

# Permitting decisions

## Variation

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We have decided to grant the variation for Snodland Paper Mill operated by Smurfit Kappa UK Limited.

The variation number is EPR/BJ7433IQ/V006.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

### Purpose of this document

This decision document provides a record of the decision making process. It summarises the decision making process in the decision checklist to show how all relevant factors have been taken in to account. This decision document provides a record of the decision making process. It:

- highlights [key issues](#) in the determination
- summarises the decision making process in the [decision checklist](#) to show how all relevant factors have been taken into account.

Unless the decision document specifies otherwise we have accepted the applicant's proposals. Read the permitting decisions in conjunction with the environmental permit and the variation notice. The introductory note summarises what the variation covers.

### Key issues of the decision

#### **Background:**

Snodland Paper Mill combined heat and power (CHP) plant has been designed to meet the current and future legislative requirements of the Medium Combustion Plant Directive (MCPD). Snodland Paper Mill CHP is required to replace the current Scottish and Southern Energy (SSE) CHP plant to provide a more efficient and reliable source of steam and electricity to the papermaking process and production security for Snodland Paper Mill. The newer Snodland Paper Mill CHP plant could also decrease noise events by reducing the need to vent steam and react better to the changes in demand, such as during a paper break.

The CHP is proposed to be fully operating by 01 September 2018 and comprises:

- two natural gas fired gas turbines (GT)
- two heat recovery steam generators (HRSG) with supplementary firing
- one standby boiler with a feed water buffer storage tank
- a water pre-treatment plant comprising filtration, ultra-filtration, reverse osmosis and water softening
- steam supply and condensate return system
- drainage systems for process and surface waters.

### **Snodland Paper Mill CHP plant and standby boiler:**

Two natural gas CHP units are to be operated in parallel each comprising a GT each generating 5.38MWe (combined electrical output of 10.76MWe) from a thermal input of 16.9MWth. Combustion gases cause the turbine blades to spin which drives a generator that converts the energy into electricity. Each GT will have a dry low oxides of nitrogen (NOx) burner installed to minimise NOx emissions and operated under optimal conditions to ensure emissions of NOx, carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) are minimised. The use of dry low NOx burners is accepted to represent BAT as this technology can achieve lower levels of NOx emissions compared with water or steam injection systems.

The GTs are designed to have a combustion system employing lean burn and flame temperature management as well as automatically adjusting the amount of fuel input to the gas turbine to keep firing temperature at the optimum level to reduce the amount of NOx produced whilst also preventing significant CO production. The GTs will have a maximum electrical efficiency of around 32% at 100% power generation (10.76MWe) of 70 tonnes/hr of steam which can be raised to a combined electrical and thermal efficiency of up to 92% at full load when supplementary firing is required.

Waste heat in the form of turbine exhaust gases (TEG) from each GT is delivered to a HRSG which converts TEG to steam providing an additional 15MWth and each capable of producing up to 35 tonnes/hr of saturated steam. The net rated thermal input of both CHP units combined is 63.8MWth (31.9MWth each) with the capacity of supplementary firing when required to meet the steam demand of the paper mill during normal operation. The HRSGs have low NOx burners comprising a water-cooled combustion chamber. This chamber controls the combustion temperature which in turn results in reduced NOx formation. Each steam boiler is fed by treated water from Mill Creek which is de-oxygenated in a de-aerator.

The CHP plant utilises a high rate of condensate return at a design rate of 93% (typically 85%). An economiser is installed in the HRSG flues to maintain feedwater temperature. As the return temperature will be on average 120°C additional steam heating of the feedwater is not required. However, during cold start-up, steam heating will be required to produce feedwater at the required temperature.

A natural gas standby boiler is to be used in the event that the main CHP units are not available. This has the capacity to generate steam at 35 tonnes/hr and has a thermal input of 29.3MWth. The boiler will comprise a low NOx burner with a NOx emission rate of less than 100mg/Nm<sup>3</sup> from the stack. Thermal efficiency is calculated to be 81% when operating at full load. This boiler will only be brought into use when either of the two HRSGs are unavailable due to maintenance or emergency scenarios. An electricity shortfall will be imported from the National Grid. No more than two boilers will be operated at any one time except for during:

- a transition period involving changing between respective boiler operations to maintain stable operation of the PM9 where units will be proportionately reduced/increased during this phase of operation
- short periods of 'burst firing' of the standby boiler (at 20% load for 30 minutes in a 24 hour period) to maintain it on 'hot standby'.

