

Environment Agency

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive 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/ZP3736XH
The Operator is: SAICA Paper UK Limited
The Installation is: Partington Paper Mill
This Variation Notice number is: EPR/ZP3736XH/V007

What this document is about

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on BAT conclusions.

We have reviewed the permit for this installation against the revised BAT Conclusions for the production of pulp, paper and board industry sector published on 30 September 2014 in the Official Journal of the European Union. Where appropriate, we also considered other relevant BAT Conclusions published prior to this date but not previously included in a permit review for the Installation. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions (BATc) for production of pulp, paper and board as detailed in document reference EU Official Journal (L 284) of Commission implementing decision 2014/687/EU of 26 September 2014. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the

consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, 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 new BAT Conclusions 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 decision
2. How we reached our decision
3. The legal framework
4. Annex 1– Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of derogation request(s) made by the operator in relation to BAT Conclusions which include an Associated Emission Level (AEL) value.
6. Annex 3 – Improvement Conditions
7. Annex 4 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review.
8. Annex 5 - Priority Compliance Issues

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow it to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

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 to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 21 November 2014 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that

- Describes the techniques that will be implemented before 30 September 2018, which will then ensure that operations meet the revised standard, or
- justifies why standards will not be met by 30 September 2018, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or

- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT AEL) described in the BAT Conclusions Document, the Regulation 60 Notice required that the Operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 60 Notice response from the Operator was received on 31 March 2015.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any party.

2.2 Review of our own information in respect to the capability of the installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation we have no reason to consider that the operator will not be able to comply with the techniques and standards described in the BAT Conclusions.

2.3 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request on 18 August 2015. A copy of the further information request was placed on our public register.

In addition to the response to our further information request, we received additional information during the determination from SAICA Paper UK Limited by email on 10 December 2015. We made a copy of this information available to the public in the same way as the response to our information request.

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.

Annex 1: decision checklist regarding relevant BAT Conclusions

BAT Conclusions for the production of pulp, paper and board, were published by the European Commission on 30 September 2014. There are 53 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

The overall status of compliance with the BAT conclusion is indicated in the table

- NA Not Applicable
- CC Currently Compliant
- FC Compliant in the future (within 4 years of publication of BAT conclusions)
- NC Not Compliant

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
1	1. In order to improve the overall environmental performance of the plants for the production of pulp, paper and board, BAT is to implement and adhere to an environmental management system (EMS)	CC	4
2	2. BAT is to apply the principles of good housekeeping for minimising the environmental impact of the production process	CC	4
3	Reduce the release of not readily biodegradable organic chelating agents such as EDTA or DTPA from peroxide bleaching using a number of techniques	NA	1
4	Reduce the generation and the pollution load of waste water from wood storage and preparation	NA	1
5	Reduce freshwater use and generation of waste water, BAT is to close the water system to the degree technically feasible in line with the pulp and paper grade manufactured	CC	4

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
6	Reduce fuel and energy consumption in pulp and paper mills	FC	5
7	Prevent and reduce the emission of odorous compounds originating from the waste water system,	CC	4
8	BAT is to monitor the key process parameters according to the table <i>(list)</i> given below.	CC	4
9	BAT is to carry out the monitoring and measurement of emissions to air, as indicated below, on a regular basis according to EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards which ensure the provision of data of an equivalent scientific quality.	NA	1
10	BAT is to carry out the monitoring and measurement of emissions to water, as indicated below, on a regular basis according to EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards which ensure the provision of data of an equivalent scientific quality.	CC	4

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
11	BAT is to regularly monitor and assess diffuse total and reduced sulphur emissions from relevant sources.	NA	1
12	In order to reduce the quantities of wastes sent for disposal, BAT is to implement a waste assessment (including waste inventories) and management system, so as to facilitate waste reuse, or failing that, waste recycling, or failing that, "other recovery"	CC	4
13	In order to reduce nutrient (nitrogen and phosphorus) emissions into receiving waters, BAT is to substitute chemical additives with high nitrogen or phosphorus contents by additives containing low nitrogen and phosphorus contents.	CC	4
14	Reduce emissions of pollutants into receiving waters	CC	4
15	When further removal of organic substances, nitrogen or phosphorus is needed, BAT is to use tertiary treatment as described in section 8.7.2.2.	FC	4
16	Reduce emissions of pollutants into receiving waters from biological waste water treatment plants	FC	4
17	Reduce the emissions of noise from pulp and paper manufacturing	CC	4

