

Consultation on implementation of the Medium Combustion Plant Directive in Scotland

December 2016



Scottish Government
Riaghaltas na h-Alba
gov.scot

Responding to this consultation

We are inviting responses to this consultation by 10 March 2017. Please respond to this consultation using the Scottish Government's consultation platform, Citizen Space. You view and respond to this consultation online at <https://consult.scotland.gov.uk/environmental-quality/implementation-medium-combustion-plant-directive> You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the above closing date.

If you are unable to respond online, please send your response and the completed Respondent Information Form (see "Handling your Response" below) to:

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If you have any queries or require further information about the consultation please contact Andrew Taylor on 0131 244 7813 or at the above email address.

Scottish Government consultation process

Consultation is an essential part of the policy making process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: <http://consult.scotland.gov.uk> Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

Consultations may involve seeking views in a number of different ways, such as public meetings, focus groups, or other online methods such as Dialogue (<https://www.ideas.gov.scot>)

Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

Handling your response

If you respond using Citizen Space (<http://consult.scotland.gov.uk/>), you will be directed to the Respondent Information Form. Please indicate how you wish your response to be handled and, in particular, whether you are happy for your response to be published.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form attached included in this document. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

Next steps in the process

Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.scotland.gov.uk>. If you use Citizen Space to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so.

What happens next?

Following the closing date, all responses will be analysed and considered along with all other available evidence to help us reach a decision on how to transpose the Medium Combustion Plant Directive in Scotland. We aim to issue a report on this consultation process within four weeks of the closing date and confirm the transposition timetable as soon as possible.

Comments and complaints

If you have any comments about how this consultation exercise has been conducted, please use the contact details on the previous page.

Introduction

This consultation seeks views on proposals designed to limit harmful emissions to air from medium sized combustion plants, through transposition in Scotland of EU Directive 2015/2193 on Medium Combustion Plants (MCPD)¹. The MCPD fills the regulatory gap at EU level between large combustion plants (> 50 MW) covered by the Industrial Emissions Directive and smaller appliances (< 1 MW) covered by the Ecodesign Directive.

Medium combustion plants (MCPs) are used to generate heat for large buildings (e.g. offices, hotels, hospitals, prisons) and industrial processes, as well as for power generation. Combustion plants in the MCP range (1-50 MW) are a significant, currently largely unregulated source of emissions of air pollutants (especially nitrogen dioxide (NO_x), fine particulate matter (PM) and sulphur dioxide (SO₂)) which impact on air quality. The MCPD was brought in to address this issue – it requires all MCPs to be registered or permitted and sets limits on the levels of pollutants that these plants can emit depending on their type, size, age, fuel type and annual operating hours. It also sets periodic emissions monitoring requirements to demonstrate compliance with emission limits. The MCPD will deliver cost effective reductions in pollutant emissions (as outlined in the Impact Assessment referred to under Question 11 of this consultation paper). Implementation of the Directive across the UK will provide an estimated 24% of the SO₂ and 9% of the NO_x emissions reductions needed to meet the 2030 UK wide national emission ceilings.

The Directive must be transposed into legislation by 19 December 2017, with requirements for new plants coming into force in December 2018. Older plants must comply with requirements from 2024 or 2029 depending largely on size. Full implementation will be achieved in 2030. Whilst many of the requirements in the Directive are set, there are some options for how to transpose it into domestic legislation and that is the focus of this consultation.

Generators with very high NO_x emissions

Schemes to increase capacity and provide balancing services for the electricity market are incentivising greater use of (mainly diesel) generators with very high NO_x emissions relative to other forms of generators within the MCP size range. In the past emissions from these generators have not been regulated because they have typically been used to provide back-up power in the event of emergencies and therefore run for a very small number of hours. The numbers and use of diesel generators are projected to increase rapidly over the next few years due to domestic energy market incentives. This is likely to lead to an avoidable increase in NO_x emissions, which the Scottish and UK Governments are committed to reduce. Ceilings for NO_x emissions in 2020 were set in the Gothenburg Protocol, an international agreement under the United Nations Convention on Long Range Transboundary Air Pollution and the National Emission Ceilings Directive.

Modelling indicates that high NO_x emitting generators can lead to local NO₂ hourly concentrations at levels that, according to the World Health Organisation (WHO), can impact on human health. The UK also has obligations through the EU Ambient Air Quality Directive to ensure that concentrations of NO₂ do not exceed WHO guideline levels more than 18 times each year. The MCPD will not provide the controls required to adequately address this problem. Under the MCPD, plant operating for less than 500 hours can be

¹ <http://ec.europa.eu/environment/industry/stationary/mcpd.htm>

exempt from emission limits. However diesel generators operating for the energy balancing market typically operate for less than 500 hours which means they could benefit from this exemption.

Very few of the Capacity Market diesel installations from the 2014 and 2015 auctions were located in Scotland and the Scottish Government is still reviewing the case for adopting controls for generators with high NO_x emissions. However there will be a further Capacity Market auction in December 2016, and we are therefore seeking views as part of this consultation on how this issue should be addressed in Scotland.

Approach to transposition

In Scotland, the intention is to transpose the MCPD as part of the Integrated Authorisation Framework².

In England and Wales the proposal is to jointly amend the Environmental Permitting Regulations to transpose MCPD and at the same time to introduce controls on generators with high NO_x emissions. Northern Ireland will lay separate transposition legislation.

