

Environment Agency

Review of an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/TP3538GF
The Operator is: MGT Teesside Limited
The Installation is: Tees Renewable Energy Plant
This Variation Notice number is: EPR/TP3538GF/V002

What this document is about

This substantial variation was undertaken based upon an application made by the operator. As part of this variation the permit has been updated and consolidated. The updated permit is set out in schedule 2 of the variation. The purpose of the variation was to introduce the following changes:

- The plant is to be fuelled by wood pellets in addition to wood chips which are already permitted.
- A wood chip dryer is to be installed on the site.
- The installation boundary has been extended.
- Updating the permit in line with the requirements of Industrial Emissions Directive (IED) 2010/75/EU. The application included all the information necessary to complete this.

The first three changes are discussed in Annex 1 of this Decision Document. Annex 1 also discusses those non IED changes made as a result of updating and consolidating the permit that require explanation. Those changes required as a result of the IED are discussed below.

All Environmental permits which permit the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), need to be varied to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

The IED provides a period of transition towards the new ELVs via Article 32, the Transitional National Plan (TNP). It also makes provision for plant that wish to be exempted from compliance with the new ELVs in Article 33, the Limited Life Derogation (LLD).

As the LCP has not yet been constructed it will operate under the ELV compliance route. The application provided sufficient information relating to the LCP, necessary for accurate implementation of the IED requirements. A copy of the variation application is available on the public register.

We have reviewed the permit for this installation, including all variations since the last permit consolidation. This is our decision document, which explains the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the compliance routes and, where relevant, the emissions limits proposed by the Operator for the LCP on the installation. This review has been undertaken with reference to the:

- Chapter III and annex V of the IED
- “IED BAT ESI Review Paper, 28 October 2014” produced by the Environment Agency (referred to as the “2014 ESI BAT review paper” in this document)
- “Electricity Supply Industry – IED compliance protocol for Utility Boilers and Gas Turbines”, published by the Joint Environmental Programme.

It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as implementing Chapter III of the IED, the consolidated variation notice takes into account and brings together in a single document, all previous variations that relate to the original permit. It also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and philosophy, and with other permits issued to installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document we therefore address only our determination of substantive issues relating to the chapter III review and any changes to the operation of the installation.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

1. Our proposed decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review and assessment of changes that are not part of the Chapter III IED derived permit review.

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow them to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the Operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information relating to the requirements of Chapter III of and Annex V to the IED

We considered that the application contained sufficient information for us to begin our determination of the permit review.

3 The legal framework

The Consolidated Variation Notice will be issued, under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

Meeting the requirements of the IED

The table below shows how each requirement of the IED has been addressed by the permit conditions.

IED Article Reference	IED requirement	Permit condition
30(6)	If there is an interruption in the supply of gas, an alternative fuel may be used and the permit emission limits deferred for a period of up to 10 days, except where there is an overriding need to maintain energy supplies. The EA shall be notified immediately.	Not required
32(4)	For installations that have applied to derogate from the IED Annex V emission limits by means of the transitional national plan, the monitoring and reporting requirements set by UK Government shall be complied with.	Not required
33(1)b	For installations that have applied to derogate from the IED Annex V emission limits by means of the Limited Life Derogation, the operator shall submit annually a record of the number of operating hours since 1 January 2016;	Not required
37	Provisions for malfunction and breakdown of abatement equipment including notifying the EA.	2.3.5, 4.2.5, 4.3.1d
38	Monitoring of air emissions in accordance with Ann V Pt 3	3.5, 3.6
40	Multi-fuel firing	Not required
41(a)	Determination of start-up and shut-down periods	2.3.6 Schedule 1 Table S1.5

