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TEES RENEWABLE ENERGY PLANT

UPDATED ENVIRONMENTAL STATEMENT ADDENDUM

Revision History


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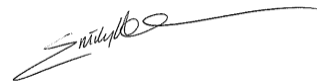
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LIST OF ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic metre
ACC	Air-cooled condenser
BAT	Best Available Techniques
CFB	Circulating fluidised bed
CO	Carbon monoxide
dB	decibel
DECC	Department of Energy and Climate Change
EIA	Environmental Impact Assessment
ES	Environmental Statement
g/s	grams per second
HCl	Hydrogen chloride
m	metre
m/s	metres per second
m^3/s	cubic metres per second
mg/Nm^3	milligrams per Normal cubic metre
MGT	MGT Teesside Ltd
MW	megawatt
NO_2	Nitrogen dioxide
NSR	Noise sensitive receptors
$^{\circ}\text{C}$	Degrees Celsius
PM	Particulate matter
SO_2	Sulphur dioxide

NON-TECHNICAL SUMMARY

In July 2008, MGT Teesside Limited (MGT) submitted an application to the Secretary of State for Energy and Climate Change (the Secretary of State) via the Department of Energy and Climate Change (DECC) for consent under Section 36 of the Electricity Act 1989 (the Act) to construct and operate a 295 MW biomass-fired generating station. On 15 July 2009, consent (reference 01.08.10.04/351C) under Section 36 of the Act and s 90 direction was granted for the Development (together referred to as the 2009 Consent).

In January 2010, MGT submitted an application to the Secretary of State via DECC for consent under Section 36 of the Act for a revised scheme for the Development. The revised scheme was essentially the same as the scheme permitted under the 2009 Consent but allowed for design revisions to the indicative physical proportions and layout of some of the proposed buildings. On 9 March 2010, consent under Section 36 of the Act and s 90 direction was granted for the Development (together referred to as the 2010 Consent).

MGT is submitting applications to vary the Consent and the Environmental Permit to allow for a number of proposed changes to the Development. These proposed changes comprise:

- An increase in permitted generating capacity from up to 295 MW to up to 299 MW;
- The potential to use a variety of biomass fuel types;
- An amendment to the boundary of the Development site; and,
- Further design revisions to the indicative physical proportions and layout of some of the buildings.

To accompany the application to vary the Consent, MGT is providing an Updated ES Addendum (this June 2015 ES Addendum) which includes (amongst other items): the rationale for proposing that the Consent is varied; and, the main respects in which MGT considers that the likely significant effects on the environment of the Development would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

The proposed changes to the Development, and the rationale for these proposed changes, comprise:

- An increase in permitted generating capacity from up to 295 MW to up to 299 MW.
The application to vary the 2010 Consent seeks that the permitted generating capacity is increased to 299 MW, an increase of only 4 MW. This would allow for the installation of the preferred CFB boiler, which has a capacity of 299 MW, without any design modifications having to be made.
- The potential to use a variety of biomass fuel types.
Since the granting of the 2009 Consent and the 2010 Consent, the biomass fuel market has developed and improved the variety of biomass fuels that are currently available. As a result, the design of the Development has progressed and the preferred CFB boiler has the ability to mix fuels and the flexibility to be fuelled on a range of blended biomass fuels which will result in economically more efficient operations. The main addition to the fuel strategy is the use of wood pellets in combination with wood chips. It should be noted that the wood pellets will still remain, once blended, within the parameters already agreed with Environment Agency but MGT is formally seeking an amendment to the Environmental Permit to reflect that fuel flexibility.
- An amendment to the boundary of the Development site.
The fuel for the Development was originally to be unloaded on a dedicated berth on the River Tees (QE II Quay), which directly adjoined the Development site, and then transported onto the Development site via a conveyor. The intention now is to use the berth on Teesdock (No 1 Quay) which also directly adjoins the Development site but on the eastern boundary, necessitating a change in the route for the conveyor and thus the redline boundary of the Development. The amendment to the boundary of the Development site is considered sufficient to allow for the construction and operation of the new conveyor route

however the detailed design of the conveyor is on-going and the final footprint of the conveyor will not be known until this is complete. The actual footprint will not cover the full area of the 'extension' of the Development site.

