

Determination of a Variation Application for an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010

Decision document recording our decision-making process

The Variation Number is: EPR/FP3132UE/V007
The Applicant / Operator is: Palm Paper Limited
The Installation is located at: Saddlebow Paper Mill,
Former British Sugar Site,
Poplar Avenue, King's
Lynn, Norfolk, PE34 3AL

What this document is about

This is a decision document, which accompanies a variation to the permit.

It explains how we have considered the Applicant's Variation Application, and why we have included the specific conditions in the permit we are issuing to the Applicant. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

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. A lot of technical terms and acronyms are inevitable in a document of this nature: we provide a glossary of acronyms near the front of the document, for ease of reference.

Preliminary information and use of terms

We gave the Variation Application the reference number EPR/FP3132UE/V007. We refer to the application as "the **Variation Application**" in this document in order to be consistent.

The Application was duly made on 27/08/15.

The Applicant is Palm Paper Limited. We refer to Palm Paper Limited as "the **Applicant**" in this document. Where we are talking about what would happen after the Permit is granted (if that is our final decision), we call Palm Paper Limited "the **Operator**".

Palm Paper Limited's proposed facility is located at Saddlebow Paper Mill, Former British Sugar Site, Poplar Avenue, King's Lynn, Norfolk, PE34 3AL. We refer to this as the "**Installation**" in this document.

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Glossary of acronyms used in this document

BAT	Best Available Technique(s)
BAT-AEL	BAT Associated Emission Level
BREF	BAT Reference Note
CCGT	Combined cycle gas turbine
CEM	Continuous emissions monitor
CROW	Countryside and rights of way Act 2000
DAA	Directly associated activity – Additional activities necessary to be carried out to allow the principal activity to be carried out
DD	Decision document
DLN	Dry low NO _x burners
EAL	Environmental assessment level
EIAD	Environmental Impact Assessment Directive (85/337/EEC)
ELV	Emission limit value
EMS	Environmental Management System
EPR	Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No. 675) as amended
EQS	Environmental quality standard
EU-EQS	European Union Environmental Quality Standard
FSA	Food Standards Agency
GWP	Global Warming Potential
HRSG	Heat recovery steam generator
IED	Industrial Emissions Directive (2010/75/EU)
LAQM	Local Air Quality Management
LCP	Large combustion plant – combustion plant subject to Chapter III of IED
LCPD	Large Combustion Plant Directive 2001/80/EC
LWS	Local Wildlife Site
MSUL/MSDL	Minimum start up load/minimum shut down load
NO _x	Oxides of nitrogen (NO plus NO ₂ expressed as NO ₂)
PC	Process Contribution
PEC	Predicted Environmental Concentration
PHE	Public Health England (formerly the Health Protection Agency (HPA))
PPS	Public participation statement
RGS	Regulatory Guidance Series

SAC	Special Area of Conservation
SGN	Sector guidance note
SPA(s)	Special Protection Area(s)
SSSI(s)	Site(s) of Special Scientific Interest
TGN	Technical guidance note
WFD	Waste Framework Directive (2008/98/EC)

1 Our decision

We have decided to issue the variation to the Applicant. This will allow it to operate the Installation with the changes specified in the Variation Application, subject to the conditions in the Permit.

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

2 How we reached our decision

2.1 Receipt of Variation Application

The Variation Application was duly made on 27/08/15. This means we considered it was in the correct form and contained sufficient information for us to begin our determination but not that it necessarily contained all the information we would need to complete that determination.

During determination of the Variation Application we requested clarification on the stack diameter within the air quality dispersion modelling report. The additional information was provided to us on 05/11/15.

The Applicant made a claim for commercial confidentiality. The confidentiality claim was for the CadnaA noise modelling file. This Applicant was required to submit this file to the Environment Agency with the Variation Application so that our noise specialists could audit the model. The details of the model inputs and outputs are specified in the following document which also makes up part of the Variation Application and is not considered confidential by the Applicant:

Application Variation Noise-Report_MBBM_M105237_04_Model_Input_Data

The Applicant states that the CadnaA noise modelling file contains a calculation model which they consider is confidential due to the technical information and detail relating to the model itself. The claim does not relate to the noise emissions information and therefore the confidentiality claim was accepted.

2.2 Consultation on the Variation Application

We carried out consultation on the Application in accordance with the EPR, and our statutory PPS.

We advertised the Variation Application by a notice placed on our website, which contained all the information required by the IED, including telling people where and when they could see a copy of the Variation Application.

We placed a paper copy of the Variation Application and all other documents relevant to our determination (see below) on our Public Register. Anyone wishing to see these documents could do so and arrange for copies to be made.

We sent copies of the Variation Application to the following bodies, which includes those with whom we have “Working Together Agreements”:

- King’s Lynn and West Norfolk Borough Council Environmental Health Department
- Public Health England (PHE)
- Norfolk County Director of Public Health
- Food Standards Agency (FSA)
- Health & Safety Executive (HSE)

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly. Note under our Working Together Agreement with Natural England, we only inform Natural England of the results of our assessment of the impact of the installation on designated Habitats sites.

3 The legal framework

The Permit variation and consolidation will be issued, under Regulation 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. The activity added to the installation through the variation has been assessed as being:

- a large combustion plant activity S1.1A(1)(a) as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

4 The Installation

4.1 Description of the existing Installation

Prior to the variation the Installation consisted of the following activities and their directly associated activities (DAAs):

Existing activities listed in Schedule 1 of the EP Regulations:

- Section 6.1 A(1)(b) production, in industrial plant, of paper and board where the plant has a production capacity of more than 20 tonnes per day on a single paper machine
- Section 1.1 A(1)(a) burning of any fuel in an appliance with a rated thermal input of 50 megawatts or more comprising two gas fired package boilers with an aggregated combustion capacity of 72 MWth
- Section 5.1 A(1)(b) operation of a fluidised bed paper sludge combustor for the generation of electricity and process steam
- Section 5.4 A(1)(a)(i) disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by biological treatment comprising the operation of an effluent treatment plant

Existing directly associated activities:

- Treatment of water abstracted from the Great Ouse Flood Relief Channel
- Surface water collection and discharge

4.2 Changes to the Installation

The variation authorises the addition of the following listed activity to the installation:

- Section 1.1 A(1)(a) burning of any fuel in an appliance with a rated thermal input of 50 megawatts or more comprising operation of a Combined Cycle Gas Turbine of an average thermal input of 99MWth and a maximum thermal input of 146MWth.

Although a Section 1.1A(1)(a) combustion activity was already listed in the permit, this variation was considered a substantial variation. This is because it exceeded the threshold for a Section 1.1A1(a) activity set out in Part 2 of Schedule 1 of EPR as stated in our Regulatory Guidance Note 8, which is 50MW thermal input.

4.2.1 Combined Cycle Gas Turbine (CCGT) summary

The proposed power plant is designed to burn natural gas in a single CCGT unit rated between 99 MWth (annual average) and 146 MWth (maximum) and is being developed to provide electricity and steam to meet the demand of the existing paper mill. No energy will be fed into the national grid. The plant will generate 40-47 MWe and approximately 100 tonnes per hour (t/h) of steam.

The CCGT plant will burn only natural gas. Dry, low NO_x burners will limit the production of nitrogen oxides. Exhaust gases are discharged to atmosphere via an 80 metre high stack.

The plant consists of an industrial gas turbine connected to a generator. The turbine comprises air inlet filters, one air compression section, a combustion chamber, one gas turbine generator and exhaust duct.

Fuel is burned in the combustion chamber of the gas turbine from where the hot gases expand through the gas turbine to generate electricity. The hot exhaust gases are then used in the heat recovery steam generator (HRSG) to generate high pressure steam, which in turn is used to generate electricity via the steam turbine plant.

