown in Figure 4.2, in several case studies (FR, IT, PL, SE (accepted), SK and UK (Wales)), the competent authority performed additional research or consultation in evaluating the derogation request.

For one of those that did not need additional data, the derogation request was rejected (SE (rejected)). In this case, Swedish competent authorities did not request additional data from the operator, which implies that the case was sufficiently clear for the authorities assessing the request.

The majority of case studies implied additional data or clarification requests to operators (all but CZ, ES (Catalonia) and SE (rejected)). In the SK case study, the information provided by the operator was considered insufficient and incorrect to justify the derogation (and therefore rejected, see below).

Figure 4.2 Number of case studies where additional research or data requests were required.



The additional requests by the competent authorities to the operators include clarifications on the data sources used, information on the alternative technique options or emission data.

Assessment of disproportionality

It was clear that for a majority of cases, disproportionality was assessed on a case by case basis, rather than using a specific threshold or a fixed cut-off value.

In all cases, the calculations and data submitted by the applicants (and validated as described in the previous sub-section) were used to estimate the difference between benefits and costs and, alongside other information, make a decision on the disproportionality of the cost for complying with the BAT-AELs compared to the environmental benefits. In the BE case study for example the calculated cost-effectiveness was compared with the criteria under the NECD for NMVOC (29 EUR/kg NMVOC vs. 5 EUR/kg NMVOC for the loading of ships). In the IT case study, the competent authority indicated that the external cost of the increased dust emissions almost equalled the benefits linked to the reduced NO_x emissions, while the operating costs for the plant amounted to approximately double the total expected benefits.

In one of the case studies (UK (Wales)), the competent authority used a specific threshold (a benefit cost ratio of 0.75). The benefit cost ratio calculated in the Welsh case study was significantly lower than the threshold used by the competent authority to assess disproportionality (0.11 or even 0.04 after reworking the calculation using different damage cost functions). The decision on disproportionality was therefore clear regardless of any possible sensitivity related to the threshold.

Where the information provided by the operator was considered insufficient or invalid (SE (rejected) and SK), competent authorities rejected the application for derogation. The arguments used by the competent authorities for the rejection are provided in Section 4.3.3. An overview of the disproportionality assessment for each case study is presented in Table 4.3, the details are provided in Appendix B.

Table 4.3 Assessment of disproportionality in the selected case studies.

Case study	Disproportionality assessments
GLS BATC	
CZ	<p>Economic calculations:</p> <ul style="list-style-type: none"> all type of cost items are quantified (see cost structure in methodology summary) benefits are not expressed (not required by methodology) calculations are made according to the formula given in the methodology <p>Assessment of the of glass manufactory operation effect on air quality - contribution dispersion study The competent authority stated that on the basis of submitted documents the derogation can be granted.</p>
ES (Catalonia)	<p>The operator discarded two of the possible options because the costs were so high that it would have to shut down the installation. As for the rest, the operator compared it to the potential benefits and concluded that the cost per year would be between €25,573 and €59,147, once the annualised costs and the potential benefits are taken into account. Given that the operator has to replace the furnace in 2019 anyway and that it would incur in losses for four years to be able to afford meeting the ELV before then; it was considered that the benefits achieved would not be significant enough to justify the costs.</p>
IT	<p>The competent authority assessed disproportionality based on scenario 4 presented by the operator: emission limits of NO_x (700 mg/Nm³ daily) and dust (20 mg/Nm³ daily). The competent authority observed that the lengthy interruption of the furnace would lead to a minor improvement in NO_x emissions (<100 mg/Nm³, 55 t/y, 10% less than the yearly NO_x emissions), but also to significantly more dust emissions (+ 12 mg/Nm³, 7 t/y, or 50% more than the than the yearly dust emissions). Moreover, the CA highlighted how the external cost of the increased dust emissions nearly matches the benefits incurred due to the reduced NO_x emissions, while the operating costs for the plant (interruptions plus loss of net electricity production) amount to double the net foreseen benefit.</p> <ul style="list-style-type: none"> costs = 250,000 EUR/year (100,000 EUR/year for two additional interruptions of the furnace's operation to allow for its maintenance; and 150,000 EUR/year for the loss of net electricity production through Organic Rankine Cycle (ORC)). benefits = 100,000 EUR/year.
SE (rejected)	N/A
IS BATC	
SE (accepted)	<p>Costs have been estimated by the applicant, no figures are mentioned in the court decision. Environmental impact has been estimated by the operator, source of data is unclear. Swedish EPA has then commented on the estimated benefits and the local environmental impact along with the costs of its implementation. They comment that the applicant has not provided enough data.</p>

Case study	Disproportionality assessments
	The CA has made an individual estimate of the benefits. There are no standardised calculation methods. The administrative county board of Norrbotten, recommended the competent authority to approve the application of time limited exemption.
UK (Wales)	<p>The competent authority has assessed the costs and benefits of closing the coke oven and rebuilding it against the costs and benefits of a retrofitting scenario in 2018, utilising a derogation for the two-year period. The cost-benefit used CAPEX and OPEX estimates on annual bases supplied by the operator, cumulative interest on Weighted Average Cost of Capital (WACC) and Green Book (Government Guidance to the Treasury) compliant discounting factors with a base year of 2014. The difference between the two scenarios in discounted costs terms was then set against the potential environmental benefits over the 2016-2019 period.</p> <p>As its central estimation the competent authority has taken the highest valuation of SO₂ and has applied both a regional adjustment factor and a price weighting to deal with inflation since the estimates were made. Discounted benefits are outweighed by discounted costs some nine-fold (BCR 0.11). When the calculation is reworked using the central DEFRA estimate of SO₂ valuation, the BCR falls further to 0.04 on account of the discounted aggregate benefits being lower. Only derogating for a period of three years was considered as the operator will be able to meet the new limit in 2019.</p>
CLM BATC	
SK (rejected)	<p>Economic evaluation: The operator stated in its application economic information for the immediate introduction of BAT. This data was relevant for the actual operation of two furnaces. The average annual loss of operation equalled more than € 235,000. Investment costs would amount to almost € 800,000. The highest increase in operating costs is caused by energy costs. The cost of reducing 1 t of pollutant would be € 485,000.</p> <p>Environmental assessment: In the case of the introduction of new abatement technologies to meet the requirements of the BAT, 33% reduction of the pollutant would be achieved. This information was provided from a comparable operation by CALMIT spol. s.r.o. – plant Žirany. This reduction would have a significant positive impact on the environment. However, since both furnaces are not currently in operation and no measurements have been made on these facilities, it is not possible to assess the actual positive environmental impact.</p> <p>Ministry of environment recommend not to grant an exception.</p>
PL	No details provided
REF BATC	
BE (Flanders)	<p>Cost-effectiveness compared with previous investments, criteria under NECD and shadow prices (ca. 1 – 7 euro/kg NMVOC)</p> <ul style="list-style-type: none"> • Loading of trucks: 10.3 euro/kg NMVOC • Loading of ships: 29 euro/kg NMVOC
FR	Disproportionate costs to the environmental benefit (per tonne of VOC avoided): the operator estimated a cost-effectiveness ratio of 6,600 € / t VOC or 4 000 € / t, i.e. 5 and 3 times higher than the acceptable cost from the ECM BREF (Annex 12), respectively.
PP BATC	
UK (England)	<p>The additional costs represented in terms of NPV range is 26 – 37 million compared to the derogation proposal. The range shown is a function of taking the lowest costs and largest benefits compared to the highest costs and least benefits and is the approach advocated within the CBA tool; the conclusion being that neither figure affects the outcome of that assessment as both figures clearly demonstrate that the BAT option is disproportionately expensive compared to the derogation proposal.</p> <p>The competent authority deliberately does not set a defined level of 'disproportionality' – the numbers generated by the CBA tool will only tell part of the story, and the qualitative information needs to be taken into account as well. The CBA analysis does not dictate a decision on derogations.</p>

Consideration of additional factors, the BREF process and the development of the BAT conclusions

Additional factors, other than what was included in the applications, were not explicitly considered in any of the derogation case studies (for example employment or socio-economic effects in the region). In the UK (England) case study it was noted however that the CBA tool, while extremely important in making the final decision, is only one of the things considered by the competent authority. The wider context is also considered, such as amenity impacts, size of the local population and its proximity to the installation, history

of complaints, consistency, especially in the context of other derogations previously granted or rejected. This is called their 'basket of measures' approach.

The development of the BREF and BAT conclusions in question was not considered in general, except in SE (rejected) and in the UK (England). In SE the competent authority used the BREF process as an argument to conclude that the operator should have known about the BAT-AELs before they became legally binding. In the UK (England) case study it was noted that the BREF process was useful to identify and compare similar installations to that of the operator and validate the data submitted in the application.

4.3.3 Decisions on derogations

As stated above, the derogation requests were accepted and granted in the majority of the case studies, except for two, i.e. SE (rejected) and SK. The arguments of the competent authority for the two rejected case studies are:

- ▶ **SK.** The emission measurements provided in the request for derogation originated from a different plant. Therefore, the competent authority rejected these input data (and provided explanation to operator). The competent authority did not accept the submitted information and for this reason rejected the derogation request.
- ▶ **SE (rejected).** The competent authority argued that the applicant has been aware of the BREF process and that the applicant has been aware of BAT 63 before the publication. A derogation based on the fact that a court case from about eight years earlier that ruled the installation environmentally sound and that an additional six months (6/3-31/8) would not have a significant impact on the local environment, is not accepted by the competent authority.

Those granted were temporary derogations in place for a number of years. The timeframe for the granted derogations as well as the decisions (granted derogation from BAT-AELs and link to the decision documents) are listed in Table 4.4.

Table 4.4 Derogations granted for the selected case studies.

Case study	Date of decision	End of derogation period	Derogation granted	BAT-AEL
GLS BATC				
CZ ⁽¹⁾	30 June 2016	December 2021	ELV for NO _x : 1 200 mg/m ³ (2 400 mg/m ³ when nitrates are used in very high-quality products manufacturing).	BAT 17: NO _x 500-800 mg/Nm ³ (BAT 18: NO _x < 1000 mg/Nm ³)
ES (Catalonia) ⁽²⁾	September 2017	31 December 2019	ELV for NO _x : 1 200 mg/m ³	BAT 17: NO _x 500-800 mg/Nm ³ (BAT 18: NO _x < 1000 mg/Nm ³)
IT ⁽³⁾	29 October 2015	December 2022	BAT 16 (dust): 30 mg/Nm ³ daily (until new furnace is installed); BAT 17 (NO _x): 1000 mg/Nm ³ daily (until new furnace is installed); BAT 19 (SO _x): BAT-AEL only for the mass flow limit equal to 0.64 kg / hour (obtained by considering the concentration limit of the BAT AEL)); BAT 20 (HCL): 30 mg/Nm ³ HCl daily, 5 mg/Nm ³	BAT 16: Dust: <10-20 mg/Nm ³ BAT 17: NO _x 500-800 mg/Nm ³ BAT 19: SO _x : <200-500 mg/Nm ³ BAT 20: HCl: <10-20 mg/Nm ³
SE (rejected) ⁽⁴⁾	15 February 2016	N/A	N/A	

Case study	Date of decision	End of derogation period	Derogation granted	BAT-AEL
IS BATC				
SE (accepted) ⁽⁵⁾	7 March 2016	July 2018	Sum of ammonia-nitrogen (NH ₄ ⁺ -N), nitrate-nitrogen (NO ₃ -N) and nitrite-nitrogen (NO ₂ -N): 200 mg/l	BAT 56: < 15–50 mg/l
UK (Wales) ⁽⁶⁾	20 April 2015	March 2018	No ELV (BAT 48)	BAT 48: H ₂ S: < 300 – 1 000 mg/Nm ³ (BAT I) and < 10 mg/Nm ³ (BAT II)
CLM BATC				
SK (rejected) ⁽⁷⁾	24 March 2017	N/A	N/A	
PL ⁽⁸⁾	9 June 2017	N/A	BAT 17 (dust): 30 mg/Nm ³ BAT 21 (SO ₂): 1) in waste gases from rotary kiln No. 1 (emitter E18): variant of work without raw material mill: 750 mg/Nm ³ (for 200 h / year), in the variant of work with the raw mill: 750 mg/Nm ³ (for 7800 h / year), 1000 mg/Nm ³ (for 500 h / year), 2) in waste gases from two rotary kilns (emitter E19): a variant of the mill without a mill, but with a carbon mill - 750 mg/Nm ³ (for 200 h / year), in the variant of work with the mill and with the coal mill: 750 mg / Nm ³ (for 7800 h / year), 1000 mg/Nm ³ (for 500 h / year).	BAT 17: Dust: <10–20 mg/Nm ³ BAT 21: SO _x : < 50–400 mg/Nm ³
REF BATC				
BE (Flanders) ⁽⁹⁾	11 April 2017	April 2024	No need for installation to apply techniques from BAT 52 (and hence BAT-AEL, as these refer to the technique).	BAT 52: NMVOC: 0.15-10 g/Nm ³ Benzene: < 1 mg/Nm ³
FR ⁽¹⁰⁾	5 January 2017	Until permit re-consideration	Emissions of volatile organic compounds must not exceed 270 tonnes per year on average over a period of 6 rolling years and in any case must not exceed 300 tonnes per year. Benzene emissions shall not exceed 2.3 tonnes per year on average over a rolling six-year period and in any event shall not exceed 2.5 tonnes per year.	BAT 52: NMVOC: 0.15-10 g/Nm ³ Benzene: < 1 mg/Nm ³
PP BATC				
UK (England) ⁽¹¹⁾	21 November 2016	December 2022	The current limit of 280 tonnes for weekly load of COD discharged at W will remain in force and is specified in table S3.2 of the permit; The current concentration limit or 2,250 mg/l for COD limits (no BAT-AEL) will be suspended until the 31 December 2021 deadline and is specified in table 3.2 of the permit; TSS levels will remain controlled by the existing permit limits in table S3.2 of the permit.	BAT 40: COD: 12-20 kg/ADt TSS: 0,5-0,9 kg/ADt BAT 50: COD: 0.15-1.5 kg/t TSS: 0.02-0.35 kg/t

Links to decision documents:

(1) CZ: <http://www.mzp.cz/ippc/ippc4.nsf>

(2) ES (Catalonia): Not yet publicly available, provided by the competent authorities

- (3) IT: www.provincia.cuneo.gov.it/allegati/tutela-territorio/procedimenti-tutela-territorio/2014aia001rie/aqc_prov_v_riesame_suap_prot_66833_del_29_10_2015_p_15461.pdf
- (4) SE (rejected): <http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/beslut-mpd-skane-2016-02-15.pdf>
- (5) SE (accepted): <http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/ied-avgoranden/alternativvarde-dispens-mmd-norrboten-2016-03-07.pdf>
- (6) UK (Wales): <https://naturalresources.wales/permits-and-permissions/check-for-a-permit-licence-or-exemption/?lang=en>
- (7) SK (rejected): <http://ipkz.enviroportal.sk/povolenie.php?id=68045>
- (8) PL: <http://bip.slaskie.pl/dokumenty/2017/07/14/1500021704.pdf>
- (9) BE (Flanders): <https://www.vlaanderen.be/nl/vlaamse-regering/beslissingenvlaamseregering> [not yet available]
- (10) FR: <http://www.installationsclassees.developpement-durable.gouv.fr/> [not yet available]
- (11) UK (England): <https://www.gov.uk/government/publications/ca14-1jx-iggesund-paperboard-workington-limited-environmental-permit-issued-eprbj7590ibv005>

Decisions were communicated to the operators and publicly in a variety of ways:

- ▶ Ministerial decree (e.g. BE);
- ▶ Prefectoral decree notified to operator (e.g. FR);
- ▶ Secured email (e.g. IT);
- ▶ Verbally, prior to official submission of decision to operator (e.g. UK-England);
- ▶ Operators are informed via official decision document sent by post (PL);
- ▶ By email, prior to official submission of decision to operator (e.g. UK-Wales); and
- ▶ Copy of decision submitted to operator.

All decisions have been published online (CZ, IT, SE (rejected), SE (accepted), SK, UK (England), UK (Wales)) or will be published in the near future (BE (Flanders) and FR).

It was indicated that follow-up evaluations of the derogations granted will be undertaken for most of the case studies, although it is intrinsic to each case. Some of the information on the follow-up evaluations is included in Table 4.5.

Table 4.5 Follow-up evaluations

Case study	Follow-up evaluations
GLS BATC	
CZ	Continuous evaluation
ES (Catalonia)	Competent authorities in charge of air quality monitoring have the duty of assessing that the derogation is being complied with and that it does not compromise the environmental quality of the surrounding environment. The derogation is granted until 31 December 2019, when it is stated that a new furnace will be installed and the BAT-AEL will be complied with. The information on the decision provided by the competent authority does not specify whether operators can be penalised if they do not comply with this on time.
IT	Continuous monitoring during the derogation period
SE (rejected)	N/A
IS BATC	
SE (accepted)	Unknown
UK (Wales)	The derogation is due in March 2018. The competent authority expects the operator will apply for another derogation.
CLM BATC	

Case study	Follow-up evaluations
SK (rejected)	N/A
PL	Unless there is a change in law or new BAT conclusions are published, the integrated permit in which the derogation was granted is issued for an indefinite period of time.
REF BATC	
BE (Flanders)	The derogation is for 7 years. A new CBA will be undertaken after 5 years to see if the other 2 years are necessary
FR	Not before the next re-evaluation of permit conditions
PP BATC	
UK (England)	Compliance checks and evaluation will be performed every 6 months to see the expected investment works are going as planned

5. Derogation Principles and Exemplar Practices

This section identifies a number of derogation principles and exemplar practices of Member State decision-making procedures in relation to IED Article 15(4).

The derogation principles can be considered as high-level recommendations on the application of IED Article 15(4) and could assist Member States in the assessment of derogation requests. The exemplar practices are intended to illustrate the derogation principles with specific examples.

5.1 Methodology

Based on the information collected on Member State derogation practices and case studies, a number of principles currently applied by Member States were identified. These principles were discussed with the participants at the IEEG workshop on IED implementation on 19 October 2017 in Brussels and at the IED Article 13 Forum meeting on 20 December 2017 in Brussels (see Appendix C). The discussions and feedback from these meetings were taken into account to develop a revised list of derogation principles. The current list of principles can assist Member States in their further application of IED Article 15(4). The current list of principles could potentially change in the future as Member States gain more experience in implementing BAT conclusions.

In the following step, all Member States practices as summarised in Section 3 and described in Appendix A, were reviewed against those principles in a screening exercise. The result of this review is a list of (parts of) Member State practices that are in line with the derogation principles and have the potential for wider EU dissemination.

5.2 Legal requirements and principles for the application of Article 15(4)

5.2.1 Legal requirements

Prior to consideration of the derogation principles, it is first necessary to ensure that the application of Article 15(4) follows the over-riding legal requirements provided in the IED and wider EU law. These requirements can be grouped as follows [*those that do not originate explicitly from Article 15(4) are marked with an **]:

A. Scope

The IED makes clear that, with regard to their scope, Article 15(4) derogations:

- i. Apply only to BAT-AELs. They do not apply to BAT conclusions without BAT-AELs.
- ii. Are of an exceptional nature⁴⁰.
- iii. Relate only to individual industrial installations. Derogations cannot be granted generically e.g. at the sectoral or national level.
- iv. Can provide a longer period than 4 years after the publication of BAT conclusions to comply with BAT-AELs to be written into permit conditions^{41,*}.
- v. Must be re-assessed each time permit conditions are reconsidered under Article 21.

⁴⁰ See IED Recital 16 reference to '*certain specific circumstances*' and Article 15(4) reference to '*in specific cases*'.

⁴¹ See IED Recital 22

B. Safeguards

In order to ensure a continued high level of environmental protection, the following safeguards exist when Article 15(4) of the IED is used:

- i. Derogation applications must respect the Precautionary Principle⁴².*
- ii. The burden of proof on the need for a derogation lies with the operator of the installation concerned⁴².*
- iii. A derogation is without prejudice to environmental quality standards⁴³.
- iv. Emission limits set under a derogation must not exceed emission limit values that are set out in the IED Annexes.
- v. When granting an Article 15(4) derogation, competent authorities must continue to ensure that no significant pollution is caused and a high level of protection of the environment as a whole is achieved.

C. Transparency

Since Article 15(4) derogations are a divergence from the normal application of BAT conclusions, it is important to have public participation in decision-making by:

- i. Giving the public early and effective opportunity to participate in any proposal to grant an Article 15(4) derogation when granting or updating a permit⁴⁴.*
- ii. Ensuring that, when an Article 15(4) derogation is granted, there is:
 - o an annex to the permit conditions that documents the reasons for the application of Article 15(4), including the result of the assessment and the justification for the conditions imposed; and
 - o public access to information, including via the Internet, on the specific reasons for that derogation and the conditions imposed⁴⁵.

D. Process

- i. BAT conclusions are implementing Acts of the European Commission. The conclusions are the result of the process for developing BAT conclusions as outlined under Article 13 of the IED as well as their adoption under Article 75. Consequently, the final text of the BAT conclusions as published in the Official Journal are the documents to be used in the setting of permit conditions under the IED. Derogation justifications should not be based on the calling into question of the content of the BAT conclusions, nor based on arguments that were discounted during the development of the BAT conclusions themselves.*

5.2.2 Derogation principles

The derogation principles are structured in Table 5.1 into four main categories following the different steps and subject areas of the decision-making process. The first category includes more general principles that apply to the overall decision-making process.

⁴² See Article 191 of the Treaty on the Functioning of the European Union

⁴³ See IED Article 18

⁴⁴ See IED Article 24(1)

⁴⁵ See IED Article 24(2)

Table 5.1 Derogation principles for the application of IED Article 15(4).

Category	Derogation principles
A. General issues	<ol style="list-style-type: none"> Procedures: Member States should have an auditable and repeatable procedure in place for assessing Article 15(4) derogation applications. To the extent possible materials relating to such procedures should be made publicly available to both assist operators in understanding to process to be applied as well as to assist Members of the public in understanding their ability to make input into the derogation decision making process. Consistency: The procedure for assessing derogation applications should ensure consistent decision-making in each Member State i.e. across their geographical regions and across industrial sectors. This decision-making should also be consistent over time. Monitoring systems: Member States should have systems to monitor the application of Article 15(4). This should include key indicators such as the number of applications; the BAT conclusions being derogated and the assessment status (i.e. granted, rejected or pending).
B. Criteria for granting Article 15(4) derogations (i.e. geographical location, environmental conditions or technical characteristics of the installation concerned)	<ol style="list-style-type: none"> Prerequisite. Fulfilment of the Article 15(4) criteria should be a prerequisite for conducting further assessment of the derogation request, i.e. one of the criteria has to be applicable for the process to start. Elaboration of criteria. Any additional elaboration of the derogation criteria should have a narrow and well-defined scope that is consistent with the Article 15(4) text. Understanding of scope. Operators and competent authorities should have a common and clear understanding of the scope of the derogation criteria. Other justifying criteria. The IED does not allow other criteria to justify an Article 15(4) derogation request. For example, there should be no consideration historic investments or impact on the competitiveness.
C. Cost Benefit Analysis (CBA)	
C.1. Calculation of costs	<ol style="list-style-type: none"> Compliance costs. The derogation assessment should include an evaluation of the costs from complying with the BAT-AELs. Wider social or economic costs should not be included. Cost quantification. The evaluation of the costs should be quantitative, if possible, and/or supported by a qualitative assessment. CAPEX and OPEX. The total cost for complying with the BAT-AELs should include both capital costs (CAPEX) and operating costs (OPEX). Net value costs. The total cost for complying with the BAT-AELs should be a net value that deducts any financial benefits from applying BAT. For example, this might include revenues (e.g. sale of ash for building materials; sale of heat or electricity generated); avoided costs (e.g. savings on raw materials, energy or disposal costs); improved productivity; or higher product quality. The cost of accessing financial capital required to finance the technique (i.e. cost of capital) can be incorporated in the operator's cost profile using, for instance, appropriate interest rate for loan repayment or company's Weighted Average Cost of Capital (WACC). Discounting. In order to allow comparison, a discount rate should be applied to the costs of complying with BAT-AELs, addressing differences in values over time. The chosen discount rate should be clearly indicated and justified. Source of costs. The derogation request should clearly identify the source of cost information and the methods used to calculate costs. Cost validation. Cost information supplied by the operator should be validated as part of the assessment process. Validation may come from alternative quotes (e.g. from technology providers), expert judgement or data from other plants where the technique was recently installed. Cost uncertainties. Given potential uncertainties in the information used to calculate costs for complying with the BAT-AELs, realistic ranges of the cost information used and/or various cost scenarios are a good basis for better understanding potential uncertainties in cost parameters.
C.2. Calculation of environmental benefits	<ol style="list-style-type: none"> Environmental benefits. The derogation assessment should include an evaluation of the environmental benefits from complying with the BAT-AELs. Type of benefits. The evaluation of environmental benefits should be quantitative (in monetary terms), if possible, and/or supported by a qualitative assessment. Established

Category	Derogation principles
	<p>pollutant damage costs should be used, where available (e.g. EEA damage cost estimates).</p> <p>18. Discounting. In order to allow comparison, a discount rate should be applied to any monetised benefits from complying with BAT-AELs, addressing differences in values to society over time. The chosen discount rate should be clearly indicated and justified</p> <p>19. Source of benefits. The derogation request should clearly identify the source of the environmental benefits information and the methods used to calculate the environmental benefits.</p> <p>20. Benefit validation. Environmental benefits information supplied by the operator should be validated as part of the assessment process. Validation may come from expert judgement or data from other plants where the technique was recently installed.</p> <p>21. Benefit uncertainties. Given potential uncertainties in the information used to calculate environmental benefits for complying with the BAT-AELs, realistic ranges of the information used and/or various benefits scenarios are a good basis for better understanding potential uncertainties in benefits parameters.</p>
D. Assessment of disproportionality	<p>22. Disproportionality. The assessment of disproportionality should compare the costs to the environmental benefits for complying with the BAT-AELs.</p> <p>23. Assessment mechanism. There should be an agreed and repeatable mechanism for assessing what are disproportionately higher costs compared to the environmental benefits. This may be assisted by quantitative mechanisms and fixed cut-off levels.</p> <p>24. Uncertainties. The agreed mechanism for assessing disproportionality should have a means to address the inherent uncertainty in costs and environmental benefits for complying with the BAT-AELs.</p> <p>25. Level of confidence. The margin by which costs exceed benefits should be appreciable and characterised by a high level of confidence.</p> <p>26. Additional considerations. Additional considerations (e.g. the operator's previous compliance with permit conditions) could contribute to the competent authority's final decision on whether to grant derogation. However, these additional considerations cannot be part of the initial screening.</p> <p>27. Duration. The duration of any derogation that is granted should not extend beyond the point when the disproportionality between costs and benefits is solved.</p>

5.3 Exemplar derogation practices

Table 5.2 maps the derogation principles (see section 5.2.2) against the Member State derogation practices as reported under this study to identify exemplar practices. The list of exemplar practices is not comprehensive but is intended to illustrate the derogation principles. Reference is made to the relevant sections in the report or appendices for more information on the highlighted Member States practices.

Table 5.2 Member State exemplar practices

N°	Derogation principle	Member State exemplar practices	Report section reference
A. General issues			
1	Procedures. Member States should have an auditable and repeatable procedure in place for assessing Article 15(4) derogation applications. To the extent possible materials relating to such procedures should be made publicly available to both assist operators in understanding to process to be applied as well as to assist Members of the public	<p>14 Member States have indicated that guidance on derogations has been developed. In the case of PL this relates specifically to derogation requests from the LCP BATC.</p> <p>The majority of these Member States made the guidance publicly available, either in the form of a web page (DK, ES (Catalonia), SK), a section of annex of national legislation (IT, SE) or PDF documents (BE (Flanders), CZ, FR, IE, PL, PT, UK). The UK provides a detailed step-by-step Excel-based guide.</p>	<p>See Section 2.3.2, Table 2.2;</p> <p>Appendix A4 (BE); A7 (CZ); A14 (FR); A17 (IE); A24 (PL); A29 (SK); A30 (UK)</p>

N°	Derogation principle	Member State exemplar practices	Report section reference
	in understanding their ability to make input into the derogation decision making process.		
2	Consistency. The procedure for assessing derogation applications should ensure consistent decision-making in each Member State i.e. across their geographical regions and across industrial sectors. This decision-making should also be consistent over time.	<p>In some Member States, the information that needs to be submitted by the operator for an IED Article 15(4) derogation request is specified explicitly, which ensures a degree of consistency in the information used to make decisions. The report highlights example of BE (Flanders), CZ, and PT.</p> <p>In BE (Flanders) the requirements of derogation requests, in addition to the derogation criteria of Article 15(4), are written into national regulation (VLAREM II). High level discussions are held by the Flemish minister and there is no further interaction with the competent authority after advice has been provided to the minister.</p> <p>In CZ, ad hoc meetings are held between permitting authorities and experts on interpretation of national guidance and GLS BATC. Similarly, in PT, the competent authority has worked closely with the industry associations and operators to agree a consistent approach on the implementation of the BATC for the Manufacture of Glass. In the UK (England), two tiers of governance are involved that ensure the consistency and quality of decision making – the Derogations and Permit Review Support Group (DAPR) and the National Derogations Panel (NDP).</p>	Section 3.1, Box 2.1; Section 3.2.4; Appendix A4 (BE); A7 (CZ); A25 (PT)
3	Monitoring systems. Member States should have systems to monitor the application of Article 15(4). This should include key indicators such as the number of applications; the BAT conclusions being derogated and the assessment status (i.e. granted, rejected or pending).	<p>In this study, Member States have provided information on the number of derogations requests received, the sector/BATC to which they apply, and their status. This would indicate that most Member States have systems to monitor derogation applications (at installation or BAT-AEL level), either at a national or regional level.</p> <p>However, Member States have not indicated what processes they have in place to monitor or record this information. It is therefore not possible to highlight examples of exemplar practice in relation to this principle.</p>	Section 2.3.3; Table 2.3
B. Criteria for granting Article 15(4) derogations (i.e. geographical location, environmental conditions or technical characteristics of the installation concerned)			
4	Prerequisite. Fulfilment of the Article 15(4) criteria should be a prerequisite for conducting further assessment of the derogation request, i.e. one of the criteria has to be applicable for the process to start.	<p>Nine Member States indicated that the derogation process is a multi-step process, i.e. involving an initial screening process for derogation requests. BE (Flanders), FR, and the UK indicated that consideration of the three derogation criteria is a prerequisite before further analysis (i.e. the technical and economic assessment) can be conducted.</p> <p>In BE (Flanders) the competent authority will request the operator to provide more information if required. The evaluation of the derogation only starts when this additional information is provided. The UK (all regions) indicated that the initial stage of the derogation process is for the operator to demonstrate that the installation is different to other 'typical' sites in the sector, ensuring the request complies with the criteria listed in Article 15(4).</p> <p>FR indicated that they also have a multi-step process for considering and granting derogations, which includes the requirement for justifying the origin of the request (with reference to the three derogation criteria). This is required before the risk assessment, and technical and economic studies are carried out.</p>	Section 3.2.3; Appendix A4 (BE); A14 (FR); A30 (UK)
5	Elaboration of criteria. Any additional elaboration of the derogation criteria should have a narrow and well-defined scope that is consistent with the Article 15(4) text.	For FR and the UK, the guidance published provides specific illustrative examples of the three derogation criteria specified by Article 15(4) (the geographical location, local environmental conditions and the technical characteristics of the installation) that will be particularly relevant.	Section 3.2.4; Appendix A14 (FR); A30 (UK)
6	Understanding of scope. Operators and competent authorities should have a common and clear	For FR and the UK, the guidance published provides specific illustrative examples of the three derogation criteria specified by Article 15(4) (the geographical location, local environmental conditions and the technical characteristics of the installation) that will be particularly relevant.	Appendix A14 (FR); A30 (UK)

N°	Derogation principle	Member State exemplar practices	Report section reference
	understanding of the scope of the derogation criteria.	<p>Case studies have noted instances where operators have demonstrated engagement with, and knowledge of the derogation process through direct involvement with the BREF process itself, usually through the national or European-level trade association (FR, IT, UK).</p> <p>Interactions took place between competent authorities and operators following the publication of BATCs to informally discuss the implications and options for potentially problematic installations prior to derogation requests being submitted (BE(Flanders), FR, UK (England), UK(Wales), For example, in the UK (Wales), the assessment of BAT conclusions is discussed with all installations to understand which might be problematic, even before publication of the BAT conclusions.</p> <p>Case studies have also noted where official requests for additional data, information, and clarifications have been made by the competent authorities to the operator (IT, PL, UK (England, UK (Wales)). In the FR case study, monthly meetings were also held between the competent authority and the operator during the process.</p>	Appendix B6 (FR); B7 (IT); B12 (UK(England)); B13 (UK(Wales))
7	<p>Other justifying criteria. The IED does not allow other criteria to justify an Article 15(4) derogation request. For example, there should be no consideration of historic investments or impact on the competitiveness.</p>	<p>As indicated in derogation case studies, the primary basis of the justifications for granting derogation is based on the three IED Article 15(4) criteria. See for example, case studies from BE based on technical characteristics, and UK based on technical characteristics (primary), geographical (secondary). The UK (England) case study stated that 'The IED does not allow other criteria to justify an Article 15(4) derogation request'.</p> <p>In the FR case study, it is indicated that the derogation justification was based on i) technical characteristics, ii) geographical location, and iii) 'local context'.</p>	<p>Section 3.2.4;</p> <p>Appendix A A4 (BE); A14 (FR); A30 (UK)</p> <p>Appendix B (Sections 3, 6 and 12)</p>
C. Cost Benefit Analysis			
C.1. Calculation of costs			
8	<p>Compliance costs. The derogation assessment should include an evaluation of the costs from complying with the BAT-AELs. Wider social or economic costs should not be included.</p>	<p>CZ, ES (Catalonia), ES (Extremadura), FR, HR, HU, IE, PL, PT, SK, UK) indicated their competent authority has a standard methodology in place for calculating the costs of implementing BAT. HU and IE indicated they use the UK (England Environment Agency) cost benefit analysis tool and guidance. FR stated that they have developed a cost sheet to be used by operators in preparing derogation requests.</p> <p>SK described a specific standardised approach to cost calculation, based on the provision of data by companies for different scenarios over a 15-year time scale. This covers the current situation, after implementing BAT, after implementing other technology to reduce the emissions (revenue, costs - investment, annual accounting depreciation, operating costs divided in separated categories, taxes and fees)</p> <p>The economic costs of compliance with BAT-AELs is either based on the amended guidance H1 Annex K methodology (HU, IE, UK), the European Commission Reference Document on Economics and Cross-Media Effects (CZ, ES (Catalonia), PT), or in some cases was designed specifically for the IED (FR, SK).</p>	<p>Section 3.3.1;</p> <p>Appendix A7 (CZ), A12 (ES(Catalonia)), A14 (FR), A25 (PT), A29 (SK), A30(UK)</p>
9	<p>Cost quantification. The evaluation of the costs should be quantitative, if possible, and/or supported by a qualitative assessment.</p>	<p>In the methodology developed by UK (England), the operator navigates an Excel-based form, filling in their relevant data on current and future operations, costs and benefits. This includes both quantitative (upfront, financing, operating costs) and qualitative (assessment of environmental impacts, with a low, medium or high ranking) data. The competent authority reviews the information and makes a decision whether it agrees with the cost outputs generated.</p> <p>The methodology described by SK also involves the provision of quantitative and qualitative (e.g. data about the company and other BAT that has to be installed). SK has developed key performance indicators (KPIs) forms to evaluate all of the information submitted by operators.</p>	<p>Section 3.3.1;</p> <p>Appendix A29 (SK), A30 (UK); Appendix B12 (UK(England))</p>
10	<p>CAPEX and OPEX. The total cost for complying with the BAT-AELs should include both capital costs (CAPEX) and operating</p>	<p>The majority of Member States indicated that both OPEX and CAPEX costs are considered in their assessment of derogation requests. A smaller number (PT, SK) included this as a specific requirement in their guidance. For the UK (England) (IE and HU use the same tool) CBA tool</p>	<p>Section 3.3.2;</p> <p>Appendix A25 (PT,</p>

N°	Derogation principle	Member State exemplar practices	Report section reference
	costs (OPEX).	also specifies the inclusion of specific capital and operational costs.	A29(SK); A30 (UK)
11	Net value costs. The total cost for complying with the BAT-AELs should be a net value that deducts any financial benefits from applying BAT. For example, this might include revenues (e.g. sale of ash for building materials; sale of heat or electricity generated); avoided costs (e.g. savings on raw materials, energy or disposal costs); improved productivity; or higher product quality. The cost of accessing financial capital required to finance the technique (i.e. cost of capital) can be incorporated in the operator's cost profile using, for instance, appropriate interest rate for loan repayment or company's Weighted Average Cost of Capital (WACC)).	ES (Catalonia), HR, HU, LT, PT and the UK specified that calculations of costs should be made using NPVs. A method for the calculation of NPVs is specified in the ECM REF. This includes a consideration of net revenues. ES (Catalonia) and PT, for example, specified that they use this methodology.	Section 3.3.3 Appendix A12 (ES) and A25 (PT)
12	Discounting. In order to allow comparison, a discount rate should be applied to the costs of complying with BAT-AELs, addressing differences in values over time. The chosen discount rate should be clearly indicated and justified.	ES (Catalonia), HR, HU, LT, PT and UK specified that calculations of costs should be made using NPVs. A method for the calculation of NPVs is specified in the ECM REF. CZ, ES (Catalonia) and PT indicated they follow this method in their calculation of costs (see principle 8). In the UK (England and Wales) the methodology (as followed in the CBA tool) first incorporates the cost of accessing financial capital (using WACC) and then discounts the costs using discounting factors specified by the UK Treasury Green Book (i.e. social discount rate).	Section 3.3.3; Appendix B12 (UK(England)) and B13 (UK(Wales))
13	Source of costs. The derogation request should clearly identify the source of cost information and the methods used to calculate costs.	In most cases, the burden of proof is on the operator to provide the necessary information. In the derogation procedure described by a number of Member States (CZ, PT, SK, UK) the derogation requests are required to follow the specified methodology and the information required to be submitted in support of the derogation request is specified. The guidance documents provided includes description of the formulae used in the calculation of costs. SE stated there is a requirement for descriptions and calculations to be transparent with given values on, for example, different types of costs. It is criminalized by Swedish law to submit incorrect information or omit information. In FR the operator describes the methodology and skills used to study the costs – the source of the data being for example the internal information or information from suppliers. In CZ the operator provides a list of sources for the data used in the calculations (i.e., expert opinions, economic calculations, air quality assessments and dispersion studies).	Section 3.3; Appendix A7 (CZ) (s A25 (PT), A27 (SE), A29 (SK) and A30 (UK)
14	Cost validation. Cost information supplied by the operator should be validated as part of the assessment process. Validation may come from alternative quotes (e.g. from technology providers), expert judgement or data from other plants where the technique was recently installed.	CZ noted that validation of the entire application (including economic assessment) is done by an expert body. HR also stated that, if necessary, external experts could be consulted for cost validation. In the UK (Wales) it is noted that technical experts make use of data from BREFs and internet sources and an economist scrutinises the figures if required. In addition, validation by external experts (e.g. agencies, authorities) has been applied in some individual derogation cases (PL, SE, SK). FR noted that when available, external quotes or internal detailed costings have to be submitted to justify costs. In the UK (England), the competent authority reserves the right to ask for specific quotes from suppliers to verify the capital costs supplied are correct. IE specified that costs should be supported by evidence such as price quotes from commercial providers of the technologies considered or references to costs in the BREFs which can be verified.	Section 3.3.3; Appendix A7 (CZ), A15 (HR) A17, A30 (SK), A30 (UK) Appendix B8 (PL), B9 (SE), B11 (SK) B12 (UK(England))