- Further design revisions to the indicative physical proportions and layout of some of the buildings.

As a result of further detailed design work and the proposed use of a variety of biomass fuel type, some further variation to the indicative physical proportions and layout of some of the buildings (including storage and handling facilities) is required.

Any design revisions will be within the following parameters:

- *The proposed design revisions will not result in any increase in the volume of development on the site from that currently permitted, however there may be changes in the dimensions of individual buildings;*
- *the pellet storage and ash silos will be no higher than 65 m;*
- *there will be no change to the height of the highest buildings on the Development site – the CFB Exhaust (stack) which will remain at 95 m; and the CFB Boiler House which will remain 71 m.*

MGT will ensure the design of the Development accords with relevant Best Available Techniques for the storage of biomass fuels (woodchip and wood pellets). The Environmental Permit will contain a pre-operational condition requiring the approval by the Environment Agency of the design of the storage, handling and use of wood pellets (in addition to those already approved for wood chip).

In preparing this June 2015 ES Addendum, MGT has undertaken consultation with a variety of stakeholders / key consultees, comprising: DECC; Redcar and Cleveland Borough Council (the local planning authority); the Environment Agency; and, Natural England.

In order to provide the information required by Schedule 4 of the EIA Regulations as modified by the Variation Regulations, the EIA methodology for this June 2015 ES Addendum comprised the following key items:

- Consultation with a variety of stakeholders / key consultees (including: DECC; Redcar and Cleveland Borough Council (the local planning authority); and, governmental and non-governmental organisations regarding the key issues on which this June 2015 Addendum should focus;
- Establishment of the proposed changes to the Development;
- Determination of the main respects in which there is potential for the Development to interact with the surrounding environment in a way that differs from that described in the July 2008 ES and the January 2010 ES Addendum;
- If there is potential for the Development to interact with the surrounding environment in a way that materially differs from that previously described, identification and assessment of the likely effects on the environment of the Development; and,
- Determination of how significant effects on the environment will be prevented, reduced or offset through design evolution or mitigation measures and, wherever relevant, how potentially significant effects on the environment will be monitored.

A summary of the results is presented in the Table below.

Environmental Aspect	Summary / Conclusion
Air Quality	<p>Whilst the proposed use of a variety of biomass fuel types may alter the release of pollutants to the air, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development.</p> <p>However, the revisions to the indicative physical proportions and layout of some of the buildings may alter the atmospheric dispersion of these pollutants.</p> <p>Update air dispersion modelling has been undertaken based on the proposed variation to the Consent. All long-term process contributions are less than 1% of the relevant guideline value therefore the potential long term impact is considered to be insignificant. All short-term process contributions are well within their respective guideline / limit value therefore the potential impacts to local air quality as a result of operation of the Development will be less than those previously predicted and thus remain not significant.</p>
Noise and Vibration	<p>The changes proposed as part of the variation application will see additional land to the north east of the current boundary included within the varied boundary to allow for the Development of a conveyor that will serve the berth on Teesdock (No 1 Quay). A conveyor at this berth will represent an additional noise source. However, the proposed changes will not cause noise and vibration which materially differs from that previously reported.</p>
Landscape and Visual	<p>The Development will be located wholly within the proposed boundary of the Development site. The proposed amendment to the boundary of the Development site requires the addition of a small of land to that designated in the extant Consent but does not change the location of the Development.</p> <p>The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings. Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) have been prepared.</p> <p>The most substantial change is the change in arrangements for the fuel storage area which, to accommodate the storage of wood pellets, is now proposed to incorporate up to three storage silos of up to 65 m in height. Given the industrial nature of the surrounding area, these changes will lie largely in the background of key views of the Development. The proposed changes to the visual impact of the Development proposed in the variation application are such that the resultant changes in potential impacts are considered to be negligible.</p>
Ecology	<p>Whilst the proposed use of a variety of biomass fuel types may alter the release of pollutants to the air, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development.</p> <p>During consultation with the Environment Agency, it has been noted that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality.</p> <p>In addition, consultation has been undertaken with Natural England. During consultation, Natural England has confirmed that they are satisfied that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on ecology.</p>
Ground Conditions / Waste	<p>The proposed amendment to the boundary of the Development site requires the addition of a small amount of land to that designated in the extant Consent but does not change the proposed land use of the site.</p> <p>The application to vary the Consent includes the proposed use of a variety of biomass fuel types. Whilst this may produce solid wastes which have characteristics which differ from those previously reported, the characteristics are not expected to be significantly different to those previously reported.</p> <p>Permitted waste types, waste quantities and waste transfer to offsite disposal facilities will be controlled by the Environmental Permit for the Development.</p>
Water Resources and Flood Risk	<p>The proposed changes will not cause effects on water resources and flood risk which differ from those previously reported.</p>
Transport and Access	<p>The proposed changes to the Development will not generate any additional traffic movements to those previously reported.</p>

