CONSULTATION

Transposition of the Medium Combustion Plant Directive including the regulation of thermal electricity generators

Air and Environmental Quality Unit

Regulatory and Natural Resources Policy Division

June 2017

Department of
Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

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1 PURPOSE

This consultation paper seeks your comments on the Department's proposed protections of air quality and human health through the transposition of the Medium Combustion Plant Directive (MCPD). The MCPD aims to improve air quality by reducing the emissions of harmful air pollutants from medium sized combustion plant.

2 HOW TO RESPOND

Please forward your comments on the review to:

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Responses should reach us by **16 August**, although earlier responses would be appreciated.

A summary of the responses received will be issued after the consultation has closed. We will not respond individually to the points you raise nor will we acknowledge receipt of individual responses unless requested.

Additional copies of this consultation paper are available on written request to the address or email above or by telephoning 028 9025 4876

It is also available at:

https://www.daera-ni.gov.uk/consultations

3 CONFIDENTIALITY OF CONSULTATIONS

The Freedom of Information Act 2000 gives the public a right of access to any information held by a public authority, namely the Department in this case. This includes information provided in response to a consultation. The Department cannot automatically consider information supplied to it in response to a consultation to be confidential.

However, it does have a responsibility to decide whether any information provided by you in response to a consultation, including information about your identity, should be made public or be treated as confidential. If you do not wish information about your identity to be made public please include an explanation in your response. However, please be aware that confidentiality cannot be guaranteed, except in very particular circumstances.

The Department will process your personal data in accordance with the Data Protection Act 1998, should you respond in an individual capacity. This means that your personal information will not be disclosed to third parties should you request confidentiality.

You should be aware that the Department will publish a synopsis of responses to the consultation.

4 European Directives and Brexit

The referendum on 23 June 2016 resulted in a decision that the UK should leave the European Union. However, until such time as exit negotiations are concluded, the UK remains a full Member of the European Union, and all the rights and obligations associated with EU membership remain in place. EU legislation will continue to be negotiated, implemented and applied during this period. It is the outcome of those exit negotiations that will determine the arrangements that should apply in relation to legislation in the future once the UK has left the European Union.

5 Introduction

This consultation seeks views on proposals designed to reduce emissions of harmful air pollutants from medium sized combustion plants and generators in Northern Ireland. These plants are a significant source of air pollutants (oxides of nitrogen- NOx, particulate matter- PM, sulphur dioxide- SO_2) which impact on air quality.

Air pollution harms our health and wellbeing. The combined impact of Nitrogen Dioxide (NO_2) and Particulate Matter (PM) pollution across the UK is estimated to lead to the equivalent of approximately 50,000 premature deaths per year, at a cost of around £30 billion per year. Air pollution also damages biodiversity and reduces crop yields.

The Department is committed to tackling air pollution and improving air quality. Reducing air pollution is vital for people's health and the environment. The UK also has EU and international obligations to protect air quality by preventing harmful pollutant levels and limiting national emissions of pollutants (under the EU Ambient Air Quality Directive and the United Nations Convention on Long Range Trans-boundary Air Pollution).

The Medium Combustion Plant Directive (MCPD) will help to reduce air pollution by bringing in emission controls for combustion plants with a thermal input of 1 to 50 megawatts. The MCPD was supported by the UK as it will deliver a cost-effective improvement to air quality. The Directive requires all plant in scope to be registered or permitted and sets limits on the levels of pollutants that these plants can emit according to their type, size, age, fuel type and annual operating hours. It also requires operators to test emissions from their plants to demonstrate compliance with emission limits.

MCPs are used to generate heat for large buildings (offices, hotels, hospitals, prisons) and industrial processes, as well as for power generation. The Directive provides important flexibilities to account for specific circumstances in which the Directive requirements might otherwise give rise to excessive costs to businesses or a risk to energy security.

The MCPD must be transposed into Northern Irish law by 19 December 2017. The controls will apply to new plants from December 2018. Existing plants must comply with requirements from 2024 or 2029, depending largely on size (5MW+ plant from 2024 and 1-5MW plant from 2029). Full implementation will be achieved in 2030. Annex B sets out the timeline for implementation and obligations for the regulator and operator. While many of the requirements in the Directive are set, there are options for how to implement it in the UK. It is those options which are the focus of this consultation, and where we are seeking your views.

Generators

Within Great Britain, there has been rapid growth in the use of low-cost, small scale flexible power generators in the past few years. Whilst there is a legitimate role for some rapidly-responding relatively efficient small-scale generation (such as gas), the recent growth of (mainly diesel) generators that emit high levels of NOx relative to other MCPs has, in part, been driven by a number

of potential distortions in the wider policy landscape which can give diesel an unfair advantage. Unless action is taken[1], this trend could continue over the next few years.

Within Great Britain, very few of the Capacity Market diesel installations from the previous auctions were located in Scotland and the Scottish Government is still reviewing the case for adopting controls for generators with high NOx emissions and are seeking views as part of their consultation on how this issue should be addressed in Scotland.

The Electricity Grid in Northern Ireland is shared with the Republic of Ireland in the Single Electricity Market (SEM) which is a wholesale electricity market operating in Ireland and Northern Ireland. The electricity market is in transition moving from the SEM Single Electricity Market to the I-SEM, the integrated Single Electricity Market in 2017. The introduction of the Integrated-Single Electricity market (I-SEM) in 2017 will bring changes to market arrangements including a new Capacity Remuneration Mechanism (CRM). *It is anticipated that a well-targeted, competitive CRM will encourage sufficient generators to remain in the market.*

It is not clear that there is currently a capacity shortage in Northern Ireland that would lead to the same level of incentives for diesel generators as seen in GB[2].

However, given the high emissions of diesel generators and the associated potential risk to public health, the Department is minded to regulate air emissions from medium sized generators to ensure that emissions do not cause local breaches of air quality standards.

To protect human heath, the EU Ambient Air Quality Directive sets NO_2 hourly limits (200 µg/m3, the World Health Organisation guideline levels[3]) which cannot be breached more than 18 times each year. If there are more than 18 exceedances in a year, district councils in Northern Ireland must declare air quality management areas and implement local air quality action plans. Modelling of air pollution indicates generators with high NOx emissions can lead to breaches of the NO_2 hourly limits. There are 26 currently active air quality management areas declared in Northern Ireland, the majority of which are declared because of NO_2 exceedances. More information is available at http://www.airqualityni.co.uk/laqm/aqma .