As there are three separate flues not combined within a common stack or windshield, there are three additional point source emissions to air from the facility:

<b>Stack</b>	<b>Height</b>	<b>Diameter</b>	<b>Efflux velocity at max continuous rating</b>
Two separate CHP units	35m	1.3m	18m/s
One standby boiler	20m	1.2m	15m/s

### **Water Treatment Plant:**

Water abstracted from Mill Creek or a borehole (existing abstraction licences) is to be used in the CHP plant process. The abstraction volumes are within the consented limit and are less compared with current abstraction volumes as the raw water requirements for the new CHP plant are reduced compared with the SSE CHP plant. In order to provide suitable quality feed water for, a new water treatment plant and associated infrastructure as well as an associated effluent discharge point are required. The treatment process comprises:

- filtration to 50µm
- ultra filtration - effluent generated from hydraulic back washing of the filter
- reverse osmosis – generates an effluent concentrate at a continuous rate of 4.74m<sup>3</sup>/hr from each unit equating to a total effluent volume of 9.48m<sup>3</sup>/hr

- water softening and chemical addition – anti-scale and cleaning chemicals, regeneration creates a low toxicity total effluent volume of 2.9m<sup>3</sup> from each of the two units once per month.

The water pre-treatment plant will generate a small volume of effluent and, together with the boiler blowdown (flows of around 0.6m<sup>3</sup>/hr) and pre-treatment reject flows, will discharge into Mill Creek via the existing emission to water point W4 (currently operated by the SSE CHP plant referenced W4 in the permit EPR/BJ7506IM). The emission limits for this discharge have been transferred unaltered from the SSE CHP permit EPR/BJ7506IM to the SKUL permit.

Mill Creek discharges into the River Medway at a point below the tidal reach where the salinity and turbidity levels in the receiving water are likely to be high and are unlikely to be adjusted by the effluent discharge volume. SSE is currently permitted to discharge up to 500m<sup>3</sup>/day and the new water discharge rate (excluding surface water run-off) is approximately 240m<sup>3</sup>/day. Potentially polluting materials stored on site to be used in the reverse osmosis and boiler feedwater systems include sodium hydroxide, poly-acrylate, sodium bisulphite, hydrochloric acid and sodium hypochlorite.

### **Surface Water:**

Uncontaminated surface water drainage will connect into the existing paper mill site surface water drainage system. Surface water emissions from the Snodland Paper Mill plant area will discharge to the River Medway via an interceptor to water discharge point W3. Two further release points (W23 and W24) which are to be adopted by Smurfit Kappa UK Limited from SSE plc for uncontaminated surface water paper mill drainage only. In the event of an incident, there is an existing interceptor in place to prevent potentially contaminated surface water discharging into the River Medway.

### **Impacts on human and ecological sensitive receptors – emissions to air:**

Combustion processes produce emissions to air which may lead to significant impacts on the environment and to human health. The most substantial of these emissions is NO<sub>x</sub> comprising mostly nitric oxide (NO) with a proportion of nitrogen dioxide (NO<sub>2</sub>). NO is converted to NO<sub>2</sub> within the atmosphere which is a principal pollutant of concern covered by the UK Air Quality Strategy (AQS) which sets objectives for short term and long term ambient concentrations in order to protect human health and the environment.

Detailed modelling was undertaken on behalf of Smurfit Kappa UK Limited assessing the closest residential receptors where there may be a relevant exposure as per the tables below.