<i>Environmental Aspect</i>	<i>Summary / Conclusion</i>
Archaeology and Cultural Heritage	<p>The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings.</p> <p>The changes proposed as part of the variation application will see additional land to the north east of the current boundary included within the varied boundary. It is reasonable to assume that the archaeological / cultural heritage value of this additional land is the same as that of the site defined by the Consent (and thus previously reported).</p>
Socio-Economics	<p>The proposed changes will not cause social changes which differ from those previously reported.</p>
Cumulative Impacts	<p>The plans for future land uses on or around the proposed Development site are the same as those previously reported. This suggests that the potential for cumulative impacts will be the same as previously reported. However, MGT have made provision for the inclusion of a wood chip dryer on the Development site (as part of a local planning application). Consideration has been given to the potential for cumulative effects which differ from those previously reported; the wood chip dryer is not likely to give rise to additional cumulative effects.</p>

1 INTRODUCTION

1.1 Overview

- 1.1.1 In July 2008, MGT Teesside Limited (MGT) submitted an application to the Secretary of State for Energy and Climate Change (the Secretary of State) via the Department of Energy and Climate Change (DECC) for consent under Section 36 of the Electricity Act 1989 (the Act) to construct and operate a 295 MW biomass-fired generating station at Teesdock, Grangetown, Middlesbrough, TS6 6UD (the Development). The application also sought a direction that planning permission be deemed to be granted (s 90 direction) under Section 90(2) of the Town and Country Planning Act 1990 (TCPA1990). The application was accompanied by the July 2008 Environmental Statement (ES) which was prepared by PB Power.
- 1.1.2 On 15 July 2009, consent (reference 01.08.10.04/351C) under Section 36 of the Act and s 90 direction was granted for the Development (together referred to as the 2009 Consent).
- 1.1.3 In November 2008, MGT submitted an application for an Environmental Permit under the (then) Environmental Permitting (England and Wales) Regulations 2007. On 23 December 2009, an Environmental Permit was granted for the Development.
- 1.1.4 In January 2010, MGT submitted an application to the Secretary of State via DECC for consent under Section 36 of the Act for a revised scheme for the Development. The revised scheme was essentially the same as the scheme permitted under the 2009 Consent but allowed for design revisions to the indicative physical proportions and layout of some of the proposed buildings. In addition, the application also sought a s 90 direction for the proposed amendments to the Development. The application was accompanied by the January 2010 ES Addendum which was prepared by PB Power.
- 1.1.5 On 9 March 2010, consent under Section 36 of the Act and s 90 direction was granted for the Development (together referred to as the 2010 Consent).
- 1.1.6 Conditions 2 and 3 of the 2010 Consent expressly states that the Conditions of the 2009 Consent remain applicable. Therefore, within the remainder of this Document, reference is made to the 2010 Consent and the Conditions of the 2009 Consent (or, together, the Consent).
- 1.1.7 The Development commenced, for the purposes of the TCPA1990 prior to 15 July 2012. However, this has not included the commencement of construction of the "main Development" as defined in the Conditions of the 2009 Consent.