[1] In GB Ofgem and BEIS are separately taking action to address potential distortion in the wider policy landscape. Ofgem is currently reviewing the use of embedded benefits. While BEIS recently launched a consultation on a proposal to calculate the Capacity Market supplier charge

[2] For Northern Ireland, (without a north/south interconnector) the capacity all demand scenarios start to show deficits in 2021, when emissions restrictions at Kilroot power station limit its contribution. With the second North South Interconnector in place by 2019, there will no longer be significant restrictions on the amount of flow between the two jurisdictions. Therefore, we can assess generation adequacy on an all-island basis, see Figure 0-6. With all of the generation available to meet the combined demand, the adequacy situation improves. However, if high demand were to transpire, we would expect there to be insufficient generation by 2024. *http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_20162025_FINAL.pdf*

[3] http://www.who.int/mediacentre/factsheets/fs313/en/

An increase in the use of these highly polluting generators could also lead to an avoidable increase in national emissions of NOx. The UK is committed to reducing these emissions in accordance with the United Nations Convention on Long-Range Transboundary Air Pollution (specifically, the Gothenburg protocol, agreed in November 1999[4]) which set maximum national emission (emission ceilings) for various pollutants including NOx from 2010 onwards. The protocol was amended in 2012 to set more stringent ceilings that will apply from 2020; an amendment to the EU National Emissions Ceilings Directive to implement these more stringent 2020 ceilings and set ceilings for 2030 is expected to be agreed shortly.

Implementation of the MCPD across the UK will make a valuable contribution to improving air quality by providing an estimated 24% of the SO2 and 9% of the NOx emission reductions needed to meet the 2030 national emission ceilings. However, according to DEFRA analysis the MCPD requirements are not sufficient to tackle emissions from increased use of generators which emit high levels of NOx, so Defra are consulting on additional measures to control them which allow England and Wales to meet the UK legal obligations. In GB quick action is needed to ensure that any generators with high NOx emissions which are not yet installed and in the future secure energy supply agreements, are required to control their emissions.

Northern Ireland is part of the Integrated Single Electricity Market which operates island-wide, and the Capacity Remuneration Mechanism is still being finalised. The first capacity auction is estimated to take place in December 2017[5]. Thus there exists a timely opportunity to notify operators of medium sized generators of the likely environmental requirements prior to the auction.

This consultation seeks views on broad principles for transposition of the MCPD and emissions controls for generators.

Stakeholder engagement

In the development of these proposals, the UK government has consulted industry and regulators through a number of fora. A series of technical workshops were held with industry and regulators to seek views on possible regulatory approaches. Defra have also engaged with a “core group” of regulators and industry experts throughout the policy development process. The Project to develop the proposals is overseen by a Project Board whose membership includes other Government Departments, Devolved Administrations and regulators and, for the controls on generators in GB, National Grid and Ofgem. In addition Defra officials have presented and sought views at a number of industry events, at one to one meetings and held a briefing session for Non-Government Organisations with an interest in Air Quality.

The Department also plan to organise a workshop to seek views from stakeholders on the consultation proposals.

[4] http://www.unece.org/info/ece-homepage.html

[5] http://www.sem-o.com/ISEM/General/I-SEM%20Status%20Report.pdf

Transposition in other regions of the UK

The Department is proposing to transpose the MCP through the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013 (as amended).

Defra and the Welsh Government are proposing to amend the current England and Wales environmental permitting regulations to implement the MCPD and introduce additional emissions controls for generators. MCPs within scope of the Directive which are located on UK offshore oil and gas platforms (gas turbines and gas and diesel engines on offshore platforms are exempt) will be regulated through an amendment to The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013.

Scotland will lay their own legislation through their integrated authorisation framework[6] to transpose the MCPD. Since very few of the Capacity Market diesel generation facilities from the 2015 auctions were located in Scotland, the Scottish Government is still reviewing the case for adopting emissions controls for electricity generators.

Structure of Document

This document is split into three key sections. The first covers proposals relating to the MCPD, the second to additional proposals to control emissions from generators. The final section covers issues affecting both proposals. Additional information and a list of the consultation questions are included in the annexes at the end of this document.

The Impact Assessment (IA) published with this consultation provides an analysis of the estimated costs and benefits of the proposals. Your views on this document are sought in Question 22 (see page 21).

Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013

(The PPC regulations)

Emissions from some combustion plants, including all those over 20MWth, are currently regulated under the existing Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013, (The PPC regulations) as amended. The PPC Regulations transpose the Industrial Emissions Directive in relation to combustion plant above 50MWth and implement domestic provisions in relation to plants between 20MWth and 50MWth. Such plant are located within PPC installations, each installation requiring a PPC permit which includes conditions designed to minimise impact on the environment. These conditions include limits and monitoring requirements relating to emissions to air. Installations are also subject to compliance assessments, including site inspections.

We propose to transpose the MCPD and introduce emission controls for generators through amendments to the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) 2013. It is anticipated the *Pollution Prevention and Control (Industrial Emissions)*

[6] http://www.gov.scot/Topics/Environment/waste-and-pollution/BER/SAF

(Amendment) Regulations (Northern Ireland) 2017 will come into force by 20 December 2017. Where a MCP is part of an installation or another type of regulated facility already subject to PPC permitting, the permit may need to be amended to ensure compliance with the MCPD. By adopting existing processes and procedures for plants already permitted under the PPC Regulations we will maintain a consistent approach, avoid confusion for regulators and operators, and also reduce the burdens associated with establishing new regimes.

Medium Combustion Plant Directive (MCPD)

The MCPD introduces mandatory registration or permitting of Medium Combustion Plant (MCPs) between 1 and 50MWth. It is estimated that the MCPD will affect around 1,200 plant in Northern Ireland. MCPs must comply with emission limits (set out in Annex II of the Directive) which are applied according to plant age, size, type and fuel used (see Annex C in this document). Periodic monitoring is also required to demonstrate compliance with the Directive. It is estimated that in excess of 300 routinely operated MCPs will be subject to the provisions of the Directive in Northern Ireland, with the remaining MCPs being standby and back-up, which operate infrequently. Of the plant subject to emission limits, the majority are 1-5MW gas boilers but plant operating on solid (e.g. biomass, coal) and liquid fuels are also affected.

Please note that the proposed emission controls for generators (combustion plant used to generate electricity) differ from those under the MCPD (in stringency and timescale) and apply to sites on which generators aggregate to a thermal input over 1MW, regardless of the size of your individual generators. If you have such a site, please read the section of this document setting out the proposed emission controls for generators.

General approach

We propose that operators will be required to obtain an environmental permit under the PPC Regulations in order to operate an MCP. From 20 December 2018 operators of all new plants (plants that are not already in operation as at that date) will need a permit while operators of existing plants (those in operation by 20 December 2018) must obtain a permit by January 2024 if over 5MWth and by January 2029 if between 1 and 5MWth. For MCPs which are part of other regulated facilities, the conditions of the existing permit may need to be amended to apply the requirements of the MCPD (as proposed in this document).

Subject to some limited exceptions (described in Table 1), all MCPs which operate on average more than 500 hours per annum will be required to comply with the emission limit values set out in Annex II of the MCPD. All MCPs firing solid fuels, regardless of the number of operating hours, will be required to comply with emission limit values for dust. Emission limit values apply from 20 December 2018 for new plants, from January 2025 for existing plants over 5MWth and from January 2030 for existing plants between 1 and 5MWth, as set out on Article 6 of the MCPD.