In the development of these proposals, the Scottish Government and the other UK administrations have engaged with industry and regulators. A series of technical workshops was held with industry and regulators across the UK to seek views on possible regulatory approaches.

² <http://www.gov.scot/Topics/Environment/waste-and-pollution/BER/SAF>

Medium Combustion Plant Directive – General background

Emissions from some combustion plants over 20 MW, are currently regulated under the Pollution Prevention and Control (Scotland) Regulations 2012³. These Regulations transpose the Industrial Emissions Directive for plants on industrial sites with aggregated thermal input capacity of 50 MW or more, and implement domestic provisions for plants with a thermal input capacity of between 20 and 50 MW. The 2012 Regulations require all plants in scope to have a permit, which sets controls on emissions to air and requires operators to regularly test emissions and be subject to regular inspections. In addition, from 1 January 2020 solid fuel plants up to 500 KW will be subject to placing on the market standards (through the EU Ecodesign Directive), but this still leaves a wide regulatory gap. Emission controls under the Clean Air Act 1993 (CAA) contain important provisions to prevent emissions of black smoke and set requirements on stack heights to aid dispersion of pollutants. However, the CAA is focused on burning solid fuels in urban areas only, which is relevant only for a small minority of MCPs. Furthermore, with the exception of smaller wood burners, the emission limits set in the CAA are dated and therefore are no longer driving change. Regulation is therefore required to apply cost-effective emission controls for this important source of air pollution which incentivise the development and uptake of cleaner technology.

The MCPD introduces mandatory registration or permitting of combustion plants with a thermal input capacity of between 1 and 50 MW. In 2030, when fully implemented, it is estimated that it will apply to approximately 2,000 plants in Scotland. Plants must comply with emission limits (set out in Annex II of the Directive) which depend on plant age, size, type and fuel used, and monitor emissions periodically to demonstrate compliance with the Directive. In addition, all plants must monitor emissions of carbon monoxide periodically. It is estimated that approximately 700 MCPs will be subject to emission limits in Scotland; the remaining plants are standby and backup, which operate infrequently. From the plants subject to emission limits, the majority are 1-5 MW gas boilers but there are also plant operating on solid (biomass, coal) and liquid fuels for heat and/or power generation.

Proposed legislative approach

As indicated in the introduction to this consultation, the Scottish Government proposes to transpose the MCPD via the Integrated Authorisation Framework (IAF). The IAF will bring together all the permissioning arrangements for SEPA's four main regulatory areas (water, waste, radioactive substances and Pollution Prevention and Control) into a single permissioning structure and under a single standardised procedure (subject to the requirements of European and national legislation). This approach to transposition represents the most efficient use of resources and is also consistent with the move away from multiple authorisations for different processes.

An alternative approach would be to transpose through amendment to the 2012 Regulations. However this would not allow the flexibility of the use of registration rather than permits provided by the Directive, (which is desired for the vast majority of MCP).

³ <http://www.legislation.gov.uk/ssi/2012/360/contents/made>

Flexibilities

The MCPD regulatory approach is designed to be straightforward to apply. However MCPs are very diverse and used for a range of functions, and so the Directive provides for a number of flexibilities to ensure the requirements are proportionate and do not cause risks to energy or heat security. Member States must decide whether to apply some flexibilities. Member States must also determine the appropriate approach to enforcement and permitting in some areas. The Scottish Government's proposed approach to applying flexibilities is outlined in Table 1.

Table 1. Flexibilities

Flexibility	Proposed approach and rationale
1) Exemption from MCPD Annex II Emission Limit Values (ELVs) for existing plant operating less than 500 hours per year as a 5 year rolling average. (Articles 6(3) and 6(8))	Apply in full – for most plant operating a limited number of hours, compliance with ELVs is not proportionate considering the limited emission reductions achieved.
2) Extension of time exempted in 1) above to 1000 hours for plant supplying heating in exceptionally cold weather. (Article 6(3))	This consultation is seeking views on the need for such an extension.
3) Extension of time exempted in 1) above to 1000 hours for plants in islands when the power supply is interrupted. (Article 6(3))	Apply in full – this is expected to be a very rare event where additional flexibility in the exemption from compliance to ELVs may be needed to allow power supply to be restored.
4) Less stringent ELVs for some new MCPs until 2025 and delay in application of ELVs to existing MCPs until 2030, if located in Small and Micro Isolated Systems (SIS and MIS) (Article 6(4))	Apply in full - there are a very small number of such plants in Scotland. Flexibility enables plants in such difficult locations longer time to achieve compliance.
5) Delay in application of Annex II ELVs for certain existing plant over 5 MW supplying heat to public district heating networks (Article 6(5))	Apply in full – district heating is a sustainable technology supported by the Scottish Government. Since this flexibility applies to a low number of plants, is time limited and regulators must still apply emission controls which safeguard local air quality, it will have limited impact on air quality.
6) Higher dust ELV for plant firing solid biomass located in zones compliant with air quality limits. (Article 6(5))	Apply in full – biomass is supported by the Scottish Government as a sustainable, low carbon technology and this flexibility allows the sector a longer time to comply with the Directive. Few plants will be affected and since regulators must still ensure these plants do not cause significant pollution and there is a high level of protection to the environment, there will be little impact on air quality.
7) Delay in requirements for certain plant used to drive compressor stations in national gas transmission system(Article 6(6))	Apply in full – this flexibility is required to allow enough time for upgrading the national gas grid, but impacts a very small number of plants.
8) Exemption from Annex II ELVs for new plant operating less than 500 hours per year as a 3 year rolling average. (Article 6(8))	Apply partially – for most plant operating a limited number of hours, compliance with ELVs is not proportionate considering the limited emission reductions achieved. However some plant with high NOx emissions may breach air quality limit values even if operating for less than 500h per annum, so this consultation also seeks views on additional controls for such plants.
9) Increase in NOx ELVs for new engines operating between 500-1500 hours provided they are applying primary abatement measures(Annex II, Table 2)	Apply partially - modelling indicates that these limits could result in a breach of air quality limit values and consequent harm to human health and the environment.