1.2 The Purpose of this Document

- 1.2.1 MGT is submitting applications to vary the Consent and the Environmental Permit to allow for a number of proposed changes to the Development. These proposed changes comprise:
- An increase in permitted generating capacity from up to 295 MW to up to 299 MW;
 - The potential to use a variety of biomass fuel types;
 - An amendment to the boundary of the Development site; and,
 - Further design revisions to the indicative physical proportions and layout of some of the buildings.
- 1.2.2 In addition, MGT have also made provision for the inclusion of a wood chip dryer on the Development site¹. The inclusion of the wood chip dryer on the Development site does

¹ An application for outline planning permission for the wood chip dryer has been submitted to Redcar and Cleveland Borough Council (Ref: R/2015/0149/OOM). Details available at: [https://planning.redcar-cleveland.gov.uk/\(S\(rcbu2tfajordhephxe1qkw4j\)\)/plaRecord.aspx?AppNo=R/2015/0149/OOM](https://planning.redcar-cleveland.gov.uk/(S(rcbu2tfajordhephxe1qkw4j))/plaRecord.aspx?AppNo=R/2015/0149/OOM)

not form part of the application to vary the Consent. However, discussion has been included within this June 2015 ES Addendum for completeness.

- 1.2.3 To accompany the application to vary the Consent, MGT is providing the following information:
- The content as set out in Regulation 3 of the Electricity Generating Stations (Variation of Consents) (England and Wales) Regulations 2013 (the Variation Regulations) (see Table 1.1);
 - An Updated ES Addendum (this June 2015 ES Addendum) which includes (amongst other items):
 - The rationale for proposing that the Consent is varied; and,
 - The main respects in which MGT considers that the likely significant effects on the environment of the Development would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
- 1.2.4 The relationship between this June 2015 ES Addendum, the July 2008 ES and the January 2010 ES Addendum is provided in Table 1.2.

TABLE 1.1: REQUIRED CONTENT OF AN APPLICATION TO VARY CONSENT UNDER SECTION 36 OF THE ELECTRICITY ACT 1989 AS SET OUT IN REGULATION 3 OF THE VARIATION REGULATIONS

Reg. 3	Requirement	MGT's Compliance
(1)	A variation application must —	
(a)	be made in writing;	MGT is applying to the Secretary of State to vary the Consent (Ref: 01.08.10.04/351C). Two hard copies and two CDs containing the Variation Application have been submitted to the Secretary of State.
(b)	describe the location of the proposed development by reference to a map;	As noted in Condition 1 of the 2009 Consent, the location of the Development is the land delineated by a solid red line on Figure 4.1 attached to the Consent (Ref: 01.08.10.04/351C), subject to the amendment to the boundary proposed as part of this Variation Application.
(c)	state —	
	(i) why it is proposed that the relevant section 36 consent should be varied;	Section 2 (Need for the Development and Benefits) of this June 2015 ES Addendum describes the rationale for proposing that the Consent is varied.
	(ii) what account has been taken of views expressed by persons who have been consulted by the applicant about the proposed variation;	Section 4 (Stakeholder Consultation) of this June 2015 ES Addendum summarises the views expressed by stakeholders / key consultees who have been consulted by MGT.
(d)	include —	
	(i) a draft of the variations which the applicant proposes should be made to the relevant section 36 consent; and	MGT is applying to the Secretary of State to vary the Consent (Ref: 01.08.10.04/351C). The draft of the proposed variations to the Consent is contained within Appendix A.
	(ii) copies of any maps or plans not referred to in the relevant section 36 consent but which the applicant proposes that the relevant section 36 consent should refer to after it is varied; and	MGT is applying to the Secretary of State to amend the boundary of the Development site outlined as an Annex (ref: Figure 4.1) to the Consent (Ref: 01.08.10.04/351C). The proposed new boundary of the Development site is contained in Appendix B (this figure is proposed to replace Figure 4.1 in the Annex to the Consent).
(e)	if the application relates to an offshore generating station, identify which of the bodies referred to in paragraph (b) of the definition of "relevant planning authority" in regulation 2(1) are, in the applicant's opinion, likely to have an interest in the variation application.	Not relevant to this application.
(2)	A variation application must include particulars of—	
(a)	the relevant section 36 consent, and, if that consent was not granted to the applicant, how the applicant has the benefit of that consent;	A copy of the 2009 Consent and 2010 Consent (Ref: 01.08.10.04/351C) accompanies this application (in Appendix C). MGT Teesside Limited is the applicant for this Variation Application and was the applicant for (and thus has the benefit of) the Consents.
(b)	where the appropriate authority is the Secretary of State, any section 90 direction given on granting the relevant section 36 consent;	A copy of the relevant Section 90 Direction that was deemed granted (Ref: 01.08.10.04/351C) accompanies this application (in Appendix D).