A permitting approach is proposed because that seems the best fit between PPC regulations and the MCPD requirements. We anticipate that for the large majority of plant, the requirements applicable will be as specified by the Directive, subject to our adoption of the optional flexibilities in the

Directive as proposed in Table 1. We anticipate that for a small minority of MCPs (e.g. 20-50MWth plant using solid fuels) the regulator may need to apply different or additional conditions, including different emission limits, in order to safeguard air quality.

Where the MCP is part of a PPC installation, the existing PPC requirements will continue to apply and the MCPD requirements will be added where necessary to comply with the Directive. Also in line with PPC regulations, the regulator will recover costs from operators via permitting fees and charges.

Q1. Do you agree with the general approach to permitting that is proposed?

Flexibilities

MCPs are very diverse and used for a range of functions. The Directive provides for a number of flexibilities to cover specific circumstances in which the requirements on certain MCPs might otherwise be disproportionate, risking impacts on energy or heat security. For these flexibilities, the MCPD text is not prescriptive and so Member States must clarify in transposition if they are applied (See Table 1). We propose to apply those flexibilities which we consider to be appropriate in relation to Northern Ireland, as explained in Table 1 in the column 'Proposed approach and rationale'.

Table 1 Flexibilities	**Proposed approach and rationale**
1) Exemption from MCPD Annex II ELVs for existing plant operating less than 500 hours per year as a 5 year rolling average.	Apply partially – For most plant operating a limited number of hours, compliance with ELVs is not proportionate considering the limited emission reductions achieved and the costs associated with doing so. Also, later in this document we are proposing emission controls for generators running for less than 500 hours, which will include some MCPs, in order to safeguard air quality.
2) Extension of time exempted in 1) above to 1000h for plant supplying heating in exceptionally cold weather.	Do not apply. We have no evidence of a need for this in our maritime climate.
3) Extension of time exempted in 1) above to 1000h for plants in islands when the power supply is interrupted.	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) Exemption from Annex II ELVs for new plant operating less than 500 hours per year as a 3 year rolling average.	Do not apply. The Department welcome comments on this. While plant running for short runtimes have

	little environmental effect, the costs of meeting the emission limit values are less for new plant (no retro fitting or flue modification costs) The Department is also unsure of the wisdom of allowing new plant onto the market in Northern Ireland which does not meet the MCP ELVs. Also, later in this document we are proposing emission controls for generators running less than 500 hours to safeguard air quality.
5) 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).	Do not apply. The Department do not currently know of any MIS or SIS in NI. We welcome any comments on this.
6) Delay in application of Annex II ELVs for certain existing plant over 5MW supplying heat to public district heating networks. The Directive specifies maximum ELVs that must be applied, however regulators are required to ensure that emission controls applied to not lead to significant pollution.	Do not apply –Regulators must set emission controls which safeguard local air quality and are proportionate in any case and meeting the Annex II ELVs is thought to be cost effective.
7) Higher dust ELV (for a limited period) for plant firing solid biomass located in zones compliant with air quality limits. The Directive specifies maximum dust ELV that must be applied, however regulators are required to ensure that emission controls applied to not lead to significant pollution.	Do not apply. The impact assessment shows that the benefits of **not** allowing higher dust ELVs outweigh the costs by 11:1.
8) Delay in application of requirements for certain plant used to drive compressor stations in national gas transmission system	Apply in full
9) Increase in NOx ELV for new engines operating between 500-1500 hours provided they are applying primary abatement measures	Do not apply.

Exemption from MCPD Annex II ELVs for existing plant operating less than 500 hours per year (or 500 years as a rolling average).

It is estimated that if the 500hr run time exemption is not used costs will increase by 940 % but benefits will only increase 5%. Therefore the Department proposes to use this exemption so that standby and backup plant do not have to meet emission limits.

Q2. Do you agree that the Department should apply the **Exemption from MCPD Annex II ELVs for existing plant operating less than 500 hours per year.**

The Department consider that while an additional flexibility for some operators would be welcomed, the increased complexity of regulating a rolling average is overly cumbersome. It would be simpler for both operators and regulators to have a single annual figure.

The rolling average adds complexity for regulators and operators alike, requiring the examination of 5 years of operating hours records to determine a years allowable runtime. We consider a simpler approach of 500 hours per year (no rolling average) more appropriate.

Q3. Do you agree that the Department should have a clear annual operating 500 hour limit or should the Department have more flexibility allowing a 5 year rolling average?

Exemption from MCPD Annex II ELVs operating for up to 1000 hours for plant supplying heating in exceptionally cold weather.

We have not seen evidence of the need to extend the number of hours combustion plants used for heat production can operate without complying with emission limits in the cases of exceptionally cold weather. We are therefore proposing not to apply this extension in Northern Ireland, unless compelling evidence for its need is submitted.

Q4. ***Do you agree that the Department should <u>not</u> allow existing plant an exemption from*** **MCPD Annex II ELVs operating for up to 1000 hours for plant supplying heating in exceptionally cold weather.**

Q5. Do you have specific examples where applying the extension to exempted hours in exceptionally cold weather is justified?

Exemption from Annex II ELVs for <u>new</u> plant operating less than 500 hours per year as a 3 year rolling average.

The Department welcome comments on this.

On one hand the benefits of reduced emissions for Plant running for only short periods are low and in some cases may be disproportionate.

On the other hand the costs for complying with emission limit values are lowest for new plant and we have concerns about allowing new plant to operate with Emission Limit values greater than those for existing plant (which are much more expensive to retrofit to meet the limits).

The Department also consider that it may lead to more difficult enforcement where new combustion plant is being installed which cannot meet the Annex II ELVs. Verifying running hours in cases of suspected non-compliance is likely to be a very time consuming and possibly disproportionate effort for regulators.

The Department propose to not include this exemption. We welcome your views.

Q 6. Do you have specific examples demonstrating the need for this exemption for <u>new</u> plant operating less than 500 hours per year?

Q 7. If the exemption is granted should it 500 hours be calculated as a 3 year rolling average?

Delay in application of Annex II ELVs for certain existing plant over 5MW supplying heat to public district heating networks.

The Directive specifies maximum ELVs that must be applied, however regulators are required to ensure that emission controls applied to not lead to significant pollution.

We do not propose to use this flexibility as we consider that benefits in terms of air quality outweigh the abatement costs. The savings from not implementing the Annex II ELVs are in any case limited as the regulator must set emission controls which safeguard local air quality and are proportionate.

Higher dust ELV (for a limited period) for plant firing solid biomass located in zones compliant with air quality limits. The Directive specifies maximum dust ELV that must be applied, however regulators are required to ensure that emission controls applied to not lead to significant pollution.