The high pressure steam is expanded in the steam turbine to a degree so it can be used in the paper machine as intermediate pressure and low pressure steam. On leaving the steam turbine, the remaining low pressure steam is cooled in air-cooled condensers and returned to the system as boiler feedwater.

The existing water treatment plant within the paper machine building will be used to provide high purity water to the PP3 CCGT. An additional water

treatment plant is required as the existing plant does not provide the required purity of de-ionised feed water for the new plant. The raw water is pre-treated in the Paper Mill's existing water treatment system using a reverse osmosis process (partially demineralised). The pre-treated water is fed to the water treatment system of the CCGT plant where it will be further de-mineralised. This completely de-mineralised water serves as feed water for the steam generator.

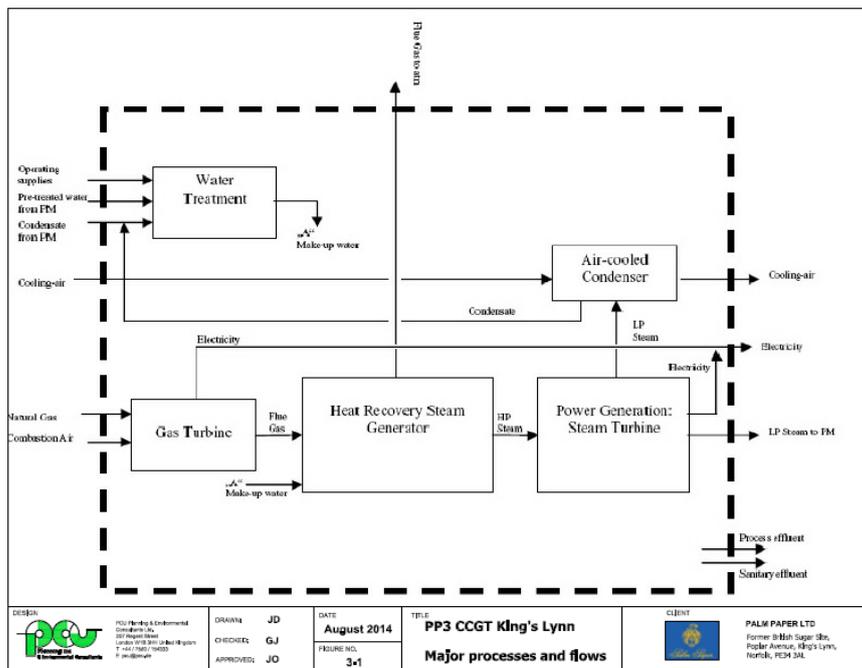
The new CCGT will replace the operation of the existing package boiler plant which will be kept as back-up.

The final nature of the CCGT configuration will be dependent on the contract chosen following the tender process. A pre-operational condition included in the variation requires the operator to submit detailed designs of the new turbine including drainage system and site layout plans to the Environment Agency. The operator shall undertake a review of the final design / plans for the new units to ensure that:

- 1) The final design will meet the requirements of BAT;
- 2) The application still accurately reflects the final operating proposals; and
- 3) The environmental impact assessment still accurately reflects the predicted impacts from the proposal.

The operator shall submit a written report to the Environment Agency for approval, at least 6 months prior to construction, detailing the findings of this review prior to the installation of the gas turbine.

Diagram 1 - Schematic of the CCGT activity



4.3 Key Issues in the Determination

The key issues arising during this determination were:

- Protection of groundwater
- The emissions to air from the Installation and their impact on human health and the environment.
- Noise emissions
- The application of best available techniques (BAT) to the CCGT.

We describe how we determined these issues in the relevant sections of this document.

4.4 The site and its protection

4.1.1 Site setting, layout and history

The Installation is located approximately 2.5 km to the south of King's Lynn at NGR 561200 317800. The installation is bounded by the A47 road to the north, the River Great Ouse to the west, Saddlebow Industrial Estate to the south east and by King's Lynn Power Station to the south.

There are three Special Areas of Conservation (SACs), one Special Protection Area (SPA) and two Ramsar sites within 10km of the installation. There is one Site of Special Scientific Interest (SSSI) and four Local Wildlife Sites within 2km of the installation. The northern part of the site is identified as being part of a Norfolk County Wildlife Site named Saddlebow Reedbeds.

Diagram 2 - Map showing the location of the installation

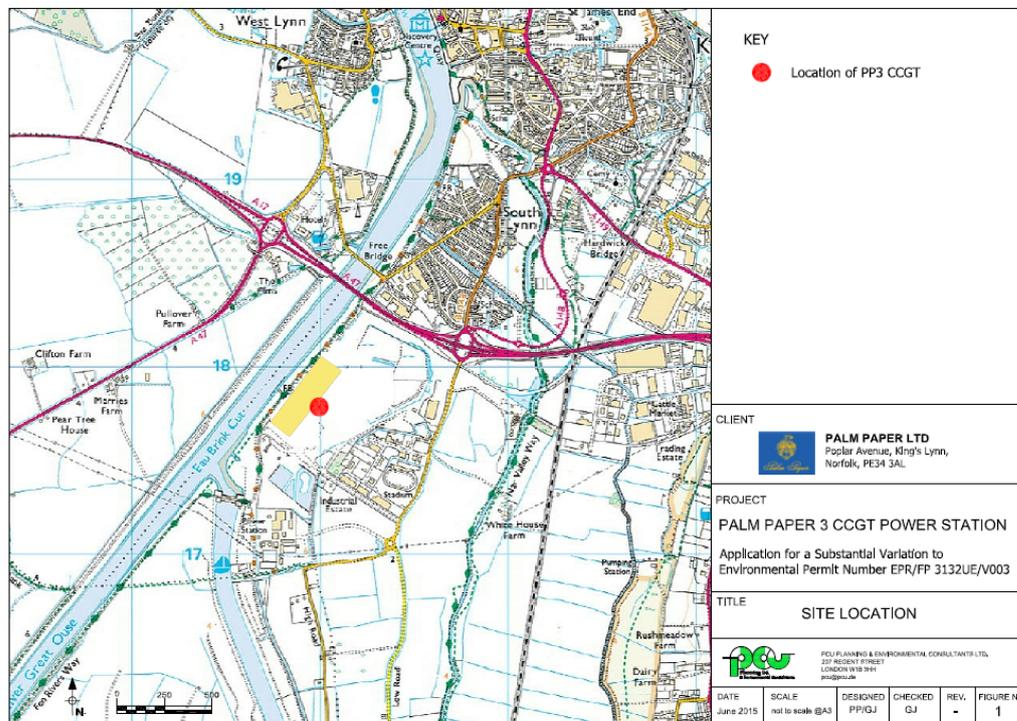
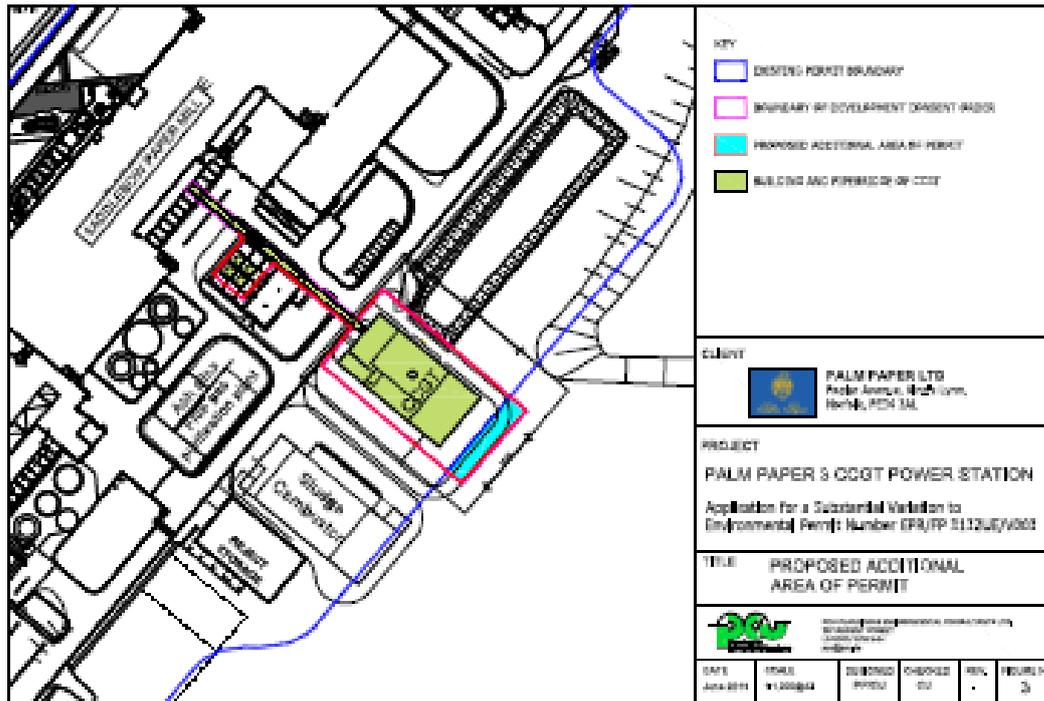


