Design and Access Statement

The Kemsley Mill K4 Combined Heat and Power Generating Station Development Consent Order

Author: DHA Planning

PINS Ref: EN010090
Document Number - 5.3
April 2018

The Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(q)

Design and Access Statement

Client:	DS Smith Paper Ltd
Project:	The Kemsley Mill K4 Heat and Power Generating Station Development Consent Order
Date:	April 2018
Reference:	EN010090 – Document 5.3
Regulation:	Applications (Prescribed Forms and Procedure Regulations 2009 - 5(2)(q)
Author:	David Harvey BA MA(Hons) MRTPI PIEMA

DHA Planning
Eclipse House, Eclipse Park
Sittingbourne Road
Maidstone, Kent
ME14 3EN

Tel: 01622 776226
Email: info@dhaplanning.co.uk
Web: www.dhaplanning.co.uk
Twitter: www.twitter.com/dhagroup

Part of the DHA Group
Planning | Urban Design | Transport | Environment

Contents

Glossary

CHP - Combined Heat and Power Plant
DCO - Development Consent Order
EN-1 - Overarching National Policy Statement for Energy
EN-2 - National Policy Statement for Fossil Fuel Generating Infrastructure
HRSG - Heat Recovery Steam Generator
MW - Megawatt
MWth - Megawatt themal

1. Context

Context

1.1 DS Smith Paper Ltd is applying to the Secretary of State for a Development Consent Order to allow them to construct and operate K4, a replacement gas powered Combined Heat and Power Plant, at the Kemsley Paper Mill in Sittingbourne, Kent.

1.2 The proposed CHP plant will comprise a gas turbine with a generation capacity of 52-57 MW, waste heat recovery boilers producing 105 MWth steam and a steam turbine generating 16MW nominal power output. It therefore requires consent from the Secretary of State under Section 14(1)(a) and 15(2) of the Planning Act 2008 (as amended) as it is an onshore generating station with a capacity in excess of 50 Megawatts.

1.3 This Design and Access Statement forms part of the application for the proposed Development Consent Order. It describes the proposal site and its surrounding context and explains the rationale behind the siting, design and access arrangements of the proposed scheme.

1.4 The Design and Access Statement forms a self contained summary of the proposed scheme in its entirety. However it should be read in conjunction with the other documents provided within the application, in particular:

- **The Application Guide** which provides a summary of the application [Document 1.2];
- The **Draft Development Consent Order** and the **Explanatory Memorandum** [Documents 2.1 and 2.2];
- **The Environmental Statement and Non Technical Summary** which assess the likely significant environmental effects of the proposed scheme [Document 3.1 and 3.2];
- **The Consultation Report**, which documents the consultation work done at the pre-application stage with the local community, statutory bodies and prescribed consultees [Document 5.1];
- **The Planning Statement** which assesses the proposed development against the relevant planning policy framework [Document 5.2].

DCO Plan Set

1.5 Reference is made throughout this document to the plans which accompany the DCO application and which comprise the following:

4.1 - Context Site Location Plan
4.2 - Site Location Plan – Aerial Photo
4.3 - The Land Plan
4.4 - Works Plans – Key Plan
4.5 - Work No.1 –Works Plan with limits of deviation for horizontal tube boiler
4.6 - Illustrative layout with horizontal tube boiler
4.7 - Illustrative Elevation cross sections – Horizontal Tube Boiler
4.8a - Site Context – Illustrative 3d Visual - Horizontal Tube Boiler
4.8b - Site Context – Illustrative 3d Visual - Horizontal Tube Boiler
4.9 - Work No.1 –Works Plan with limits of deviation for Vertical Tube Boiler
4.10 - Illustrative layout with Vertical Tube Boiler
4.11 - Illustrative Elevation cross sections – Vertical Tube Boiler
4.12a - Site Context – Illustrative 3d Visual – Vertical Tube Boiler
4.12b - Site Context – Illustrative 3d Visual – Vertical Tube Boiler
4.13 - Work No.2 Plan – Tie-ins to existing site facilities (illustrative)
4.14a - Nature Conservation Plan
4.14b - Habitats Plan
4.15 - WFD Waterbodies in a River Basin Management Plan
4.16 - Heritage Plan

2. The Project Team

DS Smith Paper Ltd - The Applicant

2.1 DS Smith is a leading European manufacturer of recycled corrugated case materials and speciality papers. The company operate nine paper mills across Europe, with the Kemsley Paper Mill their only mill within the UK.

2.2 The Kemsley Paper mill was originally constructed in 1924 to house four paper machines for newsprint production. By the 1970's the mill had diversified to produce corrugated case materials and fine papers. In the 1980's the site was split in two; St Regis operated the corrugated case material element and UK Paper, and then M-real, operated the fine paper operation. DS Smith acquired St Regis in 1986 and then acquired the entire Kemsley Paper Mill site in 2008.

2.3 Since 2008 DS Smith have invested over £100m to upgrade the facilities available to produce lightweight corrugated case material, which is the first lightweight paper product manufactured in the UK.

2.4 The Kemsley Paper Mill is capable of producing up to 800,000 tonnes of case material and paper each year from entirely recycled source material which makes it the second biggest recovered fibre-based paper operation in Europe. It employs around 400 people. There are currently three paper machines operational; PM3 has a range of 115-280 g/m2 and can produce 280,000 tonnes of product per annum and was rebuilt in 2012, PM4 has a range of 115-220g/m2 and a capacity of 240,000 tonnes of product per annum and PM6 has a range of 85-125g/m2 and a production capability of 280,000 tonnes each year.

E.ON and Costain

2.5 The existing K1 plant, which is to be replaced by the proposed K4 CHP plant, is operated by E.ON (Business Heat and Power).

2.6 DS Smith Ltd have entered into an exclusivity agreement with E.ON (trading as Kemsley CHP Ltd) for the construction and operation of K4. E.ON have appointed Costain as their technical design advisors and on the basis of the current exclusivity agreement Costain would be the main contractors for the construction of K4.

The Project Team

2.7 The project team acting on behalf of DS Smith for the DCO application is as follows:

- **DHA Planning** - planning consultants;
- **Burges Salmon** - legal advisors;
- **DHA Environment** - EIA co-ordinators;
- **RPS** - Technical topic specialists.

Figure 2.1 - Kemsley Paper mill viewed from the south

3. Energy Arrangements

Figure 3.1 - Existing K1 and K2 plants within Kemsley Paper mill

3.1 The paper production process undertaken at the Kemsley Mill is energy intensive, requiring a substantial amount of both electricity and heat (in the form of steam). The energy demands of the mill are currently met by the following:

K1 - a gas turbine combined heat and power plant and 6 ancillary package boilers located within the mill site which provides electricity and steam to the mill;

K2 - a steam generator located within the mill site which uses waste plastic and sludge as a source to provide steam to the mill;

K3 - an energy from waste plant currently being constructed by Wheelabrator Technologies on land to the east of the main mill complex which from mid-2019 will provide steam to the mill.