We do not propose to use this flexibility as we consider that the benefits in terms of air quality outweigh the abatement costs. The consultation impact assessment assumes that, where allowed by the Directive, Annex II ELVs for biomass and district heating plants are only applied in 2030 and until then plants benefiting from this later application only need to comply with the higher emission limits required in the Directive. However, the Directive also requires the regulator to ensure that no significant pollution is caused and that a high level of protection of the environment as a whole is achieved, when these flexibilities are applied. We consider that in light of the low numbers of plants and the added complexity for operators and regulators in applying this flexibility, it should not be applied. The impact assessment indicates that the benefits outweigh the costs by 11:1. Therefore we do not propose to extend the exemption in Northern Ireland

Q8.For biomass and district heating plants which qualify for later application of Annex II emission limits, do you agree with not extending the flexibilities, or do you have any data to show that they should be used?

Delay in application of requirements for certain plant used to drive compressor stations in national gas transmission system

This flexibility is required to allow enough time for upgrading the national gas grid, but impacts a very small number of plants. This exemption was included at UKs request.

Q 9. Do you agree with this delay in applying MCP requirements for certain plant in drive compressor stations?

Increase in NOx ELV for new engines operating between 500-1500 hours provided they are applying primary abatement measures

The Department consider that new plant should meet the ELVs specified if operating more than 500 hours per year. Table 8.15 of the Impact Assessment shows that the benefits outweigh the costs by 18:1.

Q 10. Do you have specific examples demonstrating the need for this exemption for <u>new</u> engines operating between 500-1500 hours per year?

Q 11. Do you have evidence that <u>not</u> applying this exemption for <u>new</u> engines operating between 500-1500 hours per year would be not be cost beneficial or disproportionate?

Non-Road Mobile Machinery

The MCPD contains an exemption for combustion plants covered by the Non-Road Mobile Machinery Directive (NRMMD)[7]. The NRMMD is being replaced with a new Regulation which will apply from January 2019 and will require all compression ignition engines installed in non-road mobile machinery within the MCP range to comply with 'placing on the market' emission standards. We consider that engines above 1MWth installed on NRMM and not subject to placing on the market emission standards will be in scope of the MCPD, except where otherwise exempted by the MCPD.

Q12. What are the practical difficulties with applying the MCPD to compression ignition engines within the MCPD size range which are not used in the propulsion of a vehicle, ship or aircraft and are not subject to 'placing on the market' emission standards under the Non-Road Mobile Machinery Directive?

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. Currently, combustion plants subject to emission controls under the PPC regulations are subject to a compliance checking regime which can include site inspections. For MCPD we envisage a focus on remote checks with site inspections being conducted at the regulator's discretion, where required to confirm compliance as is currently the case for activities already regulated under the PPC regulations. For MCPs which form part of existing installations or other regulated facilities, compliance checks may be incorporated into the compliance checking that the regulator already undertakes for the rest of the regulated facility.

When analysing the impact of the proposals in the consultation Impact Assessment (IA), Defra compared two different compliance checking regimes, one based on scheduled checks (i.e., data

[7] Directive 97/68/EC on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion (Compression Ignition and spark ignition) engines to be installed in non-road mobile machinery, inland waterway vessels and railway applications.

relating to each plant is checked every 3 years) and the other based on randomised spot checks where data relating to a percentage of plant are selected for checking at random each year.

Defra's analysis indicated that a random spot check regime is more cost effective as it assumed that random spot checks with no mandatory reporting would be more effective deterrent to non-compliance. There is no evidence for this assumption and the Department takes a different view.

We assume that not having mandatory reporting will reduce the levels of compliance. We consider that mandatory reporting will lead to greater compliance.

In addition to compliance assessment, we envisage the regulator will have available to them the existing range of enforcement powers provided under the PPC regulations.

The Department consider that data reporting should be mandatory.

Q13.What approach for compliance checks do you support, and why:

a) Random compliance checks with mandatory reporting as described above

b) Scheduled compliance checks with mandatory reporting as described above

c) Other – please describe

Monitoring

As previously stated, operators are required to monitor pollutant emissions periodically. Where secondary abatement equipment is fitted, the operator is also required to keep records to prove continuous operation of the equipment. For plants which operate on average up to 500h per annum and benefit from the exemption from compliance with MCPD Annex II ELVs, Member States are allowed to set a frequency of monitoring which is partly dependent on the number of operating hours. Member States must also decide whether to allow alternative methods for determining SO2 emissions (e.g., based on fuel sulphur content) or require continuous monitoring.

The monitoring frequencies prescribed by the MCPD for each type of plant are outlined in Table 2 – these should be interpreted as a minimum requirement, since for MCPs which are part of regulated installations, more onerous monitoring requirements may apply.

Table 2 Monitoring requirements

Type of Plant	**Pollutants Monitored**	**Plant Capacity**	**Minimum Frequency**
natural gas fired plants)	Carbon monoxide (CO) and NOx emissions	**1-20 MWth**	Every 3 years
		20-50 MWth	Annually
plants firing gaseous fuels other than	CO, NOx and SO2	**1-20 MWth**	Every 3 years

natural gas	emissions		
		20-50 MWth	Annually
plants firing solid and other liquid fuels	CO, NOx, SO2 and PM emissions	**1-20 MWth**	Every 3 years
		20-50 MWth	Annually
biomass and other solid fuels (operating <500 hours per annum)	CO and PM emissions	**1-20 MWth**	Every 1,500h of operation, and at least once every 5 years
		20-50 MWth	Every 500h of operation, and at least once every 5 years
gaseous and liquid fuels (operating <500 hours per annum)	CO emissions	**1-20 MWth**	Every 1,500h of operation, and at least once every 5 years
		20-50 MWth	Every 500h of operation, and at least once every 5 years

Continuous Monitoring

As regards continuous monitoring, stakeholders have suggested that the costs would be disproportionate for the vast majority of MCPs and thus it should not be made mandatory. We therefore propose not to apply mandatory continuous monitoring. Where continuous monitoring is otherwise required in relation to a regulated facility of which the MCP is a part, that requirement will remain. In addition, as required by the Directive, the operator will need to check the MCP continuous monitoring equipment against the reference monitoring methods annually and report the results to the regulator.

Q14. Do you agree with the proposed approach for monitoring of plants?

If not, what are your concerns?

Member States must ensure monitoring is carried out based on methods enabling reliable, representative and comparable results. We are working with industry and regulators to identify suitable methods. In the UK, plants over 50MWth are required to meet MCERTs (UK Monitoring Certification Scheme) monitoring standards; for 20-50MWth plant, operators must use monitoring

methods approved by the regulator, such as MCERTs methods. However, under the MCPD the majority of MCPs (those using natural gas and gas oil) are required to monitor only NOx and CO emissions and we consider MCERTS is likely to be disproportionate. We are therefore working with industry to identify cheaper and less stringent methods possibly utilising existing plant maintenance systems. These methods will be subject to further consultation but we welcome proposals in response to this consultation.