Diagram 3 - Diagram showing the existing installation boundary (blue line) and the proposed extension of the installation boundary to incorporate the CCGT (pink line)



The variation authorises the incorporation of a small piece of additional land into the permit to accommodate the CCGT plant through a small extension of the site boundary to the south west. The findings of the Site Condition Report (SCR) submitted with the original application apply to the new area of land. A summary of the site setting, layout and history is provided as follows.

The installation is located on the former British Sugar site within the Saddlebow Industrial Estate. The site is flat with a gentle upward slope towards the north and occupies an area of around 60 hectares at an average elevation of about 4.5 metres AOD. The Installation is bounded by the A47 road to the north, the River Great Ouse to the west (bordered by flood banks), Saddlebow Industrial Estate to the south east and by King's Lynn Power Station to the south. The Great Ouse Flood Relief Channel rejoins the river to the south west of the site and is also bordered by flood banks. Surrounding land use comprises mixed residential and commercial/industrial to the north of the A47 and generally low-lying intensively farmed arable land elsewhere, apart from the power station to the south. The entire site is at risk of flooding but current local flood defences are considered to protect the area to a satisfactory standard.

Although there is some variation across the overall site, the underlying geological sequence for the site typically consists of the following:

- Made Ground (to approximate depth 2.5 m bgl);
- Alluvium (approximately 2.5 m to 10.1 m bgl);
- Kimmeridge Clay (approximately 10.1 m to 15.2 m bgl).

The Environment Agency Groundwater Vulnerability Map indicates that the site is located above a non-aquifer of negligible permeability (the Kimmeridge Clay). However, it is likely that there is some groundwater present in the

alluvial deposits: whilst such shallow groundwater is not typically exploited for abstraction, it offers a potential pathway for mobile contaminants. There are no groundwater abstractions within 2 km of the site, and the installation does not lie within a Source Protection Zone.

The previous occupants of the site operated a sugar manufacturing process, the principal polluting issue from which relates to the settling beds where sugar beet wash water was held in lagoons for the settlement of topsoil and other waste matter originating from the imported beet. Current site topography suggests that a quantity of this topsoil remains, particularly along the western side where the settling beds were shown on historic maps. The main concern with this material is not contamination but degradation of organic content leading to gas generation. There was also some chemical storage on site, including acids and lime. There is also the potential for contamination to have arisen from vehicle fuelling/servicing activities and the railway network.

The site is located within the Environment Agency's North West Norfolk Catchment Abstraction Management Strategy (CAMS) Area. The major watercourse within this CAMS Area is the River Great Ouse, which flows north from the Denver Sluice to The Wash just north of King's Lynn, and is tidal upstream as far as Earith. The Relief Channel flows parallel to the Great Ouse from Denver to a point just south of King's Lynn and adjacent to the site. The Channel carries water from the Ely Ouse system at periods of medium to high flow and discharge to the tidal river is controlled by the Tail Sluice and occurs at low tide.

The blow-down from the boilers associated with the CCGT will be small, approximately 1m³/day. The boiler blowdown is virtually pure water containing very small quantities of corrosion and scaling prevention chemicals used in the boilers (for example ammonia, phosphate and suspended solids). ELVs for these substances are already specified within the existing permit and will not change as a result of the variation.

Four phases of site investigation were undertaken prior to the redevelopment of the site between 2005 and 2008. No significant contamination was identified, apart from some localised areas of relatively low contamination. Ground gas was detected on certain boreholes in the locality of the Sugar Factory Settling beds but was somewhat inconsistent and is not considered to present an issue for commercial land use.

We have assessed the updated Site Condition Report submitted with the Variation Application and consider there to be a low risk to groundwater and surface water from the proposed development. The area adjacent to the site to the east and south has previously been subject to remediation which was carried out in accordance with a strategy agreed with the Local Authority prior to construction and operation of the paper mill. The proposed development is not located within previously identified sources of contamination. However, contamination may have been missed and therefore in our role as a statutory

consultee we have recommended to the Local Authority a planning condition to control any required remediation work should contamination be identified.

Condition 3.1.3 relating to protection of soil, groundwater and groundwater monitoring, has been added in accordance with IED requirements.

4.2 Proposed site design: potentially polluting substances and prevention measures

The principal raw materials used in association with the CCGT are:

- Natural gas (although no natural gas will be stored on site)
- Water
- Lubricating oil
- Transformer oil
- Dosing chemicals.

There are no proposed point source releases to groundwater associated with the operation of the CCGT.

The existing surface water drainage system will be extended to drain areas of the new CCGT plant. The drainage system will incorporate oil interceptors and traps. All process effluent and surface water run-off will be discharged to the effluent treatment plant.

Lubricating oil will be used in the gas turbine, steam turbine and other mechanical equipment. The oil will be stored in existing storage tanks within the paper machine building.

Transformer oil will be used in the oil cooled transformers and will be stored in existing storage tanks within the paper machine building.

Supplies of the lubrication oil and transformer oil and other materials in small quantities will be delivered to the site by road. All valves, pipework and couplings associated with the filling and emptying of the tanks will be contained within a bund surrounding the tank.

All chemicals and oils used on site will be stored within a bunded area sized to accommodate either 110% of the contents of the largest tank within the bund or 25% of the total bund contents, whichever is the greatest. All spillages will be retained within the bunded areas and treated as necessary prior to disposal off-site.

A leakage monitoring system is located in the paper machine's control room which is constantly manned.

The site environmental management system includes a preventative maintenance programme to minimise the risk of spillage or leakage of potentially polluting materials.

4.3 Accident management

The Applicant has updated the accident management plan to include potential accidents associated with the CCGT. The key risks and control measures are as follows:

4.3.1 Fire

The Operator outlines the following key measures to minimise the risk from fire at the CCGT:

- A fire detection and suppression system will be installed at the CCGT.
- Fire resistant oils will be supplied to the gas and steam turbine and generator bearings.
- Regular inspections and maintenance of gas pipe and equipment.
- Installation of gas detectors, slam-shut valves and an enclosure to prevent the spread of fire.
- The gas turbine enclosure will be vented to prevent the build up of fugitive and natural gas concentrations.