The need to extend the number of hours MCPs used for heat production can operate without complying with Emission Limit Values (ELVs) in the cases of exceptionally cold weather is still under consideration in Scotland. We are therefore seeking views on applying this extension.

Q1. Do you have any views on whether the flexibility for cold weather should be applied in Scotland? It would be helpful if you could provide a justification for these views, whether for or against.

Q2. Do you agree that the remaining flexibilities should be applied?

Non-Road Mobile Machinery

The MCPD contains an exemption for combustion plants covered by the Non-Road Mobile Machinery Directive (NRMMD)⁴, which applies placing on the market emission standards on compression ignition engines with a net power up to 560 KW mounted on non-road mobile machinery. This 560 KW threshold will be removed when new European legislation comes into force in January 2019 but until then, compression ignition engines over the threshold are not subject to NRMMD placing on the market standards. It can therefore be deemed that they are under scope of the MCPD, although this will not apply to engines used for propulsion since these are also exempt from the MCPD.

Q3. Do you agree the MCPD should be applied to non-propulsion compression ignition engines with a thermal input over 1MW mounted on non-road mobile machinery which are not subject to placing on the market standards under the Non-Road Mobile Machinery Directive?

Choice of regulator

Member States are required to determine the regulators or competent authorities for MCPD. The Scottish Government's view is that this should be SEPA, in line with current arrangements.

Q4. Do you agree that SEPA should be designated the competent authority for MCPD?

Permitting and registration

The key requirement of the Directive is that MCPs are subject to a permit or registration. For existing plants, this requirement does not apply for several years. From 20 December 2018 all new plants must be permitted or registered while existing plants must be permitted or registered from January 2024 if over 5 MW and from January 2029 if between 1 and 5 MW. All plants which operate more than 500 hours per annum or operate on solid fuel will be required to comply with emission limits - from 20 December 2018 for new plants, from January 2025 for existing plants over 5 MW and from January 2030 for existing plant between 1 and 5 MW.

Size	Register	Comply with ELVs (unless exempt)
new – 1-50MW	from 20 December 2018	Immediately
Existing- 5-50MW	By 1 January 2024	By 1 January 2025
Existing 1-5MW	By 1 January 2029	By 1 January 2030

⁴ Directive 97/68/EC on the approximation of the laws of the Member States relating to measures against the emission of gaseous and

As previously mentioned, certain MCPs above 20 MW are already regulated in Scotland as a Part B process under the 2012 Regulations (Schedule 1 Section 1.1 - emissions to air only are regulated), and some directly associated activities at Part A PPC installations as well as some waste incineration/co-incineration plants.

It is proposed that operating an MCP would become a regulated activity. It would then be for the regulator to decide whether to require a permit or registration. It will be necessary to distinguish between those plants, which are already subject to regulation, and those which are not currently covered by the 2012 Regulations. For the latter, Article 5.7 excludes plants that are part of an installation subject to the Industrial Emissions Directive – this exclusion would be incorporated in the above approach as discussed below. Plants excluded under Articles 2.3 and 2.4 of the MCPD can also be addressed by this approach. SEPA may wish to develop specific guidance/position statement on when and how to apply these provisions.

The aggregation rule in Article 4 (which differs from that in the 2012 Regulations) would be applied. The second indent of Article 4 requires judgement by the competent authority – in this case SEPA who may wish to develop specific guidance/position statement on when and how to apply these provisions. Applications for a permit or registration would follow the common procedure, with a requirement for applications to provide the information listed in Annex I (see Article 5.3). The timescales in Article 5.4 are in line with the common framework. The common procedure provisions on registers and provision of information to the public should implement Article 5.5 (with the allowed exception for plants already covered by a permit implementing Chapter II of the IED), noting the requirement for information to be available via the internet.

SEPA would be required to incorporate in permits (or standard rules for registrations) conditions to comply with Article 6 (ELVs). Implementation of the flexibilities in Article 6 is discussed below. SEPA would also be required to incorporate in permits (or standard rules for registrations) conditions to comply with Article 7 (obligations of the operator).

We intend to adopt a risk based approach to permitting to keep the burdens for operators to a minimum and allow SEPA the flexibility to consider local air quality (including as required by Article 6.9) when issuing a permit for higher risk plant. Plants already permitted will simply have existing permits updated to ensure compliance with the Directive.

To implement Article 8 (compliance checks), SEPA will ensure that monitored emissions do not exceed the ELVs, and implement an effective system to check compliance. The enforcement powers provided to SEPA are permissive – in the circumstances covered by Article 8.3 their use would become mandatory. Non compliance (e.g. failure to obtain permit or registration, or non compliance with conditions) would be an offence under the IAF.

Q5. Do you agree with the proposed approach to permitting and registration?