N°	Derogation principle	Member State exemplar practices	Report section reference
15	Cost uncertainties. Given potential uncertainties in the information used to calculate costs for complying with the BAT-AELs, realistic ranges of the cost information used and/or various cost scenarios are a good basis for better understanding potential uncertainties in cost parameters.	In the standardised methodology developed by SK, the operator is required to supply cost data for three different scenarios: i) for current situation; ii) after implementing BAT, and iii) after implementing other technology to reduce the emissions. Data for the 15-year financial plan is requested, and an average of the input data is then calculated.	Section 3.3.1; Appendix A 29 (SK)
C. Cost Benefit Analysis			
C.2. Calculation of environmental benefits			
16	Environmental benefits. The derogation assessment should include an evaluation of the environmental benefits from complying with the BAT-AELs.	For the UK (England), the competent authority has developed a CBA tool and guidance for this purpose, with separate methodologies detailed in the UK (Wales) and the UK (Scotland). HU and IE use the UK (England) CBA tool. Other countries (e.g. FR and SK) indicated they have a methodology designed specifically for the IED.	Section 3.4.1
17	Type of benefits. The evaluation of environmental benefits should be quantitative (in monetary terms), if possible, and/or supported by a qualitative assessment. Established pollutant damage costs should be used, where available (e.g. EEA damage cost estimates).	Some Member States (e.g. FI, SK) use the standardised EEA damage costs. ES (Catalonia) indicated that in their calculation of environmental benefits, sources are taken from both the EEA damage costs and the ECM REF. FR uses the ECM REF as well as data from INERIS. In the UK (England), the CBA tool developed uses the Treasury's Green Book values by default for the benefit calculations and the EEA damage costs are used in the subsequent sensitivity analyses. HU and IE use the UK (England) CBA tool in their derogation assessments.	Section 3.4.4
18	Discounting. In order to allow comparison, a discount rate should be applied to any monetised benefits from complying with BAT-AELs addressing differences in values to society over time. The chosen discount rate should be clearly indicated and justified.	See principle 12.	Section 3.3.1; Appendix A (Section 29 (SK))
19	Source of benefits. The derogation request should clearly identify the source of the environmental benefits information and the methods used to calculate the environmental benefits.	A number of Member States outline the required source of damage cost unit values (See principle 17). For SK it is noted that the Slovak hydro-meteorological institute provides the competent authority with data to compare the values. In the BE (Flanders) NECD cost effectiveness criteria and reports are used to derive cost data and compare values. For the UK (England) the standard CBA framework is based on the UK Treasury's Green Book, with several elements that had to be specially developed for the derogations process.	Appendix B3 (BE) Appendix A29 (SK), A30 (UK)
20	Benefit validation. Environmental benefits information supplied by the operator should be validated as part of the assessment process. Validation may come from expert judgement or data from other plants where the technique was recently installed.	See principle 13 and 14.	Appendix A7 (CZ) (Sections 7, A25 (PT), A27 (SE), A29 (SK) and A30 (UK))
21	Benefit uncertainties. Given potential uncertainties in the information used to calculate	See principle 15. In the IT case study, the operator considered five emissions scenarios when it prepared the cost-benefit analysis.	Section 3.3.3;

N°	Derogation principle	Member State exemplar practices	Report section reference
	environmental benefits for complying with the BAT-AELs, realistic ranges of the information used and/or various benefits scenarios are a good basis for better understanding potential uncertainties in benefits parameters.		Appendix B7 (IT) B12 (UK(England)) and B13 (UK(Wales))
D. Assessment of disproportionality			
22	Disproportionality. The assessment of disproportionality should compare the costs to the environmental benefits for complying with the BAT-AELs.	<p>Definition or methodology for assessing disproportionality has been defined by CZ, FR, PL, SK, and the UK (England). For example, for CZ, the operator is obliged to submit expert assessment for exemption from emission levels associated with BAT, which must include a comparison of the costs of achieving the emission levels associated with BAT or the cost of reducing emissions with a similar effect on the environment and other economic indicators.</p> <p>For FR, different scenarios are assessed, with a cost/efficiency ratio calculated and compared with environmental benefit values. For the UK (England) disproportionality is assessed, only partially, by using the CBA tool on a case by case basis, taking into account qualitative evidence on both cost and benefits e.g. noise, odour or cross-media effect. For SK, it is indicated that, in the definition of key performance indicators for assessing disproportionality, the value for economic and environmental assessment is given a 50/50 percentage weighting.</p>	Section 3.5.1 Appendix A7 (CZ); A14 (FR); A29 (SK); A30 (UK)
23	Assessment mechanism. There should be an agreed and repeatable mechanism for assessing what are disproportionately higher costs compared to the environmental benefits. This may be assisted by quantitative mechanisms and fixed cut-off levels	<p>Definition or methodology for assessing disproportionality has been defined by a number of Member States (see principle 22) and in most cases, this involves the use of a combination of quantitative assessment and additional qualitative information.</p> <p>The approach developed by PL specifically for the evaluation of derogations from the LCP BATC makes reference to a fixed cut-off value, i.e. a benefit to cost ratio of 0.7. Similarly, UK (Wales) indicated that a benefit cost ratio of less than 0.75 is considered disproportionate.</p> <p>SK bases its cost-benefit analysis on the definition of a number of key performance indicators. A value is defined for each KPI and each indicator has its specific weight. Based on this, the operator is awarded points, with a derogation awarded based according to this score.</p>	Section 3.5.1 Appendix A24 (PL); A29 (SK); A30 (UK)
24	Uncertainties. The agreed mechanism for assessing disproportionality should have a means to address the inherent uncertainty in costs and environmental benefits for complying with the BAT-AELs.	<p>A number of Member States (FR, UK) include a sensitivity analysis in their assessment of disproportionality. For example, FR noted that their methodology includes a sensitivity analysis to evaluate what cost parameters are the most significant in cost/ effectiveness ratio calculation. For the UK (England) a sensitivity analysis is built into the CBA tool and guidance provides additional sensitivity tests that must be carried out if the operator and the regulator cannot agree on a particular cost, benefit or other input.</p> <p>IE express costs and the benefits in a cash flow framework, which shows separately the costs and benefits for each of the years covered by the appraisal, in order to capture the fact that capital costs are spread across a number of years and the operating costs might change across the appraisal period.</p>	Section 3.5.2. Appendix A14 (FR), A16 (HU); A17 (IE); A30 (UK)
25	Level of confidence. The margin by which costs exceed benefits should be appreciable and characterised by a high level of confidence'	<p>PL and the UK (Wales) describe a methodology for assessing disproportionality based on a fixed cut-off value for the benefit to cost ratio (see principle 23)</p> <p>In other cases (e.g. FR), the disproportionate costs relative to the environmental benefits are compared with the relevant values as for example detailed in the ECM REF.</p>	Section 3.5.1
26	Additional considerations. Additional considerations (e.g. the operator's previous compliance with permit conditions) could contribute to	<p>Qualitative factors in addition to cost benefit analysis are taken into consideration by Member States (e.g. DE, FR, HU, PT, SK, UK).</p> <p>The operator's history of investment to address other important environmental issues is considered in some Member States (FR, PT,</p>	Section 3.5.5; Table 3.11 Appendix A8 (DE);

N°	Derogation principle	Member State exemplar practices	Report section reference
	the competent authority's final decision on whether to grant derogation. However, these additional considerations cannot be part of the initial screening	<p>UK).</p> <p>In the UK (England) and UK (Scotland) a range of aspects are considered in addition to the outcome of the CBA, which is not designed a fully 'prescriptive' assessment. Thus, includes impacts that are difficult to assess quantitatively, for example from noise, odour or cross-media effect.</p> <p>SK will only consider additional criteria beyond the CBA when final assessment reaches 40-70 points.</p>	A14 (FR); A16 (HU); A25 (PT); A29 (SK); A30 (UK)
27	Duration. The duration of any derogation that is granted should not extend beyond the point when the disproportionality between costs and benefits is solved	<p>A number of Member State case studies (CZ, IT, ES (Catalonia), UK (England)) indicated that the duration of a derogation is directly dependent on the operator's indication of when realistically the BAT-AELs will be met.</p> <p>In the CZ case study, the operator proposed the technical solution necessary to achieve the BAT-AEL is based on installation of new melting furnaces in 2018 and 2021. A derogation from the NOx emission levels was granted until 31 December 2021</p> <p>In the IT case study, the substitution of the float-glass furnace was considered feasible only after 2021-2022. The derogation valid until 31 December 2022.</p> <p>In the ES (Catalonia) case study, the operator indicated there is a scheduled rebuild and refurbishment of the furnace for 2019. A derogation on BAT 17/18 (NOx) was granted until 31 December 2019.</p> <p>In the UK case study, the operator considered that continuing with ongoing improvements, then building the necessary treatment facilities would deliver compliance with BAT-AELs from 1 January 2022. The derogation decision specifies new emission limits that will apply from 1 January 2022.</p> <p>A number of Member State case studies specified the requirement for follow-up evaluations or compliance checks of the derogations granted. The BE (Flanders) case study noted that the derogation is for 7 years, but a new CBA will be undertaken after 5 years to see if the final 2 years are necessary. Continuous monitoring of emissions during the derogation period is also specified in some case studies (CZ, IT, UK (England)).</p>	Section 4.3; Appendix B3 (BE(Flanders), B4 (CZ), B5(ES(Catalonia)), B7 (IT), B12 (UK(England)))

6. Conclusions and Recommendations for Future Work

The aim of this project was to provide an overview of the approaches followed by Member States in their decision-making processes on Article 15(4) derogations and to identify general principles and exemplar practices on the application of Article 15(4) that have the potential for wider EU dissemination. This section presents the main conclusions and some recommendations for future work.

6.1 Conclusions

In total, 27 out of the 28 EU Member States responded to the invitation to complete an Article 15(4) questionnaire under this project. Representative competent authorities from 22 Member States provided input via an online questionnaire, with a further five indicating that there is a lack of available information or experience in their Member State. Given this very good coverage of EU Member States, indicating a large interest of Member States, the project findings are considered representative and reflect the current experiences and practices in the EU at the time of reporting.

A total of 105 derogation requests, i.e. applications at the installation level, have been reported by Member States in this study. The number of derogation requests reported by individual Member States range between 0 and 19. The vast majority (73) of derogation requests reported in this study have been granted. Relatively few (6) have been rejected. Some of the requests reported are still under evaluation (26). In terms of the industrial sectors for which derogations have been requested, the largest numbers were for Manufacture of Glass (40), Cement, Lime and Magnesium Oxide Manufacturing Industries (30) and for Iron and Steel Production (15). For these sectors, the four-year window for complying with the adopted BAT conclusions, and granting an Article 15(4) derogation, has passed and therefore, no further derogations are expected to be granted. Based on the information available, a break-down of the derogations at BAT-AEL level was presented, indicating a relatively higher number of derogation request for certain BAT conclusions, such as BAT 16, 17, 18 and 19 of the BATC for the Manufacture of Glass. The number of derogations presented in this study reflects the situation at the time of reporting and are constantly evolving.

Some data gaps still exist as information from two Member States is missing (Germany and Romania) and as not all Member States provided detailed information of the derogations requested, for example a break-down at the level of pollutants or BAT-AELs. Also, the number of derogations currently under evaluation was not reported by all Member States.

When referring to the number of Article 15(4) derogations, Member States may have different ways of reporting. Some Member States reported the numbers as derogations from individual BAT-AELs, i.e. one derogation request corresponds to derogation from a single BAT-AEL. Other Member States reported the numbers as requests from industrial installations, i.e. one derogation request corresponds to a single application for permit variations (and therefore, can relate to more than one BAT-AEL of the BATC).

Guidance on Article 15(4) derogations has been developed in 14 Member States (BE, CZ, DK, ES, FI, FR, HR, IE, IT, PL, PT, SE, SK, UK). In the majority of cases, the guidance has been finalised and made publicly available (either as a PDF document, spreadsheet tool, webpage or annex to the national legislation). Some of the guidance developed covers all aspects of granting derogations i.e. it considers the three criteria outlined in Article 15(4), the calculation of costs and benefits and the assessment of disproportionality. In other Member States, the guidance is either general or related to specific aspects of the decision-making process. The guidance document developed by PL is specifically related to derogation requests from the BATC for Large Combustion Plants.

Member States provided some examples to illustrate their understanding of the Article 15(4) criteria to justify a derogation request, i.e. geographical location, local environmental conditions and technical characteristics of the installation concerned. Only in a limited number of Member States these specific examples of the

derogation criteria are included in the guidance and therefore, are also made available to operators (e.g. FR and UK). For the majority of Member States, these or other examples are not made publicly available. Some Member States indicated that it is likely that more derogation requests will be received based on technical characteristics compared to the other criteria. The assessment of a derogation request against these justifying derogation criteria is in some Member States considered as a prerequisite to conducting further analysis.

There seems to be a common understanding amongst Member States of the type of cost data needed for the assessment of a derogation request (both CAPEX and OPEX), as well as of the type of environmental benefits to be considered the assessment of a derogation request. The way total costs are calculated and validated however, is only explicitly indicated and made publicly available by a small number of Member States. The reported approaches to validate the costs provided by the operators include the use of external experts, data from similar plants and information from BREFs. It is reported that validating all of the cost information provided by the operator is often very time consuming and costly. In terms of calculating environmental benefits, it was not clear for Member States how aspects such as emissions to water or air pollutants without damage costs, could be valued and included as part of the assessment. Only a few examples were reported where a different, more qualitative, approach was followed in the context of IED Article 15(4) derogations.

In order to assess disproportionality, i.e. to assess whether the costs for complying with the BAT-AELs are disproportionately higher than the environmental benefits, Member States use different approaches such as cost-benefit assessments (including the use of fixed cut-off values), cost-effectiveness calculations (including comparison to reference values) and considerations of additional information on the installation and the derogation request. The use of fixed cut-off values can be useful to decide on disproportionality and can improve consistency in decision-making. But a decision based on such values relies only on the outcome of the cost-benefit analysis and the data used to make the calculations (these are not always available). It is reported that a range of additional factors, in addition to the quantified costs and benefits, are important to take into account in the final decision.

Based on the data collected, it appears that in a small number of cases, Member States practices are not fully in line with the requirements of Article 15(4). This includes for example areas around the derogation criteria and the inclusion of wider socio-economic benefits in the decision process. More time would be needed to further understand how these Member States apply Article 15(4) and for Member States to make use of the principles for further developing or amending their practices.

A list of 27 derogation principles currently applied by Member States was identified. The derogation principles can be considered as high-level recommendations on the application of Article 15(4) and could assist Member States in the assessment of derogation requests. It is recognised that the current list could potentially change in the future. Additionally, a list of (parts of) Member State exemplar practices that are in line with the derogation principles and have the potential for wider EU dissemination was identified. The exemplar practices are intended to illustrate the derogation principles with specific examples. The derogation principles and exemplar practices cover general aspects of the decision-making procedure as well as aspects related to the Article 15(4) derogation criteria, the calculation of costs and benefits and the assessment of disproportionality.

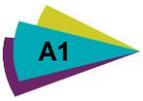
6.2 Recommendations for future work

This project provided an overview of the current Member State practices and experiences in relation to Article 15(4) as well as a list of principles to assist Member States in the decision-making process. The data collected and analysed also revealed a number of areas for future work that could further clarify and assist the application of Article 15(4):

- ▶ The number of derogations are presented in this report as the number of applications at installation level and where possible, with a breakdown to the level of BAT-AELs. Both levels (i.e. installation and BAT-AEL level) are important as it provides information on the number of installations requesting a derogation and on the number of BAT-AELs of potentially more concern, respectively. Furthermore, reporting derogations at the level of an emission source would be a possible interpretation as well. It is recommended based on this study to continue

reporting the number of derogations as applications at the installation level and to encourage a consistent reporting by all EU Member States.

- ▶ The project did not analyse the additional total amount of emissions that could occur from the installations with a derogation granted compared to achieving the BAT-AELs. Further work is required to get a better understanding of the quantitative impact from the derogations currently granted under Article 15(4). In order to make such an analysis, more information would be required, including all the derogation decisions (emission limit levels set for a specific time period) for a certain sector or process, the current amount of emissions of the pollutant from that particular sector or process and a value to relate a process from a specific installation to the overall amount of emissions of the sector (for example based on the energy use or emission factors).
- ▶ The use of damage costs is an effective approach to value environmental benefits related to achieving BAT-AELs. Damage costs can be used as such or as part of an Impact Pathway Approach (IPA), i.e. a more comprehensive methodology following a sequential pathway from emission to quantification of impacts and monetisation. Damage costs are however, only available for a number of pollutants to air and often only at a national level. For other pollutants and for emissions to water, other approaches to calculate the environmental benefits are required. Some examples have been reported to address this (incl. willingness to pay values or a more qualitative approach), but overall little experience is available. Future research could help clarifying how to best calculate environmental benefits for pollutants without relevant damage costs available.
- ▶ The list of derogation principles is developed based on the data and experience reported under this study. With experience on the evaluation of Article 15(4) derogation requests increasing, and potentially further guidance being developed in some Member States, the list of principles might slightly change in the future. It is therefore recommended to keep the list of principles as a 'live' document and to conduct further research to update the list whenever required.
- ▶ The list of derogation principles can assist Member States in further developing or amending their practices in relation to Article 15(4), especially those Member States where some of the practices did not appear to be fully in line with the requirements of Article 15(4). Further work and time is needed to better understand how these Member States apply Article 15(4) and for the Member States to adopt the list of derogation principles.



Appendix A

Member State Derogation Practices



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European Commission Directorate-General Environment

Application of IED Article 15(4) derogations

Appendix A – Member State derogation practices



March 2018

Amec Foster Wheeler Environment
& Infrastructure UK Limited



Report for

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Doc Ref. 39465

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Document revisions

No.	Details	Date
1	Draft final report	
2	Final report	March 2018



Appendix A

Member State derogation practices

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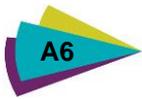


1. Introduction

Appendix A provides the detailed information of all Member State derogation practices to the questionnaire in this study. Furthermore, details are provided from previous IMPEL studies in relation to the application of IED Article 15(4) and from the reporting obligation for MS implementation of IED (Annex I Decision 2012/795/EU).

The following colour code is used in the text of each Member State overview to differentiate the information received via various inputs in addition to the online survey under this study:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation



2. Questions for Data Collection on Member State Derogation Practices

1. Respondee information
1.1. Name of respondee:
1.2. Organisation:
1.3. Telephone:
1.4. E-mail:
1.5. Please identify your role in respect to Article 15(4) of the IED. PICK LIST (more than one option possible): <ul style="list-style-type: none">- Economic expert – evaluating costs aspects of derogations- Technical expert – evaluating technical aspects of derogations- Environmental expert - evaluating environmental aspects of derogations- Permitting/enforcement officer- Author of the Member State guidance- Other (please specify):
1.6. Please provide the name, telephone number and e-mail address of the point of contact for further correspondence related to this study. This may be yourself and/or a colleague. Name: Telephone: E-mail:
2. General
2.1. In your Member State, who is the competent authority responsible for granting derogations? If more than one, please indicate all competent authorities and the basis of their respective roles (i.e. by region/devolved administration or sector/installation type?) Competent Authorities: Respective roles of Competent Authorities:
2.2. Has guidance on the procedure for granting derogations been developed? YES/NO If YES, please provide links If no links are available, please attach the relevant sources to your response using the upload function. Where this information has previously been submitted to IMPEL or to the European Commission and is listed in the accompanying document ' Existing IED Article 15(4) documentation previously received ' please simply refer to that list.
2.3. If guidance is available, does it cover all aspects of granting derogations or is it related to specific aspects? PICK LIST: <ul style="list-style-type: none">- Guidance covering all aspects- Guidance covering specific aspects (please specify)
2.4. If guidance is available, what is its current status? PICK LIST (more than one option possible): <ul style="list-style-type: none">- Publicly available- Not publicly available (internal use only)- Draft version- Other (please specify)
2.5. If you answered 'yes' to question 2.2, does the guidance include information on, or interpret, the following aspects?

<ul style="list-style-type: none"> - The criteria listed under Article 15(4) (a) “the geographical location or the local environmental conditions of the installation concerned”? YES/NO/PARTIALLY - The criteria listed under Article 15(4) (b) “the technical characteristics of the installation concerned”? YES/NO/PARTIALLY - The assessment of costs as referred to under Article 15(4)? YES/NO/PARTIALLY - The assessment of “benefits” as referred to under Article 15(4)? YES/NO/PARTIALLY - Advice/consideration on what constitutes “disproportionately higher costs” compared to the environmental benefits under Article 15(4)? YES/NO/PARTIALLY - Where you have responded PARTIALLY to any of the above please provide more details in the following box.
<p>3. Derogation procedure</p>
<p>3.1. Do you have a formal procedure in place on the derogation process (i.e. setting out general timeframe and deadlines)</p>
<p>3.2. What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>PICK LIST:</p> <ul style="list-style-type: none"> - Information on a website - Information provided on request - Reference to a contact person of the competent authority - Other (please specify)
<p>3.3. How are derogations initiated?</p> <ul style="list-style-type: none"> - Application made by the operator; YES/NO/PARTIALLY - The competent authority makes an initial determination that a derogation may be warranted before contacting the operator; YES/NO/PARTIALLY - Other (please specify) YES/NO/PARTIALLY <p>3.4. Where you have responded PARTIALLY to any of the above please provide more details in the following box.</p>
<p>3.5. Are third-party representations addressed in the derogation evaluation procedure of the Member State? YES/NO</p> <p>If YES, please provide more details in the following box.</p>
<p>3.6. According to the Member State procedure, how long does it take to grant a derogation, from the start to the final decision of the process?</p>
<p>3.7. Are there governance arrangements in place to help you make consistent decision-making on granting derogations (e.g. in relation to different industrial sectors, regions, or over time)? YES/NO</p> <p>If YES, please provide more details in the following box.</p>
<p>3.8. Do you have a multi-step process for considering derogations? For example, is there an initial screening stage, before you require an operator to consider a more detailed case (i.e. more detailed information on costs, benefits and disproportionality will only be required and evaluated in a second step)? YES/NO</p> <p>If YES, please provide more details in the following box.</p>
<p>4. Derogation criteria</p>
<p>4.1. How is the criterion of geographical location considered in relation to derogation decisions?</p> <ul style="list-style-type: none"> - Is this criterion accepted as being a valid reason for derogation? YES/NO - Do you have examples of how the geographical location of an installation can be interpreted? YES/NO <p>If YES, please provide more details in the following box.</p> <ul style="list-style-type: none"> - Typically, is this criterion judged to be of equal, greater or lesser importance to the other Article 15(4) derogation criteria in the evaluation? <p>PICK LIST:</p> <ul style="list-style-type: none"> - Equal importance - Greater importance

<ul style="list-style-type: none"> - Lesser importance <p>If of a greater of lesser importance, please provide more details in the following box (e.g. on the weighting approach).</p> <p>Please provide links or attach the relevant sources to your responses using the upload function.</p>
<p>4.2. How is the criterion of local environmental conditions considered in relation to derogation decisions?</p> <ul style="list-style-type: none"> - Is this criterion accepted as being a valid reason for derogation? YES/NO - Do you have examples of how the local environmental conditions of an installation can be interpreted? YES/NO <p>If YES, please provide more details in the following box.</p> <ul style="list-style-type: none"> - Typically, is this criterion judged to be of equal, greater or lesser importance to the other Article 15(4) derogation criteria in the evaluation? <p>PICK LIST:</p> <ul style="list-style-type: none"> - Equal importance - Greater importance - Lesser importance <p>If of a greater of lesser importance, please provide more details in the following box (e.g. on the weighting approach).</p> <p>Please provide links or attach the relevant sources to your response using the upload function.</p>
<p>4.3. How are the criteria of technical characteristics of the installation considered in relation to derogation decisions?</p> <ul style="list-style-type: none"> - Is this criterion accepted as being a valid reason for derogation? YES/NO - Do you have examples of how the technical characteristics of an installation can be interpreted? YES/NO <p>If YES, please provide more details in the following box (e.g. considering age of plant, implication on the operation, other).</p> <ul style="list-style-type: none"> - Typically, is this criterion judged to be of equal, greater or lesser importance to the other Article 15(4) derogation criteria in the evaluation? <p>PICK LIST:</p> <ul style="list-style-type: none"> - Equal - Greater importance - Lesser importance <p>If of a greater of lesser importance, please provide more details in the following box (e.g. on the weighting approach).</p> <p>Please provide links or attach the relevant sources to your response using the upload function.</p>
<p>4.4. Do you use other/additional criteria than those from Article 15(4) in the evaluation of derogations (e.g. restrictions on granting derogations)? YES/NO</p> <p>If YES, please provide more details in the following box.</p>
<p>5. Calculation of costs</p>
<p>5.1. Is there a standard methodology used or suggested to calculate the costs of implementing BAT? YES/NO</p>
<p>5.2. What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>Please provide links or attach the relevant sources to your response using the upload function.</p>
<p>5.3. Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? YES/NO</p> <p>If YES, from which method was it adapted?</p>
<p>5.4. Which costs can be considered in the total cost calculation?</p> <p>PICK LIST:</p> <ul style="list-style-type: none"> - Capital costs: <ul style="list-style-type: none"> o new equipment (abatement / monitoring / IT);

<ul style="list-style-type: none"> ○ set-up/installation costs - Operational costs: <ul style="list-style-type: none"> ○ Costs of operating the new equipment (raw materials / utilities); ○ Maintenance costs; ○ Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; ○ Training costs for staff to carry out the new activities / techniques; ○ Costs of external services (e.g. consulting and verification services) - Other costs: <ul style="list-style-type: none"> ○ Costs of production loss due to changes to the installation; ○ Insurance costs associated with the new equipment; ○ Other (please specify) <p>Please provide links or attach the relevant sources to your response using the upload function.</p>
5.5. How are the various costs data compared in the evaluation (e.g. by using present values)?
5.6. How are the costs data and calculations validated by the competent authority?
5.7. How is commercial confidentiality protected in the derogation process?
6. Calculation of environmental benefits
6.1. Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? YES/NO
6.2. What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? Please provide links or attach the relevant sources to your response using the upload function.
6.3. Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? YES/NO If YES, from which method was it adapted?
6.4. Which environmental benefits are considered in determining derogations under Article 15(4)? PICK LIST: <ul style="list-style-type: none"> - Avoided/reduced emissions to air - Avoided/reduced emissions to water - Avoided/reduced noise levels - Avoided/reduced odour levels - Avoided/reduced waste generation - Avoided/reduced raw material use - Avoided/reduced energy use - Avoided/reduced impact on biodiversity - Other (Please specify) <p>Please provide links or attach the relevant sources to your response using the upload function.</p>
6.5. Are damage costs ¹ of pollutants used in the determination of a request? YES/NO <ul style="list-style-type: none"> - If YES: <ul style="list-style-type: none"> ○ For which pollutants are damage costs available/used? ○ What sources are used as a reference for the damage cost unit values? Please provide link or actual values used. - If NO (and in case no damage costs are available for the pollutants): <ul style="list-style-type: none"> ○ Are the avoided emissions monetised and how is this done? <p>Please provide more details in the following box</p>

¹ Damage cost is the cost incurred by repercussions (effects) of direct environmental impacts (for example, from the emission of pollutants) such as the degradation of land or human-made structures and health effects. (OECD – Glossary of statistical terms)

6.6. How are the various benefits compared in the evaluation (e.g. by using present values)?
7. Methods for assessing disproportionality
7.1. What methodology is used to assess disproportionality? Please provide links or attach the relevant sources to your response using the upload function.
7.2. Is this methodology similar to that used in other policy areas (e.g. the EU Water Framework Directive)? YES/NO If YES, please provide more details in the following box.
7.3. What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?
7.4. Is the uncertainty of cost and benefit calculations addresses in the evaluation (e.g. by the use of sensitivity analysis)? YES/NO If YES, please provide more details in the following box.
7.5. Is the final decision solely based on the net present value calculations? YES/NO If NO, what other factors are considered in the final decision?
7.6. To what extent is additional information beyond a cost-benefit assessment (CBA), prepared by the applicant or the competent authority, taken into account? For example additional information such as levels of complaints, historical investment in the installation, etc.
7.7. Do you have internal guidance available on how such additional information to the CBA is considered in the process? YES/NO If YES, please provide more details in the following box.
8. Application of the methods in relation to actual installations
8.1. How many derogations have been requested in your Member State?
8.2. How many derogations have been decided in your Member State?
8.3. How many derogations have been granted in your Member State? Please indicate for which BAT conclusions.
8.4. Based on your experience with actual derogation cases, did you identify any areas where the guidance was not clear or had to be revisited? YES/NO If YES, please provide more details in the following box.
8.5. How many of the requests for derogations have been refused in your Member State? Please indicate for which BAT conclusions.
9. Further information
9.1. Can we contact you again in subsequent stages of this project? <ul style="list-style-type: none"> • Regarding a more detailed description of derogation practices? – YES/NO; and • Regarding one or more specific derogation case studies? YES/NO



3. IED Article 15(4) Survey Responses – AT

No input was provided by AT to the online survey under this study.

4. IED Article 15(4) Survey Responses – BE (Flanders)

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>The Flemish Minister responsible for the environment and water policy</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Yes. Publicly available</p>
<p>Link to guidance</p> <p>http://emis.vito.be/sites/emis.vito.be/files/pages/1142/2017/Leidraad%20BBT%20op%20bedrijfsniveau_definitief.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>It is a general guidance to determine BAT on an installation level, not specifically related to IED Article 15(4) derogations.</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p> <p>The guidance covers the calculation of costs and benefits; in the guidance reference is made to cost-effectiveness and shadow prices (emissions to air) for assessing disproportionality. Criteria for derogation are not considered.</p> <p>No references or examples of derogation criteria are available – evaluation is on a case-by-case approach.</p> <p>In VLAREM there already existed a flexibility for derogating from permit conditions (not from ELVs). Operators often consider the IED Article 15(4) derogations similar to other derogation requests and not much attention is given to the specific derogation criteria of IED Article 15(4).</p> <p>As all derogations are evaluated by the same unit in Brussels (several people) there is no need for an internal consistent procedure / approach on deciding on IED Article 15(4) derogations.</p> <p>No information /submission forms exist for the operators, but if requested the authority can provide some context.</p> <p>In general the competent authority feels that not enough attention is given to the derogation criteria by operators so far. The arguments on the derogation criteria should be the first step in the application for an IED Article 15(4) derogation. Only in a later stage, the focus should be on a CBA. In reality it is usually the other way. The rationale behind it is that a CBA is considered to be performed as part of the determination of the BAT in the Sevilla process. So it is difficult to justify that an installation performs a different CBA (often with other, sometimes less relevant data) to make the case, without explicitly referring to the derogation criteria. The first step of justifying the derogation request based on the derogation criteria should be the focus.</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>N/A</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>N/A</p>
<p>(c) “costs”</p> <p>N/A</p>

<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process? Yes</p> <p>Application for an IED Article 15(4) derogation: https://navigator.emis.vito.be/mijn-navigator?wold=61193</p> <p>Procedure for granting IED Article 15(4) derogations, including time scales and steps: https://navigator.emis.vito.be/mijn-navigator?wold=54729</p> <p>Additional conditions or factors (to the IED Article 15(4) derogation criteria) noted are:</p> <ul style="list-style-type: none"> 2° the emission limit values determined in accordance with the first paragraph are not higher than: <ul style="list-style-type: none"> (A) the relevant emission limit values in Title II of VLAREM, insofar as there is no derogation from Title II of the VLAREM; (B) any applicable limit values, listed in Annex 2; 3° it is ensured that no significant pollution is caused and that a high level of environmental protection is achieved in its entirety <p>The application needs to contain:</p> <ul style="list-style-type: none"> 1° the name, capacity and address of the applicant; 2° the name and, where applicable, the operator's number of the operator; 3° the identification of the classified device or activity that is the subject of the application for derogation; 4° the identification of the applicable BREF, the applicable BAT from the BAT conclusions and, where applicable, the corresponding conditions regarding the emission limit values as well as the articles of this decision for which the derogation is requested; 5° A rating demonstrating that achieving emission levels associated with BAT as described in the BAT conclusions would lead to excessive costs in relation to environmental benefits due to one of the following causes: <ul style="list-style-type: none"> (A) the geographical location or local environmental conditions of the installation in question; (B) the technical characteristics of the installation in question; 6° a proposal of emission limit values showing that they are not higher than: <ul style="list-style-type: none"> (A) the relevant emission limit values, as specified in Title II of VLAREM, if there is no derogation from Title II of the VLAREM; (B) any applicable limit values, listed in Annex 2; 7° a proposal of measures to ensure that no significant pollution is caused and that a high level of environmental protection is achieved; 8° a note demonstrating that the proposed measures correspond to the BAT, with particular attention to the criteria set out in Annex 3.3 of Title II of the VLAREM <p>Further details:</p> <p>Operators are free to use the data and calculations as deemed relevant. Usually, the more information provided by the operator the better or more efficient the evaluation can be performed. Often data from technology providers are used for the costs.</p> <p>The VITO guidance document can be used as a reference, but it is not compulsory for the competent authority to use in the evaluation.</p> <p>Before an application is considered complete and receptive, the competent authority might request some additional information from the operator (e.g. if nothing on the derogation criteria is provided). This is separate from the actual evaluation.</p> <p>The competent authority expects a lot more requests for the LCP BAT conclusions compared to other BATC to date.</p>

<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Information is provided on request.</p> <p>Communication on the decision: Decree of Flemish Government of 27 November 2015 : http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=nl&la=N&table_name=wet&cn=2015112729 .</p>
<p>How are derogations initiated?</p> <p>By the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>A public inquiry is organised at local level (community) for the public to have insight and provide comments on the request for application only, i.e. not on the evaluation or decision.</p>
<p>Time frame for decision</p> <p><1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>High level discussions are held by the Flemish minister.</p> <p>There is no further interaction with the competent authority after advice has been provided to the minister.</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes - no experience or examples / lesser importance</p>
<p>Local environmental conditions</p> <p>Yes- no experience or examples / lesser importance</p>
<p>Technical characteristics</p> <p>Yes - main criteria</p>
<p>Other criteria</p> <p>No response</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>No response</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No response</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>No response</p>
<p>How are the various costs data compared in the evaluation?</p> <p>No response</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>No response</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>No response</p>
<p>5. Calculation of benefits</p>



Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? No response
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No response
Which environmental benefits are considered in determining derogations under Article 15(4)? No response
How are the various benefits compared in the evaluation? No response
Are damage costs of pollutants used in the determination of a request? No response
6. Disproportionality
What methodology is used to assess disproportionality? No response
Is this methodology similar to that used in other policy areas? No response
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? No response
Is the uncertainty of cost and benefit calculations addresses in the evaluation? No response
Is the final decision solely based on the net present value calculations? No response
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? No response
Do you have internal guidance available on how such additional information? No response
7. Number of derogations
Number of derogations requested 3
Number of derogations granted 3
Sectors/BAT conclusions of the granted derogations BAT 28 GLS, BAT 74 GLS, BAT 52 REF
Number of derogations rejected 0

5. IED Article 15(4) Survey Responses – BG

1. General questions
<p>Who is the competent authority responsible for granting derogations? Executive Environmental Agency</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available.</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No There is no separate procedure on derogation granting, however according to the national legislation the derogation process is integrated into the procedure of issuing or reconsideration of the permits.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information is made available on a website. The information necessary for application for the derogation is referred to in the national legislation.</p>
<p>How are derogations initiated? Initiated by the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? No</p>
<p>Time frame for decision <1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>

<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes - According to the IED and national legislation, geographical location is considered as valid reason for derogation, however up to now we have no application for derogations.</p>
<p>Local environmental conditions</p> <p>Yes - No further details provided.</p>
<p>Technical characteristics</p> <p>Yes - No further details provided.</p>
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>N/A</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>N/A</p>
<p>How are the various costs data compared in the evaluation?</p> <p>N/A</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>N/A</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>N/A</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>N/A</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>N/A</p>
<p>How are the various benefits compared in the evaluation?</p> <p>N/A</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>No response</p>

6. Disproportionality
<p>What methodology is used to assess disproportionality? We do not have such methodology developed.</p>
<p>Is this methodology similar to that used in other policy areas? N/A</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? N/A</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation? N/A</p>
<p>Is the final decision solely based on the net present value calculations? N/A</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? N/A</p>
<p>Do you have internal guidance available on how such additional information? N/A</p>
7. Number of derogations
<p>Number of derogations requested 0</p>
<p>Number of derogations granted N/A</p>
<p>Sectors/BAT conclusions of the granted derogations N/A</p>
<p>Number of derogations rejected N/A</p>

6. IED Article 15(4) Survey Responses – CY

1. General questions
<p>Who is the competent authority responsible for granting derogations? Department of Environment (under Ministry of Agriculture, Rural Development and Environment) and Department of Labour Inspection (under Ministry of Labour, Welfare and Social Insurance).</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available.</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information is provided on request.</p>
<p>How are derogations initiated? Initiated by operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? Yes - The procedure for granting a derogation is the same as that followed when issuing a permit, including public consultation.</p>
<p>Time frame for decision 3-4 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? Yes - The application made by the operator and the draft derogation permit are submitted to the Technical Committee for Environmental Protection for evaluation. This Committee is chaired by a representative from the Ministry of Labour, Welfare and Social Insurance and comprises representatives from six government departments, one representative from the Scientific and Technical Chamber of Cyprus (ETEK) and one from the Cyprus Federation of Environmental Organisations. The opinion of the Committee is then sent to the competent</p>



Ministers for final decision.
Do you have a multi-step process for considering derogations? No
3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?
Geographical location Yes - No further details provided.
Local environmental conditions Yes - No further details provided.
Technical characteristics Yes - No further details provided.
Other criteria No
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which costs can be considered in the total cost calculation? N/A
How are the various costs data compared in the evaluation? N/A
How are the costs data and calculations validated by the competent authority? N/A
How is commercial confidentiality protected in the derogation process? N/A
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? N/A
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which environmental benefits are considered in determining derogations under Article 15(4)? N/A
How are the various benefits compared in the evaluation? N/A



Are damage costs of pollutants used in the determination of a request? No response
6. Disproportionality
What methodology is used to assess disproportionality? N/A
Is this methodology similar to that used in other policy areas? N/A
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? N/A
Is the uncertainty of cost and benefit calculations addresses in the evaluation? N/A
Is the final decision solely based on the net present value calculations? N/A
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? N/A
Do you have internal guidance available on how such additional information? N/A
7. Number of derogations
Number of derogations requested 0
Number of derogations granted N/A
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A

7. IED Article 15(4) Survey Responses – CZ

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>Regional authority responsible for issuing permits. The regional authority shall establish the conditions for the implementation of BAT including deadline, if necessary, given the conclusions of the European Commission.</p> <p>In the event that the operator is unable to meet the requirements, exemption can be requested in accordance with the relevant legislation.</p> <p>In this process, the authority may request the expert opinion of other competent authorities (such as Environment Agency, Ministry of Industry and Trade, CEI, Regional Public Health).</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Publicly available</p>
<p>Link to guidance</p> <p>http://www.mzp.cz/ippc/ippc4.nsf/xsp/.ibmmodres/domino/OpenAttachment/ippc/ippc4.nsf/0E783DE513877FC2C12580110023AFB9/files/Metodika%20vyjimky%20BAT%20%2815.04.14%29%20FINAL.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>Yes</p> <p>Specific criteria listed under Article 15(4) are not described in more detail, there is only a reference to national and EU legislation paragraph (i.e. “the geographical location or the local environmental conditions” and “the technical characteristics of the installation concerned”).</p> <p>Justifications of the reason for which the derogation should be granted is a required item of the expert assessment. General examples are mentioned in required data list for this assessment (see the following):</p> <ul style="list-style-type: none"> • due to geographical location of the facility (plant disposition, land, availability of resources), • due to the environmental significance of an installation in relation to local environmental conditions (e.g. environmental concentration limits or other environmental quality standards), • due to the technical characteristics of an installation (e.g. extent of necessary device modifications)
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>Yes</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>Yes</p>
<p>(c) “costs”</p> <p>Yes</p>
<p>(d) “benefits”</p> <p>Yes</p>
<p>(e) “disproportionality”</p> <p>Partially</p> <p>Generally the operator should achieve the same or very similar effect under the derogation as with BAT, only in</p>