4.3.2 Flooding

The site is in Flood Zone 3a and the area is protected by flood defences. It is therefore at risk of flooding should the defences that protect the site fail. The existing flood defences meet the 1 in 200 year level of protection.

- The proposed floor levels for the CCGT are set at a minimum level of 5.0 m AOD.
- There is a Flood Contingency Plan in place for the existing paper mill and the CCGT will be included in an updated plan.

We consider the accident management plan submitted with the Variation Application covers the relevant risks and appropriate mitigation and/or control measures.

5. Minimising the Installation's environmental impact

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as point source releases to air, discharges to ground or groundwater, global warming potential and generation of waste. Consideration may also have to be given to the effect of emissions being subsequently deposited onto land (where there are ecological receptors). All these factors are discussed in this and other sections of this document.

For the proposed PP3 CCGT, the principal emissions are those to air, although we also consider those to land and water.

As part of our normal procedures for the determination of a substantial Variation Application, we would consult HSE, PHE and in some cases FSA. All issues raised by these consultations are considered in determining the Variation Application as described in Annex 4 of this document.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of the emissions to air from the Installation on human health and the environment and what measures we are requiring to ensure a high level of protection.

5.1 Assessment Methodology

5.1.1 Application of Environment Agency H1 Guidance

A methodology for risk assessment of point source emissions to air, which we use to assess the risk of applications we receive for permits and permit variations, is set out in our Horizontal Guidance Note H1 and has the following steps:

- Describe emissions and receptors
- Calculate process contributions
- Screen out insignificant emissions that do not warrant further investigation
- Decide if detailed air modelling is needed
- Assess emissions against relevant standards
- Summarise the effects of your emissions

The H1 methodology uses a concept of “process contribution (PC)”, which is the estimated concentration of emitted substances after dispersion into the receiving environmental media at the point where the magnitude of the concentration is greatest. The guidance provides a simple method of calculating PC primarily for screening purposes and for estimating process contributions where environmental consequences are relatively low. It is based on using dispersion factors. These factors assume worst case dispersion conditions with no allowance made for thermal or momentum plume rise and so the process contributions calculated are likely to be an overestimate of the actual maximum concentrations. More accurate calculation of process contributions can be achieved by mathematical dispersion models, which take into account relevant parameters of the release and surrounding conditions, including local meteorology – these techniques normally lead to a lower prediction of PC.

5.1.2 Use of Air Dispersion Modelling

For large combustion plant applications, we normally require the Applicant to submit a full air dispersion model as part of their application. Air dispersion modelling enables the process contribution to be predicted at any environmental receptor that might be impacted by the plant.

Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Quality Standards (EQS) referred to as “benchmarks” in the H1 Guidance.

Where an EU EQS exists, the relevant standard is the EU EQS. Where an EU EQS does not exist, our guidance sets out a National EQS (also referred to as Environmental Assessment Level - EAL) which has been derived to provide a similar level of protection to Human Health and the Environment as the EU EQS levels. In a very small number of cases, the National EQS is more stringent than the EU EQS. In such cases, we use the National EQS standard for our assessment.

PCs are considered **Insignificant** if:

- the **long-term** process contribution is less than **1%** of the relevant EQS; and
- the **short-term** process contribution is less than **10%** of the relevant EQS.

The **long term** 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality;
- The threshold provides a substantial safety margin to protect health and the environment.

The **short term** 10% process contribution insignificance threshold is based on the judgements that:

- spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions;
- the proposed threshold provides a substantial safety margin to protect health and the environment.

Where an emission is screened out in this way, we would normally consider that the Applicant’s proposals for the prevention and control of the emission to be BAT. That is because if the impact of the emission is already insignificant, it follows that any further reduction in this emission will also be insignificant.

However, where an emission cannot be screened out as insignificant, it does not mean it will necessarily be significant.

For those pollutants which do not screen out as insignificant, we determine whether exceedences of the relevant EQS are likely. This is done through detailed audit and review of the Applicant’s air dispersion modelling taking background concentrations and modelling uncertainties into account. Where an exceedence of an EU EQS is identified, we may require the Applicant to go beyond what would normally be considered BAT for the Installation or we may refuse the application. Whether or not exceedences are considered likely, the application is subject to the requirement to operate in accordance with BAT.

This is not the end of the risk assessment, because we also take into account local factors (for example, particularly sensitive receptors nearby such as a SSSIs, SACs or SPAs). These additional factors may also lead us to include more stringent conditions than BAT.

If, as a result of reviewing of the risk assessment and taking account of any additional techniques that could be applied to limit emissions, we consider that emissions **would cause significant pollution**, we would refuse the Variation Application.

5.2 Assessment of Impact on Air Quality

The Applicant's assessment of the impact of air quality is set out in Appendix D of the Variation Application. The assessment comprises:

- Dispersion modelling of emissions to air from the operation of the Installation.
- A study of the impact of emissions on nearby sensitive habitat / conservation sites.

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation and habitat sites and human health. These assessments predict the potential effects on local air quality from the regulated facilities' stack emissions using the ADMS 5.0 dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The model used eight years of meteorological data collected from the weather station at RAF Marham between 2007 and 2014. RAF Marham is located approximately 15km from the installation and is considered an appropriate weather station for use.

The air impact assessments, and the dispersion modelling upon which they were based, employed the following assumptions.

- First, they assumed that the ELVs incorporated following the variation would be the maximum permitted by IED for the following substances.
 - Oxides of nitrogen (NO_x), expressed as NO₂
 - Carbon monoxide (CO)
 - Sulphur dioxide (SO₂)
- Second, they assumed that the Installation operates continuously at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate.

The Air Quality Assessment is based on emissions from the CCGT, the existing gas boiler and the existing sludge combustor.

The Applicant obtained background pollutant concentrations for the modelled pollutants from monitoring stations within the UK Automatic Urban and Rural Network (AURN). As a conservative assumption, the general background concentration for NO₂ was taken as the maximum monitored concentration at an urban background site (28µg/m³). We agree that this is a conservative approach.

The Applicant's modelling predictions are summarised in the following sections.

5.2.1 Assessment of Air Dispersion Modelling Outputs

The Applicant's modelling predictions are summarised in the tables below. The figures shown indicate the predicted peak ground level exposure to

pollutants in ambient air. Our Air Quality Modelling and Assessment Unit have audited the air quality dispersion modelling submitted with the Variation Application and whilst they did not agree with the absolute numerical predictions, they agree with the overall conclusions that there will not be a significant impact on local air quality. The proposed variation will result in a lower process contribution (PC) at some human and ecological receptors.

Predicted Short Term Impacts

Pollutant	EQS / EAL µg/m ³	Back-ground Conc. µg/m ³ [1]	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % of EQS/EAL [2]
NO ₂	200	56.0	9.51	4.76	-	-
SO ₂ (24 hr)	125	14.58	3.05	2.44	-	-
SO ₂ (1 hr)	350	14.58	6.17	1.76	-	-
SO ₂ (15 min)	266	14.58	7.11	2.67	-	-
CO (8 hr)	10000	568	17.42	0.17	-	-
Note [1] The background concentration is taken as twice the long term background level for Short Term EQS/EAL standards referenced to an hourly averaging value.						
Note [2] Where the PC is demonstrated to be less than 10% of the short term EQS/EAL, a level which we consider to indicate insignificant impact, further consideration of the PEC is not required.						

The table above shows that all short term emissions can be screened out as insignificant because the process contribution is <10% of the short term EQS/EAL. No further assessment of these emissions is required.