72b	For combustion plants which do not operate more than 1500 operating hours per year as a rolling average over a period of 5 years, the number of operating hours per year.	Not required
Ann V Pt 1(1)	All emission limit values shall be calculated 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 solid fuels, 3 % for combustion plants, other than gas turbines and gas engines using liquid and gaseous fuels and 15 % for gas turbines and gas engines.	Schedule 6, Interpretation
Ann V Pt 1	Emission limit values	Not required
Ann V Pt 1	For plants operating less than 500 hours per year, record the used operating hours	Not required
Ann V Pt 1(6(1))	Definition of natural gas	Not required
Ann V Pt 2	Emission limit values	3.1.2 Schedule 3, Table S3.1
AnnV Pt 3(1)	Continuous monitoring for >100MWth for specified substances	3.5, 3.6 Schedule 3, Table S3.1
AnnV Pt 3(2, 3, 5)	Monitoring derogations	Not required
AnnV Pt3(4)	Measurement of total mercury	Not required
AnnV Pt3(6)	EA informed of significant changes in fuel type or in mode of operation so can check Pt3 (1-4) still apply	Not required
AnnV Pt3(7)	Monitoring requirements	3.5.1 Schedule 3, Table S3.1
AnnV Part 3(8,9,10)	Monitoring methods	3.5, 3.6
AnnV Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.5.1 Schedule 3, Table S3.1
AnnV Pt7	Refinery multi-fuel firing SO ₂ derogation	Not required

Key Issues

The operator has proposed to operate this LCP under the ELV compliance route.

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their application operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

Emission Limits:

All emission limits in the permit are in line with the requirements of IED. Annex V Part 2 of the IED details the calendar monthly means for each pollutant which are relevant to this combustion plant. Annex 5 Part 4 details how a daily and hourly limit can be derived from the calendar monthly mean. In short:

- The daily limit is calculated based on 110% of the calendar monthly mean.
- The hourly limit is calculated based on 200% of the calendar monthly mean.

Where an emission limit is specified in the existing permit or in this application which is more stringent than IED then this has be included instead.

(i) Oxides of Nitrogen

	IED (Annex V Part 2) mg/m³	Existing permit (/A001) mg/m³	Operators proposed limits in this application (/V002) mg/m³	Limits that are included in this variation notice (/V002) mg/m³
Oxides of Nitrogen Calendar monthly mean	150	Not included	150	150
Oxides of Nitrogen Daily mean of validated hourly averages	165	Not included	Not included	150
Oxides of Nitrogen Hourly average	300	150	150	150

The existing permit and the operators proposed limits specify an hourly limit. The operators proposed limits also includes a calendar monthly mean. The calendar monthly mean is in accordance with IED and the hourly limit is more stringent than IED. Therefore, these have been included in this variation. Calculating a daily mean from the hourly value would result in a limit which is more stringent than IED. It would be unreasonable to stipulate a daily mean more stringent than IED which has not been requested by the operator.

Therefore, in this instance it has been decided to include a daily limit of 150 mg/m³.

(ii) Sulphur dioxide

	IED (Annex V Part 2) mg/m ³	Existing permit (/A001) mg/m ³	Operators proposed limits in this application (/V002) mg/m ³	Limits that are included in this variation notice (/V002) mg/m ³
Sulphur dioxide Calendar monthly mean	150	53	53	53
Sulphur dioxide Daily mean of validated hourly averages	165	Not included	Not included	165
Sulphur dioxide 95%ile of validated hourly averages within a calendar year	300	Not included	Not included	300

The existing permit and the operators proposed limits specify a calendar monthly mean. The calendar monthly mean is more stringent than IED. Therefore, this has been included in this variation. There is no daily mean or hourly limit specified in the existing permit or in the operators proposed limits. Therefore, these values have been calculated based upon the IED calendar monthly mean.