3.2 The K1 plant is 22 years old and would require significant investment to replace elements such as the gas turbine, waste heat recovery boilers and steam turbine. It is also oversized for its current use, as it was originally designed to serve both the Sittingbourne paper mill (which no longer exists) together with the Kemsley paper mill.

3.3 A development consent order is being sought to replace K1 with the proposed K4 plant, which would provide electricity and steam to the paper mill. K1 would be decommissioned by closing off specific services but no physical demolition is proposed as part of the DCO application. The 6 ancillary boilers within K1 would be retained as a back up system to provide steam to the mill should there be an interruption in the supply from any of the other steam sources.

3.4 K1 and K2 are both located immediately to the north of the proposed K4 site, as shown by Figure 3.1 (taken from the south east, with the K4 site on the left of the image).

4. The CHP Process

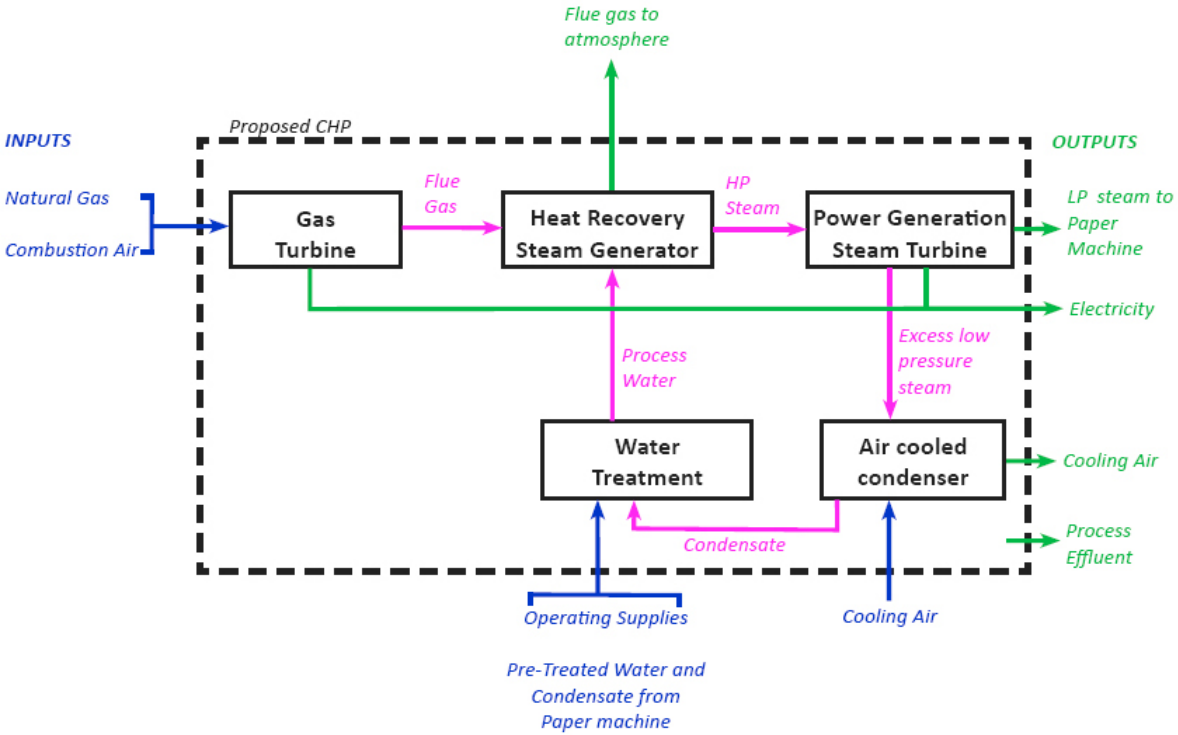


Figure 4.1 - Diagram of the CHP Process

4.1 Figure 4.1 illustrates the process which will take place within the proposed CHP plant.

4.2 Initially natural gas is mixed with compressed air and ignited to produce hot high-pressure gases. That process takes place within the gas turbine , with the hot gases driving the turbine and creating electricity via the generator.

4.3 At that stage the high pressure gases remain at temperatures of between 500 and 550^{o}C, with that heat used to create steam within the HRSG. The final exhaust gases are discharged through the HRSG stack. The high pressure steam is used to power the steam turbine, which creates further electricity.

4.4 The resulting low pressure steam is transferred to the paper mill for use within the production process, via a pipebridge. In the event that excess steam is created or the mill production process is interrupted then the low pressure steam is instead transferred to air cooled condensers where it is condensed into water, to be reused within the CHP process.

4.5 The key inputs for the CHP process are therefore natural gas and compressed air, together with pre-treated water and condensate from the paper machines where possible, together with cooling air. The CHP plant creates electricity and low pressure steam which are transferred to the paper mill (or exported to the grid in the case of any excess electricity) with other outputs comprising exhaust gases which are discharged to the atmosphere, cooling air and a small amount of process effluent arising from welfare facilities.

5. Planning Policy Context

Context

5.1 The planning policy regime for Nationally Significant Infrastructure Projects is the suite of National Policy Statements.

5.2 The relevant NPS's for the proposed K4 CHP plant are EN-1 - The Overarching National Policy Statement for Energy and EN-2 - the National Policy Statement for Fossil Fuel Electricity Generating Infrastructure.

5.3 The Planning Act 2008 allows the Secretary of State to have regard to other matters considered to be relevant and important to its decision, which can include other national and local planning policies. The NPS's will prevail should there be any conflict between them and national or local policies.

EN-1

5.4 EN-1 makes clear that high quality and inclusive design goes beyond aesthetic considerations and includes the functionality of an object in terms of it being fit for purpose and sustainable. In respect of energy projects the expectation of EN-1 is that good design will produce sustainable infrastructure sensitive to place, efficient in terms of resources used in construction, together with a good aesthetic in terms of appearance. It is acknowledged within EN-1 that the nature of energy infrastructure development will often limit the extent to which the quality of an area can be enhanced.

5.5 EN-1 requires energy infrastructure projects to demonstrate that they are sustainable, attractive, durable and adaptable, whilst taking account of functionality and aesthetics. Applicants are expected to take opportunities for good design in terms of siting in respect of landscape character, landform and vegetation.

5.6 EN-1 requires applicants to demonstrate how a design process was conducted and how the proposed design has evolved.

EN-2

5.7 EN-2, at Paragraph 2.3.16, states that applicants for Fossil Fuel Electricity Generating infrastructure should demonstrate good design particularly in respect of landscape and visual amenity, and in order to mitigate impacts such as noise, vibration, transport impacts and air emissions.

The NPPF

5.8 At Paragraph 56 the NPPF makes clear that the Government attaches great importance to the design of the built environment, with good design a key aspect of sustainable development and indivisible from good planning. In that respect the NPPF notes it is important to plan positively to achieve high quality and inclusive design for all development.