Predicted Long Term Impacts

Pollutant	EQS / EAL µg/m ³	Background Conc. µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % EQS / EAL
NO ₂	40	28.0	1.23	3.07	29.23	73.07

The table above shows that emissions of NO₂ when compared to the long term EQS/EAL cannot be screened out as insignificant in that the process contribution is >1% of the long term EQS/EAL and therefore the emission requires further assessment. In giving further consideration to the PEC the results show that there is adequate headroom between the PEC and the EQS/EAL, indicating that an exceedence of the EQS/EAL is unlikely.

As the long term process contribution is not insignificant the Applicant has carried out an in-combination impact assessment at the point of maximum impact as shown below.

Predicted In Combination Impacts

Process	EQS / EAL $\mu\text{g}/\text{m}^3$	Process Contribution (PC) $\mu\text{g}/\text{m}^3$	PC as % of EQS / EAL
Palm Paper Installation	40	1.23	3.08
King's Lynn A		0.71	1.78
King's Lynn B1		0.33	0.83
King's Lynn B2		0.33	0.83
Total PC		2.60	6.52
Background		28.00	70.00
PEC			30.60

The table shows the cumulative impact of emissions. The PEC equates to 81.77% of the EQS/EAL demonstrating that there is headroom between the PEC and the EQS/EAL. This indicates that an exceedence of the EQS is unlikely. We consider that the PC from operational sites such as King's Lynn A will also be included in the background data and therefore this in combination assessment is conservative.

Our air quality modelling and assessment specialists have carried out sensitivity checking of the predicted PCs at the maximum point of impact. The worst case scenario taking modelling uncertainty into account indicates that an exceedence of the EQS/EAL is unlikely.

Our findings are detailed in our reports AQMAU_C1348_RP01 which is available on the public register.

All emissions either screen out as insignificant or where they do not screen out as insignificant are considered unlikely to give rise to significant pollution.

5.2.2 Consideration of Local Factors

Impact on Air Quality Management Areas (AQMAs)

The following Air Quality Management Areas (AQMAs) have been declared within King's Lynn and West Norfolk Borough Council's area of jurisdiction due to exceedences of the annual mean objective for nitrogen dioxide:

- Railway Road AQMA approximately 1.7 km to the north east of the facility; and
- Gaywood Clock AQMA approximately 3.5 km to the north east of the facility

The impact on these AQMAs has been considered within the assessment. No other AQMAs have been declared within 10 km of the facility. The impact assessment for potential NO₂ contribution from the Palm Paper at the AQMAs is as follows.

Predicted Short Term Impacts

The short term PC at the AQMAs was not calculated. As the maximum short term PC for NO₂ is insignificant (<10% of the short term EQS/EAL), the impact of the proposed operations will be insignificant at the AQMAs which are some distance further from the installation compared to the point of maximum impact.

Predicted Long Term Impacts

Pollutant and receptor	EQS / EAL µg/m ³	Background Conc. µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³ [1]	PEC as % EQS / EAL [1]
NO ₂ at Railway Road AQMA	40	28.0	0.29	0.72	-	-
NO ₂ at Gaywood Clock AQMA	40	28.0	0.23	0.59	-	-
Note [1]	Where the PC is demonstrated to be less than 1% of the long term EQS/EAL, a level which we consider to indicate insignificant impact, further consideration of the PEC is not required.					

The table above shows that emissions of NO₂ at the AQMAs when compared to the long term EQS/EAL can be screened out as insignificant in that the process contribution is <1% of the long term EQS/EAL. No further assessment of potential impact at the AQMAs is necessary.

5.3.1 Impact on Habitats sites, SSSIs and non-statutory conservation sites

5.3.1 Sites Considered

There are five European sites under the Habitats Directive (i.e. Special Areas of Conservation, Special Protection Areas and Ramsar) within 10km of the proposed Installation as follows.

- Roydon Common and Dersingham Bog SAC: 7,750m from the installation
- The Wash and North Norfolk Coast SAC: 5,650m from the installation
- The Wash SPA: 5,790m from the installation
- The Wash Ramsar: 5,650m from the installation
- Roydon Common Ramsar: 7,640m from the installation

There is one Site of Special Scientific Interest within 2km of the proposed Installation as follows.

- River Nar SSSI: 1,050m from the installation

The following non-statutory local wildlife and conservation sites are located within 2km of the Installation:

- Saddlebow Reedbeds: 0m from the installation
- West Winch Common: 1,750m from the installation
- River Nar: 1,050m from the installation
- Clenchwarton Road: 1,325m from the installation

5.3.2 Assessment of European Sites

The impact assessment for potential NO₂ contribution, nitrogen deposition and acid deposition from Palm Paper Limited at the European sites is as follows.

Predicted Short Term NO₂ Impacts

European Site	EQS / EAL µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³ [1]	PEC as % of EQS/EAL [1]
The Wash SAC, SPA and Ramsar	75	0.85	1.1	-	-
Dersingham Bog SAC	75	0.77	1.0	-	-
Roydon Common SAC and Ramsar	75	0.71	1.0	-	-
Note [1]	Where the PC is demonstrated to be less than 10% of the short term EQS/EAL, a level which we consider to indicate insignificant impact, further consideration of the PEC is not required.				

The table above shows that all short term emissions can be screened out as insignificant because the process contribution is <10% of the short term EQS/EAL. No further assessment of these emissions is required.

Predicted Long Term NO₂ Impacts

European Site	EQS / EAL µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³ [1]	PEC as % EQS / EAL [1]
The Wash SAC, SPA and Ramsar	30	0.06	0.2	-	-
Dersingham Bog SAC	30	0.05	0.2	-	-
Roydon Common SAC and Ramsar	30	0.07	0.2	-	-
Note [1]	Where the PC is demonstrated to be less than 1% of the long term EQS/EAL, a level which we consider to indicate insignificant impact, further consideration of the PEC is not required.				

The table above shows that emissions of NO₂ when compared to the long term EQS/EAL can be screened out as insignificant, because the process contribution is <1% of the long term EQS/EAL. Therefore the emissions

require no further assessment. No in-combination assessment is required where the predicted impacts are insignificant.

Predicted nitrogen and acid deposition impacts

The nitrogen deposition PC includes emissions from the Installation including the CCGT and in combination PCs from King's Lynn B1 and B2. Consideration of in combination PCs is not required where the PC is less than 1% of the relevant critical load and therefore this approach is considered conservative.

Deposition	Critical Load ($\mu\text{g}/\text{m}^3$) [1]	Back-ground ($\mu\text{g}/\text{m}^3$)	Process Contribution (PC) ($\mu\text{g}/\text{m}^3$) [2]	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) ($\mu\text{g}/\text{m}^3$) [3]	PEC as % EQS / EAL [3]
The Wash SAC, SPA and Ramsar						
N Deposition (kg N/ha/yr)	20	18.76	0.024	0.12	-	-
Acidification Dep (Keq/ha/yr)	Not sensitive to acid deposition					
Dersingham Bog SAC						
N Deposition (kg N/ha/yr)	10	15.68	0.025	0.25	-	-
Acidification Dep (Keq/ha/yr)	0.57	0.23	0.0036	0.63	-	-
Roydon Common SAC and Ramsar						
N Deposition (kg N/ha/yr)	10	16.10	0.035	0.35	-	-
Acidification (Keq/ha/yr)	0.55	0.21	0.0052	0.95	-	-
Note [1] Critical load taken from APIS European Site specific information. Note [2] Direct impact units are $\mu\text{g}/\text{m}^3$ and deposition impact units are kg N/ha/yr or Keq/ha/yr. Note [3] Where the PC is demonstrated to be less than 1% of the critical load, a level which we consider to indicate insignificant impact, further consideration of the background is not required.						