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
18	Prevent pollution risks when decommissioning a plant	CC	4
19	NA	NA	-
20	NA	NA	-
21	NA	NA	-
22	NA	NA	-
23	NA	NA	-
24	NA	NA	-
25	NA	NA	-
26	NA	NA	-
27	NA	NA	-
28	NA	NA	-
29	NA	NA	-

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
30	NA	NA	-
31	NA	NA	-
32	NA	NA	-
33	NA	NA	-
34	NA	NA	-
35	NA	NA	-
36	NA	NA	-
37	NA	NA	-
38	NA	NA	-
39	NA	NA	-
40	In order to reduce water use, waste water flow and the pollution load, BAT is to use a suitable combination of the techniques specified in BAT 13, BAT 14, BAT 15 and BAT 16	NA	1

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
41	In order to reduce the consumption of thermal and electrical energy, BAT is to use a combination of the techniques	NA	1
42	In order to reduce the risk of contamination or to prevent contamination of soil and groundwater and to reduce wind drift of paper for recycling and diffuse dust emissions from the paper for recycling yard, BAT is to use one or a combination of the techniques	CC	4
43	In order to reduce fresh water use, waste water flow and the pollution load, BAT is to use a combination of the techniques	CC	4
44	In order to maintain advanced water circuit closure in mills processing paper for recycling and to avoid possible negative effects from the increased recycling of process water, BAT is to use one or a combination of the techniques	CC	4
45	In order to prevent and reduce the pollution load of waste water into receiving waters from the whole mill, BAT is to use a suitable combination of the techniques specified in BAT 13, BAT 14, BAT 15, BAT 16, BAT 43 and BAT 44.	FC	4

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
46	In order to reduce energy consumption, BAT is to reduce electrical energy consumption within RCF processing paper mills by use of a combination of the techniques	CC	4
47	In order to reduce the generation of waste water, BAT is to use a combination of the techniques	CC	1
48	In order to reduce fresh water use and emissions to water from speciality paper mills, BAT is to use a combination of the techniques	CC	1
49	Reduce emission loads of coating colours and binders which can disturb the biological waste water treatment plant	NA	1
50	In order to prevent and reduce the pollution load of waste water into receiving waters from the whole mill, BAT is to use a suitable combination of the techniques specified in BAT 13, BAT 14, BAT 15, BAT 47, BAT 48 and BAT 49.	CC	4

BAT Conclusion No	Summary of BAT Conclusion requirement for production of pulp, paper and board	Status NA/ C / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
51	In order to reduce VOC emissions from off-line or on-line coaters, BAT is to choose colour recipes (compositions) that reduce VOC emissions.	NA	1
52	In order to minimise the amount of solid waste to be disposed of, BAT is to prevent waste generation and to carry out recycling operations by the use of a combination of the techniques	CC	4
53	In order to reduce the consumption of thermal and electrical energy, BAT is to use a combination of the techniques	CC	4

Key Issues

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Consolidated Variation Notice.

Annex 2: Assessment, determination and decision where an application(s) for Derogation from BAT Conclusions with associated emission levels (AEL) has been requested.

The Operator did not request derogation from compliance with any AEL included within the BAT Conclusions as part of their Regulation 60 Notice response.

Annex 3: Improvement Conditions

Based on the information in the Operator's Regulation 60 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document (Annex 1 or Annex 2).

If the consolidated permit contains existing improvement conditions that are not yet complete or the opportunity has been taken to delete completed improvement conditions then the numbering in the table below will not be consecutive as these are only the improvement conditions arising from this permit variation.

Reference	Improvement Condition	Completion date
IC1	<p>The operator shall submit, for approval by the Environment Agency, reports setting out progress to achieving the BAT conclusion AELs where BAT is currently not achieved, but will be achieved before 01/10/18. The report shall include, but not be limited to the following:</p> <ol style="list-style-type: none"> 1) Current performance against the BATc AEL. 2) Methodology for reaching the AELs. 3) Associated targets / timelines for reaching compliance by 01 October 2018 4) Any alterations to the initial plan <p>The reports shall address compliance with BAT45.</p>	<p>Progress reports by</p> <p>01/06/16 31/12/16 01/06/17 31/12/17 01/06/18</p>
IC2	<p>The operator shall submit, for approval by Environment Agency, reports setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved, but will be achieved before 01/10/18. The report shall include, but not be limited to, the following:</p> <ol style="list-style-type: none"> 1) Methodology for achieving BAT. 2) Associated targets / timelines for reaching compliance by 01/10/18 3) Any alterations to the initial plan – <i>for progress reports</i> <p>The report shall address compliance with BAT16.</p>	<p>Progress reports by</p> <p>01/06/16 31/12/16 01/06/17 31/12/17 01/06/18</p>