The Swale Local Plan (Bearing Fruits 2031)

5.9 Policy CP4 requires all new development proposals to be of a high quality design which is appropriate to the surroundings. A number of the elements of the policy are not applicable to a development of the nature proposed, but Part 4) requires the efficient and prudent use of natural resources and 6) requires landscape, biodiversity and local environments to be conserved and enhanced.

6. Wider Site Location

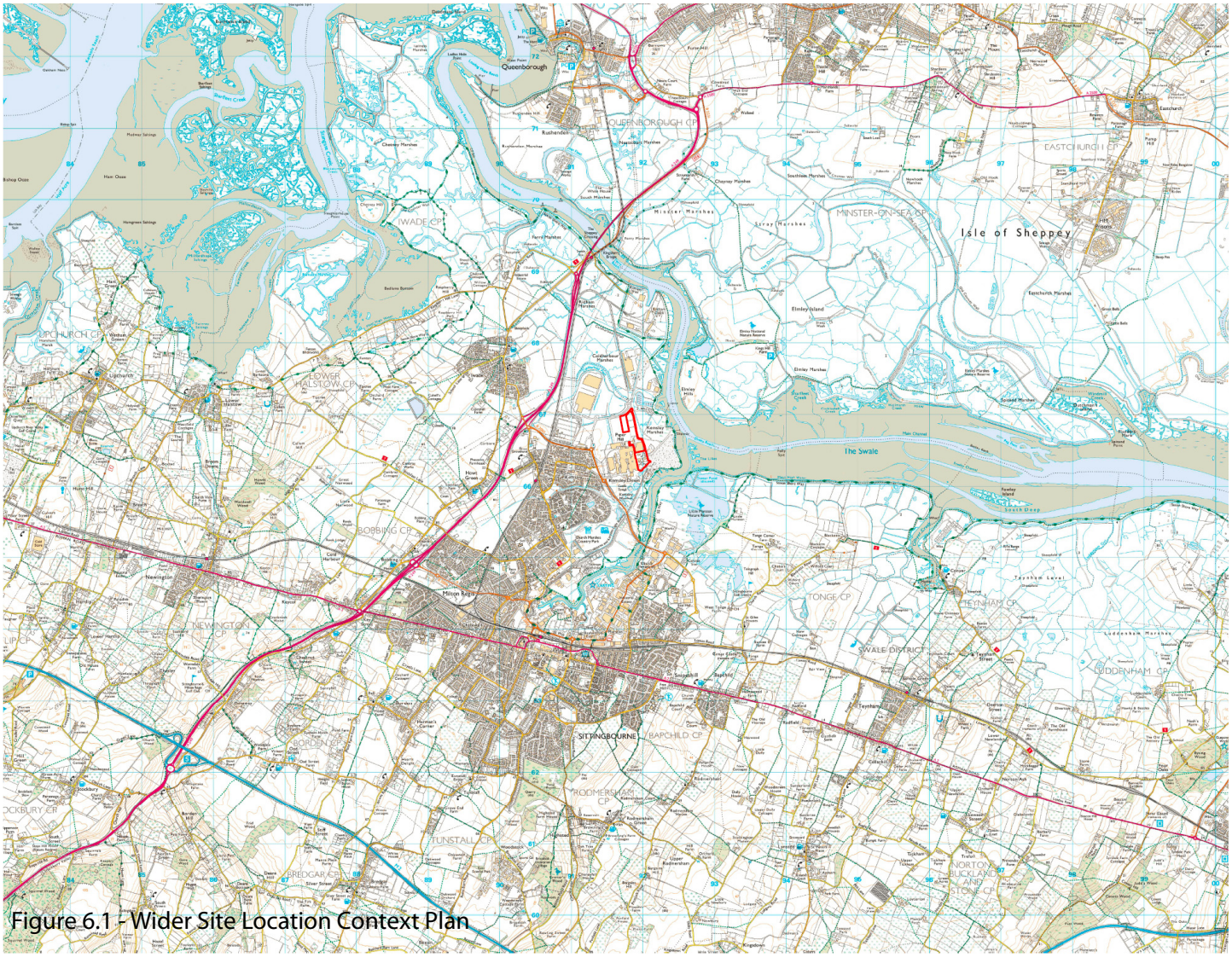


Figure 6.1 - Wider Site Location Context Plan

6.1 The Kemsley Paper Mill lies to the north east of Kemsley, which forms part of the wider urban area of Sittingbourne.

6.2 The Swale estuary separates the Isle of Sheppey from mainland Kent and runs to the north and east of the proposal site. The land to the north and east of Sittingbourne and in the south-western part of the Isle of Sheppey is predominantly flat low lying grazing and marsh land.

6.3 The A249 runs north from the M2 motorway and provides a key arterial route through the area to serve both Sittingbourne and the Isle of Sheppey. The Kemsley Paper Mill is accessed via the Grovehurst Road junction off the A249 which provides access to Kemsley to the east and the village of Iwade to the west. The A2 runs east to west through the centre of Sittingbourne and connects the town with Faversham to the east and Newington and the Medway Towns to the west. The M2 runs further to the south and provides similar connections, and further to the south the A249 then also connects with the M20 motorway.