We can conclude from the table above the all PCs for nitrogen deposition and acidification are less than 1% of the critical load and we can therefore conclude no likely significant effect at the sites. No further assessment is required.

An Appendix 11 was sent to Natural England for consultation on 16/11/15. Their response is outlined in Annex 1 of this document.

5.3.3 Assessment of Sites of Special Scientific Interest

The impact assessment for potential NO_2 contribution, nitrogen deposition and acid deposition from the Installation at the SSSI is as follows.

Predicted Short Term NO₂ Impacts

SSSI	EQS / EAL µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % of EQS/EAL [1]
River Nar SSSI	75	4.50	6.0	-	-
Note [1]	Where the PC is demonstrated to be less than 10% of the short term EQS/EAL, a level which we consider to indicate insignificant impact, further consideration of the PEC is not required.				

The table above shows that the short term emissions at the River Nar SSSI can be screened out as insignificant because the process contribution is <10% of the short term EQS/EAL. No further assessment is required.

Predicted Long Term NO₂ Impacts

SSSI	EQS / EAL µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % EQS / EAL
River Nar SSSI	30	0.50	1.7	16.42	55

The table above shows that emissions of NO₂ when compared to the long term EQS/EAL cannot be screened out as insignificant because the process contribution is >1% of the long term EQS/EAL. However, when taking the background into consideration the PEC is 55% of the EQS/EAL and therefore there is adequate headroom, indicating that an exceedence of the EQS/EAL is unlikely.

As the PC cannot be considered insignificant at the River Nar SSSI, the Applicant has also considered potential in-combination impacts as follows.

Process	EQS / EAL µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL
PP3 CCGT	30	0.50	1.66
Combustor		0.58	1.94
King's Lynn A		0.86	2.88
King's Lynn B1		0.48	1.59
King's Lynn B2		0.48	1.61
Total PC		2.91	9.68
Background		15.92	53.07
PEC		18.83	62.75

The table shows the cumulative impact of emissions. The PEC equates to 62.75% of the EQS/EAL demonstrating that there is adequate headroom between the PEC and the EQS/EAL. This indicates that an exceedence of the EQS/EAL is unlikely. We consider that the PC from operational sites such as

King's Lynn A will also be included in the background data and therefore this in-combination assessment is conservative.

As a result of the assessment above it is possible to conclude no likely damage to this site.

5.3.4 Assessment of Non-Statutory Sites

The impact assessment for potential NO₂ contribution, nitrogen deposition and acid deposition from Palm Paper Limited at the non-statutory sites is as follows. The maximum PC from the proposed operations at the Installation has been used for the assessment. The Saddlebow Reedbeds LWS is adjacent to the paper mill. The predicted impact at the other three LWSs will be significantly less than this due to increased distance from the Installation.

Predicted Short Term NO₂ Impacts (based on maximum PC)

Site	EQS / EAL µg/m ³	Back-ground Conc. µg/m ³ [1]	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % of EQS/EAL
Saddlebow Reedbeds LWS	75	56	12.68	16.91	68.68	91.57
Note [1] The background concentration is taken as twice the long term background level for Short Term EQS/EAL standards referenced to an hourly averaging value.						

The table above shows that the short term emissions at the nearest non-statutory site cannot be screened out as insignificant because the process contribution is >10% of the short term EQS/EAL. However, there is a small amount of headroom between the PEC and the EQS. Considering this together with the fact that the dispersion modelling is based on the worst case scenario and that in reality emissions are likely to be lower, we can conclude that the proposed development is unlikely to result in an exceedence of the EQS/EAL.

Predicted Long Term NO₂ Impacts (based on maximum PC)

Site	EQS / EAL µg/m ³	Background Conc. µg/m ³	Process Contribution (PC) µg/m ³	PC as % of EQS / EAL	Predicted Environmental Concentration (PEC) µg/m ³	PEC as % of EQS / EAL
Saddlebow Reedbeds LWS	30	28	1.23	4.10	29.23	97.43

The table above shows that the short term emissions at the nearest non-statutory site cannot be screened out as insignificant because the process contribution is >1% of the long term EQS/EAL. However, there is a small amount of headroom between the PEC and the EQS. Considering this together with the fact that the dispersion modelling is based on the worst case scenario and that in reality emissions are likely to be lower, we can conclude

that the proposed development is unlikely to result in an exceedance of the EQS/EAL. The PC makes up a small proportion of the PEC in comparison to the existing background and is therefore unlikely to have a significant impact on the PEC.

Our air quality modelling and assessment specialists have carried out sensitivity checking of the PCs at the LWSs. The worst case scenario taking modelling uncertainty into account indicates that an exceedance of the EQS/EAL is unlikely.

Although not all of the impacts from the Installation can be screened out as insignificant, it is possible to conclude no significant pollution of the non-statutory sites from the installation and therefore no further assessment is required.

6. Application of Best Available Techniques

6.1 Scope of Consideration

In this section, we explain how we have determined whether the Applicant's proposals are the Best Available Techniques for this Installation.

We will address the choice of technology, emission control measures and efficiency including the Global Warming Potential.

6.1.1 Consideration of combustion plant type

The proposed CCGT will comprise of one gas turbine and associated steam turbine plan. The Variation Application outlines that this configuration was selected for the following reasons:

- Best match to Palm Paper's steam and electricity demand;
- Lower environmental impact;
- Increased availability and reliability; and
- Lower operating costs.

We consider these points in further detail below.

6.2 BAT and emissions control

The use of natural gas as the primary fuel will result in lower emissions of carbon dioxide, sulphur and particulates than the use of alternative fossil fuels. BAT for the reduction of emissions from the combustion process is the use of natural gas in a CCGT power station.

BAT is to apply primary measures for the reduction of oxides of nitrogen. The Applicant proposes to implement the following primary measures:

- Low NO_x burners - this technique reduces NO_x at source and is defined as BAT where auxiliary burners are required.

The prevention and minimisation of emissions of carbon monoxide and volatile organic compounds is through the optimisation of combustion controls, where all measures will increase the oxidation of these species.

The potential impact of the emissions to air have been assessed as outlined in section 6 above.

6.3 BAT and global warming potential

This section summarises the assessment of greenhouse gas impacts which has been made in the determination of this variation. Emissions of carbon dioxide (CO₂) and other greenhouse gases differ from those of other pollutants in that, except at gross levels, they have no localised environmental impact. Their impact is at a global level and in terms of climate change. Nonetheless, CO₂ is clearly a pollutant for IED purposes.

The use of a gas turbine, heat recovery steam generator and condensing steam generator minimises the quantities of CO₂ emitted compared with other combustion techniques.

The use of steam (i.e. heat) for production purposes results in a high efficiency of fuel usage. The Carbon Assessment (Appendix I of the Variation Application) concludes that the operation of the new CCGT would lead to a carbon benefit of up to 67,000 tonnes of CO₂/annum compared to the base case of using only the existing package boilers.

6.4 BAT and energy efficiency

BAT for large combustion plant is to have co-generation of heat and power (CHP) as the most important BAT option in order to reduce the amount of CO₂ released. The proposed CCGT is a CHP plant and is therefore considered BAT.

Table 7.35 of the LCP BREF provides the BAT associated energy efficiency for CCGTs. For CCGTs with CHP energy efficiency should be between 75 and 85%. When operating at full load the design efficiency of the proposed PP3 CCGT will be in excess of 83% in line with this guidance.