(iii) Particulates

	IED (Annex V Part 2) mg/m ³	Existing permit (/A001) mg/m ³	Operators proposed limits in this application (/V002) mg/m ³	Limits that are included in this variation notice (/V002) mg/m ³
Particulates Calendar monthly mean	20	Not included	10	10
Particulates Daily mean of validated hourly averages	22	20	10	10
Particulates 95%ile of validated hourly	40	Not included	Not included	40

averages within a calendar year				
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The existing permit specifies a daily mean. The operators proposed limits specify a calendar monthly mean and a daily mean. These are both more stringent than IED. Particulates will be controlled through the use of Fabric filters, which can reliably achieve emissions less than 10mg/m³ (Combustion Sector Guidance EPR 1.01). Therefore, we agree with the operators proposed limits which have been included in the variation. There is no hourly limit specified in the existing permit or in the operators proposed limits. Therefore, this value has been calculated based upon the IED calendar monthly mean.

(iv) Carbon Monoxide

This has been taken out of the permit as emission limits are not specified in IED for this pollutant, and is regulated by ensuring that combustion meets the Best Available Technique requirements.

There have been no changes to the emission limits specified for hydrogen chloride or ammonia

The requirement to provide annual spot monitoring for all pollutants has been removed from Table S3.1. This is already a requirement under monitoring method EN 14181 which is the monitoring method for all pollutants specified in this variation.

Minimum start up load and Minimum shut-down load:

This information has been requested as part of Preoperational Condition 11. The Operator is required to define and justify the “minimum start up load” and “minimum shut-down load” for the LCP, both in terms of the output load (i.e. electricity, heat or power generated) (MW); and this output load as a percentage of the rated thermal output of the combustion plant (%).

Odour:

The installation stores and uses ammonia for NOx abatement. An Odour Management Plan is in place, which was submitted as part of the original application (EPR/TP3538GF/A001).

Notifications:

Schedule 5, Part C, takes account of the malfunction and breakdown requirements. A breach of permit condition is NOT implicit in notification under Part C.

Resource efficiency metrics:

The permit has been updated to require the reporting against the list of Resource Efficiency Metrics as detailed in table S4.2.

Waste Codes:

Waste code description has been amended removing the reference to peat as it is not to be burnt at the installation.

LCP References

The LCP reference for this combustion plant has been included in table S3.1.

Conditions 1.2.1 and 1.2.2

Condition 1.2.2 has been added, it requires the operator to review the potential for the viability of Combined Heat and Power (CHP) implementation every 4 years.

Reporting requirements:

The reporting form Energy 1 has been removed as the reporting parameters are duplicated in the Resource Efficiency Metrics form which is required as part of IED. A number of reporting parameters have been removed from the form Performance 1, these will now be checked as part of site inspections.

Reporting forms CAM1 Air 3 and REM have been added to the permit which are required as part of IED.

Cooling system:

We consider the air-cooled cooling system already required by the permit to reflect best available techniques for the installation.

Annex 1: Review and assessment of changes that are not part of the Chapter III IED derived permit review.