Reg. 3	Requirement	MGT's Compliance
(c)	any permit, licence, consent or other authorisation (other than the relevant section 36 consent) given in connection with the construction or operation of the proposed development (a "relevant authorisation"), including any variation or replacement of a relevant authorisation; and	<p>This application is accompanied by:</p> <ul style="list-style-type: none"> The Environmental Permit (under the Environmental Permitting (England and Wales) Regulations 2007 for the Development (in Appendix E); and, The Marine Licences under the Marine Works (Environmental Impact Assessment) Regulations 2007 for the No 1 Quay granted to PD Teesport Limited in relation to the berth which will be used by PD Teesport to supply stevedoring services to the Development. Land Drainage Act 1991, section 23 consent for diversion of culvert that currently bisects the site of the Development.
(d)	any application that has been made for a relevant authorisation or variation of a relevant authorisation.	<p>An application for outline planning permission for the wood chip dryer has been submitted to Redcar and Cleveland Borough Council (Ref: R/2015/0149/OOM). Details available at: https://planning.redcar-cleveland.gov.uk/(S(rcbu2tfajordhephxe1qkw4j))/plaRecord.aspx?AppNo=R/2015/0149/OOM</p> <p>This application is accompanied by:</p> <ul style="list-style-type: none"> The application to vary the Environmental Permit for the Development, submitted to the Environment Agency in June 2015 (in Appendix F).
(3)	Where the appropriate authority is the Secretary of State and the applicant requests the Secretary of State to make a section 90 direction on varying the relevant section 36 consent, the application must —	
(a)	identify the section 90 development in respect of which that request is made and describe its location by reference to a map;	<p>A copy of the relevant Section 90 Direction that was deemed granted (Ref: Ref: 01.08.10.04/351C) accompanies this application. As noted in Condition 1 of the 2009 Consent, the location of the Development is the land delineated by a solid red line on Figure 4.1 attached to the Consent (Ref: 01.08.10.04/351C).</p> <p>The proposed new boundary of the Development site is contained in Appendix B (this figure is proposed to replace Figure 4.1 in the Annex to the Consent).</p>
(b)	state –	
	(i) why it is proposed that the direction should be made; and	Section 2 (Need for the Development and Benefits) of this June 2015 ES Addendum describes the rationale for proposing that the Consent (and thus the s 90 direction) is varied.
	(ii) what account has been taken of views expressed by persons who have been consulted by the applicant about the proposed direction; and	Section 4 (Stakeholder Consultation) of this June 2015 ES Addendum summarises the views expressed by stakeholders / key consultees who have been consulted by MGT.
(c)	include –	
	(i) a draft of the proposed direction; and	The draft of the proposed direction that planning permission be deemed to be granted is contained within Appendix G.

Reg. 3	Requirement	MGT's Compliance
	<p>(ii) copies of any maps or plans to which it is proposed that the section 90 direction should refer which are not—</p> <p>(aa) referred to in the relevant section 36 consent or any section 90 direction given on granting the relevant section 36 consent; or</p> <p>(bb) included in the application in accordance with paragraph (1)(d)(ii).</p>	Not relevant to this application.
(4)	<p>If, under the EIA Regulations as modified by Regulation 7, an Environmental Statement has been prepared, or is required to be prepared, in relation to the proposed development, the environmental statement must accompany the application.</p>	<p>The Environmental Statement for the Development comprises the following documents:</p> <ul style="list-style-type: none"> • The July 2008 ES, including: <ul style="list-style-type: none"> ◦ Non-Technical Summary ◦ Volume 1: Main Report; ◦ Volume 2: Technical Appendices; ◦ Volume 3: Figures. • The January 2010 ES Addendum; and, • This June 2015 ES Addendum.