6.5 Other Emissions to the Environment

6.5.1 Emissions to water

The existing surface water drainage system will be extended to drain areas of the new CCGT plant. The majority of the surface water drainage will be uncontaminated and typical of surface water run-off from areas of hardstanding and roads.

The design of the drainage system will incorporate oil interceptors and traps. Oil interceptors will regularly be inspected, emptied and desludged to ensure efficient operation. The sludge will be disposed of, off-site, by a licensed contractor.

Contaminated water such as boiler blowdown will be conveyed along with the other surface water run-off to the effluent treatment plant where it will be treated before being discharged to surface water.

The blow-down from the boilers will be small, approximately 1m³/day. The boiler blowdown is virtually pure water containing very small quantities of corrosion and scaling prevention chemicals used in the boilers (for example ammonia, phosphate and suspended solids). ELVs for these substances are already specified within the existing permit and will not change as a result of the variation.

Based upon the information in the Application we are satisfied that appropriate measures will be in place to prevent and /or minimise emissions to water.

6.5.2 Emissions to sewer

There are no discharges to sewer from the permitted operations at the Installation and no discharge to sewer will result from the proposed changes authorised by the variation.

6.5.3 Fugitive emissions

The IED specifies that plants must be able to demonstrate that the plant is designed in such a way as to prevent the unauthorised and accidental release of polluting substances into soil, surface water and groundwater.

All chemicals and fuel will be stored appropriately and incorporate the use of bunding and other measures to ensure appropriate containment. The potential for accidents, and associated environmental impacts, is therefore limited.

Bunded enclosures will be provided around equipment that contains oil and chemicals and they will have a capacity to hold a minimum of 110% of the oil volumes.

The bunds will be impermeable, resistant, will contain no outlet, will drain to a blind collection point (sump) and will contain no penetration of contained surfaces.

Spill kits will be maintained in loading and unloading areas. The maintenance and testing of these kits will be included in the preventative maintenance programme.

Based upon the information in the Variation Application we are satisfied that appropriate measures will be in place to prevent and /or minimise fugitive emissions.

6.5.4 Odour

The gas combusted at the PP3 CCGT is not odourised. Gas detection systems are employed to detect the onset of leaks and gas escape. There are no significant sources of odour associated with the proposed CCGT. The paper mill has an odour management plan in place and will continue to operate in accordance with this plan following this variation.

6.5.5 Noise and vibration

The Applicant proposed the following primary noise mitigation measures:

- The gas turbine will be housed in an acoustic enclosure;
- Gas turbine filter and ventilation apertures are to be fitted with high performance silencers;
- Low noise or ultra low noise air cooled condensers will be used;
- Discharge noise will be controlled using silencers to attenuate low frequencies from the gas turbine exhaust;
- Unit transformers and generator transformers will be housed in an appropriate enclosure to provide full screening to receptors;
- All plant items shall be controlled to minimise noise of an impulsive or tonal nature.

The assertion contained within the noise assessment of the Variation Application is that the proposed CCGT activity is likely to present a low risk of impacts from noise and vibration at the nearest sensitive off-site receptors. We agree with this conclusion.

The Variation Application contained a site specific noise impact assessment which identified local noise-sensitive receptors and potential sources of noise at the proposed facility. Measurements were taken of the existing ambient noise levels to produce a baseline noise survey and an assessment was carried out to compare the predicted plant rating noise levels with background levels.

The applicant predicted no exceedences of the background values at all receptors indicating low impact in accordance with BS4142:2014. We agree with this conclusion.

Our findings are detailed in our reports AQMAU_C1335_RP01 which is available on the public register.

An improvement condition is included in the permit requiring an assessment of operational noise from the CCGT in line with BS4142:2014 in order to validate the Applicant's modelling predictions against measured operational noise emissions

6.6 Setting ELVs and other Permit conditions

6.6.1 Translating BAT into Permit conditions

Article 14(3) of IED states that BAT conclusions shall be the reference for permit conditions. Article 15(3) further requires that under normal operating

conditions; emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions.

We have set Emission Limit Values for NO_x and CO for the new CCGT in line with Chapter III of the IED. These limits are as follows:

LCP Plant	Pollutant	IED Limit (mg/m ³)	Monitoring frequency
PP3 CCGT	NO ₂	50	Continuously
	CO	100	Continuously

6.7 Monitoring

6.7.1 Monitoring during normal operations

We have decided that monitoring of emissions from the PP3 CCGT should be carried out for the parameters listed in Schedule 3 using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with emission limit values and to enable correction of measured concentration of substances to the appropriate reference conditions and to deliver the requirements of Chapter III of IED for monitoring.

The CCGT requires continuous monitoring through the use of CEMS as it is an LCP unit of greater than 100MWth in accordance with IED requirements.

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency's Guidance M2 for monitoring of stack emissions to air.

Based on the information in the Variation Application and the requirements set in the conditions of the permit we are satisfied that the Operator's techniques, personnel and equipment will have either MCERTS certification or MCERTS accreditation as appropriate.

6.8 Reporting

We have specified the reporting requirements for the new PP3 CCGT in Schedule 5 of the Permit either to meet the reporting requirements set out in the IED, or to ensure data is reported to enable timely review by the Environment Agency, to ensure compliance with permit conditions and to monitor the efficiency of material use and energy recovery at the Installation.

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

7 **Other legal requirements**

In this section we explain how we have addressed other relevant legal requirements, to the extent that we have not addressed them elsewhere in this document.

7.1 The EPR 2010 and related Directives

The EPR delivers the requirements of a number of European and national laws.

7.1.1 Schedules 1 and 7 to the EPR 2010 – **IED Directive**

We address the requirements of the IED in the body of this document above.

There is one requirement not addressed above, which is that contained in Article 5(3) IED. Article 5(3) requires that “In the case of a new installation or a substantial change where Article 4 of Directive 85/337/EC (the EIA Directive) applies, any relevant information obtained or conclusion arrived at pursuant to articles 5, 6 and 7 of that Directive shall be examined and used for the purposes of granting the permit.”

- Article 5 of EIA Directive relates to the obligation on developers to supply the information set out in Annex IV of the Directive when making an application for development consent.
- Article 6(1) requires Member States to ensure that the authorities likely to be concerned by a development by reason of their specific environmental responsibilities are consulted on the Environmental Statement and the request for development consent.
- Article 6(2)-6(6) makes provision for public consultation on applications for development consent.
- Article 7 relates to projects with transboundary effects and consequential obligations to consult with affected Member States.

The grant or refusal of development consent is a matter for the relevant local planning authority. The Environment Agency’s obligation is therefore to examine and use any relevant information obtained or conclusion arrived at by the local planning authorities pursuant to those EIA Directive articles.

7.1.2 Schedule 22 to the EPR 2010 – **Groundwater, Water Framework and Groundwater Daughter Directives**

To the extent that it might lead to a discharge of pollutants to groundwater (a “groundwater activity” under the EPR 2010), the Permit is subject to the requirements of Schedule 22, which delivers the requirements of EU Directives relating to pollution of groundwater. The Permit will require the taking of all necessary measures to prevent the input of any hazardous substances to groundwater, and to limit the input of non-hazardous pollutants into groundwater so as to ensure such pollutants do not cause pollution, and satisfies the requirements of Schedule 22.

No releases to groundwater from the Installation are permitted. The Permit also requires material storage areas to be designed and maintained to a high standard to prevent accidental releases.

7.1.3 Directive 2003/35/EC – The Public Participation Directive

Regulation 59 of the EPR 2010 requires the Environment Agency to prepare and publish a statement of its policies for complying with its public participation duties. We have published our public participation statement.

This Variation Application is being consulted upon in line with this statement. This satisfies the requirements of the Public Participation Directive.