Application of the MCPD to plants already subject to emission controls

The following are already subject to emission controls in Scotland:

- All 20-50 MW plants are subject to environmental permitting in domestic provisions. For Part B plant there is no aggregation i.e. each combustion unit has to be over 20

MW. For Part A plants, aggregation is applied. Emission controls are decided by SEPA based on Best Available Techniques (BAT). For existing 20-50 MW plants (of which there are only four Part B plants in Scotland), domestic provisions are in some cases stricter than Directive emission limits. For new 20-50 MW plants, domestic provisions are less strict except for the NO_x emission limit in some biomass plant.

- Some MCPs which are in installations subject to environmental permitting due to the Industrial Emissions Directive have emission controls applied e.g. where the plants are part of a bigger installation or are directly associated activities of other activities, again based on BAT. SEPA is required to apply BAT to these plants, or stricter limits where required to comply with environmental standards. Directive emission limits are a minimum requirement for these plants, but applying BAT may result in stricter limits being applied.

We propose retaining these stricter limits where they already apply.

Q6. Do you agree with the approach proposed for dealing with plants already subject to emission controls?

Compliance checks

The Directive requires Member States to set up an effective system, based on either environmental inspections or other measures, to check operator compliance. As plants will be subject to regular monitoring by (in the vast majority of cases) a third party, it is proposed that most compliance checks will be remote paper checks to ensure testing is being carried out, emissions limits are being complied with and required information is being recorded. Site visits will only be carried out in case of complaints, lack of cooperation from operators or where sites are complex and require a visit to determine applicable provisions. A compliance regime based on spot checks is proposed.

Q7. Do you agree with the suggested approach for compliance checks?

Non-compliance reporting

The Directive requires Member States to lay down rules for the type, frequency and format of information concerning events of non-compliance with emission limits to be provided by operators to the competent authority. This is required to enable the regulator to meet its obligations, as follows:

- requiring the operator to take any measures necessary to ensure that compliance is restored without undue delay; and
- requiring the operator to suspend the operation of the combustion plant where the non-compliance causes a significant degradation of local air quality.

A risk based approach to reporting non compliance will allow operators opportunity to rectify any problems and focus reporting requirements on instances which may result in a threat to air quality. It is provisionally proposed that operators are required to report non compliance to SEPA under the following circumstances⁵:

⁵ This requirement does not apply to existing requirements for plants that are already permitted.

- There is malfunction of secondary abatement that cannot be fixed within 24 hours;
- Dark smoke produced outside start up and shut down periods that cannot be fixed within 24 hours;
- ELV breaches;
- Failure to undertake monitoring; and
- Other occasions where compliance cannot be restored within one month.

We would want to take MCPs regulated in this way out of coverage of the Clean Air Act 1993 (Section 41A).

Q8. Do you agree that reporting on non-compliances with Emission Limit Values should be restricted only to those listed?

Monitoring

As previously stated, operators are required to monitor pollutant emissions periodically. The Directive allows Member States to lower frequency of monitoring for plants which operate on average up to 500 hours per annum and benefit from the exemption from compliance with Annex II ELVs. Member States must also decide whether to allow alternative methods for determining SO₂ emissions or require continuous monitoring. The proposed monitoring frequency for each type of plant is outlined in Table 2 below. We intend to apply a lower frequency of monitoring for plant operating up to 500 hours, which allows operators to test emissions only once every 1,500 hours of operation for 1-20 MW plants and once every period of average annual operation (500 hours maximum) of operation for 20-50 MW plants, but in any case at least once every five years. The less frequent monitoring is justified for these plants because the majority operate for testing and in emergencies only.

We intend to allow determination of SO₂ emissions based on fuel sulphur content, as is currently applied to combustion plants already subject to emission controls. Member States must also decide whether to require continuous monitoring. Feedback during the pre consultation process suggests that continuous monitoring is disproportionate, considering the risk posed by MCPs and the additional expense of annual comparison between the automated measuring systems and measurements with the reference methods required by the Directive. However, if an operator chooses to apply continuous monitoring then it will be considered an acceptable alternative subject to meeting the requirements of Part 1 and Part 2 of Annex III of the Directive.

Member States must ensure monitoring is carried out based on methods enabling reliable, representative and comparable results. We are working with industry and SEPA to identify suitable methods.

Table 2. Monitoring requirements

Type of Plant	Pollutants Monitored	Plant Capacity	Frequency
natural gas fired plants	CO and NO _x emissions	1-20 MWth	Every 3 years
		20-50 MWth	Annually
plants firing gaseous fuels other than natural gas	CO, NO _x and SO ₂ emissions	1-20 MWth	Every 3 years
		20-50 MWth	Annually
plants firing solid and other liquid fuels	CO, NO _x , SO ₂ and dust emissions	1-20 MWth	Every 3 years
		20-50 MWth	Annually
biomass and other solid fuels (operating <500 hours per annum)	CO and dust emissions	1-20 MWth	Every 5 years
		20-50 MWth	Annually
gaseous and liquid fuels (operating <500 hours per annum)	CO emissions	1-20 MWth	Every 5 years(1)
		20-50 MWth	Annually*

*Biannually and triennially will be considered for the final implementation.

Q9. Do you agree with the proposed approach for monitoring?

Enforcement, suspension and prohibition notices

Currently SEPA adopts a stepwise approach to ensuring compliance with environmental permitting requirements, based on the level of risk posed by any breaches/ offences. Non-compliances are initially enforced through an administrative process e.g. letters and compliance assessment scheme reports (CAS), which are followed up by a more formal enforcement notice if the non-compliance is not addressed by the operator. In some situations where the regulator considers that continued operation poses a serious risk to pollution then a suspension or prohibition notice is served. We intend to mirror this approach for MCPs and apply the necessary general provisions within the IAF. An amendment to the situations in which a suspension or prohibition notice can be served i.e. if operation causes a significant degradation of air quality, is required to reflect the wording of the MCPD.