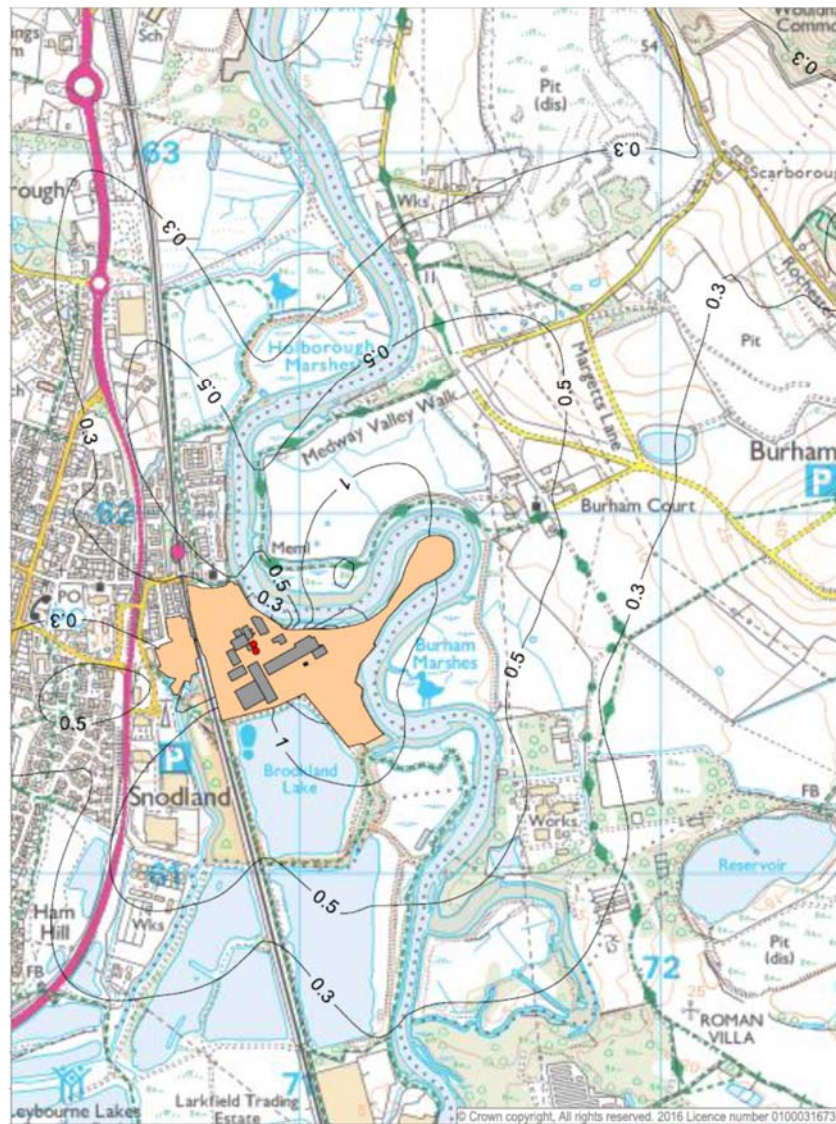
### **Maximum annual average NO<sub>x</sub> and estimated total NO<sub>2</sub> concentrations at human receptors (AQS objective is 40ug/m<sup>3</sup> as an annual mean)**

ID	Receptor	NO <sub>x</sub> PC (ug/m <sup>3</sup> )	NO <sub>2</sub> PC (ug/m <sup>3</sup> )	PC/AQS (%)	Background NO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>2</sub> PEC (ug/m <sup>3</sup> )	PEC/AQS (%)
1	Church Field	0.6	0.4	1.0	16.5	16.8	42.1
2	May Street 1	0.3	0.2	0.6	16.4	16.8	41.6
3	May Street 2	0.4	0.2	0.6	16.4	16.7	41.7
4	Mill Lane	0.3	0.2	0.5	16.5	16.7	41.7
5	Watts Close	0.9	0.6	1.5	16.5	17.1	42.8
6	Ashbee Close	0.5	0.4	1.0	16.4	16.8	42.0
7	Old Church Road	0.7	0.5	1.3	14.6	15.1	37.7
8	Birling House Care Home	0.4	0.3	0.7	16.4	16.7	41.7
9	Devonshire Rooms Pre School	0.4	0.3	0.7	16.3	16.6	41.5
10	Old Ferry Crossing Cottage (48 Mill Street)	0.6	0.4	1.0	16.6	17.0	42.5
11	Cantium Place	1.0	0.7	1.7	14.3	14.9	37.4
12	Rochester Road	0.5	0.3	0.9	13.8	14.1	35.5

**Maximum hourly average NOx and estimated total NO<sub>2</sub> concentrations at human receptors**

ID	Receptor	NOx PC (ug/m <sup>3</sup> )	NO <sub>2</sub> PC (ug/m <sup>3</sup> )	PC/AQS (%)	Background NO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>2</sub> PEC (ug/m <sup>3</sup> )	PEC/AQS (%)
1	Church Field	57.4	20.1	10.1	43.1	63.2	31.6
2	May Street 1	25.3	8.9	4.4	46.0	54.8	27.4
3	May Street 2	15.3	5.3	2.7	45.4	50.8	25.4
4	Mill Lane	19.7	6.9	3.4	48.1	55.0	27.5
5	Watts Close	51.0	17.8	8.9	46.5	64.3	32.2
6	Ashbee Close	13.7	4.8	2.4	36.6	41.4	20.7
7	Old Church Road	29.0	10.1	5.1	32.6	42.7	21.4
8	Birling House Care Home	27.8	9.7	4.9	47.2	56.9	28.5
9	Devonshire Rooms Pre School	35.6	12.5	6.2	44.1	56.5	28.3
10	Old Ferry Crossing Cottage (48 Mill Street)	32.6	11.4	5.7	44.4	55.8	27.9
11	Cantium Place	79.5	27.8	13.9	39.4	67.2	33.6
12	Rochester Road	60.1	21.0	10.5	34.6	55.6	27.8
13	Brookland Lake Water Sports Centre	64.2	22.5	11.2	35.4	57.8	28.9

**Annual average NO<sub>2</sub> concentrations (ug/m<sup>3</sup>) for human receptors**



The detailed modelling considered the in-combination effect of the existing and proposed sources by including the contribution from the paper mill's Jenbacher biogas engines, based on results from the 2014 modelling report, within the Predicted Environmental Contributions. No adjustment was made in the assessment to account for the currently operational SSE CHP plant.