Our decision in this case has been reached following consultation on the original Application. A summary of the responses received to our consultations and our consideration of them is set out in Annex 1.

7.2 National primary legislation

7.2.1 Environment Act 1995

(i) Section 4 (Pursuit of Sustainable Development)

We are required to contribute towards achieving sustainable development, as considered appropriate by Ministers and set out in guidance issued to us. The Secretary of State for Environment, Food and Rural Affairs has issued *The Environment Agency's Objectives and Contribution to Sustainable Development: Statutory Guidance (December 2002)*. This document:

“provides guidance to the Agency on such matters as the formulation of approaches that the Agency should take to its work, decisions about priorities for the Agency and the allocation of resources. It is not directly applicable to individual regulatory decisions of the Agency”.

In respect of regulation of industrial pollution through the EPR, the Guidance refers in particular to the objective of setting permit conditions *“in a consistent and proportionate fashion based on Best Available Techniques and taking into account all relevant matters...”*. The Environment Agency considers that it has pursued the objectives set out in the Government's guidance, where relevant, and that there are no additional conditions that should be included in this Permit to take account of the Section 4 duty.

(ii) Section 7 (Pursuit of Conservation Objectives)

We considered whether we should impose any additional or different requirements in terms of our duty to have regard to the various conservation objectives set out in Section 7, but concluded that we should not.

We have considered the impact of the Installation on local wildlife sites within 2 km which are not designated as either European Sites or SSSIs. We are satisfied that no additional conditions are required.

(iii) Section 81 (National Air Quality Strategy)

We have had regard to the National Air Quality Strategy and consider that our decision complies with the Strategy, and that no additional or different conditions are appropriate for this Permit.

7.2.2 Human Rights Act 1998

We have considered potential interference with rights addressed by the European Convention on Human Rights in reaching our decision and consider that our decision is compatible with our duties under the Human Rights Act 1998. In particular, we have considered the right to life (Article 2), the right to a fair trial (Article 6), the right to respect for private and family life (Article 8) and the right to protection of property (Article 1, First Protocol). We do not believe that Convention rights are engaged in relation to this determination.

7.2.3 Countryside and Rights of Way Act 2000 (CROW 2000)

Section 85 of this Act imposes a duty on Environment Agency to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty (AONB). There is no AONB which could be affected by the Installation.

7.2.4 Wildlife and Countryside Act 1981

Under section 28G of the Wildlife and Countryside Act 1981 the Environment Agency has a duty to take reasonable steps to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which a site is of special scientific interest. Under section 28I the Environment Agency has a duty to consult Natural England in relation to any permit that is likely to damage SSSIs.

We assessed the Variation Application and concluded that the Installation will not damage the special features of any SSSI.

7.2.5 Natural Environment and Rural Communities Act 2006

Section 40 of this Act requires us to have regard, so far as is consistent with the proper exercise of our functions, to the purpose of conserving biodiversity. We have done so and consider that no different or additional conditions in the Permit are required.

7.3 National secondary legislation

7.3.1 The Conservation of Natural Habitats and Species Regulations 2010

We have assessed the Variation Application in accordance with guidance agreed jointly with Natural England and concluded that there will be no likely significant effect on any European Site.

7.3.2 Water Framework Directive Regulations 2003

Consideration has been given to whether any additional requirements should be imposed in terms of the Environment Agency's duty under regulation 3 to secure the requirements of the Water Framework Directive through (inter alia)

EP permits, but it is felt that existing conditions are sufficient in this regard and no other appropriate requirements have been identified.

7.4 Other relevant legal requirements

7.4.1 Duty to Involve

S23 of the Local Democracy, Economic Development and Construction Act 2009 require us where we consider it appropriate to take such steps as we consider appropriate to secure the involvement of interested persons in the exercise of our functions by providing them with information, consulting them or involving them in any other way. S24 requires us to have regard to any Secretary of State guidance as to how we should do that.

The way in which the Environment Agency has consulted with the public and other interested parties is set out in section 2 of this document. The way in which we have taken account of the representations we have received is set out in Annex 1. Our public consultation duties are also set out in the EP Regulations, and our statutory Public Participation Statement, which implement the requirements of the Public Participation Directive. In addition to meeting our consultation responsibilities, we have also taken account of our guidance in Environment Agency Guidance Note RGS6 and the Environment Agency's Building Trust with Communities toolkit.

ANNEX 1: Consultation Responses

A) Advertising and Consultation on the Variation Application

The Variation Application has been advertised and consulted upon in accordance with the Environment Agency's Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our decision is summarised in this Annex. Copies of all consultation responses have been placed on the Environment Agency and Local Authority public registers.

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response Received from the Health and Safety Executive	
Brief summary of issues raised:	Summary of action taken / how this has been covered
No response received	No further action required

Response Received from Public Health England on 07/10/15	
Brief summary of issues raised:	Summary of action taken / how this has been covered
<p>We recommend that any Environmental Permit issued for this site should contain conditions to ensure that the following potential emissions do not impact upon public health:</p> <ul style="list-style-type: none"> emissions of nitrogen dioxide to air from the CCGT stack. <p>The applicant states that emission limit values will be exceeded during the commissioning phase, and the Environment Agency may wish to consider monitoring air quality data produced during this period to ensure that the site's impacts on local air quality during operation will be negligible.</p> <p>Air quality modelling is based on data for 2007-2011, which may not best reflect the current air quality situation. Based solely on the information contained in the application provided, PHE has no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in</p>	<p>The air dispersion modelling report in Appendix D of the application outlines that the met data used was from RAF Marham which is 15km from the installation. The met data used was from 2011 to 2014 and is therefore considered appropriate.</p> <p>The Air Quality Impact Assessment has been audited by our Air Quality Modelling Unit. This included an assessment of the adequacy of met data used within the assessment. Section 5 of the decision document sets out the findings of the assessment.</p> <p>The Operator will be expected to consider emissions during commissioning. The commissioning phase will require some testing of the CCGT to ensure that the combustion parameters are as efficient as possible during standard operating mode.</p>

accordance with the relevant sector technical guidance or industry best practice.	
In relation to potential risk to public health, we recommend that the Environment Agency also consult the following relevant organisations in relation to their areas of expertise: <ul style="list-style-type: none"> the local authority for potential impacts of nitrogen dioxide emissions on nearby Air Quality Management Areas the local authority for matters relating to impact upon human health of contaminated land; noise, odour, dust and other nuisance emissions; the Director of Public Health for matters relating to wider public health impacts. 	The Environment Agency has consulted with <ul style="list-style-type: none"> the Local Authority the Director of Public Health See section 5 of decision document for information on air quality including an impact assessment for the AQMAs.

Response Received from Director of Public Health – Norfolk County Council

Brief summary of issues raised:	Summary of action taken / how this has been covered
No response received	No further action required

Response Received from Kings Lynn & West Norfolk Borough Council Environmental Health

Brief summary of issues raised:	Summary of action taken / how this has been covered
No response received	No further action required

Response Received from the Food Standards Agency

Brief summary of issues raised:	Summary of action taken / how this has been covered
No response received	No further action required

Response Received on 08/12/15 from Natural England

Brief summary of issues raised:	Summary of action taken / how this has been covered
Natural England confirmed that they agree with the conclusion of the impact assessment (see section 5.3.2 of the decision document) of no likely significant effect and are satisfied that a permit may be issued.	No further action required

2) **Consultation Responses from Members of the Public and Community Organisations**

a) Representations from Local MP, Councillors and Parish / Town / Councils

No responses were received.

b) Representations from Community and Other Organisations

No responses were received.

c) Representations from Individual Members of the Public

No responses were received.