IC3	The Operator shall update the Operating Procedures for the Installation for incorporation into Table S1.2 of this permit.	12 months from date of issue.
IC4	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP293 . The net rated thermal input is the ‘as built’ value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ul style="list-style-type: none"> a) Performance test results during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), b) Performance test results after a significant modification (quoting the specified standards or test codes), c) Manufacturer’s contractual guarantee value, d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; f) Operational efficiency data as verified and used for heat accountancy purposes, g) Data provided as part of Due Diligence during acquisition, <p>*Performance test results shall be used if these are available.</p>	31/12/16
IC5	The operator shall provide a report in writing to the Environment Agency. The	31/12/16

	<p>report shall contain a proposed emission limit which applies when the load varies between MSUL/MSDL and base load during the daily reference period, for emission point A1 for oxides of nitrogen. The report shall also provide justification for this limit, and an assessment of the impacts of emissions at this limit using our H1 guidance or equivalent methodology.</p>	
IC6	<p>The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the “minimum start up load” and “minimum shut-down load”, for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of:</p> <ul style="list-style-type: none"> i. The output load (i.e. electricity, heat or power generated) (MW); and ii. This output load as a percentage of the rated thermal output of the combustion plant (%). <p>And / Or</p> <ul style="list-style-type: none"> iii. At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU. 	31/12/16
IC7	<p>For LCPD LCP 441 (now LCP 293 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.</p>	28/01/16

Annex 4: Review and assessment of changes that are not part of the BAT Conclusions derived permit review.

IED Chapter III Large Combustion Plant review.

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). Other derogations include limited operating hour regimes for sites using 500 hr or 1500 hr derogations. There are also options for exemption from emission limits based on operating hours.

The operator has submitted a response to our notice requiring information, issued under regulation 60(1) of the Environmental Permitting Regulations (EPR), which has provided us with information on which compliance route they wish to follow for each LCP. The response also includes specific details relating to each LCP, necessary for accurate implementation the IED requirements. A copy of the regulation 60 notice and the operator's response is available on the public register.

We have reviewed the permit for this installation, including all variations since the last permit consolidation, and referred to the operator's response to the regulation 60 notice requiring information.

Annex 4 of this Decision Document explains how we have reviewed and considered the compliance routes and, where relevant, the emissions limits proposed by the Operator for each LCP on the installation. This review has been undertaken with reference to the:

- Chapter III and annex V of the IED
- "IED BAT Non-ESI Review Paper, 28 October 2014" produced by the Environment Agency (referred to as the "2014 Non-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 the chapter III IED compliance of the installation, the variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. 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 chapter III review.

4.1 GLOSSARY

Baseload	means: (i) as a mode of operation, operating for >4000hrs per annum; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating
BAT	best available techniques
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 set out in either IED or LCPD
FGD	flue gas desulphurisation
GT	gas turbine
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
MCR	Maximum Continuous Rating
Mid merit	1500-4000 operating hours per annum
MSUL/MSDL	Minimum start up load/minimum shut-down load
OCGT	Open Cycle Gas Turbine
Peaking	500-1500 operating hours per annum
Part load operation	operation during a 24 hr period that includes loads between MSUL/MSDL and maximum continuous rating (MCR)
SCR	selective catalytic reduction
SNCR	selective non catalytic reduction
TNP	Transitional National Plan

4.2 Our decision

We have decided to issue this Variation Notice to the Operator. This will allow it to continue to operate the Large Combustion Plant (LCP293), subject to the conditions in the 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.

4.3 How we reached our decision

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

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (a Regulation 60 Notice) on 31/10/14 requiring the Operator to provide information for each LCP they operate, including:

- The type of plant, size and configuration.
- The proposed compliance route.
- Minimum start up and shut down loads.
- The proposed emission limits and how they accord with the 2014 BAT review paper.