It was concluded that the proposed CHP plant emissions to air would not lead to an adverse effect at the sensitive receptors for human health because estimated total concentrations will remain less than half of the AQS. The modelled contributions of NO<sub>2</sub> at the nearest air quality management areas were also found to be negligible and would not cause a breach of the AQS.

The effects of the CHP plant emissions to air in terms of their contribution to critical levels (CLe) and critical loads (CLo) at the following relevant statutory and non-statutory designated local ecological sites have also been assessed:

Site ID	Name	Notes
A to E	Holborough to Burnham Marshes SSSI	Reedbeds, open water, fen, grassland, scrub, woodland.
F	Wouldham to Detling Escarpment SSSI	Chalk escarpments include woodland, scrub, unimproved grassland habitats which support a rare and scarce species of plants and invertebrates.
G	Peters Pit SAC/SSSI	Rain fed ponds, chalk grassland, ruderal vegetation, scrub, developing woodland.
H1 and H2	North Downs Woodland SAC	Dry grassland, steppes, broad leaved deciduous woodland, coniferous woodland.
I	Un-named Ancient Woodland	Ancient and semi-natural woodland.
J	Eccles Old Pit LWS	Scrub, woodland, reservoir ponds, grassland.
K	Leybourne Lakes LWS	Grassland, open water, scrub, woodland, stream.
L	River Medway and Marshes LWS	Grassland, scrub, standing water.

The assessment undertaken was based on the highest modelled increments for each averaging period from five years of meteorological data and using conservative assumptions regarding operation and the background concentrations taken from the Air Pollution Information System (APIS) as tabulated below.

Site	Habitat type	N CLo (kgN/ha/yr)	Acid (N) Min CLo Max N keq/ha/yr ~
Holborough to Burnham Marshes SSSI	Neutral grassland – lowland	20	2.98 #
Wouldham to Detling Escarpment SSSI	Broadleaved, mixed and yew woodland	10	1.98
Peters Pit SAC/SSSI *	Broadleaved, mixed and yew woodland	10 ^	11.1
North Downs Woodland SAC	Broadleaved, mixed and yew woodland	10	1.98

\* no site specific CLo provided on APIS.  
 ^ APIS recommended value where lichen are not present at the site.  
 ~ to present a conservative assessment the min CLo max N across the whole designated site has been used rather than a specific value taken for the location of the modelled receptor (location of max PC within designated site).  
 # conservatively assumed to be the min CL max N for acid grassland (as opposed to calcareous grassland which has a min CL max N of 4.38keq/ha/yr).

The applicant has assessed against a nutrient nitrogen CLo of 10kgN/ha/yr for Wouldham and Detling Escarpment SSSI and North Downs Woodlands SAC habitat sites. Reference to APIS indicates that the lower nutrient nitrogen CLo for the most sensitive broadleaved, mixed and yew woodland habitat types for these site is 5kgN/ha/yr. Given the applicant's predictions, it does not appear that this will affect the conclusions.

The short term effects of the standby boiler emissions when operational in combination with a single GT/HRSG do not differ significantly from those for normal operation. The cumulative impact of the standby boiler emissions (30 minutes per day at 20% load) have a negligible effect on long term pollutant concentrations for human health and ecological sites.

The tables below list the maximum daily and annual means for oxides of nitrogen concentrations at identified ecological sites.