<p>different way (e.g. reduction on other source of pollution) or over a longer time period (mandatory reduction of emission in the future).</p> <p>There is no specific limit of disproportionate/proportionate costs that is used to grant derogation. Disproportionality is assessed on the basis of comparing costs and impact on the environment of applying BAT and other proposed scenarios.</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process?</p> <p>Yes. Same as "substantial change" according to IED as implemented in national legislation.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Information on a website, information provided on request, conferences, meetings of national (shadow) TWGs.</p>
<p>How are derogations initiated?</p> <p>There are 2 possible initiation scenarios, (1) initiated by operator (new or existing installations) or (2) initiated by competent authorities when reconsidering permit conditions within 4 years of publication of decisions on BAT conclusions (existing installations).</p> <p>When scenario 1 is not initiated by the operator of an existing installation, the operator is invited by the competent authority according to scenario 2. For new installations, of course, only an initiation by operator (scenario 1) is possible.</p> <p>However, scenario 2 cannot be identified as the official initiation of a derogation, the authority only invites the operator to bring the installation in line with BAT. The operator then assesses the need to apply for a derogation.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>Yes. Participants and involved state bodies of the permitting procedure. CENIA, Czech environmental information agency as assisting expert body.</p> <p>Competent authority may, during permitting procedure, request to an expert's opinion of the application. This assessment is made by an expert body (authorised according to national legislation – e.g. Czech environmental information agency). If the competent authority decides not to use the competent authorised person, it must evaluate those aspects themselves and state the outcome of the evaluation in the justification of the relevant decision. The outcome of this assessment is subsequently stated in the decision.</p> <p>This procedure is defined in national legislation. The same assessment is required when submitting any permit application.</p>
<p>Time frame for decision</p> <p><1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>Yes. Ad hoc meetings with permitting authorities and experts on interpretation of national guidance and BREFs.</p> <p>There is an identical approach for other installations. The relevant meetings took place in different format and scope - according to current needs. So far, there has been a need for GLS BREF, CLM BREF and also for LCP BREF, CWW BREF and IRPP BREF.</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes, equal importance. It is interpreted as an extra cost which needs to be invested to overcome the obstacle to achieve BAT-AELs.</p> <ul style="list-style-type: none"> • availability of raw input material and the extra costs associated with transport from deposits outside the Czech Republic • existing spatial layout of facility does not allow installation of a space-intensive technological unit (change of arrangement of other units is necessary)

<p>Local environmental conditions</p> <ul style="list-style-type: none"> • increasing hazardous waste production, • production of hazardous pollutants related to implementation of primary and secondary measures • legislative priority of waste production prevention • completely insignificant reduction of air quality (source has a minor influence on air pollution in local environment) • higher emission impact when changing input substances in production line
<p>Technical characteristics</p> <ul style="list-style-type: none"> • suspension of a long-term production campaign (achievement of BAT levels require general modernisation of the entire installation unit, i.e. shut down production for several days) • BAT application require a recently installed device to be rebuilt • ensuring compliance with the limits when occasional changes in production portfolio occur, these requests by the customer may lead to higher fluctuations in emissions • necessity to ensure an appropriate follow-up timetable for the modernization of the entire facility, including related activities • absence of adequate substitution to ensure required quality of the wide-spectrum production • reduced production capacity may lead to lower production device reliability
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Yes, described in the guidance.</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>Yes, described in the guidance plus expert judgment.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>Yes, Integrated Pollution Prevention and Control - Reference Document on Economics and Cross-Media Effects (July 2006)</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>Capital costs: New equipment (abatement / monitoring / IT);</p> <p>Capital costs: Set-up/installation costs</p> <p>Operational costs: Costs of operating the new equipment (raw materials / utilities);</p> <p>Operational costs: Maintenance costs;</p> <p>Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion;</p> <p>Operational costs: Training costs for staff to carry out the new activities / techniques;</p> <p>Operational costs: Costs of external services (e.g. consulting and verification services)</p> <p>Other costs: Costs of production loss due to changes to the installation;</p> <p>Other costs: Insurance costs associated with the new equipment;</p>
<p>How are the various costs data compared in the evaluation?</p> <p>Validation is done by an assisting expert body - CENIA, Czech environmental information agency</p> <p>Evaluation is based on the latest relevant sectoral or aggregate data and actual project data.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>Source of data must be always part of the application and validation of them must be possible.</p> <p>Validation of the entire application (including economic assessment) is done by an expert body (authorised according to national legislation – e.g. Czech environmental information agency). If the competent authority decides not to use the competent authorised person, it must evaluate those aspects themselves. The outcome</p>

<p>of this assessment is subsequently stated in the decision.</p>
<p>How is commercial confidentiality protected in the derogation process? Via general parts of the IPPC act (§ 8 /4/ of the act No 76/2002 Coll.)</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? Yes</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? Comparison between the effect of BAT scenario and derogation scenario on the Environment (amount of pollution, dispersion studies).</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)? Only avoided/reduced emissions to air are considered. In case of direct discharge of waste water to water recipients, the procedure according to Article 15 (4) cannot be applied because of Government Regulation No. 401/2015 Coll. which prevents such a procedure.</p>
<p>How are the various benefits compared in the evaluation? Benefits are expressed as emission reduction (within year and longer period). Subsequently, costs and benefits (impact on the environment) of BAT and other proposed scenarios are compared. For more details, see methodology and the answer to the question 7</p>
<p>Are damage costs of pollutants used in the determination of a request? No response</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality? Disproportionality is assessed on the basis of 2 semi-independent analyses (comparison of 2 or more scenarios from the point of view of cost and impact on the environment). The Decree specifies the requirements for an expert assessment exemption from emission levels associated with BAT. The operator is obliged to submit (according Annex 3) Expert Assessment for exemption from emission levels associated with BAT. This assessment must include a comparison of the costs, which means the costs of achieving the emission levels associated with BAT or the cost of reducing emissions with a similar effect on the environment and other economic indicators (reference costs, ...).</p>
<p>Is this methodology similar to that used in other policy areas? No</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? There is no specific limit of disproportionate/proportionate costs that is used to achieve for granting derogation. The significance of the costs against the reference cost vs. difference between the observed effects on the environment is compared. If the operator gets close to the BAT levels by series of "low cost" measures (or compensatory measures on another source in the site) and the investment in BAT scenario would not lead to additional significant emission reduction (within year or longer period), then granting an exception is possible.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation? N/A</p>

<p>Is the final decision solely based on the net present value calculations?</p> <p>No. Economic analysis is only part of the assessment</p>																																													
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>These issues are addressed within the administrative procedure itself (all art. 15(4) procedures are regarded as substantial change).</p> <p>No other aspects except those described in the methodology are assessed.</p>																																													
<p>Do you have internal guidance available on how such additional information?</p> <p>No</p>																																													
<p>7. Number of derogations</p>																																													
<p>Number of derogations requested</p> <p>8</p>																																													
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<p>Sectors/BAT conclusions of the granted derogations</p> <table border="1"> <thead> <tr> <th>Company Name</th> <th>Sector</th> <th colspan="3">BAT conclusion</th> </tr> </thead> <tbody> <tr> <td>Sklárny Moravia, a.s.</td> <td>GLS</td> <td>BAT 17</td> <td>BAT 18</td> <td></td> </tr> <tr> <td>PRECIOSA ORNELA, a.s.</td> <td>GLS</td> <td>BAT 38</td> <td>BAT 40</td> <td>BAT 42</td> </tr> <tr> <td>AGC Flat Glass Czech a.s.</td> <td>GLS</td> <td>BAT 24</td> <td>BAT 25</td> <td>BAT 28</td> </tr> <tr> <td>Saint-Gobain Construction Products CZ, a.s.</td> <td>GLS</td> <td>BAT 59</td> <td>BAT 63</td> <td></td> </tr> <tr> <td>O-I Manufacturing Czech Republic, a.s., plant Nové Sedlo</td> <td>GLS</td> <td>BAT 9</td> <td>BAT 17</td> <td></td> </tr> <tr> <td>O-I Manufacturing Czech Republic, a.s., plant Rudolfova Hut'</td> <td>GLS</td> <td>BAT 9</td> <td>BAT 18</td> <td></td> </tr> <tr> <td>STÖLZLE - UNION s.r.o.</td> <td>GLS</td> <td>BAT 20</td> <td></td> <td></td> </tr> <tr> <td>MEFRIT, spol. s r.o.</td> <td>GLS</td> <td>BAT 74</td> <td></td> <td></td> </tr> </tbody> </table>	Company Name	Sector	BAT conclusion			Sklárny Moravia, a.s.	GLS	BAT 17	BAT 18		PRECIOSA ORNELA, a.s.	GLS	BAT 38	BAT 40	BAT 42	AGC Flat Glass Czech a.s.	GLS	BAT 24	BAT 25	BAT 28	Saint-Gobain Construction Products CZ, a.s.	GLS	BAT 59	BAT 63		O-I Manufacturing Czech Republic, a.s., plant Nové Sedlo	GLS	BAT 9	BAT 17		O-I Manufacturing Czech Republic, a.s., plant Rudolfova Hut'	GLS	BAT 9	BAT 18		STÖLZLE - UNION s.r.o.	GLS	BAT 20			MEFRIT, spol. s r.o.	GLS	BAT 74		
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MEFRIT, spol. s r.o.	GLS	BAT 74																																											
<p>Number of derogations rejected</p> <p>N/A</p>																																													

8. IED Article 15(4) Survey Responses – DE

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>The respective competent authorities of the Federal States are responsible for handling and deciding on derogation application and for the whole derogation assessment/process.</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>No guidance available.</p>
<p>Link to guidance</p> <p>N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p> <p>N/A</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>N/A</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>N/A</p>
<p>(c) “costs”</p> <p>N/A</p>
<p>(d) “benefits”</p> <p>N/A</p>
<p>(e) “disproportionality”</p> <p>N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process?</p> <p>Yes</p> <p>For example, the competent authority has to decide within six months, if the enquired derogation - and therefore a modification of the permit - will be granted (Article 16 Paragraph 3 of the Federal Immission Control Act (BImSchG)).</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Reference to a contact person of the competent authority.</p>
<p>How are derogations initiated?</p> <p>Application made by the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>No</p> <p>There is no derogation evaluation on the level of the Federal Government.</p>
<p>Time frame for decision</p> <p><1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>Yes</p>

<p>A working group of representatives of the Federal Government and the Federal States are currently developing a tool for the assessment of derogation applications.</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>There is no derogation evaluation on the level of the Federal Government.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>No</p>
<p>Local environmental conditions</p> <p>No</p>
<p>Technical characteristics</p> <p>Yes</p> <p>We consider the second question as a mistake in writing and we therefore answer to the question "Do you have examples how technical characteristics of the installation can be interpreted?" - See example from IMPEL contribution of Germany under No. 7.</p>
<p>Other criteria</p> <p>Yes</p> <p>In case of environmental quality objectives, e.g. water quality objectives under the Water Framework Directive or e.g. air quality management plans in the respective area, the freedom of action of the Competent Authority is limited to grant a derogation according to 15 (4) IED.</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p> <p>The methodology is determined by the competent authority and environment agencies of the Federal States.</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>The methodology is determined by the competent authority and environment agencies of the Federal States.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No response</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs; • Operational costs: Costs of operating the new equipment (raw materials / utilities); • Operational costs: Maintenance costs; • Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; • Operational costs: Training costs for staff to carry out the new activities / techniques; • Operational costs: Costs of external services (e.g. consulting and verification services); • Other costs: Costs of production loss due to changes to the installation; • Other costs: Insurance costs associated with the new equipment
<p>How are the various costs data compared in the evaluation?</p> <p>The evaluation/methodology is determined by the competent authority and environment agencies of the Federal States.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>The calculation/evaluation/methodology is determined by the competent authority and environment agencies of the Federal States.</p>

<p>How is commercial confidentiality protected in the derogation process? The methodology is determined by the competent authority and environment agencies of the Federal States.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No response</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? No response</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No response</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)? No response</p>
<p>How are the various benefits compared in the evaluation? No response</p>
<p>Are damage costs of pollutants used in the determination of a request? No response</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality? Case by case assessment by each competent authority.</p>
<p>Is this methodology similar to that used in other policy areas? No</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? Case by case assessment by each competent authority.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation? Yes Data/costs and benefits are interpreted very cautiously bearing in mind the uncertainty of numbers and calculations presented, especially with regard to cost data.</p>
<p>Is the final decision solely based on the net present value calculations? No It is a complex assessment of several factors. Among those, cost-benefit-assessment is part of the list of relevant criteria.</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? Case by case assessment by each competent authority.</p>
<p>Do you have internal guidance available on how such additional information? No</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested No response</p>
<p>Number of derogations granted No response</p>



Sectors/BAT conclusions of the granted derogations No response
Number of derogations rejected No response

9. IED Article 15(4) Survey Responses – DK

1. General questions
<p>Who is the competent authority responsible for granting derogations? Danish Environmental Protection Agency (Miljøstyrelsen)</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? Publicly available</p>
<p>Link to guidance Please see existing documentation. Furthermore some examples based on IMPEL project have been included in the guidance: http://miljogodkendelsesvejledningen.dk/opslag/mere-om-bat/fravigelser-fra-bat/</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? Guidance covering specific aspects.</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? Partially</p>
<p>(b) “the technical characteristics of the installation concerned”? Partially</p>
<p>(c) “costs” No</p>
<p>(d) “benefits” No</p>
<p>(e) “disproportionality” No</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No - We have not yet any experiences with derogations.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information on a website.</p>
<p>How are derogations initiated? We have not yet any experience with derogations but expect that an application would be made by the operator e.g. in connection with reassessment of the permit after new BAT conclusions are published.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? The approval authority's assessment and justification for the derogation shall be indicated in the authorisation or decision of a reassessment which has to be made publically available.</p>
<p>Time frame for decision No response</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>
<p>Do you have a multi-step process for considering derogations? No</p>

3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?
Geographical location Yes, no further details provided
Local environmental conditions Yes, no further details provided
Technical characteristics Yes, no further details provided
Other criteria No
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which costs can be considered in the total cost calculation? N/A
How are the various costs data compared in the evaluation? N/A
How are the costs data and calculations validated by the competent authority? N/A
How is commercial confidentiality protected in the derogation process? N/A
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which environmental benefits are considered in determining derogations under Article 15(4)? N/A
How are the various benefits compared in the evaluation? N/A
Are damage costs of pollutants used in the determination of a request? N/A
6. Disproportionality



What methodology is used to assess disproportionality? N/A
Is this methodology similar to that used in other policy areas? N/A
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? N/A
Is the uncertainty of cost and benefit calculations addresses in the evaluation? N/A
Is the final decision solely based on the net present value calculations? N/A
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? N/A
Do you have internal guidance available on how such additional information? Yes - We make CBA in other connections. Danish EPA presented the method at IED workshop on CBA.
7. Number of derogations
Number of derogations requested 0
Number of derogations granted N/A
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A



10. IED Article 15(4) Survey Responses – EE

No input was provided by EE to the online survey under this study.

11. IED Article 15(4) Survey Responses – EL

1. General questions
<p>Who is the competent authority responsible for granting derogations? At the central level, the Environmental Permitting Division of the Ministry of Environment & Energy and at the regional level, the Environmental Divisions of the 7 Regional Administrations</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available.</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information provided on request, reference to a contact person of the competent authority.</p>
<p>How are derogations initiated?</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? Yes - Derogations are carried out through the environmental permitting procedure for IED installations, which includes a consultation phase.</p>
<p>Time frame for decision 1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>
<p>Do you have a multi-step process for considering derogations? Yes - Apart for the stages entailed in the environmental permitting process of the installation, for derogations in particular, a multi-step process might be followed but not formally.</p>

3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?
Geographical location Yes - No further detail provided.
Local environmental conditions Yes - No further detail provided.
Technical characteristics Yes - No further detail provided.
Other criteria No.
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which costs can be considered in the total cost calculation? N/A
How are the various costs data compared in the evaluation? N/A
How are the costs data and calculations validated by the competent authority? N/A
How is commercial confidentiality protected in the derogation process? N/A
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which environmental benefits are considered in determining derogations under Article 15(4)? N/A
How are the various benefits compared in the evaluation? N/A
Are damage costs of pollutants used in the determination of a request? No response
6. Disproportionality



What methodology is used to assess disproportionality? N/A
Is this methodology similar to that used in other policy areas? N/A
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? N/A
Is the uncertainty of cost and benefit calculations addresses in the evaluation? N/A
Is the final decision solely based on the net present value calculations? N/A
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? Available information, such as complaints, are taken into account during the environmental permitting procedure.
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested 0
Number of derogations granted N/A
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A

12. IED Article 15(4) Survey Responses – ES

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>According to the IED, competent authorities are in charge of granting derogations. In Spain, the competent authorities are the Regional Governments (Comunidades Autónomas). The central Government does not have the right to demand that they use homogeneous criteria. Nonetheless, there is a forum in which the various Regional Governments discuss and exchange opinions on anything related to the IED, including derogations. This is done via meetings and email and the discussions are not publicly available.</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Publicly available.</p>
<p>Link to guidance</p> <p>Only one guidance available (Catalonia): http://mediambient.gencat.cat/web/.content/home/ambits_dactuacio/empresa_i_produccio_sostenible/prevencio_i_control_dactivitats/mtd/les_quies_catalanes/documents/mtd_econ.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>The guidance covers: technical characteristics of the installation, assessment of costs.</p> <p>Partially: benefits, disproportionality, geographic/local conditions: No experience on the criterion geographical location. Problems in assessing the environmental benefits because the lack of data of damage from emissions of some pollutants, especially from emissions to water. It is also difficult to determine disproportionate costs compared to environmental benefits for different industrial sectors and different installations.</p> <p>In the last IED meetings (all Spanish regions) on 20/06/17 it was agreed that all regions would try to adapt to the guidance and criteria of Catalonia because it is more advanced. Other regions have contacted them for questions. However, it has to be borne in mind that ultimately this is not legally binding and competent authorities do not have to do this.</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>Partially</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>Yes</p>
<p>(c) “costs”</p> <p>Yes</p>
<p>(d) “benefits”</p> <p>Partially</p>
<p>(e) “disproportionality”</p> <p>Partially</p>
2. Derogation procedure

<p>Do you have a formal procedure in place on the derogation process?</p> <p>During the process of permit renewal or modification, by submitting an application of the operator.</p> <ul style="list-style-type: none"> • The operator presents the request for derogation during the process of reviewing the permit or a permit update due to a substantial change to the installation. The request has to contain the justification that the costs are disproportionate to the benefits. It is recommended to follow the guidance but that in itself is not mandatory. • Technical evaluation of the documentation presented by the operator to support the case. If it is not enough, the operator is required to provide additional details. <ul style="list-style-type: none"> a) If the evaluation is not satisfactory, the decision is to reject the derogation request and propose complying with the ELV or BAT-AEL as indicated in the BAT conclusions. Normally, the upper limit is used unless otherwise stated in the BAT conclusions (e.g. sometimes the installation has a technology and the conclusion states: "if XXX is used, then the lower limit applies". In cases where the environment of the area is sensitive, then they may also choose the lower limit. b) If the evaluation is satisfactory, a less strict ELV is imposed in the new permit conditions. The evaluation of the derogation is included as an annex to the permit. • Allegations/plea procedure of the proposal for final environmental permit. • Final decision/resolution
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Information on a website. Information provided on request.</p>
<p>How are derogations initiated?</p> <p>Catalonia: Application made by the operator. Either during permit renewal or if they request a modification for example if they disagree with the AELs. Basque country: Initiated by the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>No</p>
<p>Time frame for decision</p> <p>Catalonia: 1-2 years Basque Country: <1 year (only one example)</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>Catalonia: Yes. An environmental collegiate body represented by different units of the Ministry of Environment of Catalonia, decides the content of the permit proposal, including IED article 15.4 derogations, based on the reports of all units involved.</p> <p>It is a collegiate body from the Department of territory and sustainability (competent authority for environmental issues). This organism evaluates and passes all the resolutions and modifications related to environmental permits. This organism is formed by all the competent authorities and is chaired by the Director-General for environmental quality. Its functions and rules are set out in Catalonian transposition of the IPPCD (when the IED came into force replacing 7 Directives, many MS did not do the same and just updated the requirements of the previously existing transposition of the Directives). More information about this group on: http://mediambient.gencat.cat/es/05_ambits_dactuacio/empresa_i_produccio_sostenible/ponencia_ambiental/index.html (Spanish)</p> <p>Basque country: No</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>Catalonia: Yes. There is first screening. Prior to that they request more detailed information to the operator. Basque Country: No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>

<p>Geographical location</p> <p>Basque Country: No</p> <p>Catalonia: Yes but no examples as no cases are expected in Catalonia. It is given equal importance to the other criteria</p>
<p>Local environmental conditions</p> <p>Basque Country: No.</p> <p>The Basque Country is a region with a very high density of population and that has an influence on the criteria for derogation that they consider. This may not be the same in other territories so they understand that they may prioritise different criteria. They do not consider the geographical location as a "standalone" reason/option to justify a derogation. The rationale behind this is the following:</p> <p>1- We understand that the IED has a preventive approach, regardless of the possible effects at local level. In this sense, it should be noted that the majority of the effects originating from their industrial sectors has an impact at regional/national level. In their evaluation of BAT, they will try to implement the BAT conclusions coherently and homogeneously for air, water, soil etc.</p> <p>2- Also, it is difficult for them to implement conditions which depend on the local environment (new buildings nearby or new industries with cumulative effects). If a new similar activity is implemented in the vicinity and the cumulative effect means that the conditions for the derogation are no longer valid, would they have to reject an already granted derogation? (rhetoric question). Environmental control and complying with permit conditions needs investments (planification at medium-long term) which cannot change every time this could happen, they need to be more stable so they would not choose that as plausible criterion.</p> <p>Because of this, they do not intend to consider the geographical location as a plausible criterion (as standalone reason for granting a derogation).</p> <p>Catalonia: Yes, equal importance to the other criteria. The ability of the local receiving environment to assimilate the emissions of pollutants will be evaluated but no examples as yet</p> <p>This is one of the criteria that is considered to be a reason for derogations. In order to evaluate local conditions, the Competent Unit (group, department) for each of the vectors (air, water, soil) evaluates whether the receptor (air, water, soil) is able to receive more associated emissions without a major effect on the environment.</p>
<p>Technical characteristics</p> <p>Basque Country: Not accepted generally, but considered when the delay is caused by others (e.g. government authorities not giving the permit for building a filter according to law). It is considered to be more important because geographical or local environmental conditions are not directly linked to the availability.</p> <p>For the time being they have not found any installation that would make reconsidering this approach. The only derogation request so far is related to not being able to meet it due to external reasons, and this was considered valid to grant a temporary derogation.</p> <p>Catalonia: Yes, equal importance to the other 2 criteria. At the moment only derogations in container glass sector have been granted. The useful life of furnaces for glass containers and the amortization periods for investments are considered.</p>
<p>Other criteria</p> <p>Catalonia: Amortization periods for investment, maximum period of the derogation</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Basque Country: No.</p> <p>Catalonia: Yes, described in the guidance. It is based on the BREF on economics and cross-media effects (2006).</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>Basque Country: Only derogations have been given for delays in short periods when the delay has been caused by other authorities permitting works.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>BREF on economics and cross-media effects (2006).</p>

<p>Which costs can be considered in the total cost calculation?</p> <p>Basque Country: No costs considered as indicated above.</p> <p>There is no intention to do this, beyond using the Cross media BREF.</p> <p>Catalonia: There is a detailed description in the guidance. Costs considered: Capital costs: New equipment (abatement / monitoring / IT); Set-up/installation costs.</p> <p>Operational costs: Costs of operating the new equipment (raw materials / utilities); Maintenance costs; Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; Training costs for staff to carry out the new activities / techniques; Costs of external services (e.g. consulting and verification services)</p> <p>Other costs: Insurance costs associated with the new equipment; admin costs (Tax). Economic benefits of implementing a technique (i.e. if it is more efficient) are also considered.</p>
<p>How are the various costs data compared in the evaluation?</p> <p>Basque Country: No.</p> <p>Catalonia: Costs data of implementing the different techniques selected to achieve BAT-AEL NPV are used, as per the methodology set out in the ECM BREF.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>The operator is required to present budgets to implement the techniques selected.</p> <p>Economic data provided by operator are validated through the submission of the budget / fees to be charged for the investments and the balance sheets from companies. In this case the competent authority could validate the investments required because they have the budget for the new furnaces.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>If the operator proves the confidentiality of data included in documents submitted, this information is not included during the public information process of the application for the environmental permit.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>Basque Country: No</p> <p>So far it was not required to estimate the benefits, because in the cases assessed the costs have not been disproportionate. If costs are not disproportionate, you do not need to estimate benefits. It is understood that when the BAT conclusions are decided, both benefits and costs are taken into account.</p> <p>Something that was done is disregarding requests from installations that stated that they had losses, if they belonged to a major industrial group or a bigger consortium, because in all those cases the consortium did not have losses and it was understood that they could assume the installation of BAT.</p> <p>Catalonia: Yes.</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>The guidance refers to benefits from the new process and DCF.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>Methodology is based in Reference Document on Economics and Cross-Media Effects (July 2006, European Commission).</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • If relevant, noise

<p>How are the various benefits compared in the evaluation?</p> <p>Environmental benefits are evaluated by comparing present values and values of selected techniques to achieve BAT-AEL.</p>
<p>Are damage costs of pollutants used in the determination of a request? Yes</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>A semi-qualitative method to assess disproportionality, considering the result of the cost-benefit assessment and the overall economic impact for the company.</p> <p>In the particular cases of BAT 17/18 (GLS BATC), apart from evaluating the economic impact of the investments in the company's viability, Catalonia has compared these cases with other companies of the same subsector (containers, I suppose bottles) in a similar situation of other Spanish regions and in the EU. This is what is understood as semi-qualitative. The issue of these BAT conclusions is common in other EU countries and even within Spain so it could be compared how it has been done in other places. Two of the companies that requested a derogation are multi-nationals and have other glass manufacturing installations in other Member States. They informed the competent authority of the issues in those other places and how those other MS evaluated (DE, BE, IT). In the case of the 3 derogations in Catalonia, they are temporary (2019, 2020, 2022), taking into account the amortization of the investment so the operator can have the new furnaces ready for those years and then comply.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>Once assessed the overall environmental benefits of techniques selected to achieve BAT-AEL compared to present values, and assessed the economic costs and the economic impact associated, then evaluate a qualitative analysis of the costs compared to the environmental benefits, finally the economic viability for the company is evaluated.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation? Not addressed</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>Final decision not only based on NPV. Catalonia considers also the economic impact to the company and the economic viability of the investment and associated costs</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>No</p>
<p>Do you have internal guidance available on how such additional information? N/A</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested: 4</p>
<p>Number of derogations granted: 4</p>
<p>Sectors/BAT conclusions of the granted derogations</p> <p>GLS - NOx ELV (BAT 17 and BAT 18)</p> <p>Catalonia: BAT 17/18 (Glass) - 3 cases. They got delayed by the soil assessment. In one of them, there were also urban planning issues so it delayed everything. Publicly available end of 2017.</p> <p>Basque Country - "Temporary derogation to the BAT on PM for glass furnaces". The company manufactures flat glass so assumed it would be BAT 24.</p>
<p>Number of derogations rejected: 0</p>

13. IED Article 15(4) Survey Responses – FI

1. General questions
<p>Who is the competent authority responsible for granting derogations? Ministry of the Environment, Finland</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? Publicly available</p>
<p>Link to guidance Existing IED Article 15(4) documentation previously provided: http://www.ym.fi/fi-FI/Ymparisto/Lainsaadanto_ ja_ohjeet/Ymparistonsuojelun_valmisteilla_oleva_lainsaadanto/Ymparistonsuojelula_in_uudistaminen/Ymparistonsuojelulain_uudistuksen_toimeenpano</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? Guidance covering all aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality? Interprets on general level what aspects to take into account</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? Partially</p>
<p>(b) “the technical characteristics of the installation concerned”? Partially</p>
<p>(c) “costs” Partially</p>
<p>(d) “benefits” Partially</p>
<p>(e) “disproportionality” Partially</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No - Part of normal permitting process</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information on a website; Information provided on request; Reference to a contact person of the competent authority</p>
<p>How are derogations initiated? Application made by the operator</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? Yes - Part of normal permitting process (statements, complaints and opinions)</p>
<p>Time frame for decision 1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>
<p>Do you have a multi-step process for considering derogations? No</p>

<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location Yes - The anticipated impact of the emission varies on geographical basis (sensitivity of the recipient, for example lake/sea)</p>
<p>Local environmental conditions Yes - The anticipated impact of the emission varies on geographical basis (sensitivity of the recipient, for example lake/sea)</p>
<p>Technical characteristics Yes - age of plant etc.</p>
<p>Other criteria No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT? No response</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No response</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs; • Operational costs: Costs of operating the new equipment (raw materials / utilities); • Operational costs: Maintenance costs; • Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; • Operational costs: Training costs for staff to carry out the new activities / techniques; • Operational costs: Costs of external services (e.g. consulting and verification services); • Other costs: Costs of production loss due to changes to the installation; • Other costs: Insurance costs associated with the new equipment;
<p>How are the various costs data compared in the evaluation? See above</p>
<p>How are the costs data and calculations validated by the competent authority? See above</p>
<p>How is commercial confidentiality protected in the derogation process? Commercially confidential data is presented only for authorities and thus not publicly available.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? Available European methodologies (eg EEA damage cost data)</p>

<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced noise levels • Avoided/reduced odour levels • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • Avoided/reduced impact on biodiversity
<p>How are the various benefits compared in the evaluation?</p> <p>Case by case consideration</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>Yes - used case by case when suitable data is available, e.g. EEA damage cost data, although sometimes they are difficult to use as information is limited to certain pollutants</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>We have no method in place to analyse disproportionality.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No response</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits</p> <p>Case by case consideration by the permit authority</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>Case by case consideration by the permit authority</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>No</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>Case by case consideration by the permit authority</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>No</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested</p> <p>7</p>
<p>Number of derogations granted</p> <p>5</p>
<p>Sectors/BAT conclusions of the granted derogations</p> <p>Sectors: Manufacture of Glass Iron and steel production Production of Pulp, Paper and Board</p>
<p>Number of derogations rejected</p> <p>1 - Manufacture of Glass</p>

14. IED Article 15(4) Survey Responses – FR

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations? Inspection Department of the competent Prefecture, appointed in each of the 101 French regions (department), In charge of granting and reconsidering permits, granting derogation</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? Yes – publically available.</p>
<p>Link to guidance http://www.installationsclassees.developpement-durable.gouv.fr/Publication-du-Guide-de-demande-de.html</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? Guidance covering specific aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality? The three criteria are taken into account, but these may depend on the local context, and the localisation.</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? YES</p>
<p>(b) “the technical characteristics of the installation concerned”? YES</p>
<p>(c) “costs” YES</p>
<p>(d) “benefits” YES</p>
<p>(e) “disproportionality” YES</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? None - Not specifically because the timeframe and deadlines correspond to those of the permit reconsidering process. Indeed, the costs/benefits assessment required to comply with IED Art. 15(4) is part of the reconsidering file and therefore both are assessed in the same time. In France, operators have to submit a reconsidering file within a mandatory 12-month period after BAT conclusions publication. Then, the reconsideration of operating conditions should happen within the following 12-month period (only a target). Finally, installations have to comply with IED dispositions within a 4-year period after BAT conclusions publication.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Also inspectors, directly in touch with operators, disseminate all required information.</p>

<p>How are derogations initiated?</p> <p>Application made by the operator</p> <p>The operator must submit an assessment demonstrating costs are disproportionate</p> <p>For the reconsideration and for the application for a permit, the operator has to provide a file containing the envisaged emissions of the installation. If an emission is above a BAT-AEL (e.g. a derogation is asked for), the operator has to propose an assessment of the costs of “respecting” the BAT-AEL compared to the environmental benefits.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>There are no third parties involved in the evaluation of derogation per se. On the other hand, other parties are involved in the rest of the processes, including the CODERST mentioned by IMPEL. Its role is to involve the public in the consultation. It will provide the Prefect with support. Its role will be mostly an advisory role, and will represent the industry, the associations, the public services, NGOs, regional and health agencies. Stakeholders involved in the committee will be picked by the Prefect.</p>
<p>Time frame for decision</p> <p>1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>None</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>We have a multi-step process for considering and granting derogations (as indicated in the frame included in the Guidance):</p> <ol style="list-style-type: none"> 1) A clear and precise expression of the request 2) A brief review of the process involved, a monitoring results assessment for the pollutant and potential evolutions on the installation 3) The justification of the origin of the request as regards the 3 criteria 4) The sanitary risk and environmental impact assessment to ensure that the sanitary risk and the environmental impact are not unacceptable 5) The technical and economic study 6) A conclusion describing the alternative technical solution proposed by the operator to reduce emissions, timetable and achievable values <p>Note that steps 3, 4 and 5 are "Go / no Go" steps.</p> <p>The CODERST role has only an advisory role and does not take an active role in the decision. In order to be granted, derogations have to followed the guidance step by step. It contains all the criteria and guidelines to validate the derogation. In parallel, if the file is complete, an act of admissibility will be delivered to admin services. The final decision falls under the prefect.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p> <p>Evaluation of derogations are done in a systematic way, following the guidance step by step, for all criteria.</p>
<p>Geographical location</p> <p>It is typically the case of overseas regions where raw materials / consumables supply or waste treatment can be more expensive. Another case: local raw materials have specific physico-chemical characteristics.</p> <p>Also, when the plant is located on an island with high costs in transport or for waste treatment.</p>
<p>Local environmental conditions</p> <p>It is typically the case of an installation located in a dry/desert area and which has to implement a BAT requiring a lot of water to operate.</p>
<p>Technical characteristics</p> <p>It is typically the case of an installation which cannot implement a BAT due to lack of space or specific characteristics of effluents.</p>
<p>Other criteria</p> <p>Should be noted that derogations can only be granted for ELVs where BAT-AELs apply [to] point of discharge emission.</p>

<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>There is a standard methodology used or suggested in the guidance to calculate the costs of implementing BAT.</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>A cost sheet is to be used by the operator. It is sent to the operator, it is a public document as the guidance will be.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs; • Operational costs: Costs of operating the new equipment (raw materials / utilities); • Operational costs: Maintenance costs; • Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; • Operational costs: Training costs for staff to carry out the new activities / techniques; • Operational costs: Costs of external services (e.g. consulting and verification services); • Other costs: Costs of production loss due to changes to the installation; • Other costs: Insurance costs associated with the new equipment
<p>How are the various costs data compared in the evaluation?</p> <p>When costs are annualised, an interest rate is applied to take into account the cost of the capital (insurance cost included).</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>When available, external quotes or internal detailed costings have to be transmitted to justify costs.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>Some cost details can be marked confidential when transmitted (separately) but minimum public data is required for public consultation.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>Yes, there is a standard methodology used or suggested to calculate the environmental benefits of implementing BAT.</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>Tons of pollutant avoided x reference cost for the pollutant. These environmental benefits should be compared with the costs for implementing the BAT. The main issue is how to determine the reference costs?</p> <p>Efficiency will depend very much on the sectors, and on how much a sector is ready to spend for abatement. Damage costs are determined with professionals on certain criteria for each BREF review. These are developed through time, sector by sector (e.g. now LCP). National experts work on this. They use literature INERIS 2017, INTEL study, and consolidated data. The main problem relies in knowing whether these are realistic and relevant.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>

<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>Ideally they would like to be able to create reference for pollution per tonne of pollutant for wide range of pollutant. But this task seems mainly on the "air pollutants", and that these references differ widely from one another.</p> <p>There are also problems in determining references for water pollutants. It is very complex and it is still not established how to obtain them. Sometimes data is consulted from other countries.</p>
<p>How are the various benefits compared in the evaluation?</p> <p>For which pollutants are damage costs available/used?: NOx, SOx, VOC, dust (mainly air pollutants)</p>
<p>What sources are used as a reference for the damage cost unit values?</p> <p>ECM BREF and INERIS study (2007).</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>To assess disproportionality, 3 scenarios are compared:</p> <ul style="list-style-type: none"> i) the "business as usual"; ii) techniques which have been demonstrated as technically feasible; and iii) the alternative solution proposed by the operator. <p>For each scenario, a cost/efficiency rate is calculated and compared with environmental benefits (tons of pollutant avoided per year x reference cost). Depending on the cost/efficiency rate, the implementation of a technique is assessed as proportionate or not.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No</p>
<p>What are considered to be "disproportionately higher costs compared to environmental benefits" in respect to the application of Article 15(4) derogations?</p> <p>We do not have a definition of what are considered to be disproportionate. The methodology presented before is just one of a number of elements for granting derogation. Given uncertainties on costs and environmental benefits (even more for water pollutants), it is difficult to apply strictly this methodology. The methodology is useful to determine whether costs for implementing a technique are far from the balance between costs and benefits, and at the middle, discussions between operator and inspector can take place.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>The methodology includes a sensitivity analysis to evaluate what cost parameters are the most significant in cost/efficiency rate calculation. Sensitivity analysis is still very theoretical now. It is not applied yet as there was no case where it was relevant.</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>No - Except situation where cost effectiveness rate is far from the balance and where the decision is clear, discussions can take place because other regulatory texts may impose other environmental investments. And finally the Prefect makes the decision taking into account other considerations such as employment, social and economical aspects.</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>Historical investment is already taken into account (depreciation costs, decommissioning costs, scenario "business as usual"). The methodology allows operator to provide inspector with information about higher product price which may have impact on competitiveness of the company.</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>None</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested</p> <p>15</p>



Number of derogations granted 3 granted; the remainder are under review
Sectors/BAT conclusions of the granted derogations REF 52
Number of derogations rejected 0

15. IED Article 15(4) Survey Responses – HR

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations? Ministry of Environmental Protection and Energy</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Guidance specific for derogation is not publicly available. When the operator starts with the procedure of requesting derogations, the Ministry provides the guidance. The whole procedure/issue could be considered as new in Croatia. Therefore, there are no final solutions yet. Also, that is the reason why guidance is not publicly available (it will be once when finalised). But, there is a general guidance for economic evaluation of BATs the most of which could be used in derogation process, also including basic principles for economic evaluation of derogation, and could be considered as a basic guidance for all economic issues related to IED.</p>
<p>Link to guidance</p> <p>http://www.mzoip.hr/doc/studija_o_smjericama_za_ekonomsko_vrednovanje_izbora_najboljih_raspolozivih_tehnika_nrt_u_skladu_sa_zahjevima_postojece_legislative_1.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>It covers only choosing the option for which derogation could be granted</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>No</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>Yes</p> <p>Emission costs (or environmental costs on general basis for that kind of pollution) are to be compared with compliance costs of operator, both based on the unit of pollution.</p>
<p>(c) “costs”</p> <p>Yes</p>
<p>(d) “benefits”</p> <p>No</p>
<p>(e) “disproportionality”</p> <p>Yes</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process?</p> <p>Yes - it is described in Regulation on Environmental Permit (Official Gazette 8/14).</p> <p>Two possible cases:</p> <ol style="list-style-type: none"> 1. The operator already has environmental permit, realizing that emission level could not be compiled with: <ul style="list-style-type: none"> • This must be proven. The operator prepares and provides report and analysis of disproportionality of

<p>costs.</p> <ul style="list-style-type: none"> • The Ministry then sends further instructions or requests for more details/clarifications if necessary. • After clarifications are obtained, the Ministry evaluates the request is assessed (approved/not approved). • The whole procedure takes up to 6 months and it is considered as Modification of the Environmental Permit. <p>2. The operator does not have environmental permit:</p> <ul style="list-style-type: none"> • In that case, this is to be considered as a part of the environmental permission obtaining procedure. • NOTE: in some cases, environmental permit procedure is to be launched ex officio (official responsibility of ministry).
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Reference to a contact person of the competent authority</p>
<p>How are derogations initiated?</p> <p>The competent authority makes an initial determination that a derogation may be warranted before contacting the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>No</p>
<p>Time frame for decision</p> <p>1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>No</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Not accepted. There are no current cases where this could be applied.</p> <p>So far, there have been no derogation requests using geographical location as criteria. As Croatia is a small country, this criterion will not be used in the future neither.</p>
<p>Local environmental conditions</p> <p>Yes, considered. Equal importance to technical characteristics but more than geographical location. They are considered as basis for environmental quality standards.</p> <p>Local environmental conditions are included under disproportionality measuring i.e. as a basis for environmental quality standards. This approach is limited on substances causing no health problems for local population.</p>
<p>Technical characteristics</p> <p>Yes, no examples. Equal importance than local but more than geographical location.</p>
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Yes</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>The standard economic methodology used for the investment project was adapted.</p> <p>Croatia reported that for cost-benefit assessment, the cost-effectiveness analysis will be undertaken by: a) calculating the ratio between the costs of undertaking adjustments / modifications and the amount of reduced</p>