The Regulation 60 Notice response from the Operator was received on 27/03/2015.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any party.

4.3.2 Requests for Further Information during determination

Although we were able to consider the Regulation 60 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued a further information request on 18 August 2015. A copy of the further information request was placed on our public register.

In addition to the response to our further information request, we received additional information during the determination from SAICA Paper UK Limited by email on 10 December 2015. We made a copy of this information available to the public in the same way as the response to our information request.

4.4 The legal framework

The 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 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 applicable
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 applicable
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 applicable
37	Provisions for malfunction and breakdown of abatement equipment including notifying the EA.	Not applicable
38	Monitoring of air emissions in accordance with Ann V Pt 3	3.6, 3.7
40	Multi-fuel firing	Not applicable
41(a)	Determination of start-up and shut-down periods	2.4.3 Schedule 1 Table S1.4
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 O2 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	3.1.3 Schedule 3, Table S3.1
Ann V Pt 1	For plants operating less than 500 hours per year, record the used operating hours	Not applicable
Ann V Pt 1(6(1))	Definition of natural gas	Schedule 6, Interpretation
Ann V Pt 2	Emission limit values	Not applicable
AnnV Pt 3(1)	Continuous monitoring for >100MWth for specified substances	3.6, 3.7 Schedule 3, Table S3.1
AnnV Pt 3(2, 3, 5)	Monitoring derogations	3.6.1 Schedule 3, Table S3.1
AnnV Pt3(4)	Measurement of total mercury	Not applicable

IED Article Reference	IED requirement	Permit condition
AnnV Pt3(6)	EA informed of significant changes in fuel type or in mode of operation so can check Pt3 (1-4) still apply	2.4.1 Schedule 1, Table S1.2
AnnV Pt3(7)	Monitoring requirements	3.6.1 Schedule 3, Table S3.1
AnnV Part 3(8,9,10)	Monitoring methods	3.6, 3.7
AnnV Pt 4	Monthly, daily, 95%ile hourly emission limit value compliance	3.6.1 Schedule 3, Table S3.1
AnnV Pt7	Refinery multi-fuel firing SO ₂ derogation	Not applicable

4.5 Key Issues

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Where relevant and appropriate, we have incorporated the techniques described by the Operator in their Regulation 60 Notice response as specific operating techniques required by the permit, through their inclusion in Table S1.2 of the Variation Notice.

The variation notice uses updated LCP numbers in accordance with the most recent DEFRA LCP reference numbers. The LCP references have changed as follows:

- **LCP 441** is changed to **LCP 293**

LCP293: The installation operates a combined heat and power (CHP) plant consisting of a combined cycle gas turbine (CCGT), a heat recovery steam generator (HRSG) and a steam turbine which supplies all of the required electricity and 80% of the steam requirements for the site whilst also generating surplus electricity for export to the national grid. Associated with this plant is a single condenser and a steam accumulator. The primary fuel for the CCGT is natural gas, however, the HRSG is designed to operate on both natural gas and biogas produced by the ETP. This reduces the need for supplementary firing of the HRSG with natural gas. Emissions of NO_x will be controlled through good combustion control, dry low NO_x burners in the gas turbine and supplementary firing in the exhaust. Based on maximum continuous rating the net rated thermal input for the CHP is 135MW_{th}.

Compliance Route:

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

Net Rated Thermal Input:

The Operator has stated that the Net Thermal Input is 135MW_{th}. The operator has not provide sufficient evidence to support the value provided. Improvement Program IC4 has been included in the permit.

IC4:- The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP293. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).

Evidence to support this figure, in order of preference, shall be in the form of:-

- a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes),

- b) Performance test results after a significant modification (quoting the specified standards or test codes),
- c) Manufacturer's contractual guarantee value,
- d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually);
- e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system;
- f) Operational efficiency data as verified and used for heat accountancy purposes
- g) Data provided as part of Due Diligence during acquisition,

*Performance test results shall be used if these are available.

Minimum start up load and Minimum shut-down load:

The Operator has defined the "minimum start up load" and "minimum shut-down load" for the LCP in their response to question 6 of the Regulation 60. The operator response has not met the criteria required by the Environment Agency. Improvement Program IC6 has been included in the permit.

IC6:- The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of:

- a) The output load (i.e. electricity, heat or power generated) (MW); and
- b) This output load as a percentage of the rated thermal output of the combustion plant (%).