Q15. Do you have any suggestions for monitoring methods which could be applied to MCPs as an alternative to MCERTs?

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 reported by operators to the regulator and this will be the subject of later consultation.

Notwithstanding, the Directive requires operators of MCPs to take any measures necessary to ensure that compliance is restored within the shortest possible time and to keep a record of events of non-compliance with ELVs. Upon request, operators must provide this record to the regulator. The regulator may require the operator to take additional measures to ensure compliance with ELVs is restored without undue delay, and must order suspension of operation of the combustion plant where the non-compliance causes a significant degradation of local air quality.

Emission controls for generators

There is evidence that the number of generators which have relatively high NOx emissions (mainly diesel) has grown over the past few years and there is a risk this could continue if current distortions in the wider policy landscape persist.

Many of the electricity generating facilities with high NOx emissions that provide additional capacity to the electricity system at peak times have an aggregated thermal input <50MWth in size and individual generators under 20MWth. As a result their emissions are largely unregulated at present. This means that detailed data on the emissions, numbers, locations of generators and running time for these generators is not readily available. Defra have gathered the best data possible by working with BEIS, National Grid, regulators, industry and Defra's Air Quality Expert Group and we have also sought to check the relevance of this data regarding Northern Ireland by contacting SONI, Aggregators providing capacity to the NI grid and the Department for the Economy. The data used and the assumptions made are presented for GB in the associated consultation stage impact assessment.

GB generator growth

In Great Britain the number of small scale generators is growing. DEFRA consider that it is important to establish controls on NOx emissions from these generators now to ensure that any growth does not lead to air quality problems. Moreover, the proposed controls are an important step in removing an unfair advantage from which these generators benefit *i.e.* unlike larger generators, they are not

currently exposed to costs arising from having to limit their emissions. Defra have consulted early on the broad principles for regulation while seeking further evidence to develop their analysis.

BEIS and Ofgem have also been working separately to remove any unfair advantages that may be giving some types of small-scale generation an unjustified competitive edge in the Capacity Market auctions.

NI Generator growth

The Generation Capacity Statement 2016-2025 does not forecast a large rise in diesel generation. However, the Department consider that the protection of human health and the environment should be a priority and therefore does not propose to leave a loophole in the regulation which may cause problems in the future. Therefore we propose to have a similar regime as England and Wales whereby generators feeding into the Grid or operating (other than for backup and testing) will need to ensure that they will not cause an air quality problem [by undertaking air quality modelling and in some cases meeting ELVs.

The new Capacity Remuneration Mechanism is still being developed and consulted on and is expected to have it's first auction is expected in December 2017 for the period May 2018 onwards.

Proposals

Proposals to control emissions from generators are set out in the text box below.

Proposals to control emissions from generators

From 1 January 2019 and subject to the requirements of the MCPD in relation to plant that are MCPs, all generators[8] 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) which are operated for the purpose of testing for no more than 50 hours per year[9]

b) (until 2025) Tranche A generators[10] with a rated thermal input of 5-<50MWth and with an emission <500mg/Nm3, and, Tranche A generators with a rated thermal input of 5-<50MWth and operating <50 hours/year

d) (until 2030) Tranche A generators 1-<5MWth

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 generator[11] though the permit:

- **a NOx ELV of 190mg/Nm3**[12]
- **where secondary abatement is required to meet the 190mg/Nm3 it must be met within 5 minutes of the generator commencing operation**
- **there must be no persistent visible emission**
- **where the generator relies on secondary abatement to meet the 190mg/Nm3 NOx ELV,**

[8] "Generator" means:
- any single stationary electricity generating combustion plant; or
- any group of stationary electricity generating combustion plant located at the same site and providing electricity for the same purpose,

with a rated thermal input of between 1MWth and 50MWth, including any MCP, but excluding any plant subject to the provisions of Chapter II or Chapter III of Directive 2010/75/EU (Integrated Pollution Prevention and Control and Large Combustion Plant chapters of the Industrial Emissions Directive).

[9] No running time restrictions will apply to these generators when providing power on site during an emergency

[10] "Tranche A generator" means any generator that comes into operation before 1 December 2017
"Tranche B generator" means any generator other than a "Tranche A generator"

[11] Except:

- 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.
- Until 1 January 2025, any Tranche A generator with a rated thermal input 5-<50MW with NOx emissions 500mg/Nm3 or greater

[12] under the MCPD reference conditions for engines and turbines (see Annex C).

emissions must be monitored every 3 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 these cases, the regulator will exercise their functions as necessary to ensure that the conditions set in permits will ensure that generators will not to give rise to a breach of standards specified in Annex XI of the Ambient Air Quality Directive.

Definition of Generators

The term "Generators" will be defined. A possible definition is

- any single electricity generating combustion plant; or
- any group of electricity generating combustion plant located at the same site and providing electricity for the same purpose,

with a rated thermal input of between 1MWth and 50MWth, 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). This definition means that mobile generators would be included in these proposals and that the combined capacity of all 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 NOx emissions which are at risk of increasing rapidly in use in Northern Ireland due to energy market incentives.

Q16. Do you agree with the proposed definition of "generators"? If not please explain your reasons and propose an alternative definition.

Operator Obligations

Guidance will be developed to ensure that operators and regulators are aware of their obligations and this will be consulted on by mid 2018 at the latest.

We anticipate 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.

Operators of generators running for more than 50 hours with NOx emissions over a specified threshold (190mg/Nm3 for Tranche B or 500mg/Nm3 for Tranche A generators) would be required to demonstrate compliance with Ambient Air Quality Limits[13]. 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 Ambient Air Quality Limits. The regulator would not issue a permit to any generator that cannot demonstrate compliance with the limits.

We propose 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 set out on page 14, and may also be required to meet additional permit conditions to comply with Ambient Air Quality Limits.

The conditions set in permits will ensure that generator process contributions are not likely to lead to a breach of limits. 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 Ambient Air Quality Limits.

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 national 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 diesel generators co-located at a single site (just under 50 MWth in total) with NOx emissions from each unit less than 190mg/Nm3,
- Multiple diesel generators with very high emissions[14] co-located at a single site (just under 50 MWth in total) that operate for no more than 50 hours per year
- Multiple generators with very high emissions co-located at a single site up to 5MWth in total

unless they were located within 150m of a sensitive receptor (e.g., a location where people are likely to be exposed).

[13] 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

[14] The Environment Agency's model worked with an assumption that emissions from these generators >3000mg/Nm3

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. 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 Ambient Air Quality Limits e.g. install stacks to disperse emissions or limit operations.

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 consultation.

Emission Limits and Thresholds

The thresholds proposed for the automatic requirement to demonstrate compliance with Ambient Air Quality Limits 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 a NOx emissions limit of 190mg/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 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 NOx abatement that could be used with 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.

Q17. Do you agree with the emissions limits proposed and that where secondary abatement is applied it must abate emissions to the required Emission Limit Value within five minutes?