<p>emissions needed to achieve the emission limit values; b) comparing the resulting ratio with the values from BREF document on Economics and cross media effects. If the resulting cost ratio is greater than the reference values, granting of a derogation would be considered justified. Derogations might be limited in time.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? The standard economic methodology used for the investment project was adapted.</p>
<p>Which costs can be considered in the total cost calculation? Capital costs: New equipment (abatement / monitoring / IT); Capital costs: Set-up/installation costs Operational costs: Costs of operating the new equipment (raw materials / utilities); Operational costs: Maintenance costs; Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; Operational costs: Training costs for staff to carry out the new activities / techniques; Operational costs: Costs of external services (e.g. consulting and verification services)</p>
<p>How are the various costs data compared in the evaluation? Present values.</p>
<p>How are the costs data and calculations validated by the competent authority? If necessary external experts could be consulted.</p>
<p>How is commercial confidentiality protected in the derogation process? On request of the operator the data is protected.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No - No benefits are calculated, but methodology for that exists, and could be applied. It was used in past in EIA procedures.</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? a) calculating the ratio between the costs of undertaking adjustments / modifications and the amount of reduced emissions needed to achieve the emission limit values; b) comparing the resulting ratio with the values from BREF document on Economics and cross media effects.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? ECM REF</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)? No response</p>
<p>How are the various benefits compared in the evaluation? No response</p>
<p>Are damage costs of pollutants used in the determination of a request? No damage costs calculations, but methodology for that exists, and could be applied (ECM REF). It was used in past in EIA procedures.</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality? Comparison of costs. The operator suggests the deadline by which the emission limit values are going to be achieved. No reference values used.</p>
<p>Is this methodology similar to that used in other policy areas?</p>



No response
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? There is neither precise boundary of “much higher” nor precise approach for assessing it. This shows high level of flexibility. It is insisted on the period within which the emission limit values will be achieved.
Is the uncertainty of cost and benefit calculations addresses in the evaluation? Yes if necessary. This issue was discussed but not finally determined. The operator is allowed to propose “uncertainty”, and it has to be well documented.
Is the final decision solely based on the net present value calculations? NPV is not the only aspect used. Also, standard factors developed through the decision making methodology. The standard factors are not prescribed/defined. Discounting is not used because of the short periods of time. In guidance for economic evaluation of BATs, the discounting factors between 2% do 3.8% are proposed in environmental evaluations, for the purpose of NET present value determination. For longer period of demanded compliance, the discount factors are likely to be used.
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? Not yet taken into account.
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested 4 (3 shipyards; 1 mineral fibres)
Number of derogations granted 0
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A

16. IED Article 15(4) Survey Responses – HU

1. General questions
<p>Who is the competent authority responsible for granting derogations? Regional Environment Authorities of Government Offices (19)</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available.</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? Yes, it is part of the permitting procedure.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <ul style="list-style-type: none"> • Information on a website • Information provided on request • Reference to a contact person of the competent authority • We also provide personal consultations upon request.
<p>How are derogations initiated? Application made by the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? No</p>
<p>Time frame for decision <1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>

<p>Do you have a multi-step process for considering derogations?</p> <p>Yes - The request for derogation is submitted to, and evaluated by authorities as part of the IPPC permit application / review documentation.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes - The criterion of geographical location is evaluated on a case by case basis. In itself it cannot be considered as a valid reason for derogation; it has to be evaluated together with the local environmental conditions. Examples for the interpretation of geographical location include the impacted area of the activity, distance of the plant from inhabited areas etc.</p>
<p>Local environmental conditions</p> <p>Yes - The criterion of local environmental conditions is evaluated on a case by case basis. In itself it cannot be considered as a valid reason for derogation; it has to be evaluated together with the geographical conditions. Examples for the interpretation of local environmental conditions are: other large facilities (emission sources) in the vicinity (total emissions), concentration of air pollutants etc.</p>
<p>Technical characteristics</p> <p>Yes - Technical condition of equipment, age of plant, location of plant at the industrial site, space constraints.</p>
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Yes</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>The O-I Glass Manufacturing Ltd. used the IED Cost-Benefit Assessment Tool of the UK Environment Agency (version no. 6.9., 02/2016), in which the Discounted Cash Flow (DCF) method was applied, ISD Dunafer Ltd. did not name a methodology.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No - The IED Cost-Benefit Assessment Tool of the UK Environment Agency was adapted specifically for the IED (see UK information, below).</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs; • Operational costs: Costs of operating the new equipment (raw materials / utilities); • Operational costs: Maintenance costs; • Operational costs: Costs of external services (e.g. consulting and verification services); • Other costs: Costs of production loss due to changes to the installation; costs of waste treatment.
<p>How are the various costs data compared in the evaluation?</p> <p>Yes, the DCF method applied by the operator uses present values.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>There is no specific methodology: costs data and calculations are prepared by experts commissioned by the applicant, these are evaluated by the authorities.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>Confidential data is only accessible to the authorities. Authorities protect commercial confidentiality by substituting confidential data with information that can be used in public evaluation of the activity.</p>
<p>5. Calculation of benefits</p>

<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>The O-I Glass Manufacturing Ltd. used the IED Cost-Benefit Assessment Tool of the UK Environment Agency (version no. 6.9., 02/2016), in which the Discounted Cash Flow (DCF) method is applied, ISD Dunaferri Ltd. did not name a methodology</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No, the IED Cost-Benefit Assessment Tool of the UK Environment Agency was designed for the IED.</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced noise levels • Avoided/reduced odour levels • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • Avoided/reduced impact on biodiversity
<p>How are the various benefits compared in the evaluation?</p> <p>Depending on the case, comparisons of benefits are made based on evaluation of different scenarios. For determination of, for example, environmental benefits, the 4 following scenarios were considered at I-O Glass Manufacturing Ltd.:</p> <ul style="list-style-type: none"> - operation under current conditions (baseline conditions) - primary emission reduction techniques used during furnace refurbishment - primary NOx emission reduction techniques used with the immediate start of furnace refurbishment - post-installation of secondary NOx emission reduction techniques (selective catalytic reduction).
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>Yes, EEA Damage costs for NO_x</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>The IED cost-benefit analysis tool compares costs of different scenarios (operational costs, costs of emissions), and their benefits (e.g.: reduced emissions) calculated for the total lifetime of the equipment to assess disproportionality. Other methods include technical assessments.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>It is determined by technical evaluation. For all 4 of the above listed scenarios for example, NOx emission concentrations, total annual emissions, investment costs, operating costs and benefits from pollution reduction were considered. Based on the results the scenarios were ranked by qualitative and quantitative risk evaluation.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>Yes, discounted Cash Flow (DCF) method incorporates capital costs into the calculations but discounts it with social discount rate.</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>No, In the evaluation of the O-I Glass Manufacturing Ltd. derogation request, other factors considered were laboratory measurements of air quality in the city and at the emission sources, technical documentation of</p>



furnace and location of furnace within the site.
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? In the two derogation cases additional information such as age and previous refurbishments of equipment, environmental interactions were also considered.
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested 3
Number of derogations granted 2
Sectors/BAT conclusions of the granted derogations GLS and IS BATC
Number of derogations rejected 1 – Manufacture of Glass

17. IED Article 15(4) Survey Responses – IE

1. General questions
<p>Who is the competent authority responsible for granting derogations? Environmental Protection Agency</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? Publicly available</p>
<p>Link to guidance http://www.epa.ie/pubs/advice/licensee/Draft%20Guidance%20on%20IED%20alternate%20ELVs%20or%20derogation%20from%20BAT%20AELs.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? Guidance covering all aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? Yes</p>
<p>(b) “the technical characteristics of the installation concerned”? Yes</p>
<p>(c) “costs” Yes</p>
<p>(d) “benefits” Yes</p>
<p>(e) “disproportionality” Yes</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? Yes</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information on a website</p>
<p>How are derogations initiated? Application made by the operator.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? Yes - Licence review is open process to all stakeholders. EPA shall attach to the licence one or more conditions and the reasons for the derogation.</p>
<p>Time frame for decision 1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No response</p>
<p>Do you have a multi-step process for considering derogations? No</p>



3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?
Geographical location Yes
Local environmental conditions Yes
Technical characteristics Yes
Other criteria No
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? EPA have relatively limited experience with such methodologies but would be guided by approach used in UK EA Derogation CBA tool.
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? Yes, UK EA Derogation CBA tool
Which costs can be considered in the total cost calculation? <ul style="list-style-type: none">• Capital costs: New equipment (abatement / monitoring / IT);• Capital costs: Set-up/installation costs;• Operational costs: Costs of operating the new equipment (raw materials / utilities);• Operational costs: Maintenance costs;• Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion;• Operational costs: Training costs for staff to carry out the new activities / techniques;• Operational costs: Costs of external services (e.g. consulting and verification service);• Other costs: Costs of production loss due to changes to the installation;• Other costs: Insurance costs associated with the new equipment;
How are the various costs data compared in the evaluation? Costs should be presented in real terms.
How are the costs data and calculations validated by the competent authority? Costs should be supported by evidence such as price quotes from commercial providers of the technologies considered or references to costs in the BREF which can be verified.
How is commercial confidentiality protected in the derogation process? If any of the material intended to be submitted as part of the derogation application, is considered to be commercially confidential, the operator should inform the EPA in advance.
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No response
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? No response

<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No response</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>No response</p>
<p>How are the various benefits compared in the evaluation?</p> <p>No response</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>Yes</p> <p>http://www.eea.europa.eu/publications/cost-of-air-pollution</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>It is for the operator to demonstrate how the cost of complying with the BAT-AEL is disproportionate to the environmental benefit it would bring. It is recommended that the operator should use standardised methodologies e.g. Cost Benefit Analysis.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>Yes</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>Varies when assessed on a case by case basis. Costs are driven by geographical location, technical characteristics of the installation, or local environmental conditions - In terms of environmental costs of emitting more pollutant than BAT-AEL allows, it is recognised there are deficiencies in methodologies for some pollutants e.g. air pollutants. Therefore it is considered necessary to carry out a quantitative environmental assessment that assesses the effect (including cumulative effect) of the excess emission of the levels of pollutant already in the locality.</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>Yes, the costs and the benefits (where they have been monetised) should be expressed in a cash flow framework, which shows separately the costs and benefits for each of the years covered by the appraisal. This should capture the fact that capital costs often do not all occur in the first year but are spread across a number of years; and the operating costs might change across the appraisal period.</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>No, local environmental conditions.</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>Yes additional information is considered e.g. level of compliance, investment cycle, complaints.</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>Yes, see epa.ie licensing & permitting/Industrial (IED).</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested: 1</p>
<p>Number of derogations granted: 0</p>
<p>Sectors/BAT conclusions of the granted derogations: 0</p>
<p>Number of derogations rejected: 0</p>

18. IED Article 15(4) Survey Responses – IT

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions

Who is the competent authority responsible for granting derogations?

1) Ministry for the Environment, Land and Sea is responsible for granting IED derogations to the following IED categories of activities:

- Refining of mineral oil and gas, gasification and liquefaction plants of coal and shale oils with a capacity of at least 500 tonnes (Mg) per day
- Combustion of fuel in installation with a total rated thermal input equal or above 300 MWth;
- Production of pig iron or steel (primary and secondary fusion); Production of large volume of chemicals.

2) Regions or Provinces are responsible for granting IED derogations to IED categories of activities other than those above

The administrative procedure that an operator must follow for requesting a derogation is standardized (i.e. official communication to the competent authority).

The operator addresses his request to the specific competent authority (Ministry for the Environment, Land and Sea, Region or Province) who is responsible for granting the derogation, based on the IED category of activity that is related to his sector and output. The addressee of the derogation request should be the same competent authority who is responsible for granting the AIA permits (Autorizzazione Integrata Ambientale / Integrated Environmental Permit). This permit authorises the operation of the entire plant, or of a specific part of it, where certain industrial activities are carried out.

NOTE: Since 2004, after the approval of Law 56/2014, Italy's Provinces have been institutionally reshaped and specific provincial competences and responsibilities have been reallocated to the Region and/or to the Metropolitan Cities in which the Province(s) are located. In some cases, other local authorities (e.g. Region; Metropolitan Cities) have taken over from the Provinces the responsibility of granting Integrated Environmental Permits and, subsequently, handling any IED derogation request.

Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?

Publicly available

The guidance (which includes only typical criteria and circumstances under which derogations may be granted) is included within 'Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014, published in the Italian Official Journal).

Legislative Decree n. 46/2014 is available both in online and in paper formats.

Link to guidance

Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014, published in the Italian Official Journal).

Link to Legislative Decree n. 46/2014, which contains the guidance, published in the Italian Official Journal: www.gazzettaufficiale.it/eli/id/2014/03/27/14G00058/sq

The national legislators have developed a brief (1 page) document detailing what is required and the general criteria for granting of derogations.

Competent authorities and national legislators have not developed a set of guidelines that cover or provide any further indication about the calculation of costs, benefits and disproportionality.

<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>The guidance (i.e. 'Annex XII-bis to Part II') details typical criteria and circumstances under which derogations may be granted.</p> <p>If one or more criteria are fulfilled, competent authority may grant a derogation.</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>YES</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>YES</p>
<p>(c) “costs”</p> <p>YES</p>
<p>(d) “benefits”</p> <p>YES</p>
<p>(e) “disproportionality”</p> <p>PARTIALLY - The guidance does not provide explicit advice/consideration on what constitutes 'disproportionately higher costs' compared to the environmental benefits for all the criteria and circumstances detailed therein. However, it can be assumed that costs involved in relation to the benefits gained might be considered disproportionate e.g. for the following conditions (as set out in the Annex):</p> <ul style="list-style-type: none"> • The specific technical characteristics of the installation or the geographical location do not allow to achieve ELVs within the BAT-AELs by the implementation of BAT (as described in the BAT Conclusions concerned); • It is appropriate to grant to the operator a time extension to achieve ELVs within the BAT-AELs range in order to allow him to reach the break-even point in relation to the investments already made for implementing the best available techniques required by the renewal or review of the permit; • It is appropriate to grant to the operator a time extension to achieve ELVs within the BAT-AELs range in order to allow him to reach at least the break-even point in relation to the investments already made, due to the specific technical characteristics of the installation and the production processes which make possible the implementation of certain BAT (as described in the BAT Conclusions concerned) only throughout the complete replacement of the whole technical unit(s) involved, instead of the part(s) of the unit(s) to which BAT should technically apply. <p>Competent authorities and national legislators have not developed a set of guidelines that cover or provide any further indication about the calculation of costs, benefits and disproportionality.</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process?</p> <p>In a simplified way, below the main administrative steps and related deadlines:</p> <ul style="list-style-type: none"> • Once EC Decisions on BAT Conclusions are published in the EU OJ, the competent authorities launch the procedures for reconsidering the permit conditions; • The operators have 30-180 days to submit a dedicated application form (including detailed fact sheets as well as a 'cost-benefit analysis' duly elaborated for such a purpose). After the operator has submitted his application form, the competent authority will review it and can also request the operator to provide additional/integrating elements/data/information; • Stakeholders are entitled to submit their comments and opinions to the competent authorities before any decision on derogation is taken. To such purpose, a copy of the application for requesting the derogation and related supplemented documents are made available for comments (via web) at least for 30 days. - Within 90 days of the date on which permit proceedings were formally initiated, the competent authorities convenes a so called “Conference of Services (CdS)”, with the scope of defining the updated permit conditions. <p>Digital copies of the request(s) for derogation are available online within the relevant permits portal/webpages managed by the competent authority to whom the request had been addressed. Copies, or</p>

<p>parts of them, might not be uploaded in case sensitive/proprietary data/information are present in the request.</p> <p>Ministry for the Environment, Land and Sea: http://aia.minambiente.it/Intro.aspx</p> <p>Regions and Provinces:</p> <p>e.g. Lombardy Region http://www.regione.lombardia.it/wps/portal/istituzionale/HP/DettaglioRedazionale/servizi-e-informazioni/Imprese/Sicurezza-ambientale-e-alimentare/Autorizzazione-Integrata-Ambientale-AIA/aia-rilasciate-anno-2015/aia-rilasciate-anno-2015</p> <p>Abruzzo Region: http://www.regione.abruzzo.it/xAmbiente/index.asp?modello=AIA&servizio=xList&stileDiv=monoLeft&template=intIndex&b=impianti5</p> <ul style="list-style-type: none"> • Within 150 days of the date on which permit proceedings were formally initiated, the competent authorities have to conclude the permitting procedures, issuing the updated permit. The permit proceedings formally commence once the competent authority officially informs the operator that the administrative procedure concerning the request for derogation is under consideration. The 150 days have to be considered as "effective days". In case the competent authority requests the operator to provide additional/ integrating information/data, the countdown to 150 stops until the operator submits it, and then resumes.
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Competent authority procedures and expectations are published in the Italian Official Journal, made publicly available via web.</p>
<p>How are derogations initiated?</p> <p>Application made by the operator. Either during permit renewal or if they request a modification e.g., if they disagree with the AELs</p> <p>The operator can also highlight the relevant criterion, or criteria, of 'Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014) as ground for his request.</p> <p>Operators should supplement the application for requesting the derogation under Article 15(4) with a 'cost-benefit analysis' duly elaborated for such a purpose.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>A copy of the application for requesting the derogation and related supplemented documents are made available for comments (via web) at least for 30 days.</p>
<p>Time frame for decision</p> <p><1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>No</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes</p> <p>All of the derogation requests received so far in Italy have been based on technical characteristics. Because of the lack of clear, overarching guidelines, a possible future case might pinpoint that geographical location is taken into account for the purpose of derogation based on the national/regional guidelines connected to the granting of the AIA permits.</p> <p>It is also worth noting that, in the future, when national and regional competent authorities will be required to outline what criteria should be considered when assessing the geographical location of an installation for the purpose of granting a derogation, their assessment of which criteria should be considered might be different.</p>

<p>Local environmental conditions</p> <p>Yes</p>
<p>Technical characteristics</p> <p>Yes</p> <p>By way of example, to schedule the plant/unit upgrades taking into consideration the life time of a (glass melting) furnaces.</p> <p>Specific Case example linked to technical characteristics - Abruzzo Region: Assovetro, the Italian Association of Industrial Glass, highlighted that glass production is an industrial process which relies on continuous flow. Therefore, the implementation of measures and interventions required to comply with the BAT conclusions would hamper the industrial process and lead to financial losses in case of furnaces that have only recently started working, or of those furnaces whose residual lifetime overshoots the deadline foreseen for the necessary upgrade.</p>
<p>Other criteria</p> <p>Yes</p> <p>Derogations must comply with other applicable legislation, for example emission limit values for Large Combustion Plants or measures laid down in Italian air quality plans</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p> <p>Because of the lack of a standard methodology, each competent authority requests, on a case-by-case basis, certain data to be submitted by the operator who is requesting a derogation, and formulates the response. The different competent authorities have their own level of discretion about which data to request and to evaluate in order to formulate the response (granted/rejected).</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>Specific Case example: derogation requested to Abruzzo Region (CA) by Pilkington Italia SpA (operator). The operator submitted a combined technical/financial report, in which it laid out the current scenario, the financial results, and the future impacts of implementing the necessary BAT conclusions. This cost-benefit analysis included the relevant recent balance data, temporary production stop, complete cessation of production, extraordinary expenses, potential penalties and future markets trends and forecast.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>There is a certain degree of flexibility and the competent authority might request specific costs to be included in the request for derogation.</p> <p>Example: derogation granted by Metropolitan City of Milan to Vetropack Italia Srl (operator) related to BAT 16 and BAT 17 (glass manufacturing). The competent authority had requested from the operator a cost-benefit analysis which includes:</p> <ul style="list-style-type: none"> • repayment plan/scheme for the costs already incurred in upgrading the plant • technical/financial analysis of all feasible interventions already undertaken/to be performed upon the existent and operational furnaces in order to reduce emissions • description of plant-related interventions needed to comply with BAT-AELs • timeline of plant-related interventions needed to comply with BAT-AELs
<p>How are the various costs data compared in the evaluation?</p> <p>No response</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>Cost-benefit analysis are evaluated by the competent authority on a case-by-case approach.</p> <p>Example: derogation granted by Metropolitan City of Milan to Vetropack Italia Srl (operator) related to glass manufacturing BATS.</p>

<p>In granting the derogation, the competent authority took into consideration the following data that had been requested from the operator:</p> <ul style="list-style-type: none"> • the repayment plan/scheme for the costs already incurred in upgrading the plant experienced a delay because of the market conditions from 2008 onwards had been characterized by lower demand and consumption. This, in turn, led to a lower output and income, which prompted the operator to push back to 2020, instead of the originally foreseen 2017, the fulfilment of his repayment plan/scheme. • technical/financial analysis of all feasible interventions already undertaken/to be performed upon the existent and operational furnaces in order to reduce emissions showed that emissions had been decreased, but these temporary interventions were still not enough to guarantee that all emissions' ceilings (e.g. dust emissions from melting furnaces), and that BAT-AELs could be respected fully only by overhauling completely two existing furnaces
<p>How is commercial confidentiality protected in the derogation process?</p> <p>The competent authority is entitled to do not grant public access to those information, provided within the derogation process, considered to be business sensitive (according to art. 29-quarter, paragraph 14, of the Italian IED transposition Decree).</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>No response provided, but some details can be inferred from Section 5</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>There is no specific list of benefits, but the following can be potentially considered:</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced noise levels • Avoided/reduced odour levels • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • Avoided/reduced impact on biodiversity
<p>How are the various benefits compared in the evaluation?</p> <p>No response provided</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>No response provided</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>On a case-by case approach</p> <p>The competent authority requests data to the operator. Once the operator submits the data, the competent authority evaluates it and, in case necessary or doubts arise, competent authority can request additional data to be presented before making a decision about the request for derogation.</p> <p>Based on specific requests for derogations, disproportionality could be indicated by using the cost benefit analysis tool. Any judgement on disproportionality could be made on a case by case basis, taking into account a full consideration of the merits, including evidence on both cost and benefits.</p>
<p>Is this methodology similar to that used in other policy areas? No similarity</p>

<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>Details provided in previous responses</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>No response provided.</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>No response provided</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>No response provided</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>Non</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested: 7</p> <p>Multiple competent authorities are in charge of reviewing requests for derogations. According to the Ministry for the Environment, Land and Sea, all seven derogations requested so far have been addressed to the local authorities and are connected to glass manufacturing.</p> <p>Local authorities, in principle, inform the Ministry about any request for derogations that they receive.</p>
<p>Number of derogations granted: 7</p>
<p>Sectors/BAT conclusions of the granted derogations</p> <p>Decision 2012/134/EU (GLS BATC), BAT conclusions for container glass manufacturing (depending on the case, derogations were granted for e.g. BAT 16, BAT 17/18, BAT 19, BAT20)</p> <p>The following documents, shared by the Ministry, are currently available:</p> <p>http://ambiente2.provincia.mi.it/aia_pubblicazione/files/04_Deroga%20BAT%20RG%20%202226%20del%2007.03.2016.pdf</p> <ul style="list-style-type: none"> derogation granted by Metropolitan City of Milan to Vetropack Italia Srl (operator): according to the decision, there is a reference to BAT 16 (dust emissions from melting furnaces), BAT 17 (NOx emissions from the melting furnace) and BAT 19 (SOx emissions from the melting furnace). However, the competent authority notes that the operator has already undertaken temporary interventions through which he now respects the limits for BAT 16 and BAT 19. Precise information on the BATs referred to by the operator in his original request are not available at the moment, because the operator’s original request is not uploaded online. http://www.regione.abruzzo.it/ippc/docs/provvedimentiAIA/2016/DPC025_24_pilkington.pdf derogation granted by Abruzzo Region to Pilkington Italia SpA (operator): BAT 16 (dust emissions from melting furnaces), BAT 17 (NOx emissions from the melting furnace) and BAT 21 (metal emissions from the melting furnace). http://www.provincia.cuneo.gov.it/allegati/tutela-territorio/procedimenti-tutela-territorio/2014aia001rie/agc_prov_riesame_suap_prot_66833_del_29_10_2015_p_15461.pdf derogation granted by Cuneo Province to AGC FLAT GLASS ITALIA srl (operator): BAT 16 (dust emissions from melting furnaces), BAT 17 (NOx emissions from the melting furnace), BAT 19 (SOx emissions from the melting furnace), and BAT 20 (HCl and HF emissions from the melting furnace). https://www.provincia.mantova.it/UploadDocs/15309_riesame_aia_saint_gobain_vetri.pdf derogation granted by Mantova Province to Saint Gobain Vetri S.p.A. (operator): BAT 16 (dust emissions from melting furnaces), BAT 17 (NOx emissions from the melting furnace), BAT 19 (SOx emissions from the melting furnace), and BAT 20 (HCl and HF emissions from the melting furnace).
<p>Number of derogations rejected</p> <p>Ministry for the Environment, Land and Sea has not been informed by local competent authorities about any rejected requests for derogation. It is not compulsory for the local competent authorities to inform the Ministry about rejections. However, as a rule of thumb, the competent authorities would inform the Ministry about both granted and rejected derogations.</p>

19. IED Article 15(4) Survey Responses – LT

1. General questions
Who is the competent authority responsible for granting derogations? Lithuanian Environmental Protection Agency; IPPC Permitting Authority
Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance
Link to guidance N/A
Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A
Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?
(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A
(b) “the technical characteristics of the installation concerned”? N/A
(c) “costs” N/A
(d) “benefits” N/A
(e) “disproportionality” N/A
2. Derogation procedure
Do you have a formal procedure in place on the derogation process? No
What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information provided on request
How are derogations initiated? Application made by the operator
Are third-party representations addressed in the derogation evaluation procedure of the Member State? No
Time frame for decision <1 year
Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No
Do you have a multi-step process for considering derogations? No
3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?

Geographical location Yes
Local environmental conditions Yes
Technical characteristics Yes
Other criteria Yes
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? No response
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No
Which costs can be considered in the total cost calculation? Capital costs: New equipment (abatement / monitoring / IT); Operational costs: Costs of operating the new equipment (raw materials / utilities).
How are the various costs data compared in the evaluation? Present values
How are the costs data and calculations validated by the competent authority? It is the biggest question
How is commercial confidentiality protected in the derogation process? Protected simply
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? No response
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No
Which environmental benefits are considered in determining derogations under Article 15(4)? <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced odour levels • Avoided/reduced energy use
How are the various benefits compared in the evaluation? By using present values
Are damage costs of pollutants used in the determination of a request? No



6. Disproportionality
What methodology is used to assess disproportionality? No response
Is this methodology similar to that used in other policy areas? No
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? No response
Is the uncertainty of cost and benefit calculations addresses in the evaluation? No response
Is the final decision solely based on the net present value calculations? Yes
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? No
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested 0
Number of derogations granted N/A
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A

20. IED Article 15(4) Survey Responses – LU

1. General questions
<p>Who is the competent authority responsible for granting derogations? Ministère du Développement durable et aux Infrastructures</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information on a website ; Individual information of operators</p>
<p>How are derogations initiated? Application made by the operator</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? No</p>
<p>Time frame for decision No response</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No response</p>
<p>Do you have a multi-step process for considering derogations? No response</p>
3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?



Geographical location No response
Local environmental conditions No response
Technical characteristics No response
Other criteria No response
4. Calculation of costs
Is there a standard methodology used or suggested to calculate the costs of implementing BAT? No
What methodology is used or suggested to calculate the costs of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which costs can be considered in the total cost calculation? N/A
How are the various costs data compared in the evaluation? N/A
How are the costs data and calculations validated by the competent authority? N/A
How is commercial confidentiality protected in the derogation process? N/A
5. Calculation of benefits
Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? N/A
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? N/A
Which environmental benefits are considered in determining derogations under Article 15(4)? N/A
How are the various benefits compared in the evaluation? N/A
Are damage costs of pollutants used in the determination of a request? N/A
6. Disproportionality
What methodology is used to assess disproportionality? No response



Is this methodology similar to that used in other policy areas? No response
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? No response
Is the uncertainty of cost and benefit calculations addresses in the evaluation? No response
Is the final decision solely based on the net present value calculations? No response
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? No response
Do you have internal guidance available on how such additional information? No response
7. Number of derogations
Number of derogations requested 0
Number of derogations granted N/A
Sectors/BAT conclusions of the granted derogations N/A
Number of derogations rejected N/A



21. IED Article 15(4) Survey Responses – LV

No input was provided by LV to the online survey under this study.

22. IED Article 15(4) Survey Responses – MT

1. General questions
<p>Who is the competent authority responsible for granting derogations? Environment and Resources Authority</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance</p>
<p>Link to guidance N/A</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? Yes The granting of a derogation involves evaluation of technical justifications provided by the operators to the authority as part of the permit application. Any conditions (including timeframes associated with improvement items which may be related to the specific derogation) form part of the permit which is eventually determined by the authority's board. If granted, reasons for such a derogation are included as an annex to the permit. To note that due to the fact that the number of IED sites is small, no formal guidance document is deemed necessary.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <ul style="list-style-type: none"> • Information on a website • Information provided on request • Reference to a contact person of the competent authority
<p>How are derogations initiated? Application made by the operator</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? Yes, requests for derogations required under Article 15(4) together with the technical justifications made by the operator are made available to the public during the mandatory public consultation process and are also discussed with other regulatory authorities during the processing of an application.</p>

<p>Time frame for decision</p> <p>There is no formal timeframe associated. The derogation (if granted) is part of the determination of the permit. MT would like to comment that in filling out this explanation, the “if over 4 years, please specify” checkbox was automatically ticked. However, as explained earlier the process could take less than one year but could also take 3-4 years depending on the complexity of the request together with other studies which may be required to complete the evaluation process.</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>Yes, in view that the IPPC process is defined in the local regulation and the processing of any type of IPPC application (including requests for derogations) follows structured internal procedures, the authority applies the principle of good governance in every case.</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>Yes, As part of the application, the first step would involve a comparison of the proposed operations with the relevant BAT conclusions. If any proposed operations are not in line with BAT and suitable alternatives are not proposed by the operator, then detailed justifications such as cost benefit analyses are requested to enable the authority to evaluate such a request from derogation from BAT. Notwithstanding the fact that no formal guidance for the application of any derogations under Art 15(4) is available, any such request is processed through the established process for a new or existing process with an installation.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes</p> <p>Although not applied on a national level as yet, the location of a plant or certain land use constraints may lead to an installation not being in a position to install certain abatement technologies required to achieve BAT-AELs. Thus alternatives need to be considered by the operator and the authority so as to assess whether the inclusion of different abatement technologies which would not achieve the required BAT-AELs is justified.</p>
<p>Local environmental conditions</p> <p>Yes - No further details provided</p>
<p>Technical characteristics</p> <p>Yes - No further details provided</p>
<p>Other criteria</p> <p>Yes, although none are identified at this point in time, there may be other criteria proposed by the operator which may necessitate the authority to consider such derogations.</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>Capital costs: New equipment (abatement / monitoring / IT);</p> <p>Capital costs: Set-up/installation costs;</p> <p>Operational costs: Costs of operating the new equipment (raw materials / utilities);</p> <p>Operational costs: Maintenance costs;</p> <p>Other costs: Costs of production loss due to changes to the installation</p>

<p>How are the various costs data compared in the evaluation?</p> <p>No information can be provided in view that the authority has not required evaluation of such economic considerations.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>No information can be provided in view that the authority has not required evaluation of such economic considerations.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>Should the operator consider any information as being commercially sensitive, a non-confidential version of the application/request is provided to the authority for utilisation during the public consultation process. Such commercial sensitivity is however assessed by the Authority on a case by case basis.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>No response</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air; • Avoided/reduced emissions to water; • Avoided/reduced noise levels; • Avoided/reduced odour levels; • Avoided/reduced waste generation; • Avoided/reduced raw material use; • Avoided/reduced energy use; • Avoided/reduced impact on biodiversity <p>Malta believes that all are relevant depending on the applicable case.</p>
<p>How are the various benefits compared in the evaluation?</p> <p>Comparison with a baseline of the current environmental scenario would be required.</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>No</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>Although until now, Malta has never had to assess reviews related to disproportionality such an assessment would be carried out on the basis of the cost benefit analyses assessing the cost required to achieve the required environmental standards versus the environmental costs of implementing the derogation request.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No response</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>Although Malta has never had to assess reviews related to disproportionality such an assessment would be carried out on the basis of the cost benefit analyses assessing the cost required to achieve the required environmental standards versus the environmental costs of implementing the derogation request.</p>



Is the uncertainty of cost and benefit calculations addresses in the evaluation? Yes, the uncertainty of any data utilised in the assessment and any assumptions would have to be clearly identified in such a report.
Is the final decision solely based on the net present value calculations? No - The final decision would also need to address possible advances in technology and amendments to the BAT-AELs from time to time
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? All information allowing an informed decision by the authority may be requested as needed.
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested 2
Number of derogations granted 2
Sectors/BAT conclusions of the granted derogations 2
Number of derogations rejected 0



23. IED Article 15(4) Survey Responses – NL

No input was provided by NL to the online survey under this study.

24. IED Article 15(4) Survey Responses – PL

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations? Permitting authorities: Starosta, Marshal (local government officers of Polish administration)</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? No guidance available A guidance was recently developed specifically related to derogations from the LCP BATC.</p>
<p>Link to guidance N/A LCP BATC guidance: http://www.ekoportal.gov.pl/fileadmin/Ekoportal/Pozwolonia_zintegrowane/Podrecznik_dotyczacy_udzielania_o_dstepstw_-_Konkluzje_BAT_dla_LCP.pdf</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? N/A</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? N/A</p>
<p>(b) “the technical characteristics of the installation concerned”? N/A</p>
<p>(c) “costs” N/A</p>
<p>(d) “benefits” N/A</p>
<p>(e) “disproportionality” N/A</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process? No</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information provided on request</p>
<p>How are derogations initiated? Application made by the operator</p>

<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>Yes</p>
<p>Time frame for decision</p> <p>1-2 years</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>Yes</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes - No further details provided</p>
<p>Local environmental conditions</p> <p>Yes - No further details provided</p>
<p>Technical characteristics</p> <p>Yes - No further details provided</p>
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>No response</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs • Operational costs: Costs of operating the new equipment (raw materials / utilities); • Operational costs: Maintenance costs; • Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; • Operational costs: Training costs for staff to carry out the new activities / techniques; • Operational costs: Costs of external services (e.g. consulting and verification services) • Other costs: Costs of production loss due to changes to the installation; • Other costs: Insurance costs associated with the new equipment
<p>How are the various costs data compared in the evaluation?</p> <p>No response</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>No response</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>No response</p>
<p>5. Calculation of benefits</p>

Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT? No
What methodology is used or suggested to calculate the environmental benefits of implementing a BAT? No response
Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED? No
Which environmental benefits are considered in determining derogations under Article 15(4)? <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced noise levels • Avoided/reduced odour levels • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • Avoided/reduced impact on biodiversity
How are the various benefits compared in the evaluation? No response
Are damage costs of pollutants used in the determination of a request? Yes
6. Disproportionality
What methodology is used to assess disproportionality? No response
Is this methodology similar to that used in other policy areas? No
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? No response <i>In the LCP BATC guidance a fixed cut-off of 0.7 for the benefits to costs ratio is applied. Values smaller than 0.7 can be considered for a derogation. Although this is a fixed value, its intention is more as a reference value. Additional factors can play a role as well.</i>
What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations? Yes
Is the uncertainty of cost and benefit calculations addresses in the evaluation? No
To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account? No response
Do you have internal guidance available on how such additional information? No
7. Number of derogations
Number of derogations requested: 8
Number of derogations granted: 4
Sectors/BAT conclusions of the granted derogations Manufacture of Glass Production of Cement, Lime and Magnesium Oxide
Number of derogations rejected No response

25. IED Article 15(4) Survey Responses – PT

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>APA - Portuguese Environmental Agency (Permitting and evaluating derogations)</p> <p>APA is responsible for granting IED derogations in all IED categories and across all regions of Portugal.</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Publicly available</p>
<p>Link to guidance</p> <p>http://www.apambiente.pt/index.php?ref=17&subref=151&sub2ref=321&sub3ref=330</p> <p>The IED was transposed to Portuguese law by Legislative Decree no.124/2013 (dated 30/08/2013) which is available online. Article 30(6) states that APA may set less strict ELVs where the operator shows that implementing the BAT-AELs would lead to disproportionately higher costs compared to the environmental benefits due to (a) geographical location or local environmental conditions of the installation concerned; or (b) the technical characteristics of the installation concerned.</p> <p>The Guidance Document entitled "Guia de Aplicacao- BREF Economics and Cross Media Effects" (dated 15/03/13) is available online in Portuguese. This document provides a methodology for the operator to undertake cost-benefit analysis to identify BAT and is based on the REF Economics and Cross Media. The document also provides details of the information and the forms to be submitted to APAP supporting the derogation request.</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>It covers basically economics and Cross-Media Effects</p> <p>It should be noted that the Guidance Document was issued before IED was transposed to Portuguese law. However it has been used by operators and APA for cost-benefit analysis under IED derogations.</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p> <p>The Guidance Document was issued before IED was transposed to Portuguese law. The Guidance Document provides a methodology for the operator to undertake cost-benefit analysis to identify BAT and is based on the REF Economics and Cross Media. The Guidance does not explicitly refer to the factors geographical location, local environmental conditions of the installation concerned, or the technical characteristics of the installation concerned. However the operator is required to state in the application forms included in the Guidance the relevant factors supporting the derogation (which may include the factors above). APA has recognised that the application forms could be improved by referring explicitly to the factors above.</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>No</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>No</p>
<p>(c) “costs”</p> <p>Yes</p>
<p>(d) “benefits”</p> <p>Yes</p>

<p>(e) “disproportionality” Partially - It is difficult to find data of the effects of some pollutants.</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process? No There is no formal procedure in place. The operator must submit to APA the application forms and information set out in the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects". The applications are then assessed by APA on a case by case basis. Information on granted derogations is appended to the Environmental Permit of the installation (in accordance with the requirements of Legislative Decree no.124/2013 (dated 30/08/2013). The Environmental Permits and Variations are available online (http://ladigital.apambiente.pt/). There is no internal (governmental) guidance on the derogation procedure. APA would welcome any EC guidelines on the derogation procedure.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Reference to a contact person of the competent authority, Information on a website</p>
<p>How are derogations initiated? Application made by operator</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? No</p>
<p>Time frame for decision 1-2 years There is no formal schedule but typically the derogation process lasts less than 12 months.</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? Yes, for some industrial sectors preparation to evaluate the state of the art considering the effort made to comply to the previous BREF. APA has worked closely with the Portuguese Association of Manufacture of Glass and operators to agree a consistent approach on the implementation of the BREF for the Manufacture of Glass (2012). The technical characteristics and historical investment in the installation are taken into account in the derogation requests.</p>
<p>Do you have a multi-step process for considering derogations? Yes. The application is first submitted and evaluated considering the BAT already available and applied on the installations.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location It is considered. No examples provided. It is given the same importance than the other criteria. All derogation requests received to date have been from the glass manufacture sector and some of them were based on geographical location. Example: The glass manufacture sector in Portugal is characterised by historical installations which have been surrounded by industrial/residential developments over time. This often results in limited space for new equipment (e.g. new gas emission filters) required to comply with the BAT conclusions. Although no derogations have been received to date from the ceramics industry this is also likely to be an issue for this sector.</p>
<p>Local environmental conditions It is considered. No examples provided. It is given the same importance than the other criteria. No relevant examples from the derogation requests received to date.</p>
<p>Technical characteristics It is considered. Some improvements could only be implemented when there is a major refurbishment and it is taken in account. It is given the same importance than the other criteria. All derogation requests received to date have been from the glass manufacture sector and some of them were</p>

<p>based on technical characteristics.</p> <p>Example: The implementation of measures required to comply with the BAT conclusions for e.g. NOx and SOx emissions include re-construction of the melting furnaces. When reviewing derogation requests APA takes into consideration the residual lifetime of the melting furnaces (typically up 8-12 years) compared to the 4-year period for implementation of the BAT conclusions. Derogations may be granted where the residual lifetime of the furnaces exceeds the BAT conclusions implementation period.</p>
<p>Other criteria</p> <p>Usually a time period is agreed between operator and authority to achieve the expect ELV.</p> <p>The Environmental Permits are renewed at least every 10 years (typically less than 10 years) depending on the characteristics of the installation. At permit renewal stage any permitted derogations are reviewed.</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Yes.</p> <p>The Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects" (dated 15/03/13) sets out a methodology for the operator to undertake cost-benefit analysis to identify BAT. This methodology has been used by the operators and APA since 2013.</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>The Guidance Document sets out a methodology for the calculation of costs of implementing BAT and details the information required to be submitted to APA in support of the derogation request.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>The Guidance Document has been based on the REF Economics and Cross Media. The Document is not just a translation of the BREF as it also provides information for the operator on the data and forms to be submitted to APA in support of the derogation request.</p>
<p>Which costs can be considered in the total cost calculation?</p> <p>Operational costs: Maintenance costs;</p> <p>Operational costs: Costs of operating the new equipment (raw materials / utilities);</p> <p>Capital costs: Set-up/installation costs</p> <p>Capital costs: New equipment (abatement / monitoring / IT)</p> <p>As per the methodology set out in the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects".</p>
<p>How are the various costs data compared in the evaluation?</p> <p>As per the methodology set out in the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects".</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>The Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects" requires the operator to provide details of the source of all information supporting the costing calculations in order to be validated by APA. The Guidance Document recommends that data costs should be obtained from more than one independent source.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>The Environmental Permits and Permit Variations (which include details on any derogations) are publicly available. However APA do not grant public access to detailed information provided under the derogation process, including any information considered to be business sensitive.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>Yes. The Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects" (dated 15/03/13) sets out a methodology for the operator to undertake cost-benefit analysis to identify BAT. This methodology</p>

<p>has been used by the operators and APA since 2013.</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>No</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>Avoided/reduced emissions to air Avoided/reduced emissions to water Avoided/reduced waste generation Avoided/reduced energy use</p> <p>As per the methodology set out in the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects".</p>
<p>How are the various benefits compared in the evaluation?</p> <p>N/A</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>No</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>Portuguese guidance (similar to Catalonia)</p> <p>Disproportionality is assessed on the basis of the cost-benefit analysis methodology set out in the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects". Reference prices as set out in the REF Economics and Cross Media Effects have been used by operators.</p>
<p>Is this methodology similar to that used in other policy areas?</p> <p>No</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>According to the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects" there are two approaches for calculating the total annual costs of an investment whether or not inflation is taken into account. The operator must complete different application form depending on the approach selected.</p> <p>The Guidance Document recommends that the justification of the proposed technique should be based on the ranking of the available techniques by their cost effectiveness. This is a useful way of identifying the best balance between the cost of a technique and the environmental benefits that implementing it will deliver. APA recognises that some professional judgement may also need to be used when identifying the technique that represents the best alternative.</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>No</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>No</p> <p>According to the Guidance Document "Guia de Aplicacao - REF Economics and Cross Media Effects" there are two approaches for calculating the total annual costs of an investment whether or not inflation is taken into account. The operator must complete different application form depending on the approach selected.</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>Yes, the historical investment in the installation is taken in account</p> <p>The derogation process takes into account any historical investments in the installations. For example some of</p>



<p>the glass manufacture installations have made large investments relatively recently (2007) to meet the previous BAT-AELs for dust emissions. However the AELs have been reduced under the current BATC. In these circumstances APA would grant derogations for dust emissions.</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>No</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested</p> <p>6</p> <p>All derogation requests received to date have been from the glass manufacture sector.</p> <p>For the wider industry sector in Portugal APA expects derogation requests from the agriculture sector (which comprises 300-400 installations) and some from the large combustion plants sector (which comprises 20-25 installations).</p>
<p>Number of derogations granted</p> <p>6</p>
<p>Sectors/BAT conclusions of the granted derogations</p> <p>Most of the derogations concerned the NOx BAT-AELs for glass furnaces. The BAT for abatement of this pollutant requires a reconstruction of the oven which can only be done at specific timings. Other BAT require easy access to oxygen, as oxidizing agent of combustion, which is not readily available for most operators.</p> <p>Most of the derogations granted were related to the technical characteristics of the installation in particular the NOx emissions but also SOx and dust emissions for melting furnaces. The derogations were granted taking into consideration the residual lifetime of the melting furnaces and requires the BAT-AELs for NOx to be met at the scheduled time of re-construction of the furnaces.</p>
<p>Number of derogations rejected</p> <p>0</p> <p>In some cases the operators applied for derogations for longer periods, higher ELV or more pollutants than the ones that were agreed on the final decision.</p> <p>Although no derogations were rejected some of the ELVs originally proposed by the operators were rejected and lower values were agreed. In these cases the operators applied for higher ELVs than those set out in their Permit. Although the proposed ELVs were consistent with current legislation APA noted that if historically the installations were able to achieve lower ELVs then higher emission limits would not be allowed.</p>



26. IED Article 15(4) Survey Responses – RO

No input was provided by RO to the online survey under this study.