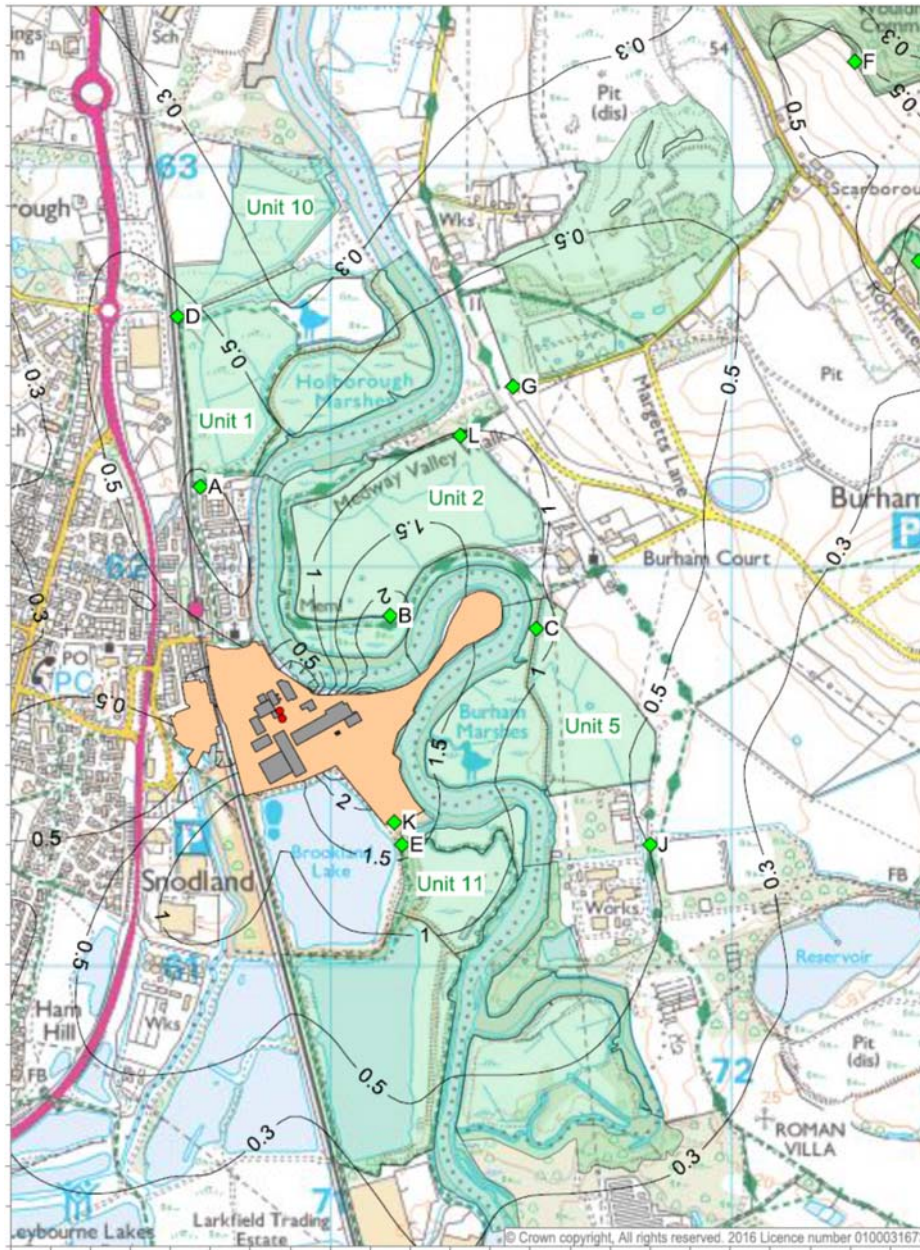
**Maximum annual mean oxides of nitrogen concentrations at ecological sites.**

Site ID	Name	NOx PC (ug/m <sup>3</sup> )	PC/CL (%)	Background (ug/m <sup>3</sup> )	NOx PEC (ug/m <sup>3</sup> )	PEC/CL (%)
A	Holborough to Burnham Marshes SSSI (unit 1)	1.1	3.5	24.6	25.6	85.5
B	Holborough to Burnham Marshes SSSI (unit 2)	2.1	7.1	25.7	27.8	92.8
C	Holborough to Burnham Marshes SSSI (unit 5)	1.1	3.7	24.9	26.0	86.7
D	Holborough to Burnham Marshes SSSI (unit 10)	0.6	1.9	24.5	25.1	83.6
E	Holborough to Burnham Marshes SSSI (unit 11)	1.6	5.4	25.1	26.7	88.9
F	Wouldham to Detling Escarpment SSSI	0.6	1.9	26.5	27.0	90.1
G	Peters Pit SAC/SSSI	0.8	2.8	24.6	25.4	84.8
H1	North Downs Woodland SAC (west)	0.1	0.4	26.4	26.5	88.4
H2	North Downs Woodland SAC (east)	0.1	0.2	26.4	26.4	88.1
I	Un-named Ancient Woodland	0.4	1.4	-	-	-
J	Eccles Old Pit LWS	0.5	1.6	-	-	-
K	Leybourne Lakes LWS	1.8	6.0	-	-	-
L	River Medway and Marshes LWS	1.0	3.4	-	-	-