And / Or

- c) At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.

Emission limits:

The operator has proposed limits in line with annex V of the IED and the 2014 BAT review paper. Consequently we have accepted the proposed limits and incorporated them into table S3.1 of the permit.

Release point A1(HRSG either not fired or fired in supplementary mode)
ELVs mg/m³

Period	Current	IED	Applied for	Granted
Oxides of nitrogen				
Monthly	-	50 / 75		75
Daily	50 / 75	55 / 82.5		75
95%ile hr	100	100 / 150		100

The Operator has confirmed that the CCGT/CHP operates at >75% efficiency. The current daily ELV is set at 50mg/m³ with a footnote which reads as follows:-

The emission limit shall not exceed 75 mg/m³, where the efficiency of the gas turbine, used in Combined heat and power systems, is determined at ISO base load conditions to have an overall efficiency greater than 75% as specified within Annex IV B of the LCPD.

This higher ELV associated with the CCGT being >75% efficient is also in the IED under Annex V Part 1(6)(2)(i). Because the existing daily ELV is tighter than that in Annex V, it has been retained. The current 95%ile hourly ELV is also tighter than higher Annex V ELV applicable to appliances at >75% efficiency hence it has been retained. The Monthly ELV has been calculated in line with the methodology set out in our IED BAT Non-ESI Review Paper, 28 October 2014 and is in line with that allowed for under Annex V.

Release point A1(HRSG either not fired or fired in supplementary mode)
ELVs mg/m³

Period	Current	IED	Applied for	Granted
Carbon Monoxide				
Monthly	-	100	-	100
Daily	100	110	100	100
95%ile hr	-	200	-	200

The daily ELV is tighter than that in Annex V hence it has been retained. The monthly and 95%ile hourly ELVs have been calculated in line with the methodology set out in our IED BAT Non-ESI Review Paper, 28 October 2014.

Release point A1(HRSG fired in auxiliary mode only)
ELVs mg/m³

Period	Current	IED	Applied for	Granted
Oxides of nitrogen				
Monthly	-	100	-	100
Daily	-	110	-	110
95%ile hr	-	200	-	200

The current permit does not set ELVs for the operation of the HRSG operated in auxiliary mode despite the Operator confirming that on occasions it does. In order to adequately accommodate this mode of operation we have set the IED Annex V ELVs for gas fired boilers. It must be noted that the oxygen reference conditions for this mode of firing will be 3% as opposed to the 15% under normal, HRSG supplementary fired / unfired mode.

Release point A1(HRSG fired in auxiliary mode only)
ELVs mg/m³

Period	Current	IED	Applied for	Granted
Oxides of nitrogen				
Monthly	-	100	-	100
Daily	-	110	-	110
95%ile hr	-	200	-	200

The current permit does not set ELVs for the operation of the HRSG operated in auxiliary mode despite the Operator confirming that on occasions it does. In order to adequately accommodate this mode of operation we have set the IED Annex V ELVs for gas fired boilers. It must be noted that the oxygen reference conditions for this mode of firing will be 3% as opposed to the 15% under normal, HRSG supplementary fired / unfired mode.

Release point A1:-

- 1) HRSG either not fired or fired in supplementary mode
- 2) HRSG in auxiliary mode.

ELVs mg/m³

Period	Current	IED	Applied for	Granted
Sulphur Dioxide				
Average value over monitoring period	10	38.5 - 70	10	10
Dust				
Average value over monitoring period	5	5.5 - 10	5	5

The IED (Annex V, Part 4, section 1) requires that each series of periodic measurements must comply with the “emission limit values” set out in the relevant section of Annex V. This is somewhat imprecise as three different ELVs are set, each with a different time basis (monthly, daily and hourly as defined in Annex V, Part 4, Section 1). Periodic monitoring is usually undertaken for a limited time period (ranging from 30 minutes to a number of hours depending on the details of monitoring standard applicable at the time). Consequently, we believe that the most applicable short term emission limit value applicable where only periodic monitoring is required is the daily average value (i.e. 110% of the headline IED Annex V emission limit value). This is our BAT position. However, we also recognise that this limit value may not be appropriate in some situations (e.g. for those plant that routinely operate at reduced firing rates or where plant operate at highly variable loads). In such cases, a site specific emission limit value would be set, based on the consideration of BAT. Any elevated emission limit value shall not exceed a maximum value of 200% of the headline IED Annex V emission limit value.