27. IED Article 15(4) Survey Responses – SE

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>Eleven Regional County Administrative Boards have an Environmental Permit Office that have the authority for granting derogations. In the case an operator is in an ongoing licencing process, also the Environmental Courts (five units) have this authority.</p> <p>The geographical location of the applicant determine which testing authority is responsible for decisions in the first legal instance.</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Publicly available</p>
<p>Link to guidance</p> <p>In the member state implementation report, reference has been made to the motives of the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy (FM 2013:1 p. 38-39). Guidance on derogations is given on page 38-41. General guidance on the implementation of IED in Sweden is given in a report from the Swedish EPA.</p> <p>General <u>guidance on derogations is given in paragraph 8.5, page 39-42</u> in the Swedish report. General guidance report from the Swedish EPA: http://www.naturvardsverket.se/Om-Naturvardsverket/Publikationer/ISBN/6700/978-91-620-6702-1/</p> <p>Ordinance document : http://www.regeringen.se/contentassets/0dc2803e58f748028786ca01260e2285/forordning-om-industriutslapp-fm-201301</p> <p>The guidance says that there are three aspects that can be taken into account when estimating disproportionate high costs. Those are geographical location, local environment and the facility's technical properties. Emission standards can only be eased and not repealed. Emission standards should only be eased to such level that the disproportionate costs can be eliminated.</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>Guidance covering all aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p> <p>The guidance is on a general level and is up for interpretation for each individual case.</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>YES</p>
<p>(b) “the technical characteristics of the installation concerned”?</p> <p>YES</p>
<p>(c) “costs”</p> <p>YES</p>
<p>(d) “benefits”</p> <p>YES</p>
<p>(e) “disproportionality”</p> <p>YES</p>
2. Derogation procedure
<p>Do you have a formal procedure in place on the derogation process?</p> <p>YES - There are no specific timeframes set.</p> <p>Applications shall be handed to one of the 11 Regional County Administrative Boards that have an Environmental Permit Office or to the Land and Environmental court. Derogation applications can be submitted</p>

<p>at the same time as the facility's production is being authorized. The derogation process and decision should be in line with Swedish environmental law (Miljöbalken, kap.2 7§). However, no other arguments than the three (previously listed) aspects can be used. All data and evidence should be provided by an applicant. The guidance documents contains instructions of what should be included in an application. Exemptions can only be granted for a maximum of 4 years, but can also be shorter.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <p>Information provided on request and reference to a contact person of the competent authority</p>
<p>How are derogations initiated?</p> <p>Application made by the operator</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State?</p> <p>When an application is received by the competent authority it shall be officially announced in order to give those with right to litigate the possibility to give one's opinion. A decision can be appealed to higher court.</p>
<p>Time frame for decision</p> <p><1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations?</p> <p>No</p>
<p>Do you have a multi-step process for considering derogations?</p> <p>No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Yes - Some examples are given in the document describing the motives for the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy, giving guidance on derogations, page 38-4 (FM 2013:1) and in the general guidance report from the report from the Swedish EPA (p.39-42).</p>
<p>Local environmental conditions</p> <p>Yes - Some examples are given in the document describing the motives for the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy, giving guidance on derogations, page 38-4 (FM 2013:1) and in the general guidance report from the report from the Swedish EPA (p.39-42).</p>
<p>Technical characteristics</p> <p>Yes - Some examples are given in the document describing the motives for the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy, giving guidance on derogations, page 38-4 (FM 2013:1) and in the general guidance report from the report from the Swedish EPA (p.39-42).</p>
<p>Other criteria</p> <p>No</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>N/A</p>
<p>Which costs can be considered in the total cost calculation?</p> <ul style="list-style-type: none"> • Capital costs: New equipment (abatement / monitoring / IT); • Capital costs: Set-up/installation costs; • Operational costs: Costs of operating the new equipment (raw materials / utilities);

<ul style="list-style-type: none"> • Operational costs: Maintenance costs; • Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion; • Operational costs: Training costs for staff to carry out the new activities / techniques; • Operational costs: Costs of external services (e.g. consulting and verification services); • Other costs: Costs of production loss due to changes to the installation; • Other costs: Insurance costs associated with the new equipment.
<p>How are the various costs data compared in the evaluation?</p> <p>The capital costs are assessed with regard to depreciation and interest rate</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>The burden of proof is on the operator. Descriptions and calculation shall be transparent with given values on for example different types of costs. It is criminalized by Swedish law to submit incorrect information or omit information.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>Upon request for a document from the competent authority, a confidentiality assessment is always carried out by the competent authority against the confidentiality rules.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>No</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>N/A</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>N/A</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <ul style="list-style-type: none"> • Avoided/reduced emissions to air • Avoided/reduced emissions to water • Avoided/reduced noise levels • Avoided/reduced odour levels • Avoided/reduced waste generation • Avoided/reduced raw material use • Avoided/reduced energy use • Avoided/reduced impact on biodiversity
<p>How are the various benefits compared in the evaluation?</p> <p>N/A</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>Yes – no further details provided</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>Equitable balances similar to those made according to the Swedish Environmental Code chapter 2 section 7 in the General Rules of Consideration are used. According to the motives for the Swedish main ordinance which implements IED issued by the Ministry of the Environment and Energy (FM 2013:1 p. 38-39) the result of the cost-benefit analysis should essentially be in accordance with the result of the application of chapter 2 section 7 in the environmental code - states that requirements shall be applicable where compliance cannot be deemed unreasonable. Particular importance shall be attached in this connection to the benefits of protective measures</p>

and other precautions in relation to their cost.
<p>Is this methodology similar to that used in other policy areas?</p> <p>Chapter 2 Section 7 the environmental code are, together with the general rules of consideration in Chapter 2 the Environmental Code, generally applicable.</p>
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <p>See earlier response</p>
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>The burden of proof is on the operator.</p>
<p>Is the final decision solely based on the net present value calculations?</p> <p>According to chapter 1 section 16 the Swedish main ordinance which implements IED a derogation may only be granted if, due to the geographical location of the installation where the activity is pursued, the technical characteristics of the installation, or the local environmental conditions, it would result in disproportionately high costs compared to the environmental benefits to meet the emission limit value. The operator shall also show that the obligations arising out of chapter 2 the environmental code, the general rules of consideration, have been complied with.</p>
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>N/A</p>
<p>Do you have internal guidance available on how such additional information?</p> <p>No</p>
<p>7. Number of derogations</p>
<p>Number of derogations requested</p> <p>6</p>
<p>Number of derogations granted</p> <p>5</p>
<p>Sectors/BAT conclusions of the granted derogations</p> <p>IS BATC: BAT 34; 49 and 64; 51 and 56; 64 and 65.</p> <p>PP BATC: BAT 23.</p>
<p>Number of derogations rejected</p> <p>1 - GLS - BAT 63, table 53.</p>



28. IED Article 15(4) Survey Responses – SI

No input was provided by SI to the online survey under this study.

29. IED Article 15(4) Survey Responses – SK

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations? Ministry of the Environment</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance? Publicly available</p>
<p>Link to guidance http://www.minzp.sk/sekcie/temy-oblasti/integrovana-prevencia-kontrola-znecistovania/informacie/informacie-usmernenia.html Usmernenie pre uplatnenie § 22 ods. 6 zákona č. 39/2013 Z. z (only in Slovak language)</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations? Guidance covering all aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”? Yes</p> <ul style="list-style-type: none"> • limited disposition of the operation, that presents broader technical issues with new technology placement, e.g. separator within the operation or operator area, which leads to inadequately higher costs for harmonization than adequate costs for BAT-AEL; • insufficient water resources e.g. for wet cooling; • reaching BAT-AEL emission level for particular pollutant would cause higher pollution of other component of environment, which is in given location endangered, e.g. insufficient inflow of surface water as a recipient for waste water.
<p>(b) “the technical characteristics of the installation concerned”? Yes</p> <ul style="list-style-type: none"> • insignificant emission reduction of given pollutant – if reaching BAT level does not guarantee reduction of emissions of given pollutant, or no significant environmental effect; • reduction of emissions of one pollutant causes increase in emissions of other pollutant, or it impacts transfer of emissions to another component of the environment, or it is linked to higher consumption of resources, fuel or generation of waste; • particular configuration of installation in given operation – implementation of BAT would require wider interventions to operation, e.g. link to renewal of larger technological unit than is required by BAT, or the whole operation, if this investment is associated with inadequate costs; • feasibility of investment (e.g. ensuring at least minimum production capacity) mainly with regard to hygienic requirements, safety risks and other relevant requirements arising from different legislation. This means dividing the implementation into several stages or timing of investment on planned outage within the scope of natural investment cycle; taking into account several dependent investments; • specific character of given production, whereas BAT conclusions do not consider specifics of such production (e.g. medicinal or military purpose) or specific qualitative parameters of local resources;

<ul style="list-style-type: none"> reaching equal positive effect corresponding to BAT-AEL emission level through less costly provisions to associated operations within the scope of given operation; recent measures for reduction of emissions of given pollutant; reaching breaking point of economic lifetime with regard to investments already spent on implementation of BAT in given installation;
<p>(c) “costs” Yes</p>
<p>(d) “benefits” Yes</p>
<p>(e) “disproportionality” Yes</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process? No</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations? Information provided on request and reference to a contact person of the competent authority</p>
<p>How are derogations initiated? Application made by the operator Slovakia uses the same approach as in Czech Republic (scenario 1 initiated by operator). Scenario 2 (initiated by competent authorities when reconsidering permit conditions within 4 years of publication of decisions on BAT conclusions) cannot be identified as the initiation of derogation. The authority only invites the operator to bring installation in line with BAT, the operator then assesses the need to apply for derogation.</p>
<p>Are third-party representations addressed in the derogation evaluation procedure of the Member State? No</p>
<p>Time frame for decision <1 year</p>
<p>Are there governance arrangements in place to help you make consistent decision-making on granting derogations? No</p>
<p>Do you have a multi-step process for considering derogations? No</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location YES</p> <ul style="list-style-type: none"> limited disposition of the operation, that presents broader technical issues with new technology placement, e.g. separator within the operation or operator area, which leads to inadequately higher costs for harmonization than adequate costs for BAT-AEL, insufficient water resources e.g. for wet cooling.
<p>Local environmental conditions YES</p> <ul style="list-style-type: none"> reaching BAT-AEL emission level for particular pollutant would cause higher pollution of other component of environment, which is in given location endangered, e.g. insufficient inflow of surface water as a recipient for waste water.
<p>Technical characteristics YES</p>

<ul style="list-style-type: none"> • insignificant emission reduction of given pollutant – if reaching BAT level does not guarantee reduction of emissions of given pollutant, or no significant environmental effect, • reduction of emissions of one pollutant causes increase in emissions of other pollutant, or it impacts transfer of emissions to another component of the environment, or it is linked to higher consumption of resources, fuel or generation of waste, • particular configuration of installation in given operation – implementation of BAT would require wider interventions to operation, e.g. link to renewal of larger technological unit than is required by BAT, or the whole operation, if this investment is associated with inadequate costs, • feasibility of investment (e.g. ensuring at least minimum production capacity) mainly with regard to hygienic requirements, safety risks and other relevant requirements arising from different legislation. This means dividing the implementation into several stages or timing of investment on planned outage within the scope of natural investment cycle; taking into account several dependent investments, • specific character of given production, whereas BAT conclusions do not consider specifics of such production (e.g. medicinal or military purpose) or specific qualitative parameters of local resources, • reaching equal positive effect corresponding to BAT-AEL emission level through less costly provisions to associated operations within the scope of given operation, • recent measures for reduction of emissions of given pollutant, • reaching breaking point of economic lifetime with regard to investments already spent on implementation of BAT in given installation,
<p>Other criteria</p> <p>YES</p> <p>Slovakia reported that when granting derogations, the authorising authority may take account of the socio-economic conditions of the region in which the installation is located, e.g. if the region has a high unemployment rate;</p> <p>Other limitations may be associated with the geographical location of an installation, for example, if it is in an area with controlled air quality or in a protected water management area.</p>
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>Yes</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT?</p> <p>Methodology is standardized for each operator and industry. Ministry of environment have created the specific methodology. Operator fill the tables with internal company data. Mostly economics data (forms is attached) for current situation, after implementing BAT, after implementing other technology to reduce the emissions (revenue, costs - investment, annual accounting depreciation, operating costs divided in separated categories, taxes and fees). Data for the 15 year financial plan is requested, average of the input data is then calculated. If operator include fewer years the Ministry of environment calculated the average of those years.</p>

Methodology is designed specifically for the IED.
<p>Which costs can be considered in the total cost calculation?</p> <p>See earlier response</p>
<p>How are the various costs data compared in the evaluation?</p> <p>The comparison is expressed in terms of key performance indicators.</p>
<p>How are the costs data and calculations validated by the competent authority?</p> <p>Validation of data is not necessary as the calculation is performed by the competent authority.</p>
<p>How is commercial confidentiality protected in the derogation process?</p> <p>All economics information from operator is confidential and in the decision is used just the results of each KPI.</p>
<p>5. Calculation of benefits</p>
<p>Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?</p> <p>Yes</p>
<p>What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?</p> <p>Environmental benefits are considered.</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>Methodology is designed specifically for the IED. Slovak hydro-meteorological institute provides competent authority the data for the operator and competent authority can compare the emission that report SHMU and the submitted data from operator.</p>
<p>Which environmental benefits are considered in determining derogations under Article 15(4)?</p> <p>See earlier response.</p>
<p>Are damage costs of pollutants used in the determination of a request?</p> <p>Yes.</p> <p>The pollutants are determined by the operator or Inspection. The selected pollutant corresponds to the pollutant for which an exemption is requested.</p> <p>Information on costs to reduce environmental pollution by a specific pollutant are taken from document “Costs of air pollution from European industrial facilities 2008–2012”, EEA Technical report No 20/2014. According to this document, there are standardised values that are acceptable from the EC. These costs are acceptable and standard for the given pollutant. If the costs that are defined by the operator are higher than standard costs, operator receives points in the evaluation. If their price to reduce the pollutants is the same or lower, they do not get points.</p>
<p>How are the various benefits compared in the evaluation?</p> <p>The comparison is expressed in terms of key performance indicators.</p>
<p>6. Disproportionality</p>
<p>What methodology is used to assess disproportionality?</p> <p>Ministry of environment defines the value for each KPI. The value for economic and environmental assessment is 50:50 percentage. Each indicator has its specific weight (see following form).</p> <p>According to these calculations the operator get the points for the each KPI (based on the data he had included to the submission form).</p>

Evaluation			
Indicator	Achieved points	Maximum	share of indicator
Finance analyses	-	50	50%
average annual flow - diff	-	10,00	10,0%
average annual costs	-	15,00	15,0%
the average payback period	-	7,50	7,5%
additional investment payback	-	7,50	7,5%
the value of the investment value of the property	0,00	7,50	7,5%
significant investment over the last 5 years	0,00	2,50	2,5%
Environmental analyses	-	50	50%
reduction of pollutants	-	20,00	20,0%
evaluative comparison of changes	-	15,00	15,0%
social benefit – comparison to MDC	-	15,00	15,0%
share of installation on the pollution in the area and country	-	0,00	0,0%
<p>According to the final result, derogation can be recommended/not recommended or individual evaluation can be recommended (see decision key). If individual evaluation is necessary, than all information from the company, region, regional unemployment, local environmental situation, fees for the company, investments for the region provided by the operator, the technical options, etc. is taken into account.</p> <p><u>Decision key:</u></p> <ul style="list-style-type: none"> 0-40 point = derogation not recommended 40-70 points = individual evaluation 70-100 = derogation recommended 			
<p>Is this methodology similar to that used in other policy areas?</p> <p>No</p>			
<p>What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?</p> <ul style="list-style-type: none"> • if the value of the investment is greater than 20% of the property value • if the average payback period is higher than 12 years. 			
<p>Is the uncertainty of cost and benefit calculations addresses in the evaluation?</p> <p>No</p>			
<p>Is the final decision solely based on the net present value calculations?</p> <p>No, but Ministry of environment plan to include to the evaluation process.</p>			
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>Only when final assessment reaches result of 40-70 points. Extent is very individual and dependent on many variables.</p>			
<p>Do you have internal guidance available on how such additional information?</p> <p>No</p>			
<p>7. Number of derogations</p>			
<p>Number of derogations requested</p> <p>10</p>			
<p>Number of derogations granted</p> <p>8</p>			

Sectors/BAT conclusions of the granted derogations

Company Name	Sector	BAT conclusion		
U. S. Steel Košice, s.r.o. - Coke oven	IS	BAT 49	BAT 50	BAT 21
U. S. Steel Košice, s.r.o. - Sinter strand	IS	BAT 20	BAT 25	BAT 26
SMZ, a.s. Jelšava	CLM	BAT 63		
SLOVMAG, a.s. Lubeník	CLM	BAT 63		
Calmit, spol. s r.o. – Plant Žirany	CLM	BAT 48	BAT 50	
Knauf Insulation, s.r.o.	GLS	BAT 59		

Number of derogations rejected: 2

Company Name	Sector	BAT conclusion
Calmit, spol. s r.o. – Plant Tisovec	CLM	BAT 50
Fortischem a.s.	CAK	BAT 1

30. IED Article 15(4) Survey Responses – UK

Colour coding:

- ▶ Black – responses to the online survey
- ▶ Green - Follow-up interview with the competent authority and/or additional information provided under this study
- ▶ Blue - IMPEL survey response
- ▶ Purple – Formal IED reporting obligation

1. General questions
<p>Who is the competent authority responsible for granting derogations?</p> <p>Defra has the overall responsibility for compliance with IED.</p> <p>The Environment Agency (EA) are responsible for derogation activities in England; SEPA (in Scotland), NRW (in Wales) and IPRI (in Northern Ireland).</p> <p>However some installations are regulated by local authorities</p> <p>The regulation of emissions are handled as follows:</p> <ul style="list-style-type: none"> • Group A1 (high emitting) installations – EA • Group A2 and B – Local Authorities <p>Also, the situation is different in Scotland (SEPA covers all installations).</p> <p>It is unclear exactly how local authorities follow the guidance.</p> <p>There is a local authority unit at the EA – to provide them support - with the aim of having consistency with EA processes e.g. guidance on how to use the CBA tool</p>
<p>Has guidance on the procedure for granting derogations been developed? What is the current status of the guidance?</p> <p>Yes. Some aspects are not published - there are others that remain internal only. This is largely due to the government digital policy.</p>
<p>Link to guidance</p> <p>EA – Cost benefit tool and guidance published (https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool)</p> <p>Full step by step guidance advising operators how to apply not yet published.</p> <p>NRW – guidance currently in draft form.</p> <p>SEPA – Details to be provided later.</p> <p>IPRI - use EA guidance.</p>
<p>Does the guidance cover all aspects of decision making on IED Article 15(4) derogations?</p> <p>Guidance covering all aspects</p>
<p>Does the guidance covers derogation criteria, calculation of costs, benefits and/or disproportionality?</p>
<p>(a) “the geographical location or the local environmental conditions of the installation concerned”?</p> <p>PARTIALLY</p> <p>From the guidance document:</p> <p><i>“4.4.2. The geographical location of the installation may have a bearing on costs: for example, construction or energy supply costs may be higher than would normally be encountered if the installation is in a remote location. The local environmental conditions may also influence the costs: for example, there may be added costs if the installation is in a built-up location. Conversely a particularly remote location could mean the environmental benefits of meeting the BAT-AEL would be disproportionate to the costs.”</i></p>
<p>(b) “the technical characteristics of the installation concerned”?</p>

<p>PARTIALLY</p> <p>From the guidance document:</p> <p><i>“4.4.1 Technical characteristics which may be particularly relevant include:</i></p> <ul style="list-style-type: none"> • <i>the general investment cycle for a particular type of installation;</i> • <i>the recent history of pollution control investment in the installation in respect of the pollutant(s) for which the derogation is sought</i> • <i>the configuration of the plant on a given site, making it more technically difficult and costly to comply;</i> • <i>the practicability (particularly bearing in mind Health & Safety and other relevant legal obligations) of interrupting the activity so as to install improved emission control upon the pollutant(s);</i> • <i>the effect of reducing the excess emission(s) upon other pollutant emissions, energy efficiency, water use or waste arisings from the installation as a whole; and;</i> • <i>the intended remaining operational lifetime of the installation as a whole or of the part of it giving rise to the emission of the pollutant(s), where the operator is prepared to commit to a timetable for closure.”</i>
<p>(c) “costs”</p> <p>YES</p> <p>From the guidance document:</p> <p><i>“The extra costs – both capital and operating. It will be for the operator to demonstrate how these extra costs are disproportionate to the environmental benefits they would bring. In doing so, the operator may be encouraged to use such standardised methodologies as the regulator has already established, but both operator and regulator must recognise methodological limitations and be prepared to adapt accordingly, bearing in the mind the need for a robust, documented assessment.”</i></p>
<p>(d) “benefits”</p> <p>PARTIALLY</p>
<p>(e) “disproportionality”</p> <p>YES</p> <p>If the results are close to zero or if the range of NPVs includes zero then the panel is asked to make a subjective judgement on the merits of the application. The economist working on the derogations project emphasises at every panel meeting the fact that the CBA is a guide only and is one of a number of pieces of evidence that the panel need to consider in coming to their decision</p>
<p>2. Derogation procedure</p>
<p>Do you have a formal procedure in place on the derogation process?</p> <p>The EA has a formal procedure but it does not set general timeframes and deadlines. This is because it is not always helpful if we, as a regulator, juggle several derogation requests at the same time and only have limited resources (for example economic expertise) to assess them. We do however set some timescales and deadlines for example, we aim to complete permit reviews within 12 months from the publication of BAT conclusions, we aim to give operators 3 months to provide the information on how they intend to comply with BAT conclusions (or apply for a derogation), and we strive to assess the derogation requests as soon as we can to give operators the certainty they require (subject to the positive outcome from the public participation process). It is important to note that the planned timescales can vary according to the complexity and /or size of the sector.</p> <p>IPRI response: For NI the process for derogations is stated in Regulation 13(3) of the PPC Regulations.</p>
<p>What communication methods are used to disseminate to operators the competent authority procedures and expectations?</p> <ul style="list-style-type: none"> • Information on a website • Information provided on request • Reference to a contact person of the competent authority <p>Some information is available online, some can be shared on request. We have a dedicated person who can answer generic questions on derogations, and also specific people (called sector leads) who act as primary points of contact for individual BREFs. Individual permitting officers involved in sector reviews triggered by the publication of BAT conclusions are also trained to be able to give site-specific advice. Sector leads regularly</p>

engage with their respective industries. We also periodically organise pan-sector engagement sessions. The last one was in December 2016, covered the general approach to derogations in England (but included representatives from regulators in Scotland, Wales and Northern Ireland who were able to give their perspective and also highlight and explain any differences in approach) and several case studies. The session attracted a lot of interest mostly from the energy generating and refineries sectors. The economist working on the derogations has offered one site meeting with each applicant and the EA site inspector to go through their CBA. This gets round company concerns over draft costs data being held by the Environment Agency and therefore potentially subject to release under the Environmental Information Regulations. It is also easier logistically than doing the same thing by phone or email. Applicants can also speak to the economist by phone or through email as they go through the process of filling out their application.

SEPA response: The guidance and methodology will be placed on website when finalised. NRW response: Face to face meetings if derogations are likely.

The most important factor is the quality of operator's submission. Every request for further information slows the process down considerably. Unfortunately, ensuring good quality submissions requires substantial time investments from the operator and the regulator. Internal staff training is critical too to ensure staff can process requests independently, at least to an extent.

In general, 10 months from application submission to minded decision is a standard but can take longer

In case of the Iron and Steel sector, the timescales were long as we were assessing the request for a derogation and developing the derogation process at the same time. In the case of Cement and Lime, we were to a certain extent restricted by the availability of specialist staff to make a recommendation – it was because of the volume of the requests.

The internal 'self-help' group consisting of experienced permitting, regulatory and policy staff as well as economic expert and legal, is critical as it helps officers handling individual derogations throughout the process, acts as a 'critical friend' and helps with the consistency.

How are derogations initiated?

The application is made by the operator.

EA: presumes that all operators will fully implement BAT conclusions. If the operator cannot meet a particular BAT-AEL the onus is on them to apply for a derogation. The process starts by asking operators to provide evidence to demonstrate compliance with the BAT conclusions and to identify those BAT conclusions for which a derogation will be sought. This provides an early opportunity for the regulator to engage with the operator on their derogation needs.

If the operator's response to the Regulation 60 Notice sent by the regulator includes a request for a derogation, it is assessed by the National Permitting Service. As part of the assessment, a Head Office team of experts with appropriate technical, economic and legal experience is established. Each derogation assessment will be presented to a National Derogation Panel made up of senior managers from the legal, environment and business and economist teams.

SEPA response: The competent authority makes an initial determination that a derogation may be warranted before contacting the operator. The merits of derogation are considered after undertaking a site specific BAT assessment.

IPRI response: If the Operator is unable to comply within the 4 year period then a derogation submission would be made.

Wales: Operators requesting a derogation are expected to submit a report detailing the reasons for the derogation and demonstrate compliance with Article 15(4).

Are third-party representations addressed in the derogation evaluation procedure of the Member State?

If the Environment Agency is minded to grant a derogation, it consults the members of the public on the minded to position. The consultation contains the reasons for arriving at the minded to decision. Any responses received as part of the consultation are taken into account in issuing a final decision. If the Environment Agency is minded to refuse a derogation, it doesn't consult the members of the public.

SEPA response: Consultation under Public Participation Directive is a requirement of the Scottish Regulations.

IPRI response: If derogation request received then as part of NIEA substantial variation process both consultees and members of the public will have opportunity for consultation as part of the determination process. If minded to issue a derogation, the revised permit will be placed on the NIEA website for consultation

in-line with the Public Participation Directive.

NRW response: The draft permit including the minded to derogation is consulted on and any comments received taken into account and logged prior to issue.

Time frame for decision

EA response: The procedure does not have a timescale. It is entirely possible to reach a decision within a year, however, it often depends on the quality and timeliness of information received from the operator asking for a derogation. There are also sometimes issues related to the interpretation of individual BAT conclusions that can delay the application process for the operator.

SEPA response: Not stated in the procedure, will depend on the complexity of the case, each completed before the 4 year period for BATc compliance required.

IPRI response: 1-2 years

NRW response: <1 year

A particular problematic sector has been iron and steel – it has taken time for the EA to assess exactly how the derogations for this sector should be evaluated.

Are there governance arrangements in place to help you make consistent decision-making on granting derogations?

EA response: There are two tiers of governance that ensure the consistency and quality of decision making. The first tier is the Derogations and Permit Review Support Group (DAPR), with economic, legal and technical expertise. It supports the permit officer dealing with a derogation application, and endorses or not the proposed derogation before it goes to the second tier. Second tier is National Derogations Panel (NDP), and it formally recommends the approval or not of each derogation request. The Panel recommendation is just that – a recommendation and not a final decision, and as such is subject to the public participation process and other permit sign off controls.

SEPA response: Comprehensive procedure for all sectors and situations.

NI response: An Executive Summary for any derogation request that is to be accepted will be sent for approval to the Chief Executive of the Northern Ireland Environment Agency prior to issue.

NRW response: The sector specialists in NRW carry out the first stage to ensure the information received from the operator is valid. The sector specialists, policy advisor and economist then analyse the request and makes recommendations to lower management tier. The recommendation if approved then moves up the management chain for final sign off.

DAPR – made up of the sector leads from various sectors within the EA; permitting lead; IED lead – permitting officers can ask for their thought processes/drafts to be reviewed.

NDP – made up of senior managers across different functions of the EA – not just industrial emissions – can include other areas where CBA have been developed (e.g. flood defence); chaired by EA deputy director – the permitting officer decisions are reviewed, questions asked – can recommend for publication.

Difficult cases – in some cases, further information can be requested if panel are not convinced.

Do you have a multi-step process for considering derogations?

Yes, there are two steps in the process that the Environment Agency has developed. First step is for the operator to demonstrate how their particular installation is different to other 'typical' sites in the sector, having regard to the criteria listed in Article 15(4), how these differences translate to significant additional costs of achieving a BAT-AEL. At this stage we do not consider potentially reduced benefits that can be a direct result of, for example, remote location or low population density. The second stage only happens if the operator successfully passes the first stage assessment. At the second stage the Environment Agency uses a mixture of qualitative and, where possible, quantitative assessments that compare the costs of achieving a particular BAT-AEL versus environmental benefits. At each step of the process a template is completed by the permitting officer summarising the case and this is reviewed by the DAPR group before the application can progress further. Only when both stages have been reviewed at the DAPR can the application progress to the NDP for approval.

SEPA response: Yes, there is frequent correspondence with operators throughout the assessment process. The operator will only be asked to provide necessary details to fill gaps in the knowledge of the competent authority. The costs are relevant for the BAT assessment.

<p>IPRI response: No</p> <p>NRW response: Yes, the initial screening ensures the request complies with the requirements of Article 15(4). The request is only processed further if there is sufficient information available. The extent of disproportionality also directs the level of detail and sensitivity analysis required.</p>
<p>3. Derogation criteria - How are the following criteria considered in relation to derogation decisions?</p>
<p>Geographical location</p> <p>Details are provided in the Defra guidance on Part A installations (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221044/pb13898-epr-guidance-part-a-130222.pdf)</p> <ul style="list-style-type: none"> • EA response: Equal importance – though in practice probably most difficult to use / prove • SEPA response: Equal importance • IPRI response: Equal importance • NRW response: Lesser importance. It would only be applicable in a very small set of circumstances for instance if the plant relied on local feedstocks alone. This is generally not applicable in Wales.
<p>Local environmental conditions</p> <p>Examples are provided in the Defra guidance on Part A installations (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221044/pb13898-epr-guidance-part-a-130222.pdf)</p> <p>Local Environmental conditions could be the receiving environment. Emissions of solids to a receiving water with a naturally high suspended solids load differs from a river with a small suspended solid load. Thus making the effect of an emission on the environment insignificant in some circumstances.</p>
<p>Technical characteristics</p> <ul style="list-style-type: none"> • EA response: Examples are provided in the Defra guidance on Part A installations (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221044/pb13898-epr-guidance-part-a-130222.pdf) <p>Recent Investment, niche product, knock on effects to other parts of the installation, uses specific raw materials, safety, and investment.</p>
<p>Other criteria</p> <p>EA response: No. Only limitations are in relation to the duration of each derogation. IMPEL (qu8) - EA has assumed that any derogation will be reconsidered when the next BREF and BAT conclusions are published, which is likely to be 8 years after the current BREF and BAT Conclusions.</p> <ul style="list-style-type: none"> • SEPA response: No • PRI response: No • NRW response: Yes. All derogations are time limited to one BREF cycle at the most, a further derogation request would be required following publication of the next BREF.
<p>4. Calculation of costs</p>
<p>Is there a standard methodology used or suggested to calculate the costs of implementing BAT?</p> <p>YES</p>
<p>What methodology is used or suggested to calculate the costs of implementing a BAT? Link to the cost benefit analysis tool and guidance: https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool</p>
<p>Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?</p> <p>YES</p> <p>It was adapted from the H1 risk assessment methodology (Annex K) but had to be significantly developed to be fit for the purpose of assessing derogation requests.</p> <p>IMPEL (qu5)</p> <ul style="list-style-type: none"> • The structure of the new Annex K takes the user through the process of a cost benefit analysis. The old

version was structured to carry out a cost assessment of achieving a given standard without reference to the value of reduced emissions.

- Original version of Annex K was about identifying the most cost effective BAT option. The new version so broadens the scope to include proposals that are not BAT (i.e. IED derogation).
- The new version attempts to place a numerical value against the benefits resulting from a reduction in emissions where available - basis for developing a cost and benefit analysis of each proposal.
- In placing a value on the benefits of a proposal approaches such as damage costs are proposed in both the old and new version, but they are given greater prominence in the new version.
- The monetised benefits are supported by information on the scale of the impact of the emission in relation to EQS, national emissions and other known local impacts
- The new version discounts both the costs and benefits using discounting factors specified by the Treasury in their Green Book, the aim being to produce a ratio of costs to benefits. The new version also considers the sensitivity of the result to factors which may have a particular weighting.
- Discounting in the old version was based on “real” rates of between 6 and 12%. The Treasury’s Green Book uses 3.5% up to 30 years and 3% from year 31 to 75. To account for the fact that the operator’s weighted average cost of capital might be higher than HMT’s GB discount rate, then discounted using HMT’s GB discount rate.
- Following our consultation the life span of plant items is likely to increase in years from that contained in the original Annex K.
- In seeking a derogation the operator has to show that achieving emissions levels consistent with the BAT AEL would result in him incurring disproportionately high costs compared to other installations in his sector. In the old version of Annex K BAT was purely a site specific assessment.
- Cross media effects are considered in the original version of Annex K using the environmental quotient. The new version focuses on the Economics and Cross-Media BREF published by the European Commission in 2006.

Which costs can be considered in the total cost calculation?

- Capital costs: New equipment (abatement / monitoring / IT);
- Capital costs: Set-up/installation costs;
- Operational costs: Costs of operating the new equipment (raw materials / utilities);
- Operational costs: Maintenance costs;
- Operational costs: Time spent (manpower costs) on undertaking the changes needed to comply with the BAT conclusion;
- Operational costs: Training costs for staff to carry out the new activities / techniques;
- Operational costs: Costs of external services (e.g. consulting and verification services);
- Other costs: Costs of production loss due to changes to the installation;
- Other costs: Insurance costs associated with the new equipment;
- Other (please specify): cost of purchasing new land to accommodate the abatement equipment, cost of any civil works, cost of recovery / disposal of any waste generated, residual cost of existing technology (if needs to be retired early), financing costs

For the offshore sector, the regulator requires energy audits to be supported by a cost-benefit analysis for any identified improvements that are considered to be feasible. Costs provided by the operator include replacement or abatement equipment; shipping offshore; requirement for specialised heavy lift equipment offshore; and specialised manpower to install. They also consider technical feasibility in retro-fitting equipment or introducing abatement techniques where space and weight restriction on the platform would apply.

SEPA response: The relevant future costs are discounted to net present value

How are the various costs data compared in the evaluation?

Using present values

How are the costs data and calculations validated by the competent authority?

Environment Agency : Mostly by using previous experience, by comparing all installations within a sector that have asked for a derogation, by using common sense but also by checking any appropriate reference material, for example the Green Book, cost data in section 4 of sector specific BREFs, economics and cross media

BREF. The Environment Agency can also request formal quotes from technology providers but has so far not resorted to asking for formal quotes as obtaining them can be costly as well as time consuming.

SEPA response: We seek evidence that the costs are based on sound principles and assumptions.

NRW response: Technical experts use of data from BREF and Internet sources. An economist also scrutinises the figures if required.

How is commercial confidentiality protected in the derogation process?

The Environment Agency produced separate guidance on how to assess commercial confidentiality for all aspects of environmental permitting. We also have a process specific to derogations that considers the extent to which the information in question is commercially confidential and the public interest in disclosing the information. The information has to be published regardless of commercial confidentiality if it relates to emissions. We consider commercial confidentiality twice: at the point of receiving the derogation request and at the point of making the minded-to decision known to the members of the public.

SEPA response: Included in the Scottish Regulations.

IPRI response: If requested dealt with under Regulation 35 of the Pollution Prevention and Control Regulations

NRW response: The detailed costs are withheld, the level of emissions and the benefit cost ratio are made available.

5. Calculation of benefits

Is there a standard methodology used or suggested to calculate the environmental benefits of implementing BAT?

Yes

What methodology is used or suggested to calculate the environmental benefits of implementing a BAT?

- EA response: Provided in the answer to earlier question
- SEPA response: Have methodology for some pollutants to air and developing methodology for other where not currently feasible to calculate damage costs for example to water.
- NRW response: Damage costs per unit emission.

Was this methodology adapted from a method in existence prior to the IED or was it designed specifically for the IED?

- EA response: It is a standard CBA framework based on the UK Treasury’s Green Book, but with several elements that had to be specially developed for the derogations process, in particular the definition of the baseline.
- SEPA response: Yes, partially adapting existing methodologies
- NRW response: IGCB damage costs

Some key issues taken into account to ‘supplement’ the Green Book:

1) The cost (investment) is private and the benefits are public:

- There is no guidance on how to take this into account in the Green Book
- They take the ‘Spackman’ Approach
https://www.ofcom.org.uk/data/assets/pdf_file/0029/37856/jrg_statement.pdf – includes a weighted average cost of capital – discounts everything at the standard Treasury discount rate.