7. Local Site Context

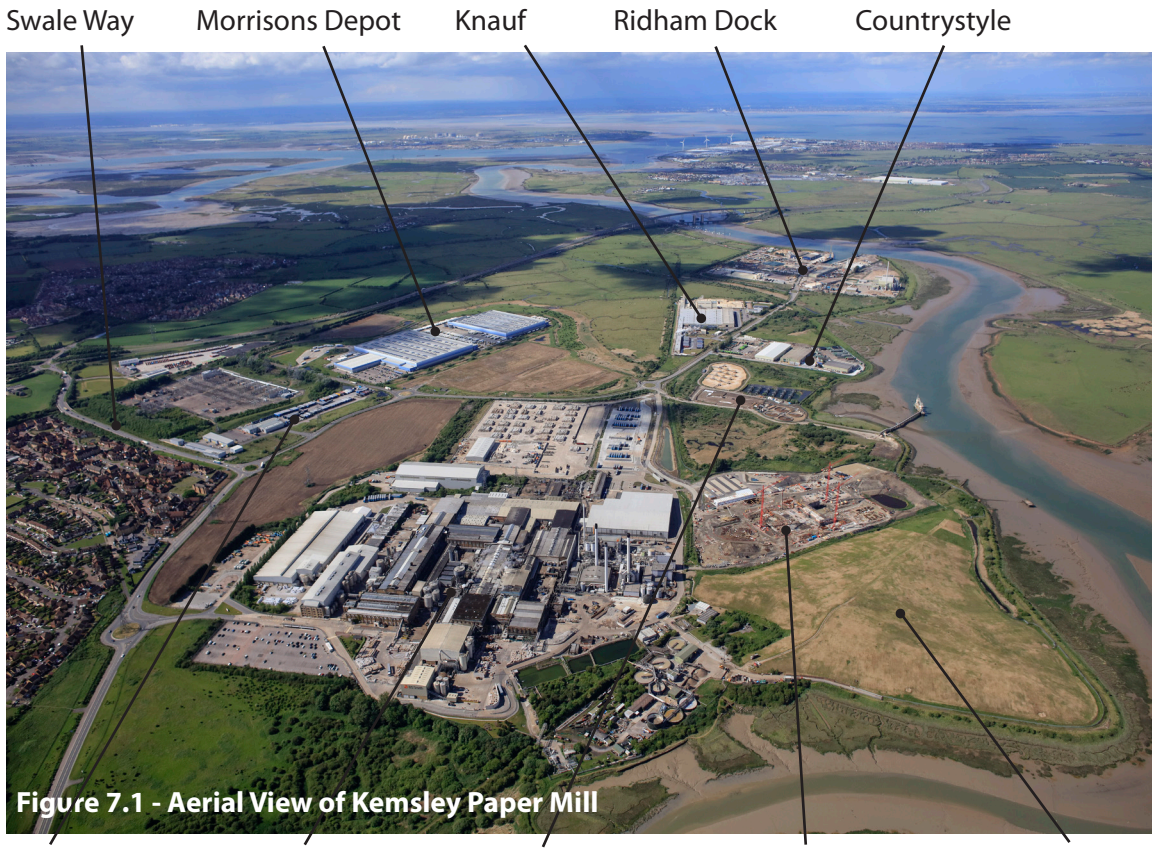


Figure 7.1 - Aerial View of Kemsley Paper Mill

7.1 The Kemsley Paper mill is a prominent established industrial complex between Kemsley and the Swale.

7.2 In broad terms the main production lines, comprising the three paper machines, run in a linear arrangement through the centre of the site, from north to south, with extensive supporting ancillary buildings and systems arranged around them. There is a collection of chimneys of varying heights in the eastern part of the mill complex which is the location of the existing K1 CHP plant and K2 steam generator. An extensive area of hardstanding to the north of the mill complex is used to store raw materials. DS Smith are currently constructing an anaerobic digester to replace an existing aerobic digester to the north of the mill complex.

7.3 The main access to the mill is via Swale Way, which provides access from the A249 and then continues south along the Sittingbourne Northern Relief Road. There is a large staff and visitor car park in the south-western part of the mill complex. Immediately to the east of the mill is the K3 development, which is shown on Figure 7.1 and which is an energy from waste plant being constructed by Wheelabrator Technologies. Immediately to the south of K3 is a former landfill site. The Saxon Shore Way long distance footpath follows the route of the estuary along the southern and eastern boundaries of the mill and is intended to become part of the England Coast Path in due course.

7.4 The land to the south and west of the mill is currently a mixture of scrubland and managed arable field, which is allocated for commercial/ industrial development within the current Swale Local Plan. The Milton Creek Country Park is expected to be extended to cover more land to the south of the paper mill.

7.5 Residential areas of Kemsley lie to the west of the mill complex and a number of other industrial facilities are located to the north of the mill including Firmin Distribution, the Morrisons' distribution centre, Knauf plasterboard, Countrystyle Recycling and the Ridham Dock.

8. The Application Site

Figure 8.1 - Proposal site (viewed from east) (boundary of Work No.1 is illustrative)

8.1 K4 would be constructed on a parcel of land within the south-eastern part of the wider Kemsley mill complex. As illustrated by Figure 8.1 the actual site of K4 is currently covered in hardstanding and contains a number of ancillary structures which would be relocated.

8.2 The wider DCO boundary extends to cover the construction zone, together with ancillary infrastructure and tie-in equipment which would link K4 to gas, electricity and steam infrastructure within the mill. The construction access uses an existing internal road running along the eastern side of the mill complex to access a roundabout on Barge Way to the north and provides access to a construction laydown area which would be formed within an existing open storage area within the wider Kemsley Paper mill site.

8.3 The site is bound by the existing energy plant to the north and by an internal access road to the east and south. DS Smith are seeking to reroute that access road, via a separate planning application under the Town and Country Planning Act, to run to the south of the three existing lagoons.

8.4 The proposed location of K4 was selected based on a number of factors. There were a number of potential areas within the wider Kemsley mill site which would have had sufficient space to accommodate the K4 CHP plant development. However the chosen site location benefits from being close to the existing energy infrastructure within the mill and therefore to existing tie-ins and other infrastructure. In addition that ensures that the proposed K4 stacks would be close to the other chimney stacks already present at the mill for visual context. The proposal site is located at the side of the mill complex which is furthest from the nearest residential areas in Kemsley.

9. Development Overview

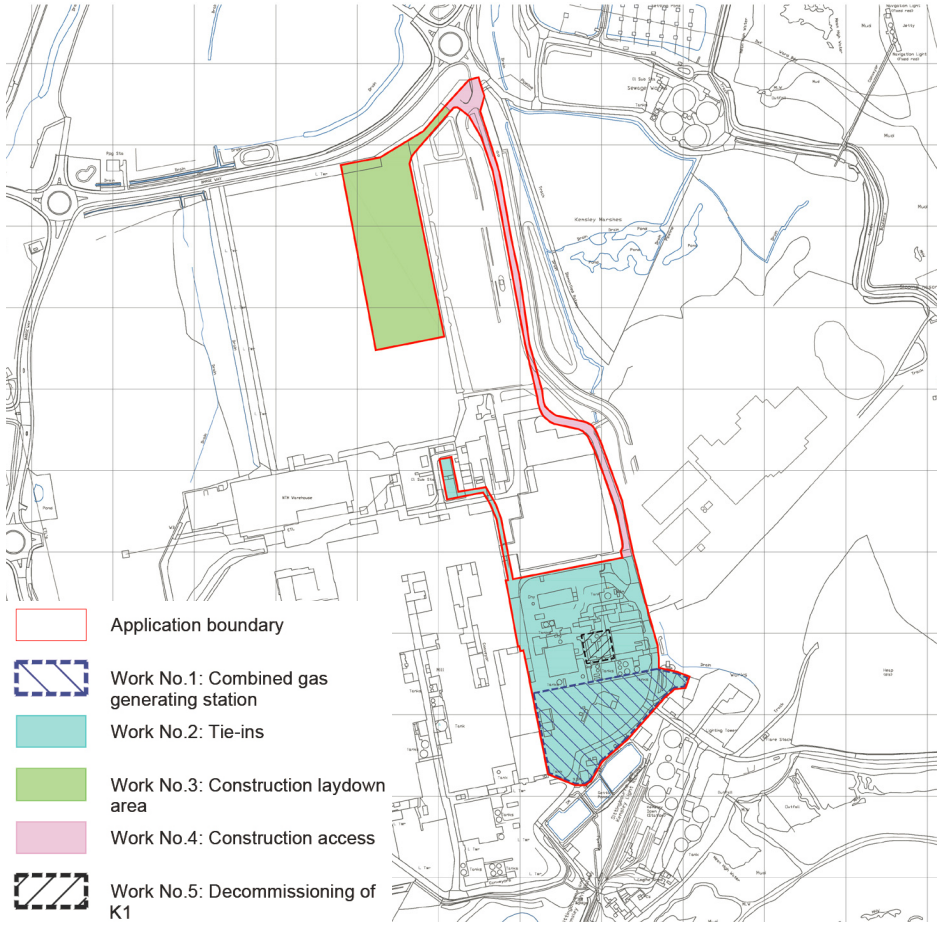


Figure 9.1 - Document 4.4 - Works Plans - Key Plan

Works

9.1 The draft DCO makes provision for five works, within Schedule 1:

1. A combined cycle generating station, with main plant items and ancillary plant items listed;
2. The retention of, connection into and continued use of a number of listed items of existing infrastructure and tie-in points;
3. The construction compound and laydown area;
4. The retention and continued use of the internal access and haulage road;
5. The decommissioning of the existing gas fired K1 CHP generating station.