**Maximum daily mean oxides of nitrogen concentrations at ecological sites.**

Site ID	Name	NOx PC (ug/m <sup>3</sup> )	PC/EAL (%)	Background (ug/m <sup>3</sup> )	NOx PEC (ug/m <sup>3</sup> )	PEC/EAL (%)
A	Holborough to Burnham Marshes SSSI (unit 1)	16.8	22.4	31.8	48.6	64.8
B	Holborough to Burnham Marshes SSSI (unit 2)	10.9	14.6	32.8	43.7	58.3
C	Holborough to Burnham Marshes SSSI (unit 5)	7.1	9.5	28.8	35.9	47.9
D	Holborough to Burnham Marshes SSSI (unit 10)	7.5	10.0	29.5	37.0	49.3
E	Holborough to Burnham Marshes SSSI (unit 11)	13.8	18.5	33.6	47.5	63.3
F	Wouldham to Detling Escarpment SSSI	5.1	6.7	27.7	32.8	43.7
G	Peters Pit SAC/SSSI	4.7	6.3	27.5	32.2	42.9
H1	North Downs Woodland SAC (west)	3.2	4.3	27.0	30.2	40.2
H2	North Downs Woodland SAC (east)	1.8	2.4	27.0	28.8	38.4
I	Un-named Ancient Woodland	5.0	6.7	-	-	-
J	Eccles Old Pit LWS	5.4	7.2	-	-	-
K	Leybourne Lakes LWS	17.3	23.1	-	-	-
L	River Medway and Marshes LWS	5.9	7.8	-	-	-

## Annual average oxides of nitrogen concentrations at ecological receptors (ug/m<sup>3</sup>)



Environment Agency guidance on identifying 'relevance' for assessment under the Habitats Regulations with combustion processes has been used to review the potential impact on ecological receptors. This guidance is used to identify releases from combustion processes for installations permitted under the Environmental Permitting Regulations which are 'relevant' to the tests of the Habitats Regulations.

The key consideration is that the current 140MW CHP plant operated by SSE is to be replaced with two natural gas fired dry low NO<sub>x</sub> turbines including supplementary firing giving a total thermal input of 97MW<sub>th</sub>. Technically this is an environmental improvement and shouldn't need any further conservation assessment. However, in order to confirm that this will be the case, the Environment Agency needs to be satisfied that the following points are met for all the conservation designations:

- emissions are reducing or are staying the same:  
This has been confirmed within the application supporting documentation. Details have been provided within the application documentation and are added into the operators permit under operating techniques.
- the source is not moving any closer to the sensitive receptors (which could increase impacts):  
The SKUL CHP plant is positioned adjacent to the SSE CHP plant as it will be utilising the existing discharge to surface water infrastructure.

- there are no new conservation sites designated within relevant screening distances since the last permit was granted:  
The Environment Agency internal ecological mapping database as well as the citations for the SSSIs have been checked to confirm no changes, recent updates and/or new designations have been listed. Checks were also made against a permit variation completed in 2015 and the same designations are listed within that assessment.
- there are no increased sensitivity changes at the conservation site since the last permit was granted (e.g. new species or habitats added to a designation):  
As above.

In conclusion, the application to add the combustion process at the installation is not relevant for assessment under the Habitats Regulations, CRoW Act or our wider conservation duties as there are no associated risks. No further assessment is required.

#### **Global warming potential (GWP):**

The assessment of greenhouse gas impacts has been made for IED purposes as CO<sub>2</sub> is a pollutant. Emissions of CO<sub>2</sub> 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. The GWP of the facility has been calculated in accordance with the Environment Agency's H1 Annex H Global Warming Potential and H1 Software Tool. The worst case GWP score for the facility is 88,930 which is derived from CO<sub>2</sub> emissions from the combustion of natural gas in the CHP units. This is based on the facility operating two units for 8,760 hours per year using monitoring data from 2016. As only two units will typically operate at the same time during normal operation, the standby boiler has not been included in the calculation.

The GWP of the proposed CHP plant is approximately half that of the current SSE CHP plant (88,930 compared to 198,485). BAT for greenhouse gas emissions is to maximise energy recovery and efficiency. This is achieved both through the installation of a demand-led high efficiency CHP plant and energy efficiency improvements to PM9.

#### **Medium Plant Combustion Directive (MPCD):**

The recently published BAT conclusions document should only be applied to large combustion plant (LCPs) and not medium combustion plants (MCPs). The Local Authority Guidance is still technically applicable to the three MCP units at Snodland Paper Mill as they will be classed as 'existing combustion plant' and therefore are considered as BAT. However, if Local Authority Guidance is used within the permit then the Operator will need to meet the limits set within the MCPD by 2025 for this size of plant.