Offences and penalties

We intend to make use of the proposed offences and penalties within the IAF as outlined in Table 2 below.

Offences	Penalties
<ul style="list-style-type: none">operate a regulated facility without a permitknowingly cause or knowingly permit a) to occurcontravening an environmental permit conditionsFailing to comply with requirements in an enforcement notice, prohibition notice or suspension noticefailure to provide required informationmaking false or misleading statement statementsto intentionally make a false entry in a record required to be kept under an environmental permit condition;	<ul style="list-style-type: none">on summary conviction, a fine or imprisonment for a term not exceeding 12 months, or both;on conviction on indictment, a fine or imprisonment for a term not exceeding five years, or both on summary conviction, to a fine;on conviction on indictment, a fine or imprisonment for a term not exceeding two years, or both.

The IAF proposals contain powers for criminal prosecution; it is anticipated that these will act as a deterrent and be used only in very rare instances where operators persistently fail to achieve compliance, particularly when this results in an impact to local air quality.

Appeals

Also in line with current practice it is intended that the operator will have the ability to appeal against the following decisions made by the regulator:

- Refusal or deemed withdrawal of a permit;
- Conditions of permit;
- Suspension of permit;
- Application of aggregation rules;
- Terms of enforcement, revocation or suspension notice; and
- Refusal of commercial confidentiality claim

Powers of the regulator

To effectively transpose the MCPD, the following proposals contained in the draft IAF will provisionally apply:

- Decision on whether to issue a permit;
- Set permit conditions and ELVs;
- Conduct compliance checks and carry out site inspections;
- Request information from operators;
- Share information via a public register of MCPs (ensuring data confidentiality requirements are adhered to);
- Perform monitoring tests;
- Issue enforcement notices and withdraw them if appropriate; and
- Issue suspension notices and withdraw them if appropriate

Fees and Charges

It is envisaged that the costs of permitting any plants within scope of the controls proposed will be recovered by the regulator through an initial fee to cover the cost of registration/permitting and an annual subsistence charge to cover the costs of compliance checking. SEPA will be reviewing their current charging scheme in 2017 and will take the opportunity to consider and consult on costs.

Consequential amendments - Clean Air Act 1993

In transposing the MCPD it is important that any overlaps with existing legislation are properly managed. We must ensure that current levels of environmental protection are maintained and that double regulation, which will give rise to confusion and prevent effective enforcement of the new requirements, is avoided.

The Clean Air Act contains a number of provisions which are primarily intended to control emissions from solid fuel combustion in urban areas and includes some requirements which are considered important to the protection of local air quality – such as restrictions on the emission of black smoke and requirements on chimney heights, to aid dispersion of pollutants.

Q10. Do you agree that the Clean Air Act provisions on dark smoke and chimney heights should be retained for plant affected by both proposals?

Impact of the proposals

A draft impact assessment is provided in support of the proposals in this consultation.

Q11. Do you agree with the assumptions made/ evidence provided in the policy analysis and associated impact assessment e.g. number of plants, operating hours, emissions?

Controls for high NO_x generators

Evidence from Capacity Market auctions indicates that the number of diesel generators which have high NO_x emissions is likely to increase rapidly over the next few years. Analysis undertaken by the UK Government indicates that the rapid increase is the result of the financial incentives available to this type of generator from the energy market and that further increases in the numbers and use of these generators in a UK context is likely unless quick action is taken. Many of the installations with high NO_x emissions that are operating to produce power during peak periods have an aggregated thermal input <50 MW in size and individual generators under 20 MW, and as a result their emissions are largely unregulated. This means that detailed data on the emissions, numbers and locations of installations and running time for these installations is not readily available. The UK Government has gathered the best data possible by working with operators, regulators, industry and Defra's Air Quality Expert Group. The data used and the assumptions made are presented in the associated impact assessment, which informs the proposals for addressing this issue in England and Wales.

Proposals

Although the approach for controlling emissions from high NO_x generators in Scotland is still under consideration, the proposals for England and Wales are set out below for information. We welcome views from consultees on whether a similar approach would be appropriate for Scotland, some alternative approach or whether such controls are required at all.

Proposals to control emissions from generators in England and Wales

From 1 January 2019 and subject to the requirements of the MCPD in relation to plant that are MCPs, all generators⁶ will require a permit to operate, except:

- a) Back-up generators (generators operating to supply power during an on-site emergency e.g. a power cut and for up to 50 hours routine testing per year)
- b) Generators operating on a site that is the subject of a nuclear site licence⁷
- c) (until 2025) Tranche A generators⁸, with a rated thermal input of 5-<50 MW_{th} and with an emission <500mg/Nm³ and Tranche A generators, with a rated thermal input of 5-<50 MW_{th} and operating <50 hours/year
- d) (until 2030) Tranche A generators 1-<5 MW_{th}

Unless otherwise specified below, the regulator will be required to exercise their permitting functions so as to ensure that at least the four following **standard requirements** are applied to the generator⁹ though the permit:

⁶ "Generator" means:

- any single stationary electricity generating combustion plant; or
- any group of stationary electricity generating combustion plant located together and providing electricity for the same purpose, with a rated thermal input of between 1MW_{th} and 50MW_{th}, including any MCP, but excluding any plant subject to the provisions of Chapter II or Chapter III of Directive 2010/75/EU (the industrial emissions Directive).