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 at a national level with the need to protect local air quality and limit national emissions. In Northern Ireland the new Capacity Remuneration Mechanism is still being developed and consulted on and the first auction is expected in December 2017 for the period May 2018 onwards.

Tranche A generators (existing generators) that are not exempt from emissions controls and have high emissions (>500mg/Nm3) would be required to obtain permits and meet controls aimed at protecting local air quality from 20 December 2018 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 until 2025, when the MCPD requirements are introduced reduces the cost of the regulation to business substantially.

By contrast, Tranche B (New) generators would be expected to meet tight emissions standards (190mg/Nm3) aimed at protecting local and national air quality on 20 December 2018. We anticipate that the generators legislation is likely to come into force 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.

Q18. Do you agree with the proposed timescales for implementation, which reflect those specified in the Medium Combustion Plant Directive?

Applying Limits to Generators <1MWth

We are proposing that generators (as previously defined) 1-<50MWth should be permitted. Provision of Grid services is usually restricted to generators with a capacity greater than 4MWth[15] 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 from 500kW electrical capacity to produce aggregated bids to Grid services. We have 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, so failing to limit NOx emissions from generators could open a loophole potentially undermining some of the benefits of the proposed regulation. We are therefore seeking views on whether the legislation should be extended to generators <1MWth in size.

Dispatchable Aggregated Generating Units (AGU) operate in Northern Ireland, which consists of a number of individual diesel generators grouping together to make available their combined capacity to the market. The amount of capacity available to these AGUs is approximately 90 MW. The capacity of Demand Side Units in Northern Ireland is 18 MW and is not expected to increase over the coming years.[16]

Industrial generation refers to generation, usually powered by diesel engines, located on industrial or commercial premises, which acts as on-site supply during peak demand and emergency periods. The condition and mode of operation of this plant is uncertain, as some of these units would fall outside the jurisdiction of the TSOs.

[15] http://www.eirgridgroup.com/customer-and-industry/becoming-a-customer/demand-side-management/#comp_000056166e56_0000002b69_63be

[16] http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_20162025_FINAL.pdf

All-Island Generation Capacity Statement 2016-2025

Projected Aggregated Generating Units and Demand Side Units

Year end: ID	Fuel Type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Contour Global AGU	Gas	12	15	15	15	15	15	15	15	15	15	15
Empower AGU	Distillate Oil	3	7	7	7	7	7	7	7	7	7	7
iPower AGU	Distillate Oil	73	73	73	73	73	73	73	73	73	73	73
Powerhouse DSU	Distillate Oil	18	24	24	24	24	24	24	24	24	24	24

Exemption for legitimate testing of back-up generators

The proposals allow back-up generators to be operated for no more than 50 hours each year for testing purposes without the requirement for a permit. Discussions with 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. For generators operating in such circumstances, operators would be able to undertake legitimate testing of their plant at peak times for no more than 50 hours per year, enabling them to use the electrical output during testing to participate in "peak lopping". The air quality impact of operating generators at peak times of energy demand is not expected to be significantly greater than operation at other times, and allowing testing of backup generators at peak times could help to balance demand on the transmission network at these times. However, we are aware that this could provide an incentive for operators to test for more hours than they might otherwise (within the 50 hours per year limit), resulting in additional, avoidable pollutant emissions. We are therefore seeking views on whether testing between 4-7pm on winter weekday evenings (expected peak times of electricity demand) should be restricted.

Q19. Is there a case for allowing back-up generators to be tested at peak times of demand?

A spatial approach to regulation

We have considered whether it is appropriate to adopt different emissions controls for generators situated within and outside Air Quality Management Areas designated on the basis of local NO2 concentrations. Most of these designations follow a breach of the annual NO2 concentration limit in the Ambient Air Quality Directive. Generators with very high NOx emissions can lead to exceedance of local hourly NO2 limits but because they operate less than 500 hours/year their contribution to annual NO2 concentrations is small. We are therefore not proposing to automatically adopt different emissions limits in permits for generators located within Air Quality Management Areas. However, background NO2 levels will be taken into account by regulators when determining whether the operator is required to demonstrate compliance with Ambient Air Quality Limits.

Particulate Emissions

Diesel generators emit higher levels of particulate emissions than gas generators. Our 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. As a result of this assessment, emission limit values for particulate emissions have not been proposed. However background PM levels will be taken into account by regulators when determining whether the operator is required to demonstrate compliance with Ambient Air Quality Limits. 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.

Q20. Do you agree with the proposed approach to controlling particulate emissions from generators?

Exemptions from Emission Controls

We are 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. We 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 NOx emissions.

Q21. Do you agree with the proposed exemptions for certain generators from emission controls from generators?

Monitoring

We propose that permitted generators that rely on secondary abatement to achieve emissions limits will require emissions monitoring at least once every three years. In addition, all plant 1-<50MWth will be subject to the MCPD monitoring requirements set out on page 10 of this document.

Q22. Do you agree that permitted generators should be required to monitor their emissions every three years only if they have adopted abatement?

Proposed legislative approach

Transposition of the MCPD and implementation of Generator emission controls are to be achieved via amendments to the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland). We intend to use a number of general provisions within the main body of the PPC regulations regarding powers or the regulator, penalties and offences, which are required to enforce the new requirements and ensure compliance. By adopting existing processes and procedures for plants already permitted under the PPC regulations we will maintain a consistent approach, avoid confusion for regulators and operators, and also reduce the burdens associated with establishing new regimes.

Q23. **Do you foresee any challenges to using the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) for implementing the MCPD and controls on generators*?***

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 permitting and an annual subsistence charge to cover the costs of compliance checking. The level of fees and charges that apply will be updated periodically and will be published by the Northern Ireland Environment Agency; or by the Department (for District Councils) as applied to other regulated facilities under PPC Regulations.

Overlapping legislation e.g. the Clean Air (Northern Ireland) Order 1981, Sulphur Content of Liquid Fuels Regulations (2007) (SCoLFR) and Environmental (NI) Order 2002.

Some plants in scope of the MCPD and emission controls proposed for generators are currently subject to requirements to control air pollution under the CA(NI)O, SCoLFR and E(NI)O 2002. Notably, the CA(NI)O contains provisions to limit emissions of dark smoke and set height of chimneys to protect local air quality and ensure safe dispersion of pollutants which we consider should be retained, as they are complementary to our proposals.

Q.24 Do you have any comments on any overlap between the different regimes which could or should be avoided?

The Regulator

Member States are required to determine the regulators or competent authorities for MCPD.

Currently, the Northern Ireland Environment Agency (NIEA) regulate combustion plants in sites with an aggregated rated thermal input over 50MW and those which are part of PPC Part A installations, while District Councils regulate the remaining 20-50MWth plants and those which are part of PPC Part C installations. The NIEA and NRW have considerable expertise and resources for permitting complex sites, by setting conditions which safeguard the local environment. However, Councils are more likely to already have contact with MCP operators (e.g., through charging of business rates) and already appraise the impact of MCPs in proposed developments subject to planning consent.