#### **Level of Permit Variation:**

The Environmental Permitting Regulations (EPR) 2016 state that certain changes are automatically regarded as substantial such as a change in operation of a Part A installation where that change meets the thresholds, if any, set out in Part 2 of Schedule 1 of the EPR. Although this variation is to add over 50MWth of combustion capacity to the permit this was not deemed a substantial variation as once the new SKUL CHP plant is running the SSE CHP plant will cease to operate. The regulations refer to adding over a schedule activity threshold to an installation rather than to a permit and so consequently the closing of the SSE CHP scheduled combustion activity has to be taken into account.

#### **Paper and Pulp BAT Conclusions:**

The sector BAT Conclusions, revised and implemented as of September 2014, detail the key elements of the BAT document and what is to be considered as BAT for the Sector. However, it should be noted that this BAT Conclusions document does not specifically address combustion plants for steam and power generation (other than recovery boilers) which is covered by the Large Combustion Plant BAT Conclusions document. BAT6c does require operators to use CHP as far as possible to generate the steam and power as demanded by the installation process and is applicable for new plants and major energy plant refurbishments.

Another BAT Conclusions requirement is to reduce the quantities of waste sent for disposal by implementing a waste assessment and management system using the waste hierarchy of reuse, recycling, recovery before disposal is considered as an option (BAT12c). There is limited waste generated by the process, much of which is of low-combustibility such as metals or is already recycled. SKUL recover their high organic content pulp waste from the paper making process to use in their on-site anaerobic digester to generate a usable energy



source although this is limited as paper production efficiencies would mean waste streams are minimised. The operator has considered BAT12c for those wastes which are currently sent to landfill and is currently investigating possibilities using the waste hierarchy including off-site energy recovery.

It is considered that the operator has met the requirements of BAT6c and BAT12c as discussed above.

## Decision checklist

Aspect considered	Decision
<b>Receipt of application</b>	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified any information provided as part of the application that we consider to be confidential.
<b>The facility</b>	
The regulated facility	<p>We considered the extent and nature of the facilities at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits. The extent of the facilities are defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p> <p>This permit applies to only one part of the installation which covers the paper mill as per the site plan in permit EPR/BJ7433IQ. The names and permit numbers of the operators of other parts of the installation are detailed in the permit's introductory note.</p>
<b>The site</b>	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility and the location of the part of the installation to which this permit applies on that site. A plan is included in the permit.
Biodiversity, heritage, landscape and nature conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. We have assessed the application and its potential to affect all known sites of nature conservation as part of the permitting process. We consider that the application will not affect any sites of nature conservation identified. We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p> <p>The effects of the CHP plant emissions in terms of their contribution to critical levels and critical loads at relevant statutory and non-statutory designated ecological sites is discussed further in the <a href="#">key issues</a> section.</p>
<b>Environmental risk assessment</b>	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that applying the conservative criteria in our guidance on environmental risk assessment all emissions may be categorised as not environmentally significant. Further discussion is presented in the <a href="#">key issues</a> section.

Aspect considered	Decision
<b>Operating techniques</b>	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p> <p>In Table S1.2: “The joint operating procedures for the operation of the CHP plant and the management of steam (OP 125-45 dated 01/11/14, Appendix C of the Commissioning Plan)” won’t be removed from the Snodland Paper Mill permit until the surrender of the SSE permit, the cessation of the SSE CHP plant operation and the full operation of the Snodland Paper Mill CHP plant.</p>
Operating techniques for emissions that screen out as insignificant	<p>Emissions of carbon dioxide, carbon monoxide and nitrogen dioxide have been screened out as insignificant, and so we agree that the applicant’s proposed technique is BAT for the installation. We consider that the emission limits included in the installation permit reflect the BAT for the sector.</p> <p>Ground level concentrations of nitrogen dioxide and carbon monoxide were considered. A detailed assessment was made of nitrogen dioxide and oxides of nitrogen concentrations at sensitive human health and ecological receptors in the surrounding area. The calculation of total nitrogen dioxide concentrations used the Environment Agency “worst case” assumptions for conversion from oxides of nitrogen, and an existing background concentration that includes a contribution from operational emissions of the SSE CHP plant, which is due to close before operation of the proposed facility, and the onsite biogas engines. Further discussion is presented in the <a href="#">key issues</a> section.</p>
Noise management	<p>We have reviewed the noise management plan in accordance with our guidance on noise assessment and control. We consider that the noise management plan is satisfactory. A Noise Assessment was undertaken in accordance with BS4142:2014 ‘Methods for rating and assessing industrial and commercial sound’. It concluded that with reference to BS4142:2014 the predicted rating levels would be below the prevailing background levels at the nearest noise-sensitive receptors identified and therefore an adverse noise impact is unlikely.</p> <p>Basic good practice measures for the control of noise are to be employed throughout the installation including planned maintenance of any plant or equipment whose deterioration may give rise to increase in noise. The site layout has been designed in such a way that activities will be screened from nearby noise sensitive receptors wherever possible. Turbines will be containerised within an acoustic enclosure with inlet and outlet ventilation attenuators fitted. Silencers are installed on existing steam vents and the new steam vent will be fitted with a silencer. It is proposed that silencers are not required to be fitted to pressure reducing valves (PRVs) as they are only to be used in the case of abnormal operation or an emergency. However, should noise through use of PRVs generate concern, it will be possible to install silencers.</p>
<b>Permit conditions</b>	
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.