⁷ A nuclear site licence issued by the Office for Nuclear Regulation

⁸ "Tranche A generator" means any generator that:

- comes into operation before 1 December 2016; or
- is the subject of a Capacity Market Agreement for new capacity arising from the 2014 or 2015 auction (including those which have not come into operation by 1 December 2016); or
- for which a Feed-in Tariff preliminary accreditation application has been received by Ofgem before 1 December 2016.

⁹ Except:

- an NO_x ELV of 190 mg Nm³
- where secondary abatement is required to meet the 190 mg Nm³ it must be met within five minutes of the generator commencing operation
- there must be no persistent visible emission
- where the generator relies on secondary abatement to meet the 190 mg Nm³ NO_x ELV, emissions must be monitored every three years.

Where the regulator considers there may be a risk to air quality standards resulting from the operation of the generator, an operator will be expected to quantify the impact of emissions on sensitive receptors, e.g. by air dispersion modelling, incorporating as necessary, for example, any proposals for appropriate dispersion, abatement and restrictions on operating hours. The regulator, accounting for the results of such assessment, will be required to apply any further or different requirements as are necessary to ensure any breach of Ambient AQ Directive Annex XI standards is avoided.

In relation to the generators described at c) and d) above, the regulator will not be required to apply the **standard requirements** where operation of the generator is required for the purpose of a legally binding pre-existing supply contract or agreement¹⁰, in which case the standard requirements will be applied from the date the contract/agreement expires.

Definition of Generators

The term “Generators” will be defined. A possible definition is “a single stationary electricity generating combustion plant or group of stationary electricity generating combustion plants (which may or may not be MCPs) co-located at the same site and providing electricity for the same purpose”. This definition means that mobile generators would be excluded from the proposals and that the combined capacity of all stationary electricity generating combustion plant located at the same site will be aggregated to determine the total rated thermal input of the “Generator” so plant <1MWth may be affected by the proposed regulation.

The proposed regulation seeks to reduce emissions from generators with relatively high NO_x emissions which are increasing rapidly in use due to energy market incentives. The intention is not to regulate mobile generators through the proposals because it is understood that mobile plants are not used in the provision of balancing services, triad avoidance or demand side response and as such its use is not increasing greatly. The UK Government would welcome further evidence on this point, including whether this may create a potential loophole.

Operator Obligations

Guidance will be developed by the UK Government to ensure that operators and regulators are aware of their obligations. It is anticipated that the operator of a generator which is not exempt from permitting would be required to submit evidence of its emissions to the regulator. This may be in the form of an emissions test or evidence from manufacturers on the emissions from the generator and abatement equipment.

-
- any Tranche B generator used at a site to which it is not reasonably practicable to supply mains power; or
 - any Tranche B back-up generator for which the operator has demonstrated to the regulator a genuine need to carry out routine testing for more than 50 hours per year.
 - Any tranche A generator with a rated thermal input 5-<50MW with NO_x emissions 500mg/Nm³ or greater

In these cases, the regulator will exercise their functions as necessary to ensure that the conditions set in permits will ensure that generators will not give rise to a breach of standards specified in Annex XI the Ambient Air Quality Directive requirements are applied.

¹⁰ A contract or agreement to supply capacity or electricity to National Grid made before 1 December 2016

Operators of generators running for more than 50 hours with NO_x emissions over a specified threshold (>190 mg Nm³ for Tranche A or >500 mg Nm³ for Tranche B generators) would be required to demonstrate compliance with ambient air quality Limit Values¹¹. This may involve submission of site-specific air dispersion modelling of pollutants from the generator. The regulator could also apply this requirement to operators of generators with emissions below the specified thresholds, where they have reason to believe that the process contributions of the generator could lead to a breach of Limit Values. The regulator would not issue a permit to any generator that cannot demonstrate compliance with the limits. It is proposed that operators of exempt plant would not be required to hold or apply for a permit.

Permit Conditions

All generators that are not exempt would be required to meet the four standard requirements shown in the proposals, and may also be required to meet additional permit conditions to comply with Limit Values. The conditions set in permits will ensure that generator process contributions are not likely to lead to a breach. The permit conditions may limit the operating hours and emissions limits of the generator and may require dispersion equipment (e.g. stacks) or abatement equipment to be installed to ensure compliance with Limit Values.

Environment Agency Modelling

Modelling undertaken by the Environment Agency based on high-risk configurations of generators was used to identify size, time and emission limits below which breaches of the EU Ambient Air Quality Directive and domestic air quality objectives would be unlikely (occur less than 1 in 20 years). With these conservative assumptions the modelling indicated that a breach was unlikely for:

- Multiple generators co-located at a single site (just under 50 MWth in total) with emissions from each unit less than 190 mg Nm³,
- Multiple generators co-located at a single site (just under 50 MWth in total) of diesel plant with very high emissions (>3000 mg Nm³) that operate for no more than 50 hours per year; and
- Multiple generators co-located at a single site (up to 5MWth in total) unless they were located within 150m of a sensitive receptor (place where people are likely to be exposed).

Large generators are likely to have been subject to an air quality assessment through the planning regime and as a result would have to meet conditions to ensure there were no breaches to Limit Values e.g. install stacks to disperse emissions or limit operations. Such extreme configurations are thought to be very unlikely to occur in practice and as such the modelling is likely to represent a bad/worst-case scenario. The model has been reviewed by Defra's Air Quality Expert Group and the Environment Agency has updated the analysis in response to the reviewers' comments. The finalised modelling report will be made available online during the UK Government's consultation.