Aspect considered	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to web publicising and consultation	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Site condition report	The operator has provided a description of the condition of the site. We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED–guidance and templates (H5). A portion of land to the north west of the site has been included within the installation boundary. This area of land is where a series of conveyors are located that transfer wood chip on to the site from the shipping berth. Details relating to the condition of this land have been provided.	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>The operator is proposing to burn wood pellets in addition to wood chips. Both fuels are derived from virgin timber and have a similar composition. It is therefore expected that the emission profile will be similar and no further assessment is necessary.</p> <p>The variation also authorises the inclusion of a wood chip dryer. The fire risk associated with the use of this equipment will be addressed through the Fire Prevention Plan as required through Preoperational Condition 10. The emissions to air from the equipment will be addressed through Preoperational Condition 2, which requires the submission of air dispersion modelling.</p> <p>There is an emission to air from the wood chip dryer. The air from the drying chamber will contain dust from the wood chip. These emissions will be mitigated through the installation of fabric filters or an equivalent system. The wood chip dryer will be maintained in accordance with the manufacturers recommendations. In the event that any issues arise with the wood chip dryer, it will be shut down and the problem will be investigated. The environmental risk from these emissions is thus deemed to be insignificant.</p>	
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <p>The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions.</p>	✓
The permit conditions		
Updating permit conditions during consolidation.	We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same meaning as those in the previous permit(s).	✓
Raw materials	We have specified limits and controls on the use of raw materials and fuels.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>The permit has been updated to allow the operator to burn wood pellets in addition to wood chips. The permit stipulates that the wood pellets are derived from virgin timber, the operator has confirmed that this is the case.</p>	
<p>Pre-operational conditions</p>	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions.</p> <p>POC2 – This preoperational condition has been updated to reflect current guidance in relation to BAT standards. The wording has also been amended to ensure that the condition is enforceable.</p> <p>POC9 – The preoperational condition has been added and requests revised air dispersion modelling should the site layout change. This condition is required to ensure that any changes do not lead to unacceptable impacts on sensitive receptors.</p> <p>POC10 – The preoperational condition has been added and requests that a Fire Prevention Plan is provided. Large quantities of wood chip and wood pellets will be stored on site, it is important to ensure that the necessary procedures and preventative measures are in place to minimize the risk of fire.</p> <p>POC11 – The preoperational condition has been added and requests that the start up and shut down thresholds are defined. This information is required to ensure that emissions during this period are at acceptable levels.</p> <p>POC12 – This preoperational condition has been added and requests a flood risk assessment. This preoperational condition has been added as the installation is situated within a flood zone.</p> <p>POC13 – The preoperational condition has been added and requires details of the processing monitoring and controls for the use of the Selective Non Catalytic Reduction System (SNCR). This information is required to ensure that the risks associated with the use of SNCR have been considered</p>	<p>✓</p>

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>POC14 – This preoperational condition was originally IC4. This has been done as the consideration for the feasibility Combined Heat and Power is best considered at the design stage prior to the construction of the site. Therefore, a preoperational condition is more suitable. The requirements of this preoperational condition have deemed to have been completed prior to permit issue on 24/09/15.</p>	
Improvement conditions	<p>Based on the information in the application, we consider that we need to impose improvement conditions.</p> <p>IC1 – This has been amended to request that any improvements identified are included in the report along with a timetable for their implementation. It has also been amended requesting calculations for the net rated thermal input of all combustion equipment are provided.</p> <p>IC2 - This has been amended to request that any improvements identified are included in the report along with a timetable for their implementation. It has also been amended to request that the operator puts forward emission limits based on the emissions data provided.</p> <p>IC3 - This has been amended to request that any improvements identified are included in the report along with a timetable for their implementation.</p>	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓

Annex 2: Consultation and web publicising

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received from
Public Health England
Brief summary of issues raised
Based on the information contained within the application Public Health England have no significant concerns regarding the risk to the health of the local population from the proposals in this application.
Summary of actions taken or show how this has been covered
None required

The Local Planning Authority, Environmental Health, Local Fire Service, Health and Safety Executive, National Grid and Department of Public Health were also consulted however no response was received.

The application was advertised on our website from 07/07/15 to 04/08/15. No comments were received.

GLOSSARY

Baseload	>4000 operating hours per annum
BAT	best available techniques
BOFA	boosted over fire air
BREF	best available techniques reference document
CCGT	combined cycle gas turbine
Derogation	as set out in Article 15(4) of the IED
Emergency use	<500 operating hours per annum
elv	emission limit value derived under BAT
ELV	emission limit value set out in either IED or LCPD
FGD	flue gas desulphurisation
IED	Industrial Emissions Directive 2010/75/EC
LCP	large combustion plant – combustion plant subject to Chapter III of IED
LCPD	Large Combustion Plant Directive 2001/80/EC
LLD	Limited Life Derogation
Mid merit	1500-4000 operating hours per annum
MSUL/MSDL	Minimum start up load/minimum shut-down load
Peaking	500-1500 operating hours per annum
Part load operation	operation during a 24 hr period that includes loads between MSUL/MSDL and base load.
SCR	selective catalytic reduction
SNCR	selective non catalytic reduction
TNP	Transitional National Plan