9.2 A further suite of general works is allowed for by the draft DCO and makes provision for operations which include the strengthening and alteration of any building, ancillary structures such as barriers, outfalls and fencing, site preparation works, the alteration of below ground apparatus and construction compounds.

9.3 The K4 site itself, the extent of Work No.1, is in the south-eastern part of the mill complex. The various tie-ins to existing facilities and infrastructure (Work No.2) take place in various locations throughout the south-eastern part of the Kemsley mill and within the existing energy infrastructure present to the north of the K4 site. The construction and laydown area (Work No.3) is to be located on existing hardstanding in the northern part of the Kemsley Paper mill site which is currently used for general storage purposes and would be accessed via Barge Way from the north. The internal access road (Work No.4) runs from the northern access to the mill from Barge Way along the east side of the complex to the site of K4. Work No.5 comprises the decommissioning of the existing K1 plant, which is located to the north of the K4 site.

9.4 In physical terms the proposed CHP will comprise a collection of buildings and plant together with a main heat recovery steam generator stack of 70m in height and a boiler stack of 35m in height.

10. Work No.1 - Design Approach

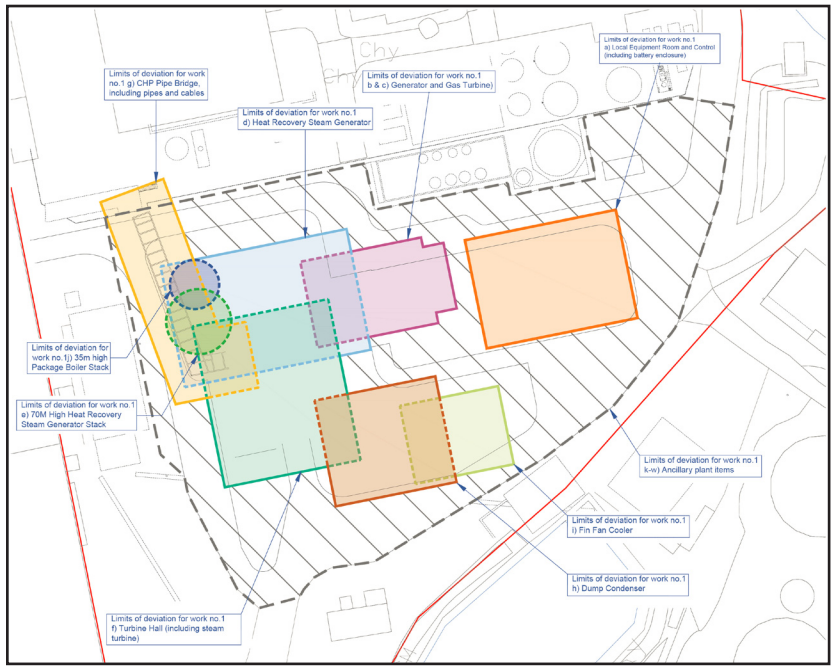


Figure 10.1 - Work No.1 - Works Plan with limits of Deviation (top)

Figure 10.2 - Parameters Plan within the draft DCO (right)

Work No.	*Building or structure*	*Maximum length (metres)*	*Maximum width (metres)*	*Maximum height (metres above site level)*
1(a)	Local equipment room and control	23.1	13.75	9.9
1(b)	Generator	5.5	4.4	6.6
1(c)	Gas turbine	16.5	8.8	9.9
1(d)	Heat recovery steam generator	30.8	16.5	35.2
1(e)	70m high heat recovery steam generator stack	-	4 diam	70
1(f)	Turbine hall	25.3	19.8	16.5
1(g)	CHP pipe bridge	40.7	4.4	12
1(h)	Dump condenser	16.5	13.2	8.8
1(i)	Fin fan cooler	11.55	7.15	7.7
1(j)	35m high package boiler stack	-	0.6 diam	35
1(k) – 1(x)	All other ancillary plant items	-	-	7.5

Work No.1

10.1 Work No.1 within the draft DCO provides for a combined cycle generating station, to comprise the main plant items and ancillary plant items specified. As noted within this DAS the technical design of the proposed plant has not yet been finalised.

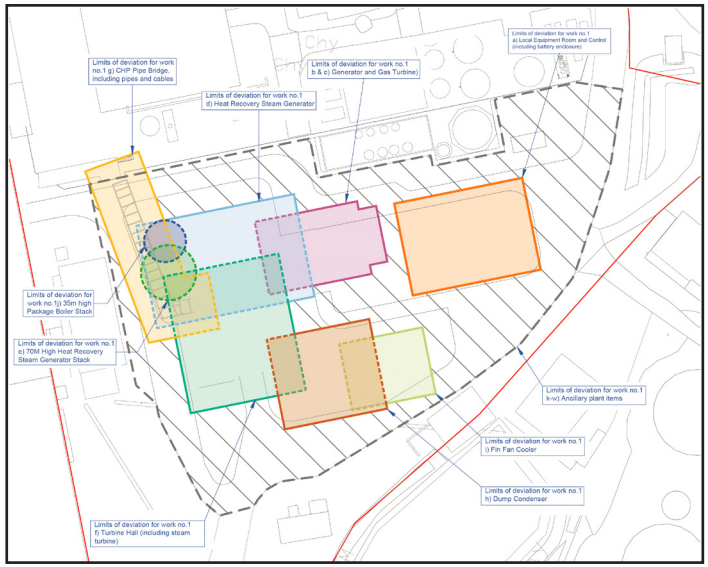
10.2 Requirement 5 of the DCO therefore requires the final design of the authorised development to be approved by the relevant planning authority (i.e. Swale Borough Council) prior to construction. The details to be submitted to the planning authority are to include a) the layout, design, external appearance, dimensions and floor levels of all permanent buildings and structures; b) the colour, materials and surface finishes of all permanent buildings and structures; and c) the durability of all cladding materials. The Requirement states that any details submitted must be in accordance with this Design and Access Statement.