¹¹ the pollutant concentration limits set in Annex XI of the Ambient Air Quality Directive (Directive 2008/50/EC) at any sensitive receptor (for example a place where people are likely to be exposed) in the local area

Emission Limits and Thresholds

The thresholds proposed for the automatic requirement to demonstrate compliance with Limit Values have been selected to protect air quality, ensure that impacts on energy security are minimised and costs to businesses are proportionate. The standard requirement that applies an NO_x emissions limit of 190 mg Nm³ to all new generators (except back-up generators used in emergencies and those on nuclear sites) has been selected to protect local air quality and drive the use of cleaner technology in power production, acting to curb emissions from this source. Technology already exists (e.g. lean burn gas engines) that can meet this emission limit so it should not pose a threat to energy security and the 190mg Nm³ limit also aligns with the lower limits for diesel engines in the MCPD.

The five minute abatement limit

The proposals include a requirement for generators relying on secondary abatement to achieve emission limits and thresholds within five minutes of operation. This is because Selective Catalytic Reduction (the form of secondary NO_x abatement that could be used for diesel generators to enable them to fall below the emissions thresholds proposed) operates effectively only when the catalyst has reached a high temperature. Diesel generators providing energy balancing services may operate for as little as 20 minutes per run and in some situations the catalyst may not reach the required temperature to reduce emissions. A five minute time limit has therefore been proposed to ensure that the secondary abatement operates effectively in the circumstances that these plants are most likely to be operating.

Proposed Timelines and Transitional Measures to protect Energy Security and minimise costs to business

The proposals seek to balance the need to retain sufficient electricity generating capacity with the need to protect local air quality and national emissions by introducing transitional measures for existing generators, those with Capacity Market contracts for new capacity from 2014 and 2015 auctions and plants for which a Feed-in Tariff preliminary accreditation application has been received by Ofgem before 1 December 2016) (Tranche A generators).

The Capacity Market is the UK Government's key policy tool to bring forward sufficient reliable electricity capacity to maintain a secure supply of electricity. This is particularly important over the next few years when capacity margins are expected to be low. In order to protect the new capacity secured through auctions held to date and to minimise impacts on these businesses the UK Government is proposing that these generators will be able to continue to operate to provide power for the Capacity Market without abating emissions until the end of their agreements. Tranche A generators with contracts to supply the National Grid predating 1 December 2016 (e.g. a Short Term Operating Reserve contract or Firm Frequency Response contract) would also be able to provide power as required by that contract without abating emissions. Tranche A generators with 2014/2015 Capacity Market agreements for new capacity that operate for other purposes (e.g. provision of Short Term Operating Reserve services without a contract made on or before 1 December 2016) will be expected to meet the standard requirements (including the 190 mg Nm³ NO_x emissions limit) in 2025 or 2030 depending on the size of the generator.

The UK Government is also proposing that generators for which a Feed-in Tariff (FIT) preliminary accreditation application has been received by Ofgem before 1 December 2016 will be subject to transitional measures. All plants accredited under FIT will be <5 MWth and the Environment Agency's modelling indicates that plants of this size are not likely to breach the EU Ambient Air Quality Directive. These plants are required to submit evidence of planning permission (including information on environmental effects and air quality) and grid connection agreement. Projects which obtain preliminary accreditation under FITs are not able to make material changes to the plant, without voiding their preliminary accreditation and would therefore incur a substantial cost.

Tranche A generators that are not exempt from emissions controls (e.g. those on nuclear sites, back-up generators that test for less than 50 hours/ year) that have high emissions (>500 mg Nm³) would be required to obtain permits and meet controls aimed at protecting local air quality from January 2019 unless they are run for a short duration (50 hours or less). Introducing this requirement for the most polluting plant targets those which present the highest risk to local air quality. However the lighter-touch 500 mg Nm³ threshold is proposed for Tranche A generators because a large number of gas generators have emissions below this threshold and excluding them from these permitting requirements reduces the cost of the regulation to business substantially.

By contrast, Tranche B generators would be expected to meet tight emissions standards (190 mg Nm³) aimed at protecting local and national air quality on 1 January 2019. It is anticipated that the generators legislation is likely to come into force in England and Wales in April 2018, so this date has been proposed to allow operators time to apply for permits and make any required modifications to their plants.

Applying Limits to Generators <1MWth

The UK Government is proposing that generators (as previously defined) 1-<50MWth should be permitted. Provision of National Grid services is usually restricted to generators with a capacity greater than 3MWth electrical (roughly 10 MW thermal input), however there is no requirement for these generators to be co-located at a single site. Third party companies known as "aggregators" work with companies that own diesel generators <3MW electrical capacity to produce aggregated bids to National Grid services. There is no information to suggest that generators with an aggregated input smaller than 1MWth are currently being used for this purpose. However there is a large reservoir of back-up diesel generators (possibly 14-20GW¹²) so failing to limit NO_x emissions from generators could open a loophole potentially undermining some of the benefits of the proposed regulation. The UK Government is therefore seeking views on whether the legislation should be extended to generators <1MWth in size.