Q25. Which of the following approaches do you consider to be the best option for choice of the regulator:

A) NIEA regulate plants in Part A and Part B installations and District Councils regulate all other plants.

B) NIEA regulates all plants

C) District Councils regulate all plants

Q26. Are there any situations where you consider the identity of the regulator needs to be further clarified?

Impact of the proposals

An impact assessment compiled by Defra is provided in support of the proposals in this consultation.

Q27. 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?

If not, please provide details.

Next Steps

The consultation runs for 8 weeks. The consultation will close **16/8/17.**

Following the close of the consultation period, the Department will publish a summary of all the responses received, unless specifically notified otherwise

Copies of responses will be made available to the public on request. If you do not want your response – including your name, contact details and any other personal information – to be publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer, that won't count as a confidentiality request.

Please explain why you need to keep details confidential. We will take your reasons into account if someone asks for this information under freedom of information legislation. But, because of the law, we cannot promise that we will always be able to keep those details confidential.

We will summarise all responses and place this summary on our website at: **https://www.daera-ni.gov.uk/consultations**

This summary will include a list of names of organisations that responded but not people's personal names, addresses or other contact details

MANDATORY CONSULTATION ARRANGEMENTS

Equality Impact Assessment

The Department has completed a preliminary screening exercise on the proposal contained in this consultation paper. There is no evidence that there would be any impact on issues related to equality. Therefore, the Department does not consider it necessary to undertake a full Equality Impact Assessment.

Human Rights Act 1998

The Human Rights Act 1998 implements the European Convention on Human Rights. The Act makes it unlawful for any public authority to act in a way that is incompatible with those rights.

The Department considers that the proposals contained in this consultation paper are compatible with the Human Rights Act 1998.

Rural Proofing

Rural proofing is a process to ensure that all relevant Executive policies are examined carefully and objectively. It determines whether or not those policies have a different impact in rural areas from that elsewhere, given the particular characteristics of rural areas.

Consideration should be given to the policy adjustments that could be made to reflect rural needs so that, as far as possible, public services are accessible on a fair basis to the rural community.

Initial Regulatory Impact Assessment

The Department has used the Impact Assessment compiled by Defra to guide and inform its proposed transposition. The original analysis was produced for a UK perspective. However, this impact assessment presents plant numbers for England and Wales, emissions reductions and consequent costs and benefits, and not those of the UK. The disaggregation from the UK results was based on 84% of plants being located in England, 7.5% in Scotland, 5.2% in Wales and 3.1% in Northern Ireland. It was assumed that plants are distributed equally regardless of capacity, technology and fuel type.

Costs

The total Net Present Value of the cost is estimated to be £13.43 million. Monetised costs comprise costs of making plant compliant with emission limits (abatement costs), emissions monitoring, reporting and permitting and annual enforcement fees.

Benefits

The benefits are estimated to be £58.64 million. The principal monetised benefits represent the benefits of improved air quality on human health and from reduced greenhouse gas emissions. This captures benefits from reduced emissions of NOx, particulate matter known as PM or dust and Sulphur dioxide (SO2), and greenhouse gases namely carbon dioxide (CO2). Benefits relate to plant within scope of this IA, but implementation of the MCPD across the rest of the EU will also improve air quality in the UK because air pollution is a transboundary issue.

ANNEX A - Consultation Questions

Q1	**Do you agree with the general approach to permitting that is proposed?**
Q2	**Do you agree that the Department should apply the Exemption from MCPD Annex II ELVs for existing plant operating less than 500 hours per year.**
Q3	**Do you agree that the Department should have a clear annual operating 500 hour limit or should the Department have a more complex 5 year rolling average?**
Q4	**Do you agree that the Department should not allow existing plant an exemption from MCPD Annex II ELVs operating for up to 1000 hours for plant supplying heating in exceptionally cold weather.**
Q5	**Do you have specific examples where applying the extension to exempted hours in exceptionally cold weather is justified?**
Q6	**Do you have specific examples demonstrating the need for this exemption for new plant operating less than 500 hours per year?**
Q7	**If the exemption is granted should it 500 hours be calculated as a 3 year rolling average?**
Q8	**For biomass and district heating plants which qualify for later application of Annex II emission limits, do you agree with not extending the flexibilities, or do you have any data to show that they should be used?**
Q9	**Do you agree with this delay in applying MCP requirements for certain plant in drive compressor stations?**

Q10	**Do you have specific examples demonstrating the need for this exemption for <u>new</u> engines operating between 500-1500 hours per year?**
Q11	**Do you have evidence that <u>not</u> applying this exemption for <u>new</u> engines operating between 500-1500 hours per year would be not be cost beneficial or disproportionate?**
Q12	**What are the practical difficulties with applying the MCPD to compression ignition engines within the MCPD size range which are not used in the propulsion of a vehicle, ship or aircraft and are not subject to 'placing on the market' emission standards under the Non-Road Mobile Machinery Directive?**
Q13	**What approach for compliance checks do you support, and why:** **a) Random compliance checks with mandatory reporting as described above** **b) Scheduled compliance checks with mandatory reporting as described above** **c) Other – please describe**
Q14	**Do you agree with the proposed approach for monitoring of plants?**
Q15	**Do you have any suggestions for monitoring methods which could be applied to MCPs as an alternative to MCERTs?**
Q16	**Do you agree with the proposed definition of "generators"? If not please explain your reasons and propose an alternative definition.**
Q17	**Do you agree with the emissions limits proposed and that where secondary abatement is applied it must abate emissions to the required Emission Limit Value within five minutes?**
Q18	**Do you agree with the proposed timescales for implementation, which reflect those specified in the Medium Combustion Plant Directive?**
Q19	**Is there a case for allowing back-up generators to be tested at peak times of demand?**
Q20	**Do you agree with the proposed approach to controlling particulate emissions from generators?**

Q21	**Do you agree with the proposed exemptions for certain generators from emission controls from generators?**
Q22	**Do you agree that permitted generators should be required to monitor their emissions every three years only if they have adopted abatement?**
Q23	**Do you foresee any challenges to using the Pollution Prevention and Control (Industrial Emissions) Regulations (Northern Ireland) for implementing the MCPD and controls on generators?**
Q24	**Do you have any comments on any overlap between the different regimes which could or should be avoided?**
Q25	**Which of the following approaches do you consider to be the best option for choice of the regulator:** **A) NIEA regulate plants in Part A and Part B PPC installations and District Councils regulate all other plants.** **B) NIEA regulates all plants** **C) District Councils regulate all plants**
Q26	**Are there any situations where you consider the identity of the regulator needs to be further clarified?**
Q27	**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?** **If not, please provide details.**

Annex B – MCPD timeline and obligations for the operator and regulator MCPD implementation timeline

	New plants	Existing plants > 5MW	Existing 1-5MW plants

20 December 2018	**Permit required** **Emission limits apply**		
1 January 2024		**Permit required**	
1 January 2025		**Emission limits apply**	
1 January 2029			**Permit required**
1 January 2030			**Emission limits apply**

Annex C – MCPD Annex II Emission Limit Values (ELVs)

All emission limit values set out in this Annex are defined at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O_2 content of 6 % for medium combustion plants using solid fuels, 3 % for medium combustion plants, other than engines and gas turbines, using liquid and gaseous fuels and 15 % for engines and gas turbines.