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UPDATED ENVIRONMENTAL STATEMENT ADDENDUM

TABLE 1.2: RELATIONSHIP BETWEEN THIS MAY 2015 ES ADDENDUM EE, THE JULY 2008 ES AND THE JANUARY 2010 ES ADDENDUM

<i>This June 2015 ES Addendum</i>	<i>The July 2008 ES</i>	<i>The January 2010 ES Addendum</i>	<i>Comments</i>
Section 1 – Introduction	Supplements Section 2 (Introduction).	No corresponding Section.	This Section has been updated to provide a brief introduction to this June 2015 ES Addendum.
Section 2 – Need for the Development and Benefits	Supplements Section 3 (Need for the Project and Benefits).	No corresponding Section.	This Section has been updated to provide the rationale for proposing that the Consent is varied.
Section 3 – EIA Methodology	Supplements Section 5 (EIA Methodology).	Supplements Section 2 (EIA).	This Section has been updated to provide details on the EIA methodology and ES content for the application to vary the Consent based on the requirements of the Electricity Works (Environmental Impact Assessment) Regulations 2000 (the EIA Regulations) as modified by the Electricity Generating Stations (Variation of Consents) (England and Wales) Regulations 2013 (the Variation Regulations).
Section 4 – Stakeholder Consultation	No corresponding Section.	No corresponding Section.	This Section summarises the views expressed by stakeholders / key consultees who have been consulted by MGT.
Section 5 – Project and Site Description	Supplements Section 4 (Project and Site Description).	No corresponding Section.	This Section has been updated to provide details on the proposed variations to the Development.
Section 6 – Air Quality	Supplements Section 6 (Air Quality).	Supplements Section 3 (Air Quality).	This Section considers the potential effects of the Development on air quality, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 7 – Noise and Vibration	Supplements Section 8 (Noise and Vibration).	No corresponding Section.	This Section considers the potential noise and vibration effects of the Development, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 8 – Landscape and Visual	Supplements Section 10 (Landscape and Visual).	Supplements Section 4 (Landscape and Visual Impact).	This Section considers the potential effects of the Development on landscape and visual, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 9 - Ecology	Supplements Section 13 (Ecology).	No corresponding Section.	This Section considers the potential effects of the Development on ecology, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

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<i>This June 2015 ES Addendum</i>	<i>The July 2008 ES</i>	<i>The January 2010 ES Addendum</i>	<i>Comments</i>
Section 10 – Ground Conditions (Geology and Land Contamination)	Supplements Section 9 (Land Use and Contaminated Land).	No corresponding Section.	This Section considers the potential effects of the Development on ground conditions (geology and land contamination), providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 11 – Water Resources and Flood Risk	Supplements Section 7 (Water Quality).	No corresponding Section.	This Section considers the potential effects of the Development on water resources and flood risk, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 12 – Transport and Access	Supplements Section 11 (Transport and Infrastructure).	No corresponding Section.	This Section considers the potential effects of the Development on transport and access, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 13 – Archaeology and Cultural Heritage	Supplements Section 14 (Archaeology and Cultural Heritage).	No corresponding Section.	This Section considers the potential effects of the Development on archaeology and cultural heritage, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 14 – Socio-Economics	Supplements Section 12 (Socio-Economics).	No corresponding Section.	This Section considers the potential effects of the Development on socio-economics, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.
Section 15 – Cumulative Impacts	No corresponding Section.	No corresponding Section.	This Section has considered the potential cumulative effects of the Development with other ancillary development / other planned developments and projects.

2 NEED FOR THE DEVELOPMENT AND BENEFITS

2.1 Summary of July 2008 ES: Need for the Development and Benefits

2.1.1 The need for the Development and its associated benefits is set out fully in Section 3 of the July 2008 ES, with the three key drivers for the development of the Development noted to be:

- Climate change;
- The planned closure of approximately one third of the UK's electricity generating capacity by 2018; and,
- The need to diversity away from oils and gas given historically high and volatile prices.

2.1.2 As noted previously, consent under Section 36 of the Act and s 90 direction has been granted for the Development (the Consent).

2.1.3 The letter accompanying the 2009 Consent stated the Secretary of State's view that:

"The Proposed Development is consistent with the Government's energy policy [...] in respect of meeting diversity and security of supply for power generation".

2.1.4 Therefore, the need for the