Exemption for legitimate testing

The proposals allow back-up generators used in emergencies which exceed the specified threshold to run for testing for up to 50 hours each year without a permit. Discussions between the UK Government and operators suggest that 50 hours enables adequate testing of back-up generators and associated cooling systems for most back-up generators, including those used in hospitals. It is anticipated that the 50 hours running

¹² Frontier report for DECC

limit will act as a disincentive for existing generators with high NO_x emissions to extend running hours for the purpose of generating revenue from operating at peak times or providing energy balancing services. Under the proposals, operators of new plants which have been built specifically to provide balancing services to the National Grid would be required to meet a strict emissions limit. However new back-up plants which exceed the limit could undertake legitimate testing of their plant at peak times for up to 50 hours per year, enabling them to participate in “triad avoidance” and provision of demand side response services. The air quality impact of operating at peak times of energy demand is not expected to be significantly greater and the operation of these plants could help to balance demand on the transmission network at these times. However the UK Government is aware that this could provide an incentive for operators to test for more hours than they might otherwise and is seeking views on whether permit conditions should explicitly prohibit or limit testing between 4-7pm on winter weekday evenings (expected peak times of electricity demand). Ofgem is currently undertaking a review of embedded benefits so this incentive may reduce in future.

A spatial approach to regulation

The UK Government has considered whether it is appropriate to adopt different emissions controls for generators situated within and outside Air Quality Management Areas (AQMAs) designated on the basis of local NO₂ concentrations. Generators with very high NO_x emissions can lead to exceedance of local hourly NO₂ limits but because they operate less than 500 hours/year the contribution of these generators to annual NO₂ concentrations is very small. The UK Government is therefore not proposing to automatically adopt different emissions limits in permits for generators located within AQMAs. However, background NO₂ levels will be taken into account by regulators when determining whether the operator is required to demonstrate compliance with Limit Values.

Particulate Emissions

Diesel generators emit higher levels of particulate emissions than gas generators. An initial assessment of particulate emissions from diesel generators, based on emissions information published by engine manufacturers, indicates that particulate emissions were below the level likely to cause a significant issue at local or national scale. Following this assessment, ELVs for particulate emissions have not been proposed. However background particulate levels will be taken into account by regulators when determining whether the operator is required to demonstrate compliance with Limit Values. In addition, in order to protect the environment from high levels of particulate emissions from poorly functioning generators, a standard requirement to be set out in permits will require operators of generators with a persistent visible emission to carry out maintenance to ensure the problem does not persist.

Exemptions from Emission Controls

The UK Government is proposing that back-up generators that operate to provide power in emergency situations should not be required to meet ELVs or to hold a permit unless their testing regime exceeds 50 hours per year. This reflects the importance of diesel generators in providing security of supply to sites, recognising the costs and technical challenges of fitting abatement at these sites. The UK Government is also proposing that generators providing power at nuclear sites should be exempt on the basis that these sites are licenced under a separate regulatory regime which ensures that back-up generators are only used for supplying power to the site and cannot be used to generate power for

export off-site. The UK Government will review evidence submitted for exempting other generators, particularly those that aim to promote resource efficiency and produce low carbon power if their impacts on local air quality and national emissions are likely to be low and there is not a good economic case for abating NO_x emissions.

Monitoring

The UK Government proposes that permitted generators that rely on secondary abatement to achieve emissions limits will require a test at least once every three years. In addition, all plant 1<50MWth will be subject to the MCPD monitoring requirements.

Q12. Do you consider that the proposed approach for dealing with high NO_x generators in England and Wales would be appropriate for Scotland? It would be helpful if you could provide a justification for any views offered.

Q13. If you do not consider the proposed approach to be appropriate, do you have an alternative proposal or do you consider that no such controls are required in Scotland?

Annex A – Consultation Questions

Q1 Do you have any views on whether the flexibility for cold weather should be applied in Scotland? It would be helpful if you could provide a justification for these views, whether for or against.

Comments

Q2 Do you agree that the remaining flexibilities should be applied?

Comments

Q3 Do you agree the MCPD should be applied to non-propulsion compression ignition engines with a thermal input over 1 MW mounted on non-road mobile machinery which are not subject to placing on the market standards under the Non-Road Mobile Machinery Directive?

Comments

Q4 Do you agree that SEPA should be designated the competent authority for MCPD?

Comments

Q5 Do you agree with the proposed approach to permitting and registration?

Comments

Q6 Do you agree with the approach proposed for dealing with plants already subject to emission controls?

Comments

Q7 Do you agree with the suggested approach for compliance checks?

Comments

Q8 Do you agree that reporting on non-compliances with ELVs should be restricted only to those listed?

Comments

Q9 Do you agree with the proposed approach for monitoring?

Comments

Q10 Do you agree that the Clean Air Act provisions on dark smoke and chimney heights should be retained for plant affected by both proposals?

Comments

Q11 Do you agree with the assumptions made/ evidence provided in the policy analysis and associated impact assessment e.g. number of plants, operating hours, emissions?

Comments

Q12 Do you consider that the proposed approach for dealing with high NO_x generators in England and Wales would be appropriate for Scotland? It would be helpful if you could provide a justification for any views offered.

Comments

Q13 If you do not consider the proposed approach to be appropriate, do you have an alternative proposal or do you consider that no such controls are required in Scotland?

Comments



Consultation on Implementation of the Medium Combustion Plant Directive in Scotland

RESPONDENT INFORMATION FORM

Please Note this form **must** be completed and returned with your response.

Are you responding as an individual or an organisation?

- Individual
 Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

- Publish response with name
 Publish response only (anonymous) – Individuals only
 Do not publish response

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

- Yes
 No



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