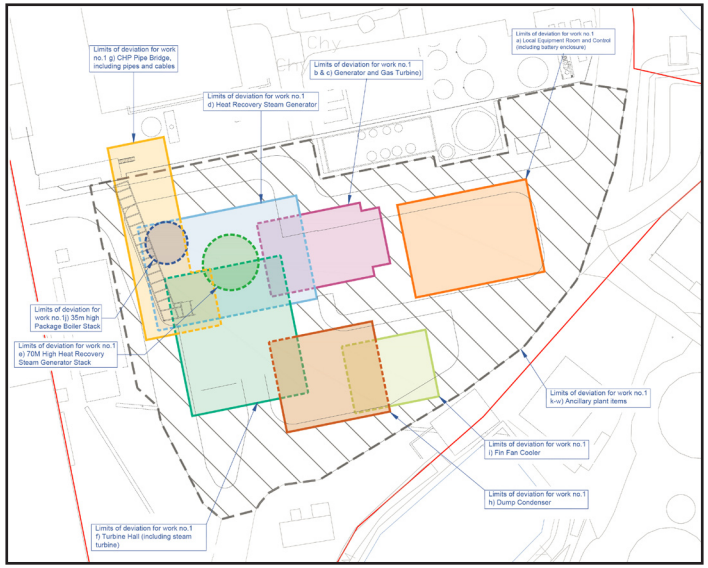
10.3 The DCO then sets maximum length, width and height parameters for each of the ten main elements of the CHP plant. A maximum height parameter is then provided for all other more minor ancillary plant. Those size parameters have been created by formulating a preliminary design for the proposed CHP plant and defining maximum expected dimensions for the various individual elements of the plant.

10.4 The Works plans submitted as part of the DCO application use the maximum length and width of the key elements of the K4 CHP plant, as set out in Requirement 5, and then provide flexibility for the location of those key plant items by setting limits of deviation of 5 metres in any direction. The Works Plans will form the basis for the detailed design and layout drawings to be submitted for the approval of the local planning authority.

10.5 The Environmental Statement uses those parameters to define a maximum 'worst case' environmental envelope in terms of the scale of the proposed development for the purposes of environmental assessment.

11. Work No.1 - Technical Options





Application boundary

Limits of deviation for work no.1 a) Local Equipment Room and Control (including battery enclosure)

Limits of deviation for work no.1 b & c) Generator and Gas Turbine

Limits of deviation for work no.1 d) Heat Recovery Steam Generator

Limits of deviation for work no.1 e) 70M High Heat Recovery Steam Generator Stack

Limits of deviation for work no.1 f) Turbine Hall (including steam turbine)

Limits of deviation for work no.1 g) CHP Pipe Bridge, including pipes and cables

Limits of deviation for work no.1 h) Dump Condenser

Limits of deviation for work no.1 i) Fin Fan Cooler

Limits of deviation for work no.1 j) 35m high Package Boiler Stack

Limits of deviation for work no.1 k-w) Ancillary plant items

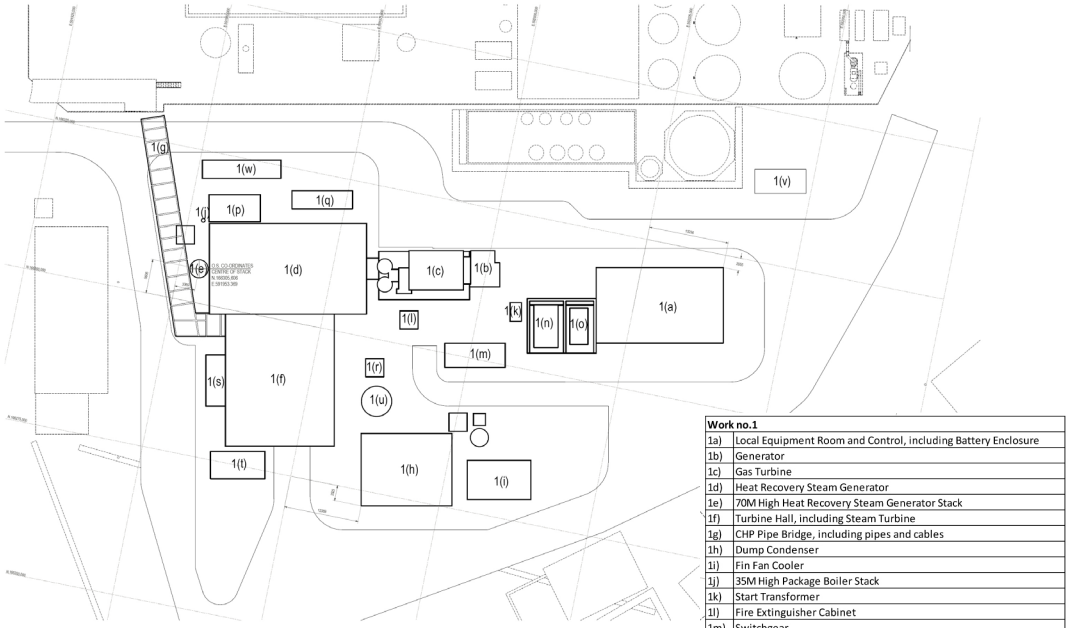
Technical Options - Vertical or Horizontal Tube Boiler

11.1 At the point of submission there are two technical options being considered; a horizontal tube boiler or a vertical tube boiler. In physical terms those options result in two potential locations for the HRSG stack (Work No.1(e)) and as a result of that two different options for the CHP pipebridge location (Work No.1(g)). The HRSG building (Work No.1(d)) would be slightly taller in the vertical option than if the horizontal option is used and it is therefore the vertical option which has been reflected in the parameters in DCO Table 1.

11.2 At the point of submission a Works Plan with Limits of Deviation, illustrative layout, elevations and CGI views of each option have been provided as part of the DCO application. It is anticipated that one option will be selected early in the DCO examination process, at which point one set of option plans will be removed from the application.

Figure 11.1 - Work No.1 - Works Plan with limits of deviation - horizontal tube boiler
Figure 11.2 - Work No.1 - Works Plan with limits of deviation - vertical tube boiler

12. Layout



Work no.1	
1a)	Local Equipment Room and Control, including Battery Enclosure
1b)	Generator
1c)	Gas Turbine
1d)	Heat Recovery Steam Generator
1e)	70M High Heat Recovery Steam Generator Stack
1f)	Turbine Hall, including Steam Turbine
1g)	CHP Pipe Bridge, including pipes and cables
1h)	Dump Condenser
1i)	Fin Fan Cooler
1j)	35M High Package Boiler Stack
1k)	Start Transformer
1l)	Fire Extinguisher Cabinet
1m)	Switchgear
1n)	Block Transformer
1o)	Transformer
1p)	Package Boiler
1q)	Fuel Gas Skid
1r)	Condensate Pumps
1s)	Heat Recovery Steam Generator Chemical Dosing Equipment
1t)	Effluent Sump
1u)	Condensate Tank
1v)	Boiler Water Feed Pumps
1w)	K2 & Low Pressure Package Boiler Feed Pumps

Figure 12.1 - Illustrative layout (horizontal tube boiler)

12.1 The core building components housing the CHP process are located in the north eastern part of the proposal site and comprise the generator, gas turbine, heat recovery steam generator (HRSG) and the turbine hall. The Gas Turbine forms the start of the CHP process where the ignition process takes place to drive the generator alongside to produce electricity. The subsequent production of high pressure steam takes place in the HRSG, with the process of using that steam to drive a steam turbine taking place within the turbine hall.

12.2 A pipebridge would then run from the western part of the turbine hall into the paper mill and would transport the resulting low pressure steam to the paper mill for use within the production process.

12.3 Other notable elements of the proposed CHP plant include the dump condenser, located at the southern end of the CHP plant layout, which would allow for the condensing of any excess steam and would in the majority of cases avoid the need for emergency steam release. The fin fan cooler, adjacent to the dump condenser, is used to cool process fluids.

12.4 Other ancillary equipment is then provided as necessary around those larger elements of the CHP.

12.5 The proposed layout reflects a number of factors but is primarily functionally driven, as the CHP process has a number of distinct stages which dictate the location and arrangement of various elements of the main CHP plant together with ancillary infrastructure. The layout of the CHP plant is then also influenced by the space available and the shape of the construction zone, together with the location of tie-ins and connections with the existing Kemsley Paper mill.

13. Design

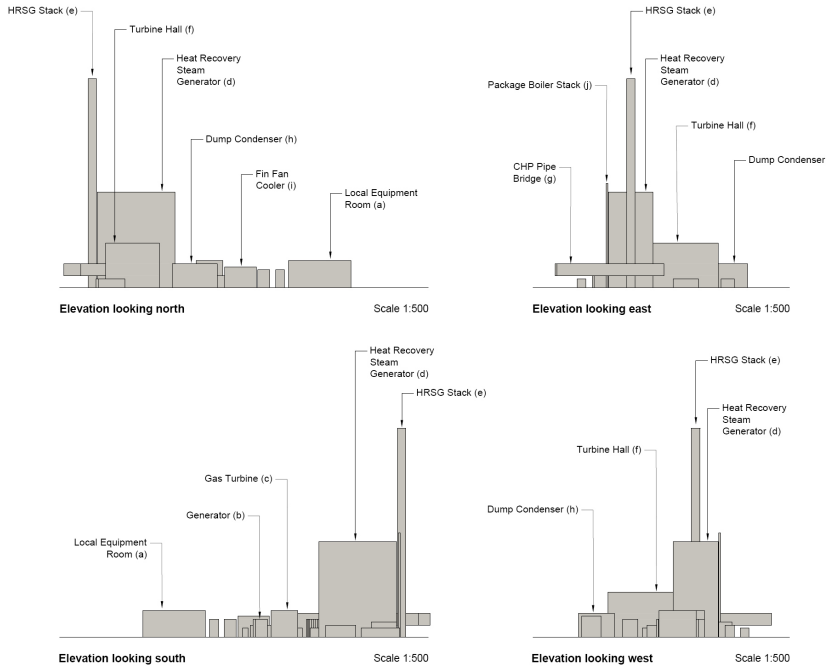


Figure 13.1 (top) - Indicative elevations
Figure 13.2 (bottom) - illustrative 3D Visual plan

13.1 The design evolution process has not yet been completed, given the finished appearance of the K4 plant will be defined through the plans submitted to discharge draft Requirement 5 within the DCO, which requires details of design, external appearance, colour, materials, surface finishes and the durability of all cladding materials to be provided for approval to the relevant planning authority.

13.2 In addition Requirement 9 within the draft DCO requires a detailed scheme for the management and mitigation of artificial light emissions, during construction, operation and decommissioning, to be submitted to and approved by the relevant planning authority.

13.3 There is currently little uniformity of design of the existing buildings and structures across the Kemsley Paper mill, reflecting the age of the mill and its continued evolution and development over time. The proposed K4 CHP plant will read as a modern but relatively minor addition within the context of the wider mill context, and an external appearance and materials will be defined which ensures that K4 complements the wider appearance of the mill and particularly those structures in proximity to the application site.

13.4 The scale of the proposed plant has been dictated by the operational requirements of the CHP process, which in turn have evolved from an assessment of the energy requirements of the Kemsley paper mill which are intended to be met by K4. The use of parameters and limits of deviation allows an appropriate level of flexibility in that respect, by setting a broad location and an upper limit in terms of building size but allowing for structures to reduce in size or to shift position where appropriate.

13.5 In accordance with the principles set out within EN-1 the height of the HRSG and boiler stacks have been defined following a stack height assessment exercise, which reflects the importance attached by the NPS's of minimising the impacts of emissions on air quality. The stack heights defined, of 70m and 35m are lower than the existing stacks already present at the mill site.

14. Landscape and Visual

14.1 Chapter 11 of the Environmental Statement (ES) [Document 3.1] addresses Landscape and Visual Resources, with Chapter 16 of the Planning Statement appraising the anticipated landscape and visual impact against the generic policies relating to that issue within EN-1.

14.2 The assessment notes that the proposal site currently comprises concrete hardstanding within the paper mill site, with the context provided by large scale industrial buildings, energy infrastructure and chimneys. The urban character area is considered by the assessment to be of low quality given the extensive industrial buildings and the presence of disused and derelict land.

14.3 There are no designated landscapes within the site area, although the North Kent Marshes Special Landscape Area (SLA) covers the Swale and neighbouring areas, including the Chetney and Greenborough Marshes which lie next to the site and along the Milton Creek to the south.

14.4 The site is not visible in views from the majority of Sittingbourne, with more long distance views available from the south-east and from Sheppey due to the low lying topography. A key visual receptor is the Saxon Shore Way long distance footpath which runs beside the Swale and Milton Creek, whilst the greatest number of views are expected to occur from vehicles travelling along the Swale Way.

14.5 The ES concludes that there would be no significant adverse effects on townscape or landscape character, either at the construction or operational stage, arising from the proposed development.

14.6 The ES then concludes that in visual terms there would be no significant effect on receptors at individual locations for users of the Saxon Shore Way footpath. However users would be expected to experience a significant sequential effect on visual amenity when those views are combined within a single journey.

14.7 It is expected that there will be a slight adverse effect on townscape and substantial adverse impacts on landscape character arising from the effect cumulatively of other planned and consented developments in the area, although the proposed K4 CHP plant would make a negligible contribution to those overall effects, which would occur even if K4 was not built. Similarly the other developments consented or planned in the surrounding area would give rise to a significant substantial cumulative effect on visual receptors such as the Saxon Shore Way footpath, but again K4 itself would only make a slight adverse contribution to that cumulative effect.

14.8 The design details to be defined under Requirement 5 will ensure that K4 would be clad in non-reflective materials and be of an appropriate colour, such as grey, to reduce its apparent bulk and scale when viewed against both the skyline and the existing paper mill. The ES concludes that any landscaping mitigation measures would not achieve a meaningful reduction in landscape, townscape or visual effects given the location, position and context of the site.