PART 1

Emission limit values for existing medium combustion plants

Table 1

Emission limit values (mg/Nm^3) for existing medium combustion plants with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW, other than engines and gas turbines

Pollutant	Solid biomass	Other solid fuels	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO_2	200 (1) (2)	1 100	—	350	—	200 (3)
NO_x	650	650	200	650	250	250
Dust	50	50	—	50	—	—

Table 2

Emission limit values (mg/Nm^3) for existing medium combustion plants with a rated thermal input greater than 5 MW, other than engines and gas turbines

Pollutant	Solid biomass	Other solid fuels	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO_2	200 (4) (5)	400 (6)	—	350 (7)	—	35 (8) (9)
NO_X	650	650	200	650	200	250
Dust	30 (10)	30 (10)	—	30	—	—

Table 3

Emission limit values (mg/Nm^3) for existing engines and gas turbines

Pollutant	Type of medium combustion plant	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO_2	Engines and gas turbines	—	120	—	15 (11) (12)

NO_x	Engines	190 [13] [14]	190 [13] [15]	190 [16]	190 [16]
	Gas turbines [17]	200	200	150	200
Dust	Engines and gas turbines	—	10 [18]	—	—

PART 2

Emission limit values for new medium combustion plants

Table 1

Emission limit values (mg/Nm^3) for new medium combustion plants other than engines and gas turbines

Pollutant	Solid biomass	Other solid fuels	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO_2	200 [19]	400	—	350 [20]	—	35 [21] [22]
NO_x	300 [23]	300 [23]	200	300 [24]	100	200
Dust	20 [25]	20 [25]	—	20 [26]	—	—

Table 2

Emission limit values (mg/Nm^3) for new engines and gas turbines

Pollutant	Type of medium combustion plant	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO_2	Engines and gas turbines	—	120 [27]	—	15 [28]
NO_x	Engines [29] [30]	190 [31]	190 [31] [32]	95 [33]	190
	Gas turbines [34]	75	75 [35]	50	75
Dust	Engines and gas turbines	—	10 [36] [37]	—	—

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[1] The value does not apply in the case of plants firing exclusively woody solid biomass.

[2] 300 mg/Nm^3 in the case of plants firing straw.

[3] 400 mg/Nm^3 in the case of low calorific gases from coke ovens in the iron and steel industry.

[4] The value does not apply in the case of plants firing exclusively woody solid biomass.

[5] 300 mg/Nm^3 in the case of plants firing straw.

[6] 1 100 mg/Nm^3 in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

([7]) Until 1 January 2030, 850 mg/Nm^3 in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW firing heavy fuel oil.

([8]) 400 mg/Nm^3 in the case of low calorific gases from coke ovens, and 200 mg/Nm^3 in the case of low calorific gases from blast furnaces, in the iron and steel industry.

([9]) 170 mg/Nm^3 in the case of biogas.

([10]) 50 mg/Nm^3 in the case of plants with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

([11]) 60 mg/Nm^3 in the case of biogas.

([12]) 130 mg/Nm^3 in the case of low calorific gases from coke ovens, and 65 mg/Nm^3 in the case of low calorific gases from blast furnaces, in the iron and steel industry.

([13]) 1 850 mg/Nm^3 in the following cases:

i. for diesel engines the construction of which commenced before 18 May 2006;

ii. for dual fuel engines in liquid mode.

([14]) 250 mg/Nm^3 in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

([15]) 250 mg/Nm^3 in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW; 225 mg/Nm^3 in the case of engines with a rated thermal input greater than 5 MW and less than or equal to 20 MW.

([16]) 380 mg/Nm^3 for dual fuel engines in gas mode.

([17]) Emission limit values are only applicable above 70 % load.

([18]) 20 mg/Nm^3 in the case of plants with a rated thermal input equal to or greater than 1 MW and less than or equal to 20 MW.

([19]) The value does not apply in the case of plants firing exclusively woody solid biomass.

([20]) Until 1 January 2025, 1 700 mg/Nm^3 in the case of plants which are part of SIS or MIS.

([21]) 400 mg/Nm^3 in the case of low calorific gases from coke ovens, and 200 mg/Nm^3 in the case of low calorific gases from blast furnaces, in the iron and steel industry.

([22]) 100 mg/Nm^3 in the case of biogas.

([23]) 500 mg/Nm^3 in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

([24]) Until 1 January 2025, 450 mg/Nm^3 when firing heavy fuel oil containing between 0,2 % and 0,3 % N and 360 mg/Nm^3 when firing heavy fuel oil containing less than 0,2 % N in the case of plants which are part of SIS or MIS.

([25]) 50 mg/Nm^3 in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW; 30 mg/Nm^3 in the case of plants with a total rated thermal input greater than 5 MW and less than or equal to 20 MW.

([26]) 50 mg/Nm^3 in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

([27]) Until 1 January 2025, 590 mg/Nm^3 for diesel engines which are part of SIS or MIS.

([28]) 40 mg/Nm^3 in the case of biogas.

([29]) Engines running between 500 and 1 500 hours per year may be exempted from compliance with those emission limit values if they are applying primary measures to limit NO_x emissions and meet the emission limit values set out in footnote (4).

([30]) Until 1 January 2025 in SIS and MIS, 1 850 mg/Nm^3 for dual fuel engines in liquid mode and 380 mg/Nm^3 in gas mode; 1 300 mg/Nm^3 for diesel engines with ≤ 1 200 rpm with a total rated thermal input less than or equal to 20 MW and 1 850 mg/Nm^3 for diesel engines with a total rated thermal input greater than 20 MW; 750 mg/Nm^3 for diesel engines with > 1 200 rpm.

([31]) 225 mg/Nm^3 for dual fuel engines in liquid mode.

([32]) 225 mg/Nm^3 for diesel engines with a total rated thermal input less than or equal to 20 MW with ≤ 1 200 rpm.

([33]) 190 mg/Nm^3 for dual fuel engines in gas mode.

([34]) These emission limit values are only applicable above 70 % load.

([35]) Until 1 January 2025, 550 mg/Nm^3 for plants which are part of SIS or MIS.

([36]) Until 1 January 2025, 75 mg/Nm^3 for diesel engines which are part of SIS or MIS.

([37]) 20 mg/Nm3 in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.