2) The appraisal period

With no specific guidance in the Green Book, a flexible approach is taken:

- Green Book makes reference to ‘the lifetime of the longest term asset’ when assessing appraisal periods
- However, industrial plants typically will constantly ‘patch up’ their facilities so this is hard to assess
- It is generally assessed from the point of ‘major refurbishment’ – typically 10-30 years
- There is some ambiguity what is meant by ‘major refurbishment’

3) Damage costs

Treasury will only take into account the damage costs that are UK-specific

EEA also provide damage costs for a wider range of pollutants (e.g. VOCs) and will be more relevant as

pollutants emitted from the UK will have an impact in Europe
 EA makes use of these EEA values - generally a direct use of damage costs – converted to current value £
 Only been one case where these damage cost values have caused the CBA to go from one direction to the other

4) The baseline

In most cases the ‘do nothing’ BAU is used as the baseline. This is not really an option in the case of IED derogations (as described in PP case study) because:

- i) The BAU may not be sufficient to meet the IED requirements
- ii) In some cases have started making improvements already (see case study)

Baseline must therefore be assessed on a case-by-case basis for the characteristics of each site.

Which environmental benefits are considered in determining derogations under Article 15(4)?

- Avoided/reduced emissions to air
- Avoided/reduced emissions to water
- Avoided/reduced noise levels
- Avoided/reduced odour levels
- Avoided/reduced waste generation
- Avoided/reduced raw material use
- Avoided/reduced energy use
- Avoided/reduced impact on biodiversity
- Other :
 - EA response: Impact on future ability to comply with other legislation i.e. NECD, Cross media affects, Amenity value
 - SEPA response: Waste, raw materials, energy etc. considered when considering derogation from BAT-AELs.
 - NRW response: Only emissions to air have been determined thus far, however we envisage including a wider range of benefits.

How are the various benefits compared in the evaluation?

- EA response: By using present values.
- SEPA response: By using present values, where damage costs available. The methodology being developed may not include damage costs e.g. for water, and therefore a different method to compare benefits may be required.
- NRW response: Present values

Explanation in context of PP Case Study (see Appendix B)

As discussed with the case study – estimation of benefit costs for water emissions are based on the willingness to pay values for improvements in water quality, assuming an improvement in WFD classifications.

This gives an upper limit of what the damage cost would be (benefits). This is a massive overestimate of what the benefit will be, although this can be communicated to the committee – will take this into account. There has only ever been two cases where derogations take water emission into account (one of the PP case study).

Are damage costs of pollutants used in the determination of a request?

YES

- EA response: UK national average costs for NOx, SOx, PM10, ammonia
- SEPA response: SO₂, NOx, PM, in emissions to air, some others, including to water, are under consideration.
- NRW response: PM_{2.5}, SOx, NOx, NH₃ and VOC

Sources used: IGCB and café

6. Disproportionality

What methodology is used to assess disproportionality?

The disproportionality is assessed, only partially, by using the cost benefit analysis tool. The judgement on disproportionality is made on a case by case basis, taking into account a full consideration of the merits, including evidence on both cost and benefits that can only be assessed qualitatively.

NRW response: Benefit cost ratio

We are careful not to let the CBA ‘tell’ us what the final decision is – we use it as an extremely helpful tool in the ‘basket of measures’ approach. The operator is encouraged to give us as much contextual information as possible. This includes impacts that are difficult to assess quantitatively, for example from noise, odour or cross-media effect. Depending on the context, we might also consider operator’s history of investment, for example if they have invested heavily in resolving another important environmental issue at their installation.

We have also considered in the past things like availability of specialist contractors to do the required work (for example provide and install the abatement). We tend to verify the information by checking with experienced regulatory, permitting and policy staff and also through basic desk research. We place the onus for providing the information, including suitable justification, on the operator.

We also consider wider context for example amenity impacts, size of the local population and its proximity to the installation, history of complaints, fairness to others, especially in the context of other derogations previously granted or rejected.

Is this methodology similar to that used in other policy areas?

EA: Yes, to a point in terms of considering CBA; however the WFD guidance looks at consumers’ willingness to pay for improvements to water body status. There is also some overlap in terms of water-based derogations where the NWEBS data is used, but the CBA framework is quite different in terms of baseline, appraisal period etc.

SEPA response: Yes. It will be in some cases once this part of the methodology is developed.

NRW response: No

What are considered to be “disproportionately higher costs compared to environmental benefits” in respect to the application of Article 15(4) derogations?

EA: Partial answer is provided by the difference in the net present values between costs and benefits. This is however only part of the answer, and provides some useful insight only when the damage costs exist. The rest is judged on a case by case basis.

SEPA response: The monetisation of the costs and benefits have high uncertainty values, therefore sensitivity analysis is important.

NRW response: A benefit cost ratio of less than 0.75

Is the uncertainty of cost and benefit calculations addresses in the evaluation?

This is built into the cost benefit analysis tool. The guidance to the tool also provides additional sensitivity tests that must be carried out if the operator and the regulator can’t agree on a particular cost, benefit or other input into the tool.

Is the final decision solely based on the net present value calculations?

EA response: No. The Environment Agency uses a ‘basket of measures’ approach and will consider other factors in making the final decision. Other factors can include for example:

- The benefits might be overestimated for low population areas.
- The benefits might be underestimated for habitats.
- Operator’s starting point: if they have to make substantially greater investments overall in comparison to other installations in the sector. We try to ensure that those who have failed to invest historically are not advantaged. Otherwise, those that have underinvested will be advantaged as their costs will be greater than those that have invested and the CBA results will be affected accordingly. If we identify that there has been underinvestment we will be able to take this into account when considering the decision in the round.
- The history of complaints
- Consistency with other operators in the sector. The Environment Agency will not take into account affordability (can the operator afford to meet BAT-AEL), effect on employment or local economy.

SEPA response: No. Due to uncertainty, decision is based on a range of aspects and judgement is required.

NRW response: Yes
<p>To what extent is additional information beyond a cost-benefit assessment (CBA) taken into account?</p> <p>EA: It can be as important depending on the extent of information contained in the CBA and the specific circumstances.</p> <p>SEPA response: Before considering a derogation a BAT assessment is undertaken, so all aspects considered at this stage are part of the final decision.</p> <p>NRW response: Providing the other criteria are met then the additional information can be taken into account.</p>
<p>Do you have internal guidance available on how such additional information?</p> <ul style="list-style-type: none"> • EA: Yes but it is very high level and not prescriptive as each derogation case will be different • SEPA response: No • NRW Response: No
<p>7. Number of derogations</p>
<p>Number of derogations requested</p> <p>44</p> <p><i>[note: these refer to individual BAT-AELs, i.e. one operator's request can contain several of the numbers reported here]</i></p>
<p>Number of derogations granted</p> <p>42</p> <p><i>[note: these refer to individual BAT-AELs, i.e. one operator's request can contain several of the numbers reported here]</i></p>
<p>BAT conclusions - granted derogations</p> <p>GLS, IS, CLM, REF, PP</p> <p>NRW response: Iron and Steel: BAT 26, 48 and 49. Refining of Oil and gas: BAT 52</p>
<p>Number of derogations rejected</p> <p>4 - GLS, IS, CLM</p> <p>NRW response: Manufacture of Glass: BAT 59, Cement and Lime: BAT 20</p>





Appendix B

Member State Derogation Case Studies



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European Commission Directorate-General Environment

Application of IED Article 15(4) derogations

Appendix B – Member State case studies



March 2018

Amec Foster Wheeler Environment
& Infrastructure UK Limited



Report for

European Commission
Directorate-General Environment
Directorate C – Quality of Life
Unit ENV C.4 – Industrial emissions & Safety
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Doc Ref. 39465

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Document revisions

No.	Details	Date
1	Draft final report	
2	Final report	13/03/2018



Appendix B

Member State case studies

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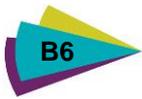


1. Introduction

Appendix B provides the list of questions on the IED Article 15(4) derogation case studies and the detailed information of the selected derogation case studies.

The following derogation case studies are described in the sections below:

Member State (region)	GLS BATC	IS BATC	CLM BATC	REF BATC	PP BATC
BE (Flanders)				BAT 52	
CZ	BAT 17/18				
ES (Catalonia)	BAT 17/18				
FR				BAT 52	
IT	BAT 16, 17, 18, 19, 20				
PL			BAT 17, 21		
SE	BAT 63 (rejected)	BAT 56			
SK			BAT 50 (rejected)		
UK (England)					BAT 40/50
UK (Wales)		BAT 48/49 (26)			



2. Questions for Data Collection on IED Article 15(4) Derogation Case Studies

1. Case study details
Company name
Company website
Description of company and process (main process, products)
Year of first operation
Location
Capacity
BAT conclusion and BAT-AEL for which derogation was requested
2. Initiation of derogation
Was the company involved in the BREF process (either directly or via trade associations)? If so, how?
Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request?
3. Application for derogation
Date of application
Description of the derogation request / background info / rationale for request
Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.
Arguments used by the operator for requesting derogation?
Data and calculations used in the application to justify request: Costs: <ul style="list-style-type: none">▶ Type of costs used in application (operational, capital, other - specify)▶ Source of cost data▶ Calculations of costs Benefits: <ul style="list-style-type: none">▶ Type of benefits used in the application▶ Source of data▶ Calculations of benefits
Statement on disproportionality in the application? If so, what and how is this calculated?
Were any aspects of the information provided not in line with the MS guidance, if any?
4. Evaluation of derogation request
How are the data and calculations validated?
Did the CA perform any research or consultation for additional data sources? If so, please specify.
Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.
How was disproportionality assessed? (calculations and thresholds)
How many iterations / contacts between operator and CA took place during the evaluation



Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.
Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.
Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.
Were any aspects of the evaluation process not in line with the MS guidance, if any?
5. Derogation decision
Date of the decision
Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)
How was the decision communicated to the operator?
Has the decision been published online?
Where can the permit and application decision be accessed (please provide a link to the documents)?
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.
6. Further information
Documents available (applications, evaluation, decisions)?

3. Derogation Case Study – BE (Flanders)

1. Case study details: REF- BAT 52
<p>Company name ExxonMobil Petroleum & Chemical</p>
<p>Company website http://www.exxonmobil.be/en-be/company/locations/belgium/antwerp-refinery</p>
<p>Description of company and process (main process, products) The company produces a range of fuels (LPG, petrol, naphtha, kerosene, diesel oil, domestic fuel oil, light and heavy gasoil), raw materials for the chemical sector, solvents and bitumen.</p>
<p>Year of first operation 1953 (information from permit)</p>
<p>Location Polderdijkweg z/n, Haven 447, 2030 Antwerpen</p>
<p>Capacity Annual production: 20 million tonnes</p>
<p>BAT conclusion and BAT-AEL for which derogation was requested BAT 52 of the REF BATC (BAT-AEL for NMVOC and benzene)</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? The CA is not aware of any involvement.</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Before the BAT conclusions are transposed in VLAREM III, the government invites trade association for opinion (and in this case of limited installations also from the individual installations). After publication of the BAT conclusions, the permit of every installation is re-evaluated within 2 years of publication of the BAT conclusions. At that time it was already flagged by the CA that BAT 52 could be an issue for the installation. Then there are two options, i.e. complying with the BAT conclusion or a request for an Article 15(4) derogation.</p>
3. Application for derogation
<p>Date of application 20 September 2016 (receptive 17/10/2016). There was no interaction between CA and operator at application stage (immediately receptive).</p>
<p>Description of the derogation request / background info / rationale for request It concerned 1 request related to 2 derogations (one for loading of trucks/trains and one for loading of ships). BAT-AELs related to NMVOC and benzene (BAT 52 of the REF BATC).</p>
<p>Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria. Technical characteristics</p>
<p>Arguments used by the operator for requesting derogation? Relatively little attention or focus was made on the criteria for justifying a derogation. The focus of the application was on the CBA in the request.</p>

Data and calculations used in the application to justify request:

Costs:

- ▶ **Type of costs used in application (operational, capital, other - specify)**
- ▶ **Source of cost data**
- ▶ **Calculations of costs**

It involved 2 different projects, i.e. one for loading of trucks/trains (need for a new VRU) and one for loading of ships (need for pipelines to existing VRU). The ELVs and techniques are already applied in the installation, but to other activities, i.e. not to the activities covered by BAT 52. The scope of the BAT 52 is now broader and includes more activities/products.

The data used by the operator in the request are mainly costs of pipelines, scaffolding and VRU from (technology) providers. Sometimes rather old information (in case of old NEC) is used.

Benefits:

- ▶ **Type of benefits used in the application**
- ▶ **Source of data**
- ▶ **Calculations of benefits**

The information from the NEC reduction programme (cost effectiveness criteria), shadow prices from VITO report

(https://emis.vito.be/sites/emis.vito.be/files/pages/1142/2017/Leidraad%20BBT%20op%20bedrijfsniveau_d_efinitief.pdf) are used.

The CA indicated that although the CBA might indeed indicate that costs are disproportionally higher, the technical characteristics of the installation seem to be similar to a standard refinery (and hence should comply with BAT conclusions). CBA for pipelines outcome lower than for new VRU (lower volumes).

Disproportionality: cost-effectiveness calculated for:

- ▶ loading of ships: 29 euro/kg VOCs;
- ▶ loading of trucks: 10.3 euro/kg VOCs.

Cost-effectiveness criteria from the NECD: below 5 euro/kg suggests applying the technique, if the value is higher it is not suggested to apply the technique.

Statement on disproportionality in the application? If so, what and how is this calculated?

NECD cost-effectiveness criteria were used, see above.

Were any aspects of the information provided not in line with the MS guidance, if any?

No, but a lot of focus was made on the cost-effectiveness (less on the criteria for justification).

4. Evaluation of derogation request

How are the data and calculations validated?

This is considered the most difficult part for the CA. The CA has to rely on the input provided by the operator (e.g. data provided on costs from technology provides). The CA does not have the resources to search for new data.

Did the CA perform any research or consultation for additional data sources? If so, please specify.

No

Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.

Some interactions between CA and operator took place during the evaluation: explanation of data, alternatives, etc.

How was disproportionality assessed? (calculations and thresholds)

Reference to NECD cost-effectiveness criteria in the request

How many iterations / contacts between operator and CA took place during the evaluation

Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.

- Only information provided by operator in the request.

<ul style="list-style-type: none"> • Advice was provided by three CAs: <ul style="list-style-type: none"> ○ VMM (focus on water) ○ LNE lucht (air) ○ LNE Milieuvergunningen (environmental permits)
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>11 April 2017</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Derogation was granted – see decision document (Ministerial Decree)</p> <p>The conclusions was that there is no need for the installation to apply techniques from BAT 52 (and hence BAT-AEL, as these refer to the technique). Specifically for VOC it is also difficult to apply other techniques.</p> <p>A similar condition already existed, but the scope of the BAT conclusion was broader and therefore more activities had to comply with the conclusion. For the two parts, i.e. loading of trucks/trains and loading of ships, a derogation was granted.</p>
<p>How was the decision communicated to the operator?</p> <p>Ministerial Decree</p>
<p>Has the decision been published online?</p> <p>Not yet, but will be published online via geopunt: http://www.geopunt.be/</p>
<p>Where can the permit and application decision be accessed (please provide a link to the documents)?</p> <p>See above, permit also available via geopunt</p>
<p>Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.</p> <p>Derogation is granted for 7 years.</p> <p>A new CBA is requested after 5 years</p>
<p>6. Further information</p>
<p>Documents available (applications, evaluation, decisions)?</p> <p>The request might be available at community level</p> <p>Ministerial Decree – specifies whether the advice from the different CAs was favourable or unfavourable.</p> <p>The details of the advice from different CAs (VMM, LNE (lucht & milieuvergunningen) can be requested, but is not publicly available online</p>

4. Derogation Case Study – CZ

1. Case study details: GLS – BAT 17/18
<p>Company name SKLÁRNÝ MORAVIA a. s.</p>
<p>Company website https://www.skloravie.cz/</p>
<p>Description of company and process (main process, products) Glassworks Moravia, residing in Úsobrno, is a traditional manufacturer and dealer of packing glass: liqueur and wine bottles, bottles for food products, laboratory glass (reagent bottles, powder bottles, dropping bottles, burette bottles), cosmetic bottles.</p> <p>All products in transparent, brown and black glass colour, with a capacity ranging from 50 ml to 2000 ml, with maximum height of 340 mm. Specialization in producing bottles and glasses that are custom shaped according to customer's requirements.</p> <p>Technical parameters:</p> <p>Melting aggregate No. 1 - transverse flame with oxygen boosting. The melting part is equipped with 9 whirling burners with a total output of 3 150 kW and 2 oxygen burners of 600 kW. Melting temperature max. 1 460°C. The combustion air is preheated in the steel heat exchanger, the preheating temperature is up to 560°C. The melting part is connected to the working part and the feeder heated by natural gas.</p> <p>Melting aggregate No. 3 - transverse flame with electric boosting. The melting part is equipped with 14 whirling burners with a total output of 4 700 kW and 12 electrodes with a power input of 700 kW. Melting temperature max. 1 425°C. Two recuperators are used to preheat the combustion air, the preheating temperature is up to 560°C. The melting part is connected to the working part A and B connected with 1 burner and gas-heated feeders.</p>
<p>Year of first operation The beginning of the glassworks dates back to 1827, but according to legal classification the operation dates from 2002.</p>
<p>Location Úsobrno 79, 679 39 Úsobrno, Czech Republic</p>
<p>Capacity Two glass melting aggregates:</p> <ul style="list-style-type: none"> • No. 1: 18 t of glass melts / day • No. 3: 48 t of glass melts / day
<p>BAT conclusion and BAT-AEL for which derogation was requested GLS BATC - BAT 17 and BAT 18</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? No</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Yes</p>
3. Application for derogation
<p>Date of application 20-01-2016</p>

Description of the derogation request / background info / rationale for request

Application for derogation was initiated by operator. Derogation request was part of the application for the permit change. Content of application was in line with national legislation requirements.

Existing melting furnaces are technically designed so that there is no economical equipment that would be able to guarantee compliance with the BAT limits, and installation of the NOx emission reduction technology would mean disproportionate investment.

In the expert assessment, the operator proposed the technical solution necessary to achieve the emission level associated with the best available techniques. This solution is based on installation of new melting furnaces in the following years (one will be installed in 2018 and the other in 2021).

Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.

Technical characteristics of the installation.

Arguments used by the operator for requesting derogation?

If the operator would bring installation into compliance with BAT-AELs, he would have to invest several million CZK in the NOx reduction technology. According to the information obtained, the costs of the denitrification equipment range between 30-40% of the cost of new melting furnace.

It would not be possible to use this emission abatement equipment with the planned new furnaces due to the small melting capacities of the current furnaces and higher capacity of new furnaces (each 60 t/day). If the operator would have to build a denitrification for both existing furnaces, it would interfere with the planned construction of the new furnace in 2018. One furnace would be shut down and the whole facility would therefore not be fully utilised. Then the undersized or over-sized device may not work reliably.

Currently there is no information on the amount of exhaust gas from the new melting furnaces. Since the furnace design and the burner system are different from the current furnace system, it is possible that the NOx emission from the new aggregates will ensure that BAT-AELs will be achieved. This would make the expected investment in denitrification of existing melting aggregates uneconomic.

Data and calculations used in the application to justify request

Costs:

- ▶ Type of costs used in application (operational, capital, other - specify)
- ▶ Source of cost data
- ▶ Calculations of costs

Benefits:

- ▶ Type of benefits used in the application
- ▶ Source of data
- ▶ Calculations of benefits

All data was in accordance with the methodology. Exact calculations are not available (confidential).

The overview of the documents submitted is as follows:

- 1) Application for permit change including application for derogation from the BAT-AELs (for the NOx levels), prepared by SKLÁRNÝ MORAVIA, dated 20 January 2016.
- 2) Expert assessment to grant derogation from the BAT-AELs, prepared by SKLÁRNÝ MORAVIA.
- 3) Economic Assessment for achievement of BAT-AELs, prepared by SKLÁRNÝ MORAVIA, joint stock company, dated 25 January 2016.
- 4) Economic calculations (appendix to economic assessment of achievement of BAT-AELs)
 - all type of cost items are quantified (see cost structure in methodology summary)
 - benefits are not expressed
 - calculation are made according to the formula given in the methodology
- 5) Assessment of the of glass manufactory operation effect on air quality - contribution dispersion study, prepared by Bucek s.r.o., January 2016
- 6) Evaluation of parameters in line with the BAT conclusions, Chapter 5.1.5 Emission level associated with

best available techniques for discharging wastewater from glass production into surface water, December 2012.
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>No</p>
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>No</p>
<p>4. Evaluation of derogation request</p>
<p>How are the data and calculations validated?</p> <p>Assessment was made by authorised person according to national legislation.</p> <p>Statement of the expert body:</p> <p><i>"The operator has submitted an application for derogation (application for permit change No. 9). Related documentation and background materials were elaborated within all requirements. After assessing the technical, economic and environmental aspects the application is considered to be founded.</i></p> <p><i>On the basis of the request of the Regional Authority of the South Moravian Region, (No. JMK 26803/2016, dated 22.02.2016), which we received on 26.02.2016, we have assessed the request for the 9th permit change for installation (Glass melting furnace No. 1 and No 3) submitted by Sklářny Moravia, a. s.</i></p> <p><i>We state that on the basis of submitted documents the derogation can be granted."</i></p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>The documents were reviewed and there was no need to make any amendments.</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>No</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>Calculations and thresholds for disproportionality are not expressed (assessment on the basis of 2 scenario comparison from the cost and impact on the environment point of view).</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Approximately 10 times throughout permitting procedure.</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>No</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>30-06-2016</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>A derogation from the NO_x emission levels is granted until 31.12.2021.</p> <p>The emission limit for NO_x is set at 1 200 mg/m³ (2 400 mg/m³ when nitrates are used in very high quality products manufacturing).</p>



After expiration of the period covered by the granted derogation, operator has to meet limit values in accordance with BAT conclusions.
How was the decision communicated to the operator? The decision was sent in accordance with national legislation.
Has the decision been published online? Yes
Where can the permit and application decision be accessed (please provide a link to the documents)? http://www.mzp.cz/ipcc/ipcc4.nsf/\$pid/MZPMNGWABTJE
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. Yes, continuously.
6. Further information
Documents available (applications, evaluations, decisions)? Decision in Czech language is available, summary from these documents is presented in the appropriate parts of this questionnaire. Application and financial statement analysis is the property of the operator and contains sensitive data, the competent authority cannot pass the documents for inspection without the operator's consent.

5. Derogation Case Study – ES (Catalonia)

1. Case study details: GLS – BAT 17/18	
Company name	The decision has not been made publicly available yet and the information on the company has not been provided by the competent authority.
Company website	N/A (See above)
Description of company and process (main process, products)	The company produces container glass. It has requested a derogation for its melting furnace.
Year of first operation	N/A, see above.
Location	N/A, see above.
Capacity	N/A, see above
BAT conclusion and BAT-AEL for which derogation was requested	GLS BATC - BAT 17 and 18 for melting furnace.
2. Initiation of derogation	
Was the company involved in the BREF process (either directly or via trade associations)? If so, how?	No
Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request?	Unknown
3. Application for derogation	
Date of application	Unknown, see above.
Description of the derogation request / background info / rationale for request	<p>An operator has requested to set emission limits deviating from BAT-AELs for a certain period until the technical / operational measures reach the required level according to BAT.</p> <p>The request for derogation describes the primary and secondary measures that may reduce NOx emissions. These include:</p> <p>Primary:</p> <ul style="list-style-type: none"> • Different choice of fuel: The operator cannot apply this due to technical reasons. Current furnaces are designed to use natural gas and it would not be practical to adapt them to a different fuel. • Reduction of combustion temperature: Not considered applicable because furnaces would be more efficient, which would imply a potentially lower concentration but probably higher absolute emissions (in tonnes). • Waste gas recirculation: Not technically applicable to the furnaces used in the installation. • Low NOx burners: It requires making substantial changes and it needs the furnace to shut down. It was not possible to install it in the last periodic shutdown of the furnace. However, it is possible technically. • Electrical fusion: It requires a complete refurbishment of the furnace. It is possible. • Special design: If the design of the furnace is changed, the furnace would have to be refurbished completely. It would not be practical to do this due to space constraints and other technical reasons. However, it is possible in theory.

- Electric melting (converting it to an electric furnace): It would require the complete rebuild of the furnace but it is possible technically.
- Oxy-fired melting: Possible in principle.

Secondary:

- SCR: Possible in principle.
- SNCR: It would be technically challenging for the type of furnace used.

The following options were considered to be technically viable:

- Low NOx burners
- Modification of the design
- Electric melting.
- Oxy-combustion
- SCR.

According to the operator, a change to the design would need a complete rebuild of the furnace. Due to the lack of space, that would mean upgrading the whole building with a cost of approx. €6m, according to quotes requested by the operator to technology providers and construction companies.

The electric combustion or the oxy-combustion would require an investment of between €5.9m and €6.3m.

A SCR system would require an investment between €0.966m and €1.461m with operational costs between €86,325 and €92,080 per year. These costs do not take into account the additional investment of installing a sour gas scrubber or the necessary changes to the installation, as the SCR equipment requires space.

The operator requested the competent authority to accept its proposal:

There is a scheduled rebuild and refurbishment of the furnace for 2019. The operator intends to apply the necessary changes to meet the NOx BAT-AELs as part of these works. These modifications consist of:

- Optimisation of the design
- Reduction of the number of burners and optimisation of their location
- Design of a new doghouse.
- Study the feasibility of increasing the height of the structure. This has to be confirmed.
- Installation of low-NOx burners
- Installation of systems that control the amount of gas used in each burner.
- Electric boosting
- Reverse system for residual gases
- New system to control the furnace parameters

The operator stated that the current furnace was rebuilt in 2011 and that the estimated lifetime is up to 2019. The furnace had to be repaired in 2015. The total costs of this were €1.6m, to be amortised in the 8 years of lifetime of the furnace. The additional costs of the changes outlined above would mean that the company would make losses for four years, taking into account its balance sheet. Also, it would require a complete shutdown for a number of months, which would be an advantage for the operator's competitors.

Given the economic analysis outlined above, the operator discards the oxy-combustion, electric combustion or design change outlined as possible options, as they would compromise the viability of the installation. SCR could be possible, but the cost would be very similar to the upgrade proposed by the company for 2019 but with much higher operational costs. Moreover, SCR is associated with ammonia slip and the production of hazardous waste.

The operator estimated the damage costs of having an ELV of 1,200 mg/Nm³ instead of 1,000 mg/Nm³ or lower considering the damage cost functions for NOx for Spain from an EEA report. If compared to the costs, the balance is that costs are higher between €25,573 and €59,147 per year.

The competent authority understands this and concluded that as long as the proposed works are undertaken in 2019 and as long as air quality monitoring is suitable in the area, the operator could have this derogation until 31 December 2019.

Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.

Technical characteristics of the installation.

Arguments used by the operator for requesting derogation?

<p>The options that are technically feasible would either compromise the viability of the business or be disproportionate for the environmental benefits obtained, also considering that the operator intends to rebuild the furnace completely in 2019, which will include the necessary upgrades to be able to comply with the BAT-AEL.</p> <p>The operator justified the costs using quotes from technology providers and construction companies. The damage costs were estimated using the damage cost function for NOx in Spain in a report from the EEA. The arguments used by the operator were deemed adequate.</p>
<p>Data and calculations used in the application to justify request</p> <p>See above. There is no detailed information in the document provided by the competent authority.</p>
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>Yes.</p> <p>It is stated and the costs are provided but there is no explanation on how it is deemed disproportionate. The guidance drafted by the Regional Government was used.</p>
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>No</p>
<p>4. Evaluation of derogation request</p>
<p>How are the data and calculations validated?</p> <p>Assessment was made by the expert group in charge of assessing all derogation requests. This organism evaluates and passes all the resolutions and modifications related to environmental permits. This organism is formed by all the competent authorities and is chaired by the Director-General for environmental quality. Its functions and rules are set out in Catalonian transposition of the IPPCD (when the IED came into force replacing 7 Directives).</p> <p>The operator included real costs from either a refurbishment undertaken in 2011 or real quotes from technology providers and construction companies. The damage cost functions used are publicly available. The tonnes reduced per year (potentially) were calculated using the ELV of the BAT-AEL as opposed to the ELV requested, and data on the normal annual activity of the company.</p> <p>The operator compromised to conduct the necessary changes during the programmed rebuild that is intended for 2019.</p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>No</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Unknown</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>See above. The thresholds do not appear in the information provided by the competent authority.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Unknown</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>Unknown</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>Unknown</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>



5. Derogation decision
Date of the decision September 2017, but not publicly available yet. The official date may therefore be set at a different date.
Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions) A derogation on BAT 17/18 (NOx) was granted until 31 December 2019 provided that the local environment is not affected and provided that the operator undertakes the rebuild programmed for 2019.
How was the decision communicated to the operator? A copy of the decision is usually sent to the operator, but it is unknown how it was done this time.
Has the decision been published online? No
Where can the permit and application decision be accessed (please provide a link to the documents)? N/A
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. These are expected, as it is stated that the refurbishment proposed by the operator has to be completed.
6. Further information
Documents available (applications, evaluations, decisions)? The competent authority provided part of the final decision by email. The information is anonymised.

6. Derogation Case Study – FR

1. Case study details: REF – BAT 52
Company name: ESSO Raffinage SAS
Company web site: http://corporate.esso.fr/fr-fr/notre-groupe/nos-sites-industriels/la-plateforme-de-gravenchon
Description of company and process (main process, products): The Gravenchon refinery manufactures a wide range of petroleum products: gas, gasoline, kerosene and gas oil, heavy fuel oil and domestic fuel oil. It also manufactures base oils for lubricants. All these products are then marketed by Esso in various distribution networks.
Year of first operation: 1931
Location: Port-Jérôme-sur-Seine, France (76)
Capacity: 12 millions tonnes/year
BAT conclusion and BAT-AEL for which derogation was requested: REF BATC - BAT 52
2. Initiation of derogation
Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Yes, ESSO is a member of UFIP and UIC.
Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Yes, during the publication of REF BATC.
3. Application for derogation
Date of application: End of 2015, with supplements provided in March 2016.
Description of the derogation request / background info / rationale for request
Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria. In accordance with the provisions of Article R515-68 of the Environmental Code, the operator has requested to benefit from the derogation provided for in article R515-68 of the Environment Code for the recovery of vapours for the loading of dust, gasoline at wharves (BAT 52). The arguments put forward by the operator to justify the request for exemption are as follows: <ul style="list-style-type: none"> • Historical (merging of two sites) to justify the number and distance of wharves: technical characteristics • Tidal constraint to justify the impossibility of operating only with a single wharf and the need to work with larger filling rates: geographical location • Gasoline market until now turned towards the USA thus exporting a large volume of gasoline: local context
Arguments used by the operator for requesting derogation? See above.
Data and calculations used in the application to justify request:
Costs:

<ul style="list-style-type: none"> Type of costs used in application (operational, capital, other – specify): Presentation of the methodology and skills used to study the costs. Only investment costs (labour, material costs, engineering works, studies) are presented, operating costs of 4% of the investment costs (CONCAWE report). Source of cost data: Internal tool from Exxon Mobil, and budgetary information from the supplier, REX Calculations of costs: 22,825,000 € <p>Benefits:</p> <ul style="list-style-type: none"> Type of benefits used in the application: Reduction of VOC emissions during ship loading. Source of data: Exxon Mobil experts. Calculations of benefits: 260 tonnes of VOC/year, among which approx. 1.9 tonnes of benzene/year.
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>Disproportionate costs to the environmental benefit (per tonne of VOC avoided): the operator estimated a cost / effectiveness ratio of 6,600 € / t VOC or 4 000 € / t, i.e. 5 and 3 times higher than the acceptable cost from the ECM BREF (Annex 12).</p>
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>No</p>
<p>4. Evaluation of derogation request</p>
<p>How are the data and calculations validated?</p> <p>By comparing with other sites and using some cost data in the REF BREF (paragraph 4.23.6.2)</p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>Yes, in particular in the ECM document, but very little data was available and these were old and without information on the methodology used to determine. Furthermore, these data do not differentiate between VOCs and benzene and only relate to the costs of environmental damage, not the abatement costs.</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Yes, additional information was received in March 2016.</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>Comparison of cost / effectiveness ratios with ECM values and comparison with other similar sites. Investments (€ 23 million) and associated indirect costs (€ 3.6 million / year) for the establishment of a VRU for the refinery would be disproportionate to the environmental gain (260 tonnes of VOC per year for about 2 million m³ loaded).</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Bi-monthly meetings were held between DREAL and the operator during the second review, a letter requesting supplements was also sent to the operator on 26 February 2016.</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>The operator indicated that the VOC emissions associated with the loading operations of vessels without VRU do not introduce health risks for the surrounding populations.</p> <p>The operator also indicated that an action program was under way to reduce VOC emissions from storage tanks from 2020. Thus, it proposes in an alternative solution an annual compensation of 100 tons of VOCs for the non-implementation of the VRU.</p> <p>Moreover, the impact of the phasing out from Diesel of the French car fleet by 2028 will lead to a significant reduction in French gasoline exports from 2.6 to 1.2 MT and thus a similar reduction in exports of gasoline Esso refinery and emissions.</p> <p>Finally, the operator aims to go below the threshold of one million cubic meters of volatile liquid hydrocarbons loaded by ship by the next review of the BREF.</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>No, the evaluation was made on the basis of the information supplied by the operator, the available information</p>



and the comparison of sites.
Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify. Yes, the company was involved through the UFIP but did not submit a questionnaire during the review of the REF BREF.
Were any aspects of the evaluation process not in line with the MS guidance, if any? No
5. Derogation decision
Date of the decision: 5th of January 2017
Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions): The derogation was granted by laying down the following requirement: "During this period, their emissions of volatile organic compounds must not exceed 270 tonnes per year on average over a period of 6 rolling years and in any case must not exceed 300 tonnes per year. Benzene emissions shall not exceed 2.3 tonnes per year on average over a rolling six-year period and in any event shall not exceed 2.5 tonnes per year. "
How was the decision communicated to the operator? A copy of the prefectural order was sent to the operator.
Has the decision been published online? Ongoing.
Where can the permit and application decision be accessed (please provide a link to the documents)? Consultable at the town hall of the site and the prefecture of Seine-Maritime. Or online: http://www.installationsclassees.developpement-durable.gouv.fr/
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. Not before the next re-examination of the permit
6. Further information
Documents available (applications, evaluations, decisions)? Yes, the re-examined file including the claim for exemption was subject to public consultation. The report of the Inspection used to take the prefectural order, as well as the prefectural decree, will soon be available on the internet.

7. Derogation Case Study – IT

1. Case study details: GLS – BAT 16,17,19,20
<p>Company name AGC Flat Glass Italia Srl</p>
<p>Company website www.agc-glass.eu/en</p>
<p>Description of company and process (main process, products) AGC Glass Europe is the European glass branch of AGC (Japan), the world leader in flat glass. AGC Glass Europe produces, processes and markets flat glass for the construction industry (external glazing and interior decoration), car manufacture and solar power applications. It has over 100 sites throughout Europe, from Spain to Russia, and employs around 16,000 employees.</p> <p>The AGC Cuneo plant entered service in 1963 and is now the largest glass manufacturing plant supplying the construction industry in Italy. It has one float glass line, together with downstream facilities for processing the float glass into laminated glass, mirror glass, coated glass and matt glass. It produces two types of float glass with different thicknesses:</p> <ul style="list-style-type: none"> • from 2 to 6 mm, mainly for the plant's own processing units; and • from 8 to 25 mm, for the particular requirements of the furniture and interior decoration industries. These products include the blue-tinted "Linea Azzurra," much appreciated by designers. <p>At the end of 2015 the plant employed around 220 people.</p>
<p>Year of first operation 1963</p>
<p>Location Cuneo (Piedmont Region, Italy)</p>
<p>Capacity Flat glass production: 600 t/day Flat glass processing:</p> <ul style="list-style-type: none"> • Mirror glass: 2.500.000 m²/year • Laminated glass: 3.000.000 m²/year • Coated glass: 4.500.000 m²/year • Matt glass: 500.000 m²/year
<p>BAT conclusion and BAT-AEL for which derogation was requested GLS BATC:</p> <ul style="list-style-type: none"> • BAT 16 (dust emissions from melting furnaces) • BAT 17 (NO_x emissions from the melting furnace) • BAT 19 (SO_x emissions from the melting furnace) • BAT 20 (HCl and HF emissions from the melting furnace)
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Yes, through Glass for Europe trade association. AGC Glass Europe is a member of Glass for Europe.</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Four meetings ("Conferenza di Servizi") took place between the operator and the CA after the operator had submitted its request to the CA for granting the necessary renewal of its AIA permit (Autorizzazione Integrata Ambientale / Integrated Environmental Permit) linked to the manufacture of glass, including the production of</p>

glass fibres, with a melting capacity of more than 20 mg/day.

(Date of the four meetings: 23 July 2013; 28 November 2013; 16 December 2014; 29 May 2015)

During such meetings, the CA raised issues and requested clarification to the operator about several points, including the operator's request for a derogation to the application of specific BAT-AELs.

According to the minutes of the meeting held on 16 December 2014, the CA requested the operator to provide several clarifications and integrating data and information linked to the operators request for derogation, including:

- The cost-benefit analysis presented by the operator (ExternE methodology) states that the only way to respect the BAT-AELs is to substitute the existing furnace, and that this substitution could be only possible in 2021-2022.
- CA - based on the technical report submitted by the operator - notices that the present emission abatement equipment could make it possible to respect the BAT-AELs. Therefore, CA requested the operator to review its cost-benefit analysis by taking into consideration additional factors, such as:
 - Assess the consequences for the impacted area and population in terms of air quality if the derogation would be granted;
 - Compare healthcare costs and foreseen increase in management costs between 2016 and 2021-2022;
 - Pinpoint the underlying criterion, or criteria, within the 'Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014) as ground for the request for derogation, and submit any relevant, supporting financial data.
 - Indicate how many times the electrofilters should be interrupted for maintenance in order to keep the dust emission concentrations below 20 mg/Nm³.

3. Application for derogation

Date of application

The operator submitted to the CA the request for granting the necessary renewal of its AIA permit (Autorizzazione Integrata Ambientale / Integrated Environmental Permit) linked to the manufacture of glass, including the production of glass fibres, with a melting capacity of more than 20 mg/day, on 28 May 2013.

Description of the derogation request / background info / rationale for request

The operator, based on the performed cost-benefit analysis, considered the substitution of its float-glass furnace to be the only way to comply with the limits provided by the BAT-AELs. The multi-annual financial plan of the AGC Group did not foresee the substitution of the float-glass furnace in the short term, but only after 2021-2022.

Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.

Technical characteristics

Arguments used by the operator for requesting derogation?

The operator highlighted the following criterion set forth 'Annex XII-bis to Part II' to the Italian IED transposition Decree (Legislative Decree n. 46/2014) to justify his request:

b) the achievement of ELVs within the BAT-AEL ranges does not guarantee, compared to the environmental performances ensured according to the permit conditions being defined, any significant positive effect for the environment in which the industrial activity is taking place while, on the other hand, it requires a considerable investment by the operator concerned;

The operator claimed that, given the current plant design (.i.e. without the possibility of substituting the furnace), it would be possible to achieve compliance with BAT AEL levels only for limited periods and under certain operating conditions of the furnace which, in turn, would lead to reduced emissions. The latter would not be always possible to maintain over time due to oven instability and due to the need to search for optimal settings, aimed at reducing energy consumption and ensuring the quality of the glass produced.

To achieve the BAT-AELs, the operator claimed that maintenance of the furnace should be increased from one to three interruptions of 21 days each; the timing of each interruption includes the time necessary for interrupting and restarting the abatement facilities. This scenario would lead to an increase in the running costs

for the plant.

Considering the scenario in which the plant would be able to achieve the BAT-AELs, and comparing this scenario to the current situation, the increase in the interruptions necessary for the furnace's maintenance would lead to a reduction of about 55 t/y of NO_x and to an increase of dust emissions from melting furnaces of about 7 t/y of dust. This scenario would apply to each of the remaining years of the current furnace's operation (assumed until 2021-2022).

The operator concluded that, in case the plant needs to comply with the BAT-AELs, the cost-benefit analysis shows how in the period 2016 -2021/2022 the management costs will always be considerably higher than the healthcare costs (i.e. the lost benefit).