Aspect considered	Decision
Pre-operational conditions	<p>Based on the information in the application, we consider that we need to impose pre-operational conditions. These are to ensure that:</p> <ul style="list-style-type: none"> <li>➤ there is an Environment Agency, SSE and SKUL approved plan/report/strategy for the phased transfer of SSE permitted land and infrastructure critical to the commissioning and operation of the SKUL CHP plant</li> <li>➤ there is an Environment Agency approved commissioning plan detailing the commissioning stages for the SKUL CHP plant.</li> </ul>
Improvement programme	<p>Based on the information in the application, we consider that we need to impose an improvement programme to ensure that:</p> <ul style="list-style-type: none"> <li>➤ the Operator submits a written report on the commissioning of the CHP plant including environmental performance, performance of the facility against the conditions in the permit and procedures developed for achieving and demonstrating compliance with the permit conditions</li> <li>➤ the Operator submits a revised and updated site EMS to include the CHP combustion activities.</li> </ul>
Emission limits	<p>ELVs based on BAT have been added for the following:</p> <p><u>Emissions to Air:</u></p> <ul style="list-style-type: none"> <li>➤ Gas turbines and HRSGs 1 and 2: oxides of nitrogen - 58mg/Nm<sup>3</sup></li> <li>➤ Standby boiler: oxides of nitrogen - 100mg/Nm<sup>3</sup>.</li> </ul> <p>These ELV requirements have been imposed in accordance with the Local Authority Guidance 'Process Guidance Note 1/04 (11) - Statutory Guidance for Gas Turbines 20 – 50MW Thermal Input', October 2011. Further discussion is presented in the <u>key issues</u> section.</p> <p><u>Emissions to Water:</u></p> <ul style="list-style-type: none"> <li>➤ W4 (existing SSE plc emission point to Mill Creek to be carried over from the SSE plc permit into the Smurfit permit) – pH, temperature, visible oil/grease, flow (no ELVs set).</li> </ul>
Monitoring	<p>We have decided that monitoring should be added for the following parameters, using the methods detailed and to the frequencies specified within Tables S3.1 and S3.2 in the permit:</p> <ul style="list-style-type: none"> <li>➤ oxides of nitrogen (NO and NO<sub>2</sub> expressed as NO<sub>2</sub>)</li> <li>➤ carbon monoxide</li> <li>➤ pH, temperature, visible oil and/or grease, and flow.</li> </ul> <p>These monitoring requirements have been imposed in accordance with the Combustion Sector Guidance Note 1.01.</p> <p>A framework procedure will be developed for the proposed Snodland Paper Mill CHP plant that addresses Environmental Monitoring and Reporting requirements to ensure compliance with applicable legislation and EA requirements. Emissions points will be compliant with the standards stipulated in EA Technical Guidance Note 'M1: Sampling requirements for stack emission monitoring', Version 7, March 2016.</p> <p>Stack emissions from the process will be monitored in accordance with requirements of MCerts. MCerts qualified personnel, using MCerts certified monitoring equipment will be employed to monitor emissions from the</p>

Aspect considered	Decision
	<p>Snodland Paper Mill CHP plant. Monitoring will be carried out using CEN standards and methods stipulated in the EA Guidance Note 'M2: Monitoring of Stack Emissions to Air', Version 11 November 2015.</p> <p>The maintenance of process instrumentation and measurement devices will be managed primarily by the operator's CHP plant engineers, with specialist contractors brought in to maintain specific items of plant such as the calibration of gas meters, pressure and temperature valves. All monitoring equipment will be regularly calibrated and records of calibration kept.</p>
Reporting	<p>We have amended the reporting in the permit as follows:</p> <ul style="list-style-type: none"> <li>➤ added emissions to air points A18, A19 and A20 and emissions to water point W4 with regards to reporting of monitoring</li> <li>➤ reporting of various parameters for the CHP plant (e.g: steam supplied, gas used, electricity export/used) differentiating this from the reporting requirements for the AD plant.</li> </ul> <p>We have made these decisions in accordance with Combustion Sector Guidance Note 1.01.</p>
<b>Operator competence</b>	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.
<b>Growth Duty</b>	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit. Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections. We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>