Figure 14.1 - Example of Photomontage prepared for the ES

15. Sustainability

Design Sustainability

15.1 Requirement 5 of the draft DCO, which requires the detailed design of K4 to be agreed with the relevant planning authority prior to commencement, includes the requirement that those details address the durability of all cladding materials which reflects the requirement within EN-1 of efficiency in terms of the use of resources.

15.2 Requirement 7 then also addresses that aim by providing for a Construction Environmental Management Plan to be approved, which will include measures to reduce construction waste and to use resources efficiently during the construction process.

Operational Sustainability

15.3 The CHP process is ideally suited to use within paper mills given they can use the resulting low pressure steam within the paper making process. The proposed K4 CHP plant is therefore expected to have a very high level of efficiency of circa 94%.

15.4 Chapter 6 of the Environmental Statement [Document 3.1] and Chapter 10 of the Planning Statement [Document 5.2] discuss the greenhouse gas emissions which will result from the proposed development. For the purposes of comparison those assessments compare K4 with a future baseline where K1 has been upgraded rather than being replaced with a new CHP plant, and in addition has been modified to reflect the more stringent emissions limits to be introduced in 2020 within the UK by the Industrial Emissions Directive.

15.5 The ES concludes that K4 is expected to create a 16% reduction in its first operating year in greenhouse gas emissions compared with the future baseline, with a reduction of 12% expected over the operational lifetime of K4.

15.6 The proposed development would therefore provide direct benefits in terms of environmental sustainability.

Economic and Social Sustainability

15.7 As discussed at Chapter 19 of the Planning Statement, the proposed development contributes towards ensuring that the Kemsley paper mill continues to have a reliable, secure and flexible source of electricity and steam. The paper mill employs some 400 people and is one of the largest employers within the Swale Borough area. In addition the proposal itself would create some 200 construction jobs at its peak.

15.8 Whilst no economic or social benefits have been modelled or evidenced as part of the DCO application, there are some tangible benefits in that respect arising from the proposal.

16. Access

Context

16.1 The Kemsley Paper Mill has good road links with the national highway network via the A249 which provides an arterial route running north to south and which links to both the M2 and M20 motorways, which in turn provide links to the M25 or east Kent. The A249 lies some 1.5km to the west of the mill site and is accessed by Swale Way from the main Kemsley mill entrance and by Barge Way and Swale Way from the northern entrance to the mill.

Site Layout

16.2 Work No.3 within the draft DCO makes provision for a construction compound and laydown area which would be created on an existing hardstanding area within the north of the mill complex. The laydown area would be accessed via the existing northern Kemsley mill access, via Barge Way.

16.3 An existing internal access road would then be used for construction vehicles and the transfer of materials from the laydown area to the construction site, within the south-eastern part of the mill complex. Work No.4 of the draft DCO makes provision for the retention and continued use of the internal access and haulage road.

Construction Traffic

16.4 The Environmental Statement anticipates there being an average of 100 construction staff on site over the build programme of some 20 months, with a peak of around 200 construction staff present during early ground and foundation works.

16.5 Similarly the construction process is anticipated to generate between 25 to 30 HGV's per day on average across the construction period, with a peak of 40 HGV deliveries during the early groundworks period. It is anticipated that in total around 15 abnormal loads would be required, which would be delivered to site under police or contractor escort. All HGV's associated with the construction of K4 would use the northern access to the mill site, which then provides access to the proposed laydown area or, via an existing internal access road, to the construction site itself.

16.6 The ES concludes that the amount of construction traffic proposed would have an imperceptible impact on the surrounding road network, with no additional significant effects identified as arising from the required abnormal loads. Requirement 8 within the draft DCO commits DS Smith to agree a Construction Traffic Management Plan with the relevant local authority to mitigate impacts of construction traffic. That CTMP will include details on the number, size and type of vehicles to be accessing the site, a defined access route, access and vehicle waiting details, details of wheel washing and monitoring, co-ordinating and control measures.

Operational Traffic

16.7 K4 would be managed alongside the current energy infrastructure for the mill and would only require an occasional ad hoc maintenance vehicle. There would be four members of staff or less on site at any one time, so the impact of construction traffic will be negligible.

17. Summary

17.1 DS Smith Paper Ltd are seeking a development consent order to allow for the construction and operation of a replacement CHP plant to provide electricity and steam to the Kemsley Paper mill.

17.2 The Kemsley Paper mill was first built in the 1920's and has continued to expand to form an established and extensive industrial complex at the edge of Kemsley and Sittingbourne. The mill is located beside the Swale Estuary and enjoys easy access to the strategic road network via the A249, which connects to the M2 and M20.

17.3 The energy requirements of the mill; primarily electricity and steam, are currently provided by a range of sources including K1, an existing CHP plant which is now 22 years old. Elements of K1 have now reached the end of their operational life.

17.4 It is therefore proposed to replace K1 with a new CHP plant; K4. The new plant would be located on an area of existing hardstanding in the south-eastern part of the Kemsley mill site. The draft DCO makes provision for the construction of the generating station, a number of tie-ins to existing infrastructure and services, a laydown construction area, the retention and use of an existing internal access road and the decomissioning of K1.

17.5 The proposed CHP would comprise a number of main structures alongside ancillary infrastructure and would include a 70m and 35m high stack. Works Plans and scale parameters have been prepared for Work No.1; the combined cycle generating station which provide flexibility in terms of the scale and position of the main plant items within the site. Two technical approaches; a vertical tube or horizontal tube boiler are being considered, one of which will be selected during the examination. At the point of submission Works Plans and illustrative material relating to both options has been provided.

17.6 The design of the proposed K4 CHP plant has not yet been finalised. Requirement 5 within the draft DCO requires full design details to be approved by the relevant planning authority ahead of the commencement of development.

17.7 The design details will take account of the need to minimise landscape and visual impacts. Where significant adverse effects occur they do so as a result of a combination of views on users of the Saxon Shore Way or as a result of the cumulative effects of consented or planned projects, of which K4 would only represent a small part.

17.8 The paper mill enjoys convenient access to the strategic road network. Construction vehicles will use the existing northern access to the paper mill site, with a construction laydown area proposed and an existing internal access road to be used. Only minimal ad-hoc vehicles are required for the CHP plant whilst operational.

17.9 The proposed CHP would be constructed from durable materials and would have direct benefits over the expected future baseline in terms of lower greenhouse gas emissions. It would also generate social and economic benefits in terms of its function within the wider Kemsley Paper mill.

17.10 CHP is a technology ideally suited to paper mills due to the high levels of efficiency it creates. As demonstrated throughout this document the proposed site is considered the most appropriate in terms of its location in respect of existing energy infrastructure and tie-ins within the mill. The scale, layout and design of the proposed CHP plant is then dictated primarily by the constraints of the site and by functional and operational requirements.

17.11 The proposed layout and design parameters are an appropriate response to those operational requirements and the context of the site, which is also appropriate in terms of its construction and operational access requirements.