Specific BAT-AELs derogation requested by the operator:

BAT Conclusion	BAT AEL	Derogation requested by operator
BAT 16 (dust emissions from melting furnaces)	10-20 mg/Nm ³ daily	30 mg/Nm ³ daily (until new furnace is installed)
BAT 17 (NO _x emissions from the melting furnace)	400-700 mg/Nm ³ daily	1000 mg/Nm ³ daily (until new furnace is installed)
BAT 19 (SO _x emissions from the melting furnace)	200 mg/Nm ³ hourly	Only for the mass flow limit equal to 0.64 kg/hour (obtained by considering the concentration limit of the BAT AEL)
BAT 20 (HCl and HF emissions from the melting furnace)	10-25 mg/Nm ³ HCl daily 1-4 mg/Nm ³ HF daily	30 mg/Nm ³ HCl daily 5 mg/Nm ³ HF daily (until new furnace is installed)

Data and calculations used in the application to justify request:

Costs:

- ▶ Type of costs used in application (operational, capital, other - specify)
- ▶ Source of cost data
- ▶ Calculations of costs

Benefits:

- ▶ Type of benefits used in the application
- ▶ Source of data
- ▶ Calculations of benefits

The operator prepared and submitted the cost-benefit analysis based on the following methodologies:

- ExternE (External costs of Energy) www.externe.info/externe_d7
- NEEDS (New Energy Externalities Developments for Sustainability) www.needs-project.org
- CAFE (Clean Air For Europe) http://ec.europa.eu/environment/archives/cafe/activities/pdf/cafe_cba_externalities.pdf

The operator considered five emissions scenarios when it prepared the cost-benefit analysis:

Scenario	Condizioni	Portata (Nm ³ /h)	NOx (mg/Nm ³)	Polveri (mg/Nm ³)
1	Assetto emissivo con limiti attuali di 1000 mg/Nm ³ per NOx e 30 mg/Nm ³ per polveri considerando il normale funzionamento degli impianti APC (portata media 2014, valori medi di concentrazione 2014)	65.765,5	952,9	17,4
2	Assetto emissivo con limite attuale di 1000 mg/Nm ³ per NOx e 30 mg/Nm ³ per polveri considerando una fermata manutentiva annuale con portata media 2014 valori medi di concentrazione rilevati nel 2014 (per il periodo di fermata si considerano i dati medi monitorati durante la fermata 2013 come da scenario 5).	65.765,5	1.018,6	22,9
3	Assetto emissivo con limiti riferiti alle BAT AEL di 700 mg/Nm ³ per NOx e 20 mg/Nm ³ per polveri considerando il normale funzionamento degli impianti APC (portata media 2014, valori medi di concentrazione stimati)	65.765,5	670	15
4	Assetto emissivo con limite riferito alle BAT AEL di 700 mg/Nm ³ per NOx e 20 mg/Nm ³ per polveri considerando 3 fermate manutentive annuali con portata media 2014 e valori medi di concentrazione stimati come da scenario 3 e per il periodo di fermata si considerano i dati medi monitorati durante la fermata 2013 come da scenario 5.	65.765,5	922,4	34,9
5	Attuale assetto emissivo senza impianti di abbattimento (condizioni proprie della fermata manutentiva) con portata media 2014 e dati medi monitorati durante la fermata 2013.	65.765,5	2.132,5	130,4

NOTA: una fermata si considera di 21 giorni comprensivi dei tempi di arresto e avvio impianti di abbattimento.

The operator, compared the specific conditions set forth in scenarios 2 and 4 outlined in the above table.

- Scenario 2: emission limits of NOx (1.000 mg/Nm³ daily) and dust (30 mg/Nm³ daily), including one necessary interruption of 21 days for the furnace's maintenance and considering, during the sole interruption, the emission data foreseen for scenario 5
- Scenario 4: emission limits of NOx (700 mg/Nm³ daily) and dust (20 mg/Nm³ daily), including three necessary interruptions totalling 63 days per year for the furnace's maintenance and considering, during each interruption, the emission data foreseen for scenario 5

and developed the associated cost-benefit analysis, whose conclusions are as follows:

- The yearly cost increase for managing the plant outweighs the yearly environmental/healthcare benefits:
- costs = 250,000 EUR/year (100,000 EUR/year for two additional interruptions of the furnace's operation to allow for its maintenance; and 150,000 EUR/year for the loss of net electricity production through Organic Rankine Cycle (ORC))
- benefits = 100,000 EUR/year.

Statement on disproportionality in the application? If so, what and how is this calculated?

Yes, see last paragraphs in the above section

Were any aspects of the information provided not in line with the MS guidance, if any?

No

4. Evaluation of derogation request

How are the data and calculations validated?

The CA relied on the judgment of the Provincial Department of Cuneo of the Regional Environmental Protection Agency (ARPA - Agenzia regionale per la protezione ambientale) who carried out the validation of data and calculations.

Information and data were validated mainly by considering the BREF and the information/data provided by the operator. The CA then compared both to check if the information provided by the operator is reasonable.

Did the CA perform any research or consultation for additional data sources? If so, please specify.

Yes, additional data was requested during the meetings ("Conferenza di Servizi") that took place between the operator and the CA after the operator had submitted its request to the CA for granting the necessary renewal

<p>of its AIA permit (Autorizzazione Integrata Ambientale / Integrated Environmental Permit).</p> <p>For example, the CA requested the operator to specify which sources had been considered when it came to determining the healthcare costs connected to NOx and dust emissions.</p> <p>Please see Section 2 (Initiation of derogation) for additional details.</p>												
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Yes, please see Section 2 (Initiation of derogation) for additional details.</p>												
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>The CA assessed disproportionality based on scenario 4 presented by the operator: emission limits of NOx (700 mg/Nm³ daily) and dust (20 mg/Nm³ daily), including three necessary interruptions totalling 63 days for the furnace's maintenance and considering, during each interruption, the average emission data foreseen for scenario 5.</p> <p>The CA observed that the lengthy interruption of the furnace would lead to a minor improvement in NOx emissions (<100 mg/Nm³, 55 t/y, 10% less than the yearly NOx emissions), but also to significantly worse dust emissions (+ 12 mg/Nm³, 7 t/y, or 50% more than the than the yearly dust emissions).</p> <p>Moreover, the CA highlighted how the external cost of the increased dust emissions nearly matches the benefits incurred due to the reduced NOx emissions, while the operating costs for the plant (interruptions plus loss of net electricity production) amount to double the net foreseen benefit.</p>												
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>N/A</p>												
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>												
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>No</p>												
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>												
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>												
<p>5. Derogation decision</p>												
<p>Date of the decision</p> <p>29-10-2015</p>												
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Granted</p> <p>Derogation valid until 31 December 2022</p> <p>Granted derogations:</p> <table border="1"> <thead> <tr> <th>BAT Conclusion</th> <th>BAT-AEL</th> <th>Derogations granted</th> </tr> </thead> <tbody> <tr> <td>BAT 16 (dust emissions from melting furnaces)</td> <td>10-20 mg/Nm³ daily</td> <td>30 mg/Nm³ daily (until new furnace is installed)</td> </tr> <tr> <td>BAT 17 (NOx emissions from the melting furnace)</td> <td>400-700 mg/Nm³ daily</td> <td>1000 mg/Nm³ daily (until new furnace is installed)</td> </tr> <tr> <td>BAT 19 (SOx emissions from the melting furnace)</td> <td>200 mg/Nm³ hourly</td> <td>Only for the mass flow limit equal to 0.64 kg/hour (obtained by considering the concentration</td> </tr> </tbody> </table>	BAT Conclusion	BAT-AEL	Derogations granted	BAT 16 (dust emissions from melting furnaces)	10-20 mg/Nm ³ daily	30 mg/Nm ³ daily (until new furnace is installed)	BAT 17 (NOx emissions from the melting furnace)	400-700 mg/Nm ³ daily	1000 mg/Nm ³ daily (until new furnace is installed)	BAT 19 (SOx emissions from the melting furnace)	200 mg/Nm ³ hourly	Only for the mass flow limit equal to 0.64 kg/hour (obtained by considering the concentration
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			limit of the BAT-AEL)
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Including one necessary yearly interruption of 21 days for the furnace's maintenance			
How was the decision communicated to the operator? Operator was notified via email about the decision through certified email (PEC - posta elettronica certificata).			
Has the decision been published online? Yes			
Where can the permit and application decision be accessed (please provide a link to the documents)? Link: www.provincia.cuneo.gov.it/allegati/tutela-territorio/procedimenti-tutela-territorio/2014aia001rie/agc_provv_riesame_suap_prot_66833_del_29_10_2015_p_15461.pdf			
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. During the derogation period (2016 - 2022), the emissions will be constantly monitored.			
6. Further information			
Documents available (applications, evaluations, decisions)? Decision: (it includes information/data about the application and evaluation): www.provincia.cuneo.gov.it/allegati/tutela-territorio/procedimenti-tutela-territorio/2014aia001rie/agc_provv_riesame_suap_prot_66833_del_29_10_2015_p_15461.pdf Minutes of the meeting between CA and operator held on 16 December 2014: http://www.provincia.cuneo.gov.it/allegati/tutela-territorio/procedimenti-tutela-territorio/2014aia001rie/agc_provv_riesame_allegati_cds_c_d_pdf_15906.pdf			

8. Derogation Case Study – PL

<p>1. Case study details: CLM – BAT 17,21</p>
<p>Company name Zakład Cementownia Rudniki in Rudniki (part of company: Cemex Polska Sp. z o.o.)</p>
<p>Company website http://www.cemex.pl/cementownia-rudniki.aspx</p>
<p>Description of company and process (main process, products) Production: Portland cement slag, Portland multi-component, Portland limestone, steel cement, road cement Silment CQ-25 licensed by Rowis System, limestone powder. The production facility has two grinding mills for grinding raw material. Clinker burning takes place in three rotary kilns on a dry method. Stoves are fired with coal dust, light alternative fuels and dry sewage. The production of coal dust takes place in ball-milled grinding mills with semi-indirect application of coal dust to the furnace. Coal mills operate with closed-circuit furnaces. The hot air for drying the coal in the mill is taken from the grate cooler. Each furnace works with a slag dryer, using the furnace gas heat. Furnace gases are also used to dry the material in the mill system. Dust from the dedusting installation is stored in an additional tank and is continuously added in a suitable proportion to the furnace flour to the rotary kiln. The whole transport chain of flour is dusted with bag filters. The cement production facility has five cement mills, which operate in a closed circuit with a separator. The cement plant has 12 cement silos.</p>
<p>Year of first operation 1965</p>
<p>Location Production facility: Zakład Cementownia Rudniki, Ul. Mstowska 10, 42-240 Rudniki (near Częstochowa, śląskie vovoidenship) Company adress: Cemex Polska Sp. z o.o., ul. Łopuszańska 38 D 02-232 Warszawa</p>
<p>Capacity</p> <ul style="list-style-type: none"> • installation of clinker production – IPPC installation, max production capacity: 700 000 Mg/year • lime powder installations - installation connected technologically with IPPC installation of max. production capacity 100 000 Mg/year • cement production installation - installation connected technologically with IPPC installation of max. production capacity 1 250 000 Mg/year
<p>BAT conclusion and BAT-AEL for which derogation was requested CLM BATC – BAT 17 (Dust emission from kiln firing process) and BAT 21 (SOx emissions) Derogation from the emission limit value 20 mg/Nm³ for a variant of the installation without co-incineration waste for flue gases from rotary kilns (emitters E18 and E19), raw material mills (emitters E2 and E3) and coal mill No. 4 (emitor E88). Amount of dust emission: up to 30 mg/Nm³ Derogation from the emission limit value of 400mg/Nm³ for sulphur dioxide in flue gases from rotary kilns (emitters E18 and E19) in a variant without co-incineration of waste. Amount of emission: up to 1000 mg/Nm³.</p>
<p>2. Initiation of derogation</p>
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Yes, through the Ekoexpert Sp. z o.o. company (http://www.ekoexpert.com.pl/) who wrote and submitted the application.</p>

<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request?</p> <p>No information about any contacts or discussions between the operator and the CA.</p>
<p>3. Application for derogation</p>
<p>Date of application</p> <p>16-08-2016</p>
<p>Description of the derogation request / background info / rationale for request</p> <p>In 2005, the Silesian Province Governor granted an integrated permit (period of validity is 10 years). In 2007 it was changed by the Silesian Province Governor. Then next changes were introduced in 2008 by the Silesian Marshal (due to changes in law: <i>Environmental protection act</i> and competence of local governance organs). Further changes in the decision were made in 2010, 2012 and 2014 and on 7th of June 2016.</p> <p>In August 2015 an analysis of the terms of the integrated permit was completed and CEMEX Polska Sp. with o.o. Rampers Cement was called upon to apply for a change to the terms of the integrated permit, as well as the need to adjust the installation by September 4, 2018 to the BAT conclusions.</p> <p>CEMEX Polska Sp. z o.o. – Zakład Cementownia Rudniki requested on August 16 to change the integrated permit for cement clinker installation in rotary kilns that are exceeding the amount of 500 tons per day.</p> <p>On the 7th of February 2017 inspection of installation was conducted. After the inspection the conclusion was made that the IPPC (Integrated Pollution Prevention and Control) installation is working well.</p>
<p>Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.</p> <p>Technical characteristics</p>
<p>Arguments used by the operator for requesting derogation?</p> <ul style="list-style-type: none"> • The high amount of sulphur in fuels (coal and co-incineration with coal) and in the raw material (raw material), as well as the dynamics of the changes taking place during the production of the clinker (the part of the sulphur brought into the furnace is fixed in the clinker). • The amounts of sulphur dioxide and dust in the surroundings of Zakład Cementownia Rudniki do not exceed the levels of this substances according to the Minister of Environment decree from 24th of August 2012 on the levels of certain substances in the air (Dz. U. z 2012 r., poz. 1081) • Economical aspects (very high cost of constructing and exploitation of wet desulphurization devices)
<p>Data and calculations used in the application to justify request:</p> <p>BAT 17</p> <p>The calculations of the impact of dust emissions in flue gases from rotary ovens and from sources associated with rotary kilns have shown little effect of deviation from emission limit values on air quality. Replacing the filters with filters to ensure a dust concentration of no more than 20 mg/Nm³ would have to involve rebuilding dust extraction systems. For example: the use of dust extraction systems in raw material mills with a heavier weight would result in an increase in the pressure difference in the filters, and would therefore limit the capacity of the mills (the bags that are installed are specially selected because they are technological filters that act as a storage chamber for the raw material.). In order to increase the efficiency of the filter to 20 mg/Nm³, the filtration surface should be increased by increasing the filter by an average of 30% of the filtration area. The resistance to the filters and thus the dynamics of the gas flow would change, which would affect the technological processes carried out in rotary kilns and raw mills including:</p> <ul style="list-style-type: none"> • reduced cost-less efficiency, • quality regimes for clinker • ecological regimes referring to the gas emitted from the installation. <p>The cost of replacing the filter only in the dust extraction system of the raw material mill No. 4 is estimated at about PLN 2 million, with the ecological effect being negligible (only a small reduction of 1 hour of maximum dust concentration, including emissions and average annual dust concentrations in the air).</p>

<p>BAT 21</p> <p>The calculations of the influence of sulphur dioxide emissions in the waste gases from rotary ovens and from sources related to rotary ovens (raw mills and coal mills) showed no exceedances of permissible levels of sulphur dioxide in air. It should be noted that the derogation does not result in an aggregate (annual) increase in sulphur dioxide emissions compared to the volume of the existing integrated permit.</p> <p>The cost of construction of wet flue gas desulphurisation plant in the furnaces is estimated at about 30 million PLN.</p> <p>In addition, the operation of the wet flue gas desulphurisation plant would involve the emergence of new pressures, including wastewater from the desulphurisation plant, and new noise sources with relatively high acoustical power (sorbent preparation, desulphurisation fans and others), which are not yet occurring in Zakład Cementownia RUDNIKI.</p>					
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>In the decision granted by the Marshal of Silesia Vovoidenship there is information that in specific cases, the competent authority for an integrated permit may authorize a derogation from the emission limit values in the integrated permit if its assessment would result in disproportionately high costs for environmental benefits and provided that the emission standards are not exceeded.</p> <p>In the other documents (<i>Application for integrated decision</i> and <i>Substantiation of the derogation</i>) there was no comparison of cost calculations for production (cost of current production in comparison to cost of production with achieving the BAT-AELs). There is only information about estimated costs of the desulfurization installation (30 000 000 PLN) and information about the cost of replacing the filter in the dust extraction system of the raw material mill No. 4 is estimated at about 2 000 000 PLN (in both documents: <i>Application for integrated decision</i> and <i>Substantiation of the derogation</i>).</p>					
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>No</p>					
<p>4. Evaluation of derogation request</p>					
<p>How are the data and calculations validated?</p> <p>Company Ekoekspert Sp. z o.o. counted the annual SOx emission, calculated from the average emissions and working time of the source (duration of the emission).</p> <p>In calculating the average dust emission, it was assumed that the average (annual) dust concentration behind the dust filter systems of rotary kilns and raw material mills would not be higher than 15 mg/Nm³ (this assumption justifies the measurement results).</p> <p>Data are validated by Vovoidenship Inspectorate of Environmental Protection. (Act from 20 July 1991 on Environmental Protection Inspection (Dz. U. z 2016 r., poz. 1688) - Tasks of the Inspection of Environmental Protection (Articles 1 and 2)).</p>					
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>After the application was submitted to the Marshal of the Silesia Vovoidenship it was publicly available on Public Information Bulletin of Silesian Vovoidenship for 21 days for consultation purposes. No additional data or questions were reported during that time.</p> <p>After granting the integrated decision on the 9th of June 2017 there was a 30 days period for reporting comments. None were reported. The decision was validated after that period.</p>					
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Yes, on the 29th of March 2017 the Marshal of the Vovoidenship asked the operator for additional information to detail precisely how each BAT conclusion for Zakład Cementownia Rudniki in case of gas emissions are implemented. The detailed information was provided (the table below present the information for BAT 17 and 21):</p> <table border="1"> <thead> <tr> <th>BAT conclusion number</th> <th>Implementation - Zakład Cementownia Rudniki</th> </tr> </thead> <tbody> <tr> <td>BAT 17</td> <td>Zakład Cementownia Rudniki used: Fabric filters for reducing dust emissions from flue gases from firing processes in rotary</td> </tr> </tbody> </table>		BAT conclusion number	Implementation - Zakład Cementownia Rudniki	BAT 17	Zakład Cementownia Rudniki used: Fabric filters for reducing dust emissions from flue gases from firing processes in rotary
BAT conclusion number	Implementation - Zakład Cementownia Rudniki				
BAT 17	Zakład Cementownia Rudniki used: Fabric filters for reducing dust emissions from flue gases from firing processes in rotary				

	<p>kilns:</p> <ul style="list-style-type: none"> • E18 and E19 emitters; • E2 and E3 emitters - Drying of raw materials in raw material mills 2 and 4 with waste gases from the firing process in rotary kilns • emitter E88 - drying of coal in the coal mill No. 4 with waste gases from the firing process in rotary kilns. <p>A derogation from the emission limit values for emitters is set: E18, E19, E2, E3, E88. The dust concentrations of 30 mg/Nm³ are defined for the emitters: E18, E19, E2, E3, E88.</p> <p>Substantiation:</p> <p>- For a variant of the installation with co-incineration of waste: The emission levels for dust emissions from clinker firing processes using waste as a source of heat is 30 mg/Nm³. According to BAT 17, the standard BAT-AEL for flue gas emissions from furnace clinker kilns is <10-20 mg / Nm³, calculated as the mean daily value (i.e., the emission limit value is 20 mg/Nm³). The Industrial Emissions Directive, as "overriding" the Commission's implementing decision on BAT conclusions for the cement industry, sets the total permissible dust emission from clinker firing processes using waste as a source of heat (co-incineration) of 30 mg/Nm³ (Annex VI, part 4, point 2). Issued under the Industrial Emissions Directive, the Polish regulations set emission limit values for clinker burning in rotary kilns in co-incineration facilities at the same level. The difference between the BAT-AEL of the conclusions (<10 - 20 mg/Nm³) and the "total emission limit value" of 30 mg / m³, as defined in the Industrial Emissions Directive for flue gas dust from clinker firing furnaces is a compensation for the use of waste as a heat carrier needed to burn clinker and save natural resources.</p> <p>- For a variant of the installation without co-incineration of waste The calculations of the impact of dust emissions in flue gases from rotary kilns and from sources associated with rotary kilns have shown little effect of deviation from emission limit values on air quality. The analysis shows that replacement of the filters in dust extraction systems of rotary ovens and raw material mills (to increase dust extraction efficiency):</p> <ul style="list-style-type: none"> • will not affect the total emissions of dust within a year, • will not affect the average annual concentrations of PM10, • will not affect the average annual concentrations of PM2.5 dust, • will not affect the amount of dust, • will cause a slight increase in the concentrations of maximum PM₁₀ (concentrations 1-hour). <p>Replacing filter media with dust filters at a level of no more than 20 mg/Nm³ requires the conversion of dedusting systems. The use in the dust extraction system of raw material mills with higher grammage results in an increase in the pressure difference in the filters and limits the efficiency of the mills (nonwovens in the installed filter bags of dust extractor mills are specially selected because of the dust extraction equipment: technological filters serve as the storage chamber for the raw material). To increase the efficiency of the filter to 20 mg/Nm³, the filtration surface should be increased, with the filter expanding by an average of 30% of the filter surface. The resistance to the filters and therefore to the dynamics of the gas flow would change, which would affect the technological processes in the rotary ovens and raw mills, including:</p> <ul style="list-style-type: none"> • reduced cost-less efficiency, • quality regimes for clinker • ecological regimes referring to the gas emitted from the installation. <p>The cost of replacing the filter only in the dust extraction system of the raw material mill No. 4 for a filter with a higher dedusting efficiency is about 2 million PLN, but the ecological effect is negligible (only a small reduction of 1 hour maximum dust concentration, including</p>
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	<p>BAT 21</p>	<p>emissions and average annual dust concentrations in the air).</p> <p>Zakład Cementownia Rudniki used:</p> <p>- for the variant of the installation with the co-incineration of waste:</p> <p>The emission standard (50 mg / Nm³) is not applicable.</p> <p>Substantiation:</p> <p>The amount of sulfur dioxide generated by the incineration of waste is not greater than the amount that would have been generated if the waste had not been burned (Legal basis: - Regulation of the Minister of the Environment of 4 November 2014 on emission standards for certain types of installations, fuel combustion sources and equipment. incineration or co-incineration of waste (Dz.U. z 2014, poz. 1546), with regard to co-firing waste in cement kiln production plants (Annex No. 8, Table II).</p> <p>- for the variant of operation of the installation without co-incineration of waste</p> <p>A derogation from the emission limit values for sulfur dioxide is determined.</p> <p>The limit values for sulphur dioxide are specified:</p> <p>in waste gases from rotary kiln No. 1 (emitor E18):</p> <ol style="list-style-type: none"> a. variant of work without raw material mill - 750 mg / m³u (for 200 h / year), b. in the variant of work with the raw mill: <ul style="list-style-type: none"> • 750 mg / Nm³ (for 7800 h / year), • 1000 mg / Nm³ (for 500 h / year) <p>in waste gases from rotary kilns No. 3 and No. 4 (emitor E19):</p> <ol style="list-style-type: none"> a. a variant of the mill without a mill, but with a carbon mill - 750 mg/m³ (for 200 h / year), b. in the variant of work with the mill mill and with the coal mill: <ul style="list-style-type: none"> • 750 mg / Nm³ (for 7800 h / year), • 1000 mg / Nm³ (for 500 h / year). <p>Concentrations of sulphur dioxide in waste gases:</p> <p>raw mills (emitters E2 and E3) are set at a level no higher than 300 mg / m³,</p> <p>Carbon No. 4 (emitter E88) is set at a level not higher than 400 mg / m³.</p> <p>Substantiation:</p> <p>The reduction of emissions of sulphur oxides in flue gases from rotary kilns is achieved by using raw materials for the production of clinker with the lowest possible sulphur content. It is not possible to obtain concentration of sulphur dioxide in flue gases from rotary kilns at a level not higher than the emission limit value (400 mg / Nm³) determined on the basis of BAT-AEL (<50 - 400mg/Nm³) Because the concentration of sulphur dioxide in the waste gases from the rotary kilns determines the sulphur content of coal (as a process fuel). It is not technically justified to add lime to the feedstock as absorbent (due to the possibility of interfering with the flow of mass in the rotary kiln) and total sulphur dioxide emissions do not justify the construction of wet flue gas desulphurisation installations (sulphur dioxide emissions levels are not sufficient for gypsum production).</p> <p>The deviation from the emission limit values applied does not exceed the permissible concentrations of sulphur dioxide in the air, in the zone of influence of the Cement Plant RUDNIKI on the environment.</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>No details.</p>		
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>There were three official requests for additional information (3 Feb 2017, 29 March 2017 and 7 Feb 2017).</p> <p>The operator submitted additional data on the following dates:</p> <p>16 Dec 2016, 25 Jan 2017, 20 Feb 2017, 25 Apr 2017, 18 May 2017, 31 May 2017, 8 June 2017.</p>		

<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>Yes – see the table in point 4.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>The company granted all the required information but it was not stated as an exceptional involvement.</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>In case of sulphur dioxide emissions all the aspects to adjust the installation to the IED are being transposed to the Act: Environmental protection law (Dz. U. z 2014, poz. 1101).</p> <p>In case of dust emissions one aspect was pointed out:</p> <p>The Industrial Emissions Directive, as "overriding" the Commission's implementing decision on BAT conclusions for the cement industry, sets the total permissible dust emission from clinker firing processes using waste as a source of heat (co-incineration) of 30 mg/Nm³ (Annex VI, part 4, point 2). Issued under the Industrial Emissions Directive, the Polish regulations set emission limit values for clinker burning in rotary kilns in co-incineration facilities at the same level.</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>9-06-2017</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Granted. See the table in the point 4.</p>
<p>How was the decision communicated to the operator?</p> <p>Operator was informed via official decision document sent by post.</p>
<p>Has the decision been published online? Yes</p>
<p>Where can the permit and application decision be accessed (please provide a link to the documents)?</p> <p>http://bip.slaskie.pl/dokumenty/2017/07/14/1500021704.pdf</p>
<p>Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.</p> <p>Unless the law will not change or the new BAT conclusions will be announced the integrated permit in which the derogation was granted is issued for an indefinite period of time.</p>
<p>6. Further information</p>
<p>Documents available (applications, evaluations, decisions)?</p> <p>Since 2014 decisions are published online (unless the operator will request and will be granted concealment):</p> <p>http://bip.slaskie.pl/dokumenty/2017/07/14/1500021704.pdf</p> <p>The application is available online during 21 days after the submission. After that period, it is removed from the public server.</p>

9. Derogation Case Study – SE (IS BAT 56)

1. Case study details: IS – BAT 56
<p>Company name SSAB EMEA AB</p>
<p>Company website http://www.ssab.se/</p>
<p>Description of company and process (main process, products) Highly specialized steel company. Producing Advanced High-Strength Steels (AHSS), Quenched & Tempered Steels (Q&T), strip, plate, tubular products and construction solutions.</p>
<p>Year of first operation Company was founded in 1878 Luleå factories was operational in 1940</p>
<p>Location Luleå, Sweden</p>
<p>Capacity Between 2000-2015, production equalled 31 Million tonnes of crude iron (2.07 Mt/y)</p>
<p>BAT conclusion and BAT-AEL for which derogation was requested IS BATC - BAT 56 (and BAT 51)</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Unknown</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? An earlier court ruling determined that the operator could maintain and increase the production at the facility in Luleå. The court ruling left the question of emission levels open, awaiting further test results. The application for exemption from BAT 56 can be considered as a continuation of the earlier court case.</p>
3. Application for derogation
<p>Date of application 24-11-2014</p>
<p>Description of the derogation request / background info / rationale for request The application was handed in to the Land and Environmental court (Mark- och miljödomstolen), following a previous court case regarding the facility in Luleå. This previous court case determined that the facility could remain operational until further noticed. Due to the implementation of IED the case was re-opened as the applicant needed to comply with the BATC. The application referred to derogations from BAT 51 and BAT 56. The applicant first requested alternative values for BAT 56, but later changed the application to time limited exemption.</p>
<p>Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria. Regarding BAT 56, the operator considered that the local environmental benefits are disproportionate to the costs of improving the facility. They required an exemption from BAT 56, until they further investigate the possibility to build a new denitrification step in the waste water facility.</p>

<p>Arguments used by the operator for requesting derogation?</p> <p>That the environmental impact from the emissions are non-significant to the local environment and that the costs of improving the facilities emissions are disproportionate to the environmental benefits. The operator therefore required exemption from some of the BAT 56 to further investigate the enlargement of the waste water facility.</p>
<p>Data and calculations used in the application to justify request:</p> <p>Costs:</p> <ul style="list-style-type: none"> ▶ Type of costs used in application (operational, capital, other - specify) ▶ Source of cost data ▶ Calculations of costs <p>Costs have been estimated by the operator. No figures are mentioned in the court decision and it is unclear how high the costs of complying with BAT 56 would be.</p> <p>Benefits:</p> <ul style="list-style-type: none"> ▶ Type of benefits used in the application ▶ Source of data ▶ Calculations of benefits <p>Environmental impact has been estimated by the operator, source of data is unclear.</p> <p>Swedish EPA has commented on the estimated benefits and the local environmental impact along with the costs of its implementation. They commented that the operator did not provide enough data.</p> <p>The CA made an individual estimate of the benefits. There are no standardized calculation methods.</p>
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>No specific costs are mentioned, but the emissions are considered not significant and the compliance with BAT 56 is too expensive in comparison to the environmental benefits. The operator stated that a new step in the denitrification process would have to be implemented, something that according to the operator, would be costly.</p>
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>Yes, Swedish EPA commented there was a lack of information regarding the costs of implementing BAT 56. They also considered that the local environmental assessment is not fulfilling. The latter was later corrected by the operator.</p>
<p>4. Evaluation of derogation request</p>
<p>How are the data and calculations validated?</p> <p>Emission data and environmental impact are provided by the operator and validated if the CA deemed it necessary. In this case, the CA has asked Swedish EPA and the country administration board of Norrbotten, to investigate the environmental impact assessment and if they deem the costs to be disproportionate in relation to the environmental impact.</p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>Yes, Swedish EPA gave their opinion on the case. They commented that data was lacking of the actual implementation cost of a new denitrification facility and that the operator had not provided enough evidence of the costs to implement BAT 56. They also requested better estimates of the environmental impacts. The latter was completed by the applicant after being requested.</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Yes, to clarify the environmental impact assessment and costs estimates.</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>The case has been individually assessed based on the information and argumentation provided by the operator. Further details are unclear.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Unknown, most likely several.</p>

<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>The previous court case has left the question of emission levels open. This could have had to do with the awaiting of the IED implementation. However, this has not been confirmed and remains uncertain.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>Unknown</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>Swedish EPA deemed that the applicant did not full-fill the requirements of disproportionate costs in relation to the environmental benefits, and recommended the CA to reject the application of the alternative values and time limited exemption from BAT 56. The administrative county board of Norrbotten, recommended the CA to approve the application of time limited exemption.</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>07-03-2016</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Alternative values are granted until 1st of July 2018</p>
<p>How was the decision communicated to the operator?</p>
<p>Has the decision been published online?</p> <p>Yes</p>
<p>Where can the permit and application decision be accessed (please provide a link to the documents)?</p> <p>http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/ied-avgoranden/alternativvarde-dispens-mmd-norrbotten-2016-03-07.pdf</p>
<p>Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.</p> <p>Unknown</p>
<p>6. Further information</p>
<p>Documents available (applications, evaluations, decisions)?</p> <p>Decision: http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/ied-avgoranden/alternativvarde-dispens-mmd-norrbotten-2016-03-07.pdf</p>

10. Derogation Case Study – SE (GLS BAT 63)

1. Case study details: GLS – BAT 63
Company name Paroc Aktiebolag
Company website http://www.paroc.com/
Description of company and process (main process, products) Producer of stone wool insulator as a building material.
Year of first operation 1930's
Location Hässleholm, Sweden
Capacity Unknown
BAT conclusion and BAT-AEL for which derogation was requested BAT 63
2. Initiation of derogation
Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Unknown
Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Unknown
3. Application for derogation
Date of application 4 th of November 2015
Description of the derogation request / background info / rationale for request The applicant did not meet the levels of BAT 63 for ammonia, formaldehyde and volatile organic substances, and requested an exemption from BAT 63 until the 31 st of August 2016.
Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria. Geographical location and local environmental conditions.
Arguments used by the operator for requesting derogation? The facility is likely to maintain the same emission levels as previous years. An old court case has determined that the facility's emission standards are in line with local environmental conditions and the geographical setting. Maintaining these emissions does not pose any drastically changes to the environment. The company states that it is important that their facility can remain productive until a new smoke gas burner has been installed and requested an exemption from BAT 63 until the 31 st of August 2016. This would allow them to install a new smoke gas burner during the already planned summer shut down of the plant.

<p>Data and calculations used in the application to justify request:</p> <p>Costs:</p> <ul style="list-style-type: none"> ▶ Type of costs used in application (operational, capital, other - specify) ▶ Source of cost data ▶ Calculations of costs <p>Benefits:</p> <ul style="list-style-type: none"> ▶ Type of benefits used in the application ▶ Source of data ▶ Calculations of benefits <p>The operator has provided emission figures and suggested that the old emission levels should remain in place until the 31st of August 2016. They argued that an earlier court case eight year earlier has ruled the facility environmental sound and that the additional six months (6/3-31/8) will not have a significant impact on the local environment.</p> <p>Data of environmental assessment is not provided in the court case.</p>
<p>Statement on disproportionality in the application? If so, what and how is this calculated?</p> <p>The operator claimed that the production stop required to install the new smoke gas burner, would be highly expensive, considering the loss of income due to an idle facility, risk of indemnity to customers claiming contract break and finally lost of goodwill. In conclusion the operator claimed that an unscheduled production stop would have disproportionate high costs in comparison to the emission improvements that the first six months of complying with BAT 63 would have.</p>
<p>Were any aspects of the information provided not in line with the MS guidance, if any?</p> <p>Unknown</p>
<p>4. Evaluation of derogation request</p>
<p>How are the data and calculations validated?</p> <p>Data and calculations are be provided by the applicant. The CA can take in a third party for assessment the data and calculation if they deem needed. In this case, no third party has been involved.</p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>No</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>No</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>The case has been individually assessed based on the information and argumentation provided by the operator. No further information has been given.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Unknown</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>Yes, the CA argues that the applicant has been aware of the BREF process and that the operator has been aware of BAT 63 before the BATC were published / became applicable.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>Unknown if they have been involved the BREF process.</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p>



Unknown
5. Derogation decision
Date of the decision 15-02-2016
Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions) Derogation rejected
How was the decision communicated to the operator? Through court decision.
Has the decision been published online? Yes
Where can the permit and application decision be accessed (please provide a link to the documents)? http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/beslut-mpd-skane-2016-02-15.pdf
Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. No.
6. Further information
Documents available (applications, evaluations, decisions)? Decision: http://www.naturvardsverket.se/upload/stod-i-miljoarbetet/rattsfall/domar/beslut-mpd-skane-2016-02-15.pdf

11. Derogation Case Study – SK

1. Case study details: CLM – BAT 50
<p>Company name Calmit, spol. s r. o., Bratislava</p>
<p>Company website http://www.calmit.sk/</p>
<p>Description of company and process (main process, products) Calmit, s.r.o., is a leader in lime and limestone products in Slovakia. Major production activities are:</p> <ul style="list-style-type: none"> • production of burnt lime • production of ground lime • production of lime hydrate • production of ground limestone • delivery of lime and limestone products <p>There are 4 single-shaft furnaces (No. 1-4) and one double-blast furnace (No. 5) in operation. At present, in furnaces No. 3 and 4 (Mixed feed shaft kilns) the combustion of solid fuels (coke, anthracite and mixtures of coke, anthracite, petroleum coke and coke) is allowed. Furnace no. 5 (Parallel flow regenerative kiln) burns ground petroleum coke with natural gas. Furnaces No. 1 and 2 are currently serving as lime containers, furnaces No. 3 and 4 are out of operation, so only furnace No. 5 is in operation.</p>
<p>Year of first operation 1960</p>
<p>Location 980 61 Tisovec, Rimavská Sobota</p>
<p>Capacity The projected capacity is 86.4 t of lime per day per furnace.</p>
<p>BAT conclusion and BAT-AEL for which derogation was requested BAT 50 for furnace no. 3 and 4</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? No</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Yes, there were several contacts for clarifying some of the information provided.</p>
3. Application for derogation
<p>Date of application 20-12-2016</p>
<p>Description of the derogation request / background info / rationale for request Application for derogation was initiated by operator. Derogation request was part of the application for the permit change. The operator has requested to set emission limits deviating from BAT conclusion for a certain period until the technical / operational measures reach the required level according to BAT. The Inspectorate requested the Ministry of the Environment of the Slovak Republic to evaluate the deviations</p>

from the emission limits. The inspection announced to the parties and the authority the initiation of the administrative procedure. During the 30-day written observations were delivered to the inspection:

- The District Authority agreed with the proposed derogation for the TOC for MFSK furnaces for a certain period until the technical / operational measures reach the required BAT level. The operator shall take measures to reduce the TOC emissions, as evidenced by eligible measurements.
- The city of Tisovec agreed with the submitted application for a period of four years from the putting the decision into effect. However, the derogation may not exceed the limits specified in the valid legislation of the Slovak Republic. During this period, technical equipment must be installed in operation to reach all emission limits in line with BAT conclusions.
- The Ministry has recommended not to grant a deviation from the emission limit compared to the emission level stated in the BAT conclusions with additional statement that a reassessment could be made in case of measurements of real emission values during operation (currently not operated, data from a similar facility in another location was used). The operator is recommended to consider whether it is possible to include the gradual reconstruction of the furnaces in the investment plans (introducing BAT in two years of each device). This would lead to an increase in the use of the furnace even in the case of increased sales within two to three years. Because there is no plan to use (or restart) furnaces No. 3 and No. 4 for at least one year, it is more appropriate to gradually invest in alignment with the BAT conclusions.

The Inspectorate ordered an oral hearing. A comparison of the activities with BAT conclusions was performed on the basis of the information provided to the operators, the previous inspections carried out by the inspection, the data and the information sent by the operator.

Based on the results of the discussion made by the operators at the oral hearing as well as the Ministry's opinion, the Inspectorate did not grant derogation for TOC emission limit from furnaces No. 3 and No 4. Neither emission limits according to BAT was established because furnaces are shut down for long periods of time. Before restarting operation the new application for determination of conditions for operation of furnaces No. 3 and 4 will be requested.

Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.

Technical characteristics of the installation.

Arguments used by the operator for requesting derogation?

Single-shaft furnaces used for lime burning in the plant Tisovec were previously shutdown, therefore the BAT-AEL compliance in the application is made on the basis of former emission measurements. The comparison shows the non-compliance with BAT -AEL determined for the TOC pollutant:

- TOC was measured in single-shaft furnaces at Calmit spol. (Tisovec plant) only in 2009, at No. 3 furnace when combustion of fuel mixture (coke + anthracite). The measured average value was 58.9 mg/m³. At present, it is not possible to perform a measurement because furnaces are shut down.
- The operator also documented the results of the TOC measurement on the same types of solid fuel burning furnaces at Calmit s.r.o.. – Žirán plant. The measured average TOC emissions ranged from 33 - 54 mg/m³ for anthracite combustion.

From these measurements it is obvious that the BAT-AEL for TOC, determined as a mass concentration of 30 mg/m³, cannot be achieved with the current technical equipment. TOC emissions are emissions of volatile organic compounds and often refer to CO emissions from incomplete fuel combustion. Reducing total organic carbon emissions in BAT can be achieved by:

- optimizing process management, including automatic computer control,
- using modern gravimetric charging systems for solid fuels and gas flow meters,
- by choosing the input material into the furnace because it has a significant effect on the emissions to the air due to the impurity content,
- regular monitoring/measurement of process and emission parameters (continuous or periodic measurements).

Concerning the input material (limestone), the selection is limited by the specific requirements for the output product (lime) and the quality of the limestone extracted in the local quarry used for the firing process. The choice of fuel is based on two main criteria, which are also the quality requirements of the output product and on the other hand the purchase price of the fuel (firing process is energy-intensive and the fuel costs represent a significant part of the cost of running lime production.

Using process optimization techniques to achieve stable and total combustion, cannot be achieved due to uncontrollable variables, i. e. limestone quality.

Moreover, in the CLM BREF, in the section on TOC emissions for lime production, the emissions from the LRK, PFRK and ASK furnace types are listed. MFSK type emissions are not found here, and further text indicates that higher emissions of TOC due to special process conditions occurring at the top of the furnace (reduction area) may occur in older MFSK type furnaces.

Data and calculations used in the application to justify request:

Costs:

- ▶ Type of costs used in application (operational, capital, other - specify)
- ▶ Source of cost data
- ▶ Calculations of costs

Benefits:

- ▶ Type of benefits used in the application
- ▶ Source of data
- ▶ Calculations of benefits

Costs - the economic criteria included (overview is prepared for 15 years):

- average annual flow
- average annual costs
- average annual revenues
- average payback period
- additional investment payback
- ratio of the investment value in BAT (other technology) of the property
- significant investment over the last 5 years

Benefits - environmental criteria:

- reduction of pollutants
- evaluative comparison of changes
- social benefit
- contribution of installation on the pollution in the local and regional area

Statement on disproportionality in the application? If so, what and how is this calculated?

Yes

The emission abatement equipment would have to be installed on every shaft furnace. It would be a significant investment that would subsequently require additional costs for routine maintenance and gas (about 110 to 130 Nm³/h) and el. energy (about 25 to 35 kW/h).

Were any aspects of the information provided not in line with the MS guidance, if any?

No

4. Evaluation of derogation request

How are the data and calculations validated?

Assessment was made by Ministry of Environment of the Slovak Republic according to national methodology.

Statement of the expert body:

Economic evaluation

The operator stated in its application economic information for the immediate introduction of BAT. These data were relevant for the actual operation of furnaces No. 3 and No. 4.

The average annual loss of operation reached more than € 235 000. Investment costs would amount to almost € 800,000. The highest increase in operating costs is caused by energy costs. The cost of reducing 1 t of pollutant would be € 485 000.

Environmental assessment

<p>In the case of the introduction of new abatement technologies to meet the requirements of the BAT, 33% reduction of the pollutant would be achieved. This information was provided from a comparable operation by CALMIT spol. s.r.o. – plant Žirany. This reduction would have a significant positive impact on the environment. However, since furnaces No. 3 and No 4 are not currently in operation and no measurements have been made on these facilities, it is not possible to assess the actual positive environmental impact.</p> <p>CONCLUSION: Ministry of environment recommend not to grant an exception.</p>
<p>Did the CA perform any research or consultation for additional data sources? If so, please specify.</p> <p>Ministry of Environment always communicates with the ministry of economy and source all possible data for each industry. Ministry also asks for annual reports. This approach of data control was carried out.</p>
<p>Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.</p> <p>Yes, because emission measurement data from another plant (Calmit Žirany) was used in the application. So the Ministry rejected these input data and explained the issue to operator.</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>Ministry of environment did not accept the submitted information (emission measurements) and for this reason did not recommend the derogation.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>Up to 5</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>No, the BAT conclusion is taking as the only reference.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>24-03-2017</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>A derogation from the TOC emission levels was rejected.</p> <p>Final statement of expert body:</p> <p>The operator is required to comply with permit conditions in line with the BAT conclusions from 26.03.2017.</p> <p>In the context of BAT conclusions, the operator has introduced general primary techniques, techniques to minimize negative dust emissions, dust reduction techniques from furnace burning processes, and dusty operations other than burning processes, meets the thermal energy consumption values for lime production in single furnace furnaces No. 3 and No. 4 (MFSK) and double shaft furnace SP No. 5 (PFRK).</p> <p>The operator fulfils the conditions resulting from the BAT conclusions:</p> <ul style="list-style-type: none"> • emissions of PM in waste gases from dust operations, • PM emissions, emissions of gaseous compounds (NO_x, SO_x, CO), TOC emissions and PCDD / PCDF in waste gas from the durance No. 5. <p>The operator should comply with the emission limits in accordance with the BAT conclusions for pollutants PM, NO_x, SO_x and PCDD / PCDF, as well as the No. 3 and No. 4. However, the operator does not comply with the BAT conclusions in the lime industry in the section on TOC emissions from processes in furnaces No. 3 and No. 4. The operator has not yet set the emission limit for TOC in the permit. The emission limit in the</p>

<p>sense of BAT conclusions for TOC (<30 mg/Nm³) for existing shaft furnaces cannot be reached with the current technical equipment. In case of operation resume of these furnaces, the operator shall take measures to reduce TOC emissions, which shall be demonstrated by authorized measurement. If the reduction in emissions cannot be achieved by optimizing the firing process, this will be addressed by other technical measures, for example additional combustion of waste gases in afterburner.</p> <p>The abatement device would have to be installed separately for each shaft furnace. It would be a significant investment that would subsequently require additional costs for routine maintenance and consumption of natural gas and electricity. This would lead to CO and TOC emission reduction from burning lime processes below the BAT-AEL, but combustion of natural gas is associated with other emissions (especially NOx). This means that after the installation of an afterburner CO and TOC emissions are expected to be reduced and NOx emissions can slightly increase.</p>
<p>How was the decision communicated to the operator?</p> <p>The decision was sent in accordance with national legislation. Because the Ministry performed the continuous communication during the evaluation process, inspection just sent the decision to the operator.</p>
<p>Has the decision been published online?</p> <p>Yes</p>
<p>Where can the permit and application decision be accessed (please provide a link to the documents)?</p> <p>http://ipkz.enviroportal.sk/povolenie.php?id=68045</p>
<p>Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.</p> <p>Derogation rejected – not relevant</p>
<p>6. Further information</p>
<p>Documents available (applications, evaluations, decisions)?</p> <p>Application and decision in Slovak language is available, summary from these documents is presented in the appropriate parts of this questionnaire.</p> <p>Financial statement analysis is the property of the operator and contains sensitive data, the competent authority cannot pass the documents for inspection without the operator's consent.</p>

12. Derogation Case Study – UK (England)

1. Case study details: PP – BAT 40,50
<p>Company name Iggesund Paperboard (Workington) Limited</p>
<p>Company website https://www.iggesund.com/en/about-us/workington-mill/</p>
<p>Description of company and process (main process, products)</p> <p>The main purpose of the activity at the installation is the manufacture of paperboard; in particular folding boxboard for the packaging and graphics industries. Folding boxboard is a paperboard product in which the two outer plies are made from bleached chemical pulp and the middle plies are made from bleached or unbleached mechanical pulp. This creates a high-quality 'gloss' cardboard packaging e.g. used in cigarette and whisky boxes.</p> <p>The permit covers all stages of the paperboard manufacturing process from raw materials storage and handling, the pulp mill, the paper mill, surface coating, conversion to finished reels and sheets, warehousing prior to despatch and the effluent treatment plant. Electricity and steam are generated by the biomass Combined Heat and Power (CHP) plant.</p> <p>The fibre source for the installation is either wood from the UK or imported bleached chemical pulp.</p> <p>More details are available from the introductory note to the permit: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571715/Variation_And_Consolidation_Notice.pdf</p>
<p>Year of first operation Permit issued in 2002</p>
<p>Location Workington, Cumbria, CA14 1JX, UK</p>
<p>Capacity 235,000 tonnes per year</p>
<p>BAT conclusion and BAT-AEL for which derogation was requested</p> <p>BAT 40 (COD) and BAT 50 (TSS)</p> <p>Chemical Oxygen Demand (COD): 8.45 – 14.45 kg tonne of paper produced</p> <p>Total Suspended Solids (TSS): 0.35 – 0.74 kg tonne of paper produced</p> <p>These values are not lifted directly from the BAT conclusions. This is because Iggesund Paperboard are also an integrated mill (as defined in the BAT conclusions) and so a mixing calculation has to be performed to account for the load coming from the paper making process as well as the pulping activity. In this case BAT conclusion 50 (Paper making and related processes) and BAT-AEL table 20 applies as well as the BAT conclusion 40 (mechanical and chemi-mechanical pulping) and BAT-AEL table 16 or 17. The CA has conducted the mixing calculation based on a CTMP mill accounting for 70% of the load (BAT 40 Table 17) and 30% of the load coming from papermaking activities using the imported chemical pulp (BAT 50 Table 20). The decision to apply Table 17 rather than Table 16 is based again on the characteristics of the mill and that their operation, involving such high levels of bleaching is more comparable to a CTMP mill than a mechanical pulping mill.</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how?</p> <p>Yes, via the UK Trade Association the CPI (Confederation of Paper Industries) and the European Trade Association CEPI (Confederation of European Paper Industries). The Company is part of a European parent Company; the Holmen group based in Sweden where they have a sister mill to the Workington mill.</p> <p>https://www.holmen.com/en/</p>

Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request?

Yes, various discussions took place well ahead of any application. These were focussed on interpretation issues from the BREF as well as improving the understanding of the subsequent derogation determination process. These discussions led to a draft application being submitted for comment (informally) ahead of the actual application itself and supporting CBA analysis.

3. Application for derogation

Date of application

The revised BREF published in Sept 2014 (the dialogue between operator and EA was initiated before this). Formal application was made on 1 October 2015

Description of the derogation request / background info / rationale for request

Iggesund Paperboard (Workington) Limited produces high quality Folding Box Board (FBB) trading under the name "Incada" for a competitive market and is a mechanical pulp mill as defined in the revised BREF. The brightness of the final product is critical and relies heavily on the highly bleached mechanical pulp produced at the mill.

Iggesund Paperboard has presented a case for a derogation based on the technical characteristics of the installation. The basis for the derogation request is that the mill is unique and not represented in the data set used to compile the BAT-AELs for mechanical pulp mills within the revised BREF. The data set used for mechanical pulp mills does not include any examples where the same level of brightness needs to be achieved from a purely mechanical pulp coupled with high levels of bleaching with hydrogen peroxide. This is more normally achieved by a chemi-mechanical pulp process or CTMP mill that would then need to use less bleaching. Such mills would normally already have secondary (biological) effluent treatment plants installed in order to meet the BAT-AELs and so Iggesund have to make significant alterations to the process and reconfiguration across much of the site in order to install the most appropriate secondary (biological) treatment that will meet the agreed BAT-AELs.

Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria.

Technical characteristic as a primary reason

Geographical location as a secondary reason

The purely mechanical nature of the pulping plant and high levels of bleaching make it difficult to adjust processes to be compatible with a secondary treatment plant, which the operator proposes to install in order for BAT-AELs to be complied with. Further, all four of the CTMP mills that are referenced in the BREF are located on inland waters (Waggeryd Cell, Fors AB, Rottneros & Korsnas Rockhammer Mills in Sweden) and have operated secondary biological effluent treatment for some considerable time. The current on site effluent treatment plant (ETP), provides only coarse screening and primary (settlement) treatment and then discharge via a short sea outfall to the Solway Firth.

The geographical location is a secondary criterion in that helps explain why the site currently has primary effluent treatment only.

Iggesund Paperboard referred to geographical location in their derogation application – installation is on the coast, emissions to coastal water had previously been thought to result in sufficient dilution. Iggesund have not presented a case based primarily on the geographical location, nor have we accepted that is it anything other than a secondary criterion and helps explain why the site technical characteristics (primary treatment, coupled with high levels of bleaching) mean that compliance by 30 September 2018 would be disproportionately expensive.

Arguments used by the operator for requesting derogation?

The operator proposed to implement a whole range of improvements to the process, including reviewing operation of the board machine, introduction of alternative bleaching technology and installation of new reclaimed water silos as well as improved primary treatment; all of that ahead of the biological treatment being sized and constructed (e.g. H₂O₂ reduction).

This work (costed out to £13.5 million over 5 years with £2 million already spent by the time of applying for a derogation), is predicted to deliver the following reductions:

- 75% lower COD per tonne paperboard produced
- 90% lower TSS per tonne paperboard produced
- 45-50% lower water consumption per tonne paperboard produced (this helps as the BAT-AELs are load based annual limits calculated as a function of concentration and effluent flow).

Data and calculations used in the application to justify request:

The EA recommends applicants to use the CBA tool (<https://www.gov.uk/government/publications/industrial-emissions-directive-derogation-cost-benefit-analysis-tool>) – there was a discussion between EA and operator on how to handle the costs.

This case was notably different to that of other derogation cases. The operator had approached them in advance of the BAT conclusions.

The basis of the derogation was that the operator was placed in a situation where they would need to install secondary treatment facilities and a system for dealing with very high volumes of effluent – high capital, maintenance and waste disposal costs.

It is important to state that the CA requires the applicant to consider all viable options to meet BAT-AEL in time (September 2018), and other options to achieve BAT-AEL as soon as possible after the compliance deadline. In the case of the operator, they had the following options:

- Installing an activated sludge treatment of total stream, secondary clarifier, biosludge treatment and tertiary dissolved air flotation unit (i.e. stop the ongoing improvements and build a separate 2ary+3ary plant). This would enable to operator to meet BAT-AELs by the deadline. The CA progressed this option to the CBA stage.
- Tankering off all the effluent to a suitable external treatment plant. This would involve some 900 tankers per day and movement of liquid waste out of the County to suitable works, travelling to and from the Lake District in order to do so. This option was not entered into the CBA tool because the very high costs involved mean it is clear it would have been found to be disproportionately costly.
- Optimising the operations prior to sizing and installing an appropriately sized effluent treatment plant (i.e. continue with ongoing improvements, then build the necessary treatment facilities). This would deliver compliance with BAT-AELs from 1 January 2022 (time limited derogation until 31 December 2021).

Interestingly the operator did not present the 'business as usual' case as they have already invested £2m into their preferred (derogation) option, therefore 'business as usual' no longer existed.

Costs:

- ▶ Type of costs used in application (operational, capital, other - specify)
- ▶ Source of cost data
- ▶ Calculations of costs

Installation of a large activated sludge and tertiary treatment based on current loadings is calculated as a minimum additional £26 million capital costs (due to a much larger footprint and operating costs of the ETP as well as considerably higher disposal costs for the resultant sludge), whereas tankering all effluent to waste water treatment works capable of taking the effluent at current volumes of 18,000m³/day (900 tankers per day) is calculated at over £130 million per year operating costs. In assessing total cost, the CA took into account the total of:

- capital costs (equipment, set up cost – preparation of the site, civils, materials and other capex – project planning)
- operational costs (labour, maintenance, chemicals needed for operation)
- cost of waste disposal
- energy consumption
- process related greenhouse gases generated

The operator has completed the cost/benefit tool developed by the Environment Agency which confirmed that complying by 2018 will cost at least £26 million more than the proposed derogation option. The CA reviewed those costings and agreed with both the figures used and the conclusion reached.

A whole range of impacts that were only assessed qualitatively was also considered, for example visual impact, impact from noise and impact on the shoreline.

Benefits:

- ▶ Type of benefits used in the application
- ▶ Source of data
- ▶ Calculations of benefits

The benefits have been monetised using the National Water Environment Benefits Survey (NWEBS) willingness-to-pay survey produced for assessing bundles of measures under the Water Framework Directive. The NWEBS values cover aesthetic, recreational and existence values. The nearest water body for which we have NWEBS values is the Solway Tweed, which is slightly to the north of Iggesund's plant but still not too far away. The actual receiving water body is the Solway Outer South, which is currently classified as 'moderate'. NWEBS suggests that society would be willing to pay around £1000 per year per km to improve the status of the Solway Tweed from moderate to good. If it is assumed that by complying with BAT Iggesund will achieve that benefit three years earlier and that it would affect around 10km of the water body then the cost to the environment of Iggesund's proposed derogation option is £10,000 per year for three years. Note that this substantially over-estimates the impact of Iggesund's emissions on the water body's status so this is already a very conservative assessment from the point of view of the applicant. The value of £10,000 per year for three years is not large compared to the size of Iggesund's investments and therefore the view of the economist supporting the determination of this application is that it is not necessary to pin down the details any further. Instead a wide sensitivity analysis has been used to see if it changes the overall result, with values of £5,000 per year and £30,000 per year being used in the CBA tool. As set out above, while the higher benefits value do make the NPV less negative it does not change the overall result.

Note – it was not certain exactly how the improvements would change the WFD status, so it was assumed the change would result of improvement of one level (moderate to good) – assumed a 10km stretch of water, for 3 years + sensitivity analysis.

Statement on disproportionality in the application? If so, what and how is this calculated?

This was calculated using the CBA tool, which uses the Net Present Value to discount both costs and benefits first, then add them together and compare for each option considered.

It is important to highlight that the CBA tool, while extremely important in making the final decision, is only one of the things we will consider. The CA will also consider wider context for example amenity impacts, size of the local population and its proximity to the installation, history of complaints, fairness to others, especially in the context of other derogations previously granted or rejected. This is called 'a basket of measures' approach.

Were any aspects of the information provided not in line with the MS guidance, if any?

The only thing was not considering the 'business as usual' case but this was well justified by the operator. The CA advises all operators to enter at least 2 options in addition to BAU; in this case we only had 2 options and no BAU.

4. Evaluation of derogation request

How are the data and calculations validated?

Checked both by the permitting officer considering the derogation as well as by the principal economist. Some cost data can be validated by the reference to the BREF, others checked against freely available data for example on energy consumption. The CA reserves the option to ask for formal quotes from suppliers or even to commission an external supplier for quotes ourselves, however, this was not done in this case. There was high confidence in the costing of the derogation option as the operator has already started implementing it.

Did the CA perform any research or consultation for additional data sources? If so, please specify.

Not in this case as it was fairly straightforward.

Note – the EA reserves the right to ask for specific quotes from suppliers to verify the capital costs supplied are correct.

Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.

Several times. For example, with operator's involvement the figures that should be used to measure environmental benefits were agreed. The operator supplied more information in May 2016. This included: better justification for a derogation, better description of the work plan including costings. There were a few

<p>conversations to clarify an odd point that are not recorded separately.</p>
<p>How was disproportionality assessed? (calculations and thresholds)</p> <p>In this case it was straightforward, given the output from the CBA. There are no specific thresholds to guide us, and instead it is preferred to look at the merit of each application on a case by case basis. This is mostly to ensure that the CA does not encourage perverse behaviours from operators, for example the derogation case being just above the threshold come up with. Also, any thresholds will be arbitrary and therefore open to a challenge.</p> <p>Noted that disproportionality assessment in this process is a foregone conclusion as in most cases, when an application has got to that point, it is very likely to be deemed to be disproportionate – usually get a very net negative value from the CBA tool.</p> <p>Opens a wider point about the BREF and derogations process – the BREFs themselves are not subject to a CBA. It was noted that once an application has passed ‘stage 1’ of the process i.e. demonstrates a case that is defined in Article 15(4), most cases will be found to be disproportionate on CBA grounds.</p> <p>This is why the EA deliberately does not set a defined level of ‘disproportionality’ – the numbers generated by the CBA tool will only tell part of the story, and the qualitative information needs to be taken into account as well.</p> <p>The CBA analysis does not dictate a decision on derogations.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p> <p>The EA does not record every contact ever made. As part of the permitting process, the EA encourages permitting officers to be in close contact with the applicant, discuss progress regularly and resolve minor issues using an informal approach (for example email not a notice). The EA only records major interactions to make sure the critical records of the application are retained.</p> <p>This approach is also important from the confidentiality point of view. The entire derogation application is often considered confidential, and it is only made visible to the public including competitors at the point of deciding that the EA is minded to grant the derogation – as there is a need to consult on the ‘minded to’ decision.</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>Not in this case, other than as described above.</p> <p>The impact on employment or local economy as part of the derogation application will not be considered.</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>It was important to compare the installation to other similar plants across the EU to validate the operator’s arguments.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No – but it helped to highlight that the installation was an ‘outlier’ on the proposed BAT-AEL ranges.</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No – although there was dialogue between operator and EA, about some specific details e.g. requesting operator provide further detail on how they planned to implement the improvements (i.e. clarifying timeline) and what each step would achieve in terms of emissions reduction.</p>
<p>5. Derogation decision</p>
<p>Date of the decision internal ‘minded to grant’ decision on 28 July 2016, followed by a statutory external consultation on 7 October 2016, and followed by a permit with derogation granted on 21 November 2016.</p> <p>Note – public consultation is standard for all derogation reviews. If the EA is minded to grant a derogation, they always proceed to consult the public for the minimum of 28 days so the permit with the formal grant of a derogation is always issued a few months later.</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Granted, time limited for 3 years</p>



<p>*Note that all (bar one) of the derogations granted in the UK are time-limited</p> <p>Refer to the permit for specific permit conditions and limits imposed:</p> <ul style="list-style-type: none">- Conditions 3.1.1, 3.1.2 (compliance with limits), 2.4 (improvement programme), 3.5 (monitoring)- page 23, Table S1.3, IC3 and IC4 for the obligation on the operator to inform us every 6 months on the progress of work aimed at achieving compliance with BAT-AELs and associated narrative BAT.- page 31, Table S3.2 for current limits on TSS and COD (note different units), page 34, Table S3.3 for new limits from 1 January 2022.- pages 46 and 47 for a summary of the derogation decision.
<p>How was the decision communicated to the operator?</p> <p>Verbally (the designated permitting officer will have a contact with the operator); the operator also received the link to the minded to consultation, and a copy of the final permit.</p>
<p>Has the decision been published online?</p> <p>Yes</p>
<p>Where can the permit and application decision be accessed (please provide a link to the documents)?</p> <p>Permit and the decision document can be accessed from here: https://www.gov.uk/government/publications/ca14-1jx-iggesund-paperboard-workington-limited-environmental-permit-issued-eprbj7590ibv005</p>
<p>Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify.</p> <p>Yes, as part of the normal compliance checks. Also, the EA are evaluating operator's progress every 6 months so are in a position to intervene quicker than 1 January 2022 if the improvement work does not progress as planned and/or does not deliver expected reductions of emissions.</p> <p>If it is indicated that the operator will not be in compliance, the EA can intervene, requesting the operator to submit a revised derogation application (i.e. before the expiry date of the current one).</p>
<p>6. Further information</p>
<p>Documents available (applications, evaluations, decisions)?</p>

13. Derogation Case Study – UK (Wales)

1. Case study details: IS – BAT 48,49
<p>Company name Tata Steel UK Limited</p>
<p>Company website https://www.tatasteeleurope.com/en/about%E2%80%93us/operations/about-tata-steel-uk</p>
<p>Description of company and process (main process, products) Integrated iron and steelworks. Sinter production, coke making, blast furnace (iron), basic oxygen steelmaking. The integrated steel works has several identifiable processes which are carried out sequentially across the installation in order to convert the raw iron ores and coal to semi-finished (slab) and finished steel products (such as hot rolled, pickled and oiled, cold rolled and annealed). Coke making - Once in the ovens, the coal is heated at a temperature of between 1200 -1300 °C for a period of around 18 hours to produce coke. At the end of the coke cycle, the coke is pushed out of the oven into a rail car and the red hot coke is transported to a quenching tower where it is quenched by water.</p>
<p>Year of first operation 1953 (estimated)</p>
<p>Location Port Talbot, Wales</p>
<p>Capacity Liquid steel production from its 2 blast furnaces at full capacity is approximately 5 million tonnes per annum.</p>
<p>BAT conclusion and BAT-AEL for which derogation was requested IS BATC - BAT 48 and 49 (the installation also requested derogations from BAT 26)</p>
2. Initiation of derogation
<p>Was the company involved in the BREF process (either directly or via trade associations)? If so, how? Yes – through trade association (EUROFER). No further details. It was the first BREF / BAT conclusions under the IED. It is expected that more focus will be given during other BREF reviews.</p>
<p>Were there any contacts or discussions between the operator and the CA in advance of the application for derogation request? Yes – the option to request a derogation is thoroughly scrutinised before an official application. NRW has the philosophy to avoid where possible requests for derogations. The assessment of the BAT conclusions is discussed with all installations to understand which might be problematic, even before publication of the BAT conclusions. Prior to application there was a lot of discussion with the operator as part of an initial assessment. NRW gives the message to operators that derogation requests are difficult and complex. An initial assessment by NRW prior to an official application involves the following:</p> <ul style="list-style-type: none"> • NRW does not tend to accept geographical location as a valid criterion (rationale: Wales homogenous region, no remote islands); • Costs are key; • Is a CBA included? • Any air quality or other standards affected; • Limit in permit designed to ensure no significant pollution (provided no new release); • High level of environmental protection achieved.

<p>This very early assessment allows operators to evaluate their investment strategy. Only after this “broad brush approach”, formal derogation requests are submitted (as for the IS case study).</p>
<p>3. Application for derogation</p>
<p>Date of application 2014</p>
<p>Description of the derogation request / background info / rationale for request The installation does not scrub coke oven gas at the moment, levels of sulphur are controlled by the inputs. Coke oven gas is used elsewhere (linked to BAT 48), where the same ELVs apply as in BAT 49 (overall environmental protection is therefore ensured). BAT 49: they do not use coke oven gas, they use it for various parts of the integrated works (e.g. heating furnaces) → BAT does not really apply <i>(NRW from hindsight: wouldn't include BAT 49 in the derogation request as the BAT just does not apply)</i> A CBA was included as part of the derogation request associated with BAT 48.</p>
<p>Against which criterion as listed under Article 15(4) (i.e. geographical location, local environmental conditions or technical characteristics) was the derogation requested? In case more than one criterion was concerned please include information for each criteria. Technical characteristics</p>
<p>Arguments used by the operator for requesting derogation? The age of the existing plant, meaning that retrofitted pollution abatement equipment would have a more limited operational life, significantly increasing costs. The installation of coke oven gas de-sulphurisation lies outside the normal investment cycle for the plant. The requirement to improve tar and ammonia removal to ensure effective operation of the de-sulphurisation plant increase the capital cost of the project.</p> <p>BAT 48 From “Review of General, Coke, Sinter, Iron and Steel processes against Iron and Steel BAT Conclusions, March 2012.”: <i>Reducing Sulphur Content of COG BAT assessment</i> <i>Plans have commenced to install a coke oven gas desulphurisation unit to treat the gas arising from the coke ovens in Port Talbot, subject to the capital planning process within Tata Steel. To date, provisional financing arrangements remain to be confirmed although detailed engineering studies are on-going. Installation of COG desulphurisation is a substantial and complex project involving considerable engineering and technological resource. An assessment undertaken in August 2013 indicates that December 2017 is the earliest feasible date for commissioning of the planned coke oven gas desulphurisation unit. By the end of 2017 therefore, the Port Talbot Morfa coke ovens will meet BAT.</i></p> <p>BAT 49: Coke Oven Gas is not currently desulphurised at Port Talbot, SO₂ is currently controlled by the use of low-sulphur coking coals, this does not achieve the same level of environmental protection as desulphurised coke oven gas. However in normal operation the gas used for underfiring at Port Talbot is predominately Blast Furnace gas which is inherently low in sulphur, only a proportion of coke oven is gas added to elevate the calorific value and in this situation the BAT-AEL is not exceeded. This cannot be achieved until coke oven desulphurisation is complete. From “Review of General, Coke, Sinter, Iron and Steel processes against Iron and Steel BAT Conclusions, March 2012.”: <i>Coke Oven Underfiring BAT assessment</i> <i>BAT conclusions I & II are achieved through regular refractory maintenance and the use of airborne sealing surface powder to ensure leaking is minimised. Single stage burners are in place at Morfa Coke Ovens, however BAT conclusion III only applies to new plants (NA). No COG desulphurisation plant is currently in operation (see BAT 48 comments above), but blast furnace gas, with intrinsically low sulphur content, is</i></p>

normally used for underfiring and the SO₂ emissions are well below the relevant BAT-AEL. In the event that COG is used for underfiring because insufficient BFG is available, the BAT-AEL would not be achieved until such time as the COG desulphurisation plant described in the response to BAT 48 has been commissioned.

Data and calculations used in the application to justify request:

Costs:

- ▶ Type of costs used in application (operational, capital, other - specify)
- ▶ Source of cost data
- ▶ Calculations of costs

Benefits:

- ▶ Type of benefits used in the application
- ▶ Source of data
- ▶ Calculations of benefits

In this case, the costs of achieving BAT are focussed only on the costs between now and March 2019 (the assumed date by which a new coke ovens with COG desulphurisation could be operational). The longer-term picture previously presented, taking into account the likely remaining life of the existing plant, has not been considered here.

Two scenarios have been assessed:

1. The BAT AEL compliance scenario

Cease coke production at Port Talbot in March 2016; rebuild the coke plant to incorporate coke oven gas desulphurisation and, in the interim, purchase coke from external suppliers and additional natural gas. This scenario avoids producing coke oven gas with an H₂S content greater than the BAT-associated emission level after March 2016.

2. The derogation Scenario

Continue to operate the existing plant without coke oven gas desulphurisation until March 2018, but then install a desulphurisation unit to treat the gas arising. Although at a later date the coke ovens would be rebuilt within the normal investment cycle, this cost has not been considered in the assessment as it falls outside the timescales of the required derogation. This alternative would result in greater SO₂ emissions than achieving BAT, but would be less costly.

Net Present Cost

The Net Present Cost (i.e. the cost at 2014 prices, taking into account both capital and operating costs) of each of these options has been estimated.

Scenario 1: The cost of meeting BAT is based on the following assumptions:

- A new coke plant incorporating coke oven gas desulphurisation would be built, to become operational in March 2019
- The capital cost of the new coke plant would be £250M
- 25% of the capital cost would be incurred in the year when the plant started operation, 50% in the previous year and 25% in the year before that
- There would be no overall change in operating costs, manning, maintenance costs or revenues for the new plant compared to the existing plant, other than the additional costs for COG desulphurisation
- Whilst the new coke plant is being built, 913,000 tonnes of coke would be bought each year (based on 2013 production)
- The cost of purchasing coke from external suppliers, purchasing additional natural gas and loss of revenue from by-products sales would be equivalent to £20 per tonne of coke compared to maintaining coke production on site

On this basis, the Net Present Cost of Scenario 1 over the period from now up to March 2018 would be £308M.

Scenario 2: The cost of the proposed option of retrofitting coke oven gas desulphurisation to the existing coke plant has been assessed based on the following assumptions:

- The COG desulphurisation plant would become operational in March 2018
- The capital cost of the COG desulphurisation plant would be £26.6M
- 25% of the capital costs would be incurred in the year when the plant started operation, 50% in the

previous year and 25% in the year before that

- The net operating costs would be £5.38M per annum

On this basis, the Net Present Cost of Scenario 2 from now up to March 2018 would be £35.3M.

SO₂ emissions

The additional SO₂ emissions arising from the proposed Scenario 2 are 2,089 tonnes per annum greater than could be achieved through implementation of BAT, but since the derogation is only required for two years, this amounts to 4,177 tonnes SO₂ overall.

Cost-benefit analysis

The effective SO₂ abatement cost of achieving BAT can be calculated by dividing the difference between the Net Present Cost of the two options by the amount of SO₂ that would be abated by earlier installation of coke oven gas desulphurisation.

Thus the effective SO₂ abatement cost of achieving BAT would be $(308-35.3) \times 10^6 / 4,177 = £65,286$ per tonne SO₂ abated.

Sensitivity analysis

Because of the uncertainty of the cost of buying coke and natural gas whilst the ovens were being rebuilt, the sensitivity of the SO₂ abatement cost to this value has been assessed:

If the cost is £20/tonne coke, the cost to achieve BAT = £65,286 per tonne SO₂

If the cost is £10/tonne coke, the cost to achieve BAT = £59,393 per tonne SO₂

If the cost is £40/tonne coke, the cost to achieve BAT = £77,050 per tonne SO₂

Because of the uncertainty of the capital cost of a new coke plant, the sensitivity of the SO₂ abatement cost to this value has been assessed:

If the cost is £250M, the cost to achieve BAT = £65,286 per tonne SO₂

If the cost is £200M, the cost to achieve BAT = £52,887 per tonne SO₂

If the cost is £300M, the cost to achieve BAT = £77,670 per tonne SO₂

Statement on disproportionality in the application? If so, what and how is this calculated?

Net present values

IS BATC: ~0.1 (benefit cost ratio)

Were any aspects of the information provided not in line with the MS guidance, if any?

No

4. Evaluation of derogation request

How are the data and calculations validated?

The operator provided costing of project, NRW validated information (e.g. based on info from BREF, similar projects, previous projects dealt with, EA) to check if the information provided is reasonable.

NRW - Small project team (4 people).

The cost of harm used by NRW in the evaluation of this derogation was the Eunomia figure for SO₂, this figure is the highest cost of harm available and is used as a conservative screen.

Also reference to the IS BREF:

Typical operating and capital costs for the desulphurisation of 42000 Nm³/h coke oven gas containing 6 g/Nm³ H₂S and 6 Nm³ NH₃ of the two main types of coke oven gas desulphurisation techniques used in Europe (ASK and Stretford) are given in Table 5.18. It was reported that an increase in desulphurisation efficiency from 95 to 99.9 % in the Stretford process only costs 10 % extra. In the Stretford process, the most important operating costs items are the capital charges and the chemicals (see Table 5.18). Coke oven gas with high HCN concentrations (>2 g/Nm³) consumes relatively large amounts of chemicals. In this case it might be beneficial to install an HCN prewash before the Stretford unit.

Implementing the gas desulphurisation technique costs around EUR 30 million (capital cost) in a coke oven plant with about a hundred ovens (ArcelorMittal).'

Did the CA perform any research or consultation for additional data sources? If so, please specify.

YES – see above

It is also investigated whether the derogation breaches any applicable limit in the Annexes to the Directive or quality standards.

Coke ovens are combustion units but are specifically excluded from Chapter III the special provisions for combustion plants and Annex V by virtue of Article 28.

The current emission levels will remain, there is currently no breach of EQS for SO₂ and therefore allowing the derogation will not result in a breach of EQS.

Have there been requests to the operator for clarifications or revisions of calculations? If so, please specify.

There have been several interactions for clarifications.

How was disproportionality assessed? (calculations and thresholds)

NRW consulted legal opinion and came up with a benefit cost ratio of 0.75 (to be used for all derogation requests, also communicated with operators).

Rationale:

- In general, for values above 0.75 small variation in costs of project or harm could result in real benefit
- For values below 0.75 one could be fairly comfortable the actual ratio is less than 1 (taking into account sensitivity analyses, other data etc.); Below 0.75: NRW is more comfortable that within limits, disproportionate
- Closer to 0: costs disproportionately higher

➔ 0.75 is used as screening threshold

➔ Reason for communication screening threshold value: operator wants certainty and needs some indication.

From decision document:

NRW has assessed the costs and benefits of closing the coke oven at Port Talbot in March 2016 and rebuilding it against the costs and benefits of a retrofitting scenario in 2018, utilising a derogation for the two year period. The cost-benefit used Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) estimates on annual bases supplied by Tata, cumulative interest on Weighted Average Cost of Capital (WACC) and Green Book (Government Guidance to the Treasury) compliant discounting factors with a base year of 2014.

Analysis limited solely to the 2016 to 2019 period would indicate that discounted costs under the closure / rebuild scenario were around 8.5 times those associated with the retrofitting scenario. This broadly confirmed Tata's own Net Present Costs.

The difference between the two scenarios in discounted costs terms was then set against the potential environmental benefits over the 2016 -2019 period.

As its central estimation NRW has taken the highest valuation of sulphur dioxide and has applied both a regional adjustment factor and a price weighting to deal with inflation since the estimates were made. Taking the highest valuation for a pollutant is considered a screening stage; if the cost benefit fails other internationally agreed valuations can be used in order to properly assess the submission.

Discounted benefits are outweighed by discounted costs some nine-fold (Benefit Cost Ratio (BCR) 0.11). When the calculation is reworked using the central DEFRA estimate of SO₂ valuation, the benefit-cost ratio (BCR) falls further to 0.04 on account of the discounted aggregate benefits being lower. We have only looked at derogating for a period of three years as Tata will be able to meet the new limit in 2019.

However, at some point the capital will have to be replaced. This would be done at a more usual point in Tata's investment cycle. Clearly, analysis limited solely to the 2016-2019 period takes no account of this.

Nevertheless the entire costs over a three year replacement 2024-2026 have been factored in on a discounted basis. The expenditure figures used for this period are those supplied earlier as part of an initial package of scenario information from Tata over and above the usual operation costs for that period which were deducted from the supplied costs for the years. The early (2026) scenario has been taken rather than either 2031 or 2036 as discounted costs will weigh heavier under this scenario.

NRW has sensitivity tested this addition to the model by replacing the supplied costs with the full closure /



<p>rebuild costs shifted down the line and appropriately discounted. Under none of these scenarios does the 2016 closure option have a BCR of greater than 0.53 when the baseline option is the retrofitting alternative. Therefore, unless further information to the contrary is supplied, it would appear that the closure / rebuild scenario is an inefficient allocation of resources in terms of its returns in environmental benefits and that a derogation to 2019 could be allowed.</p>
<p>How many iterations / contacts between operator and CA took place during the evaluation</p>
<p>Have additional factors (not submitted in the application) been taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Has the BREF process and in particular the development of the BAT conclusion in question been considered in the evaluation? If so, please specify.</p> <p>Not specifically. But as stated above, contacts were made between NRW and the operator in advance of the publication of the BAT conclusions to understand which might be problematic.</p>
<p>Was the involvement of the company in the BREF process, if any, taken into account in the evaluation? If so, please specify.</p> <p>No</p>
<p>Were any aspects of the evaluation process not in line with the MS guidance, if any?</p> <p>No</p>
<p>5. Derogation decision</p>
<p>Date of the decision</p> <p>Not specified</p>
<p>Outcome of the decision: granted/rejected and specifics of the derogation (e.g. actual ELV imposed, timeframe granted, other permit conditions)</p> <p>Derogation up until March 2018</p> <p>Decision in annex to permit (see BAT 48 and 49):</p>

We have considered the Operator's proposed techniques and its comparison against other relevant techniques as described in the relevant BAT reference note. Our full reasoning is given in our decision document that accompanies the permit determination.

The proposed techniques will result in emissions for which the appropriate emission limits are less stringent than those associated with the best available techniques as described in BAT conclusions.

We have considered the operators justification for departure from the guidance and accept it in the following respects and for the following reasons;

- 1) The age of existing plant, meaning that retrofitted pollution abatement equipment would have a more limited operational life, significantly increasing costs
- 2) The installation of coke oven gas de-sulphurisation lies outside the normal investment cycle for the plant.
- 3) The current emission limit values will be maintained throughout the period of the derogation. The current emission limit values have been set to be protective of the environment and not result in significant pollution. No significant pollution will occur as a result of the derogation.
- 4) NRW has assessed the costs and benefits of closing the coke oven at Port Talbot in March 2018 and rebuilding it against the costs and benefits of a retrofitting scenario in 2018, utilising a derogation for the two year period.
- 5) NRW have assessed the costs and benefits in of a time limited derogation for BAT 26 utilising a derogation of 6 months.

The achievement of emission levels associated with the best available techniques as described in BAT conclusions would lead to disproportionately higher costs compared to the environmental benefits due to the technical characteristics of the installation concerned.

BAT conclusion	Associated BAT-AEL	Derogation until	ELV during derogation period
26	30 mg/m ³ for dust	October 2016	50 mg/m ³
48	1000mg/m ³ for hydrogen sulphide (this is not an AEL)	March 2018	No ELV
49	500 mg/m ³ for sulphur dioxide	March 2018	250 mg/m ³ (lean) 1000 mg/m ³ (rich)
	20 mg/m ³ for dust	March 2018	100 mg/m ³

How was the decision communicated to the operator?

Operators are notified via email in advance of the official decision document / annex to permit.

Has the decision been published online? See below, section 6

Where can the permit and application decision be accessed?

<https://naturalresources.wales/permits-and-permissions/check-for-a-permit-licence-or-exemption/?lang=en>

Will there be a follow-up evaluation, for example after the time frame of the derogation has expired? If so, please specify. Derogation up till March 2018

6. Further information

Documents available (applications, evaluations, decisions)?

It is intended for the documents to be made available online. The website is currently being reorganised so some documents may be available only upon request for the time being:

- Permit with annex of derogation, permit number EPR/BL7108IM (incl NRW's arguments of the derogation evaluation); and
- Derogation decision document

Available via: <https://naturalresources.wales/permits-and-permissions/check-for-a-permit-licence-or-exemption/?lang=en>





Appendix C

Presentations at IEEG and Forum Meetings

- ▶ IEEG Workshop on IED implementation (Article 15(4)) – 19 October 2017, Brussels⁴⁶
- ▶ IED Article 13 Forum meeting – 20 December 2017, Brussels⁴⁷
- ▶ Feedback from participants at IEEG and Forum meetings

⁴⁶ <https://circabc.europa.eu/sd/a/2faa5192-2ac0-4d92-a728-353f01bb3c61/5.%20Derogations%20AFW.pdf>

⁴⁷ <https://circabc.europa.eu/sd/a/a9515429-6176-468c-840a-d251a62af8fb/AMEC%20Article%2015-4%20derogations%20AMENDED.pdf>