As a result this provides an ELV range for:-

- a) Sulphur dioxide of 38.5 – 70mg/m³ and,
- b) Dust 5.5 – 10mg/m³.

Since the current ELVs for Sulphur dioxide and dust are tighter than the bottom end of their respective ranges they have both been retained.

Gas fired plant – Sulphur Dioxide and Dust

Sulphur dioxide emissions from natural gas firing of gas turbines and boilers are ordinarily reported as six monthly concentrations on the basis of the fuel sulphur content without continuous or periodic monitoring since only trace quantities of sulphur are present in UK natural gas. However, this combustion plant co-fires biogas and as a result the current permit includes a six-monthly extractive monitoring requirement with an associated ELV. That requirement has been retained.

Likewise, Dust emissions for natural gas fired boilers are ordinarily reported on the basis of emission factors without continuous or periodic monitoring. For gas turbines we would not require any reporting as the dust emissions will always be reported as zero. This is because natural gas is an ash-free fuel and high efficiency combustion in the gas turbine does not generate additional particulate matter. The fuel gas is always filtered and, in the case of gas turbines, the inlet air is also filtered resulting in a lower dust concentration in the flue than in the surrounding air. As with Sulphur dioxide, because the combustion plant is co-fired with biogas the current permit includes a six-monthly extractive monitoring requirement with an associated ELV. That requirement has been retained.

The Operator confirmed that the combustion plant can and does operate below 70% ISO base load but they did not provide any emission data in order for us to set ELVs from the load range MSUL/MSDL to ISO base load. We have therefore include an Improvement Condition in order to obtain the necessary information.

IC5:- The operator shall provide a report in writing to the Environment Agency. The report shall contain a proposed emission limit which applies when the load varies between MSUL/MSDL and base load during the daily reference period, for emission point A1 for oxides of nitrogen. The report shall also provide justification for this limit, and an assessment of the impacts of emissions at this limit using our H1 guidance or equivalent methodology.

Energy efficiency:

The installation operates as a CHP providing heat and power to the associated Paper and Pulp site. The current permit does not have the generic condition for the operator to undertake a 2-yearly review of potential CHP opportunities as it is a dedicated CHP plant for the Paper and Pulp site. Therefore, in line with the DEFRA Part A guidance, to report on the scope for further improvement, a condition has been included for the operator to carry out a 4-yearly efficiency review.

Reporting efficiency:

In order to ensure the efficiency of plant using fossil fuels or biomass is maximised and regularly recorded, condition 1.2.1(c), condition 4.2.2(b) and table S4.2 have been added to the permit.

Monitoring & standards:

Standards for assessment of the monitoring location and for measurement of oxygen, water vapour, temperature and pressure have been added to the permit template for clarity.

A row has been included in table S3.1 which requires the operator to confirm compliance with BS EN 15259 in respect of monitoring location and stack gas velocity profile in the event there is a significant operational change (such as a change of fuel type) to the LCP.

There is a requirement to continue to report for 2015 in the transition from LCPD to IED LCP Reporting process annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015. For this reason an Improvement condition has been added to table S1.3

IC7:-

For LCPD LCP 441 (now LCP 293 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LCPD LCP was a NERP

plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.

Additional IED Chapter II requirements:

Condition 3.1.6 relating to protection of soil, groundwater and groundwater monitoring, has been added in compliance with IED requirements.

Conditions 4.3.1 and 4.3.2 relating to notifications have been amended in compliance with IED requirements.

Annex 5: Priority Compliance Issues

Compliance Issue	Related conditions in the permit
<p>BAT 6 In order to reduce fuel and energy consumption in pulp and paper mills, BAT is to use technique (a) and a combination of the techniques given below.</p>	1.2.1
<p>BAT 15 When further removal of organic substances, nitrogen or phosphorus is needed, BAT is to use tertiary treatment as described in section 8.7.2.2.</p>	3.6.1
<p>BAT 16 In order to reduce emissions of pollutants into receiving waters from biological waste water treatment plants, BAT is to use all of the techniques given below.</p>	3.6.1
<p>BAT 45 In order to prevent and reduce the pollution load of waste water into receiving waters from the whole mill, BAT is to use a suitable combination of the techniques specified in BAT 13, BAT 14, BAT 15, BAT 16, BAT 43 and BAT 44.</p>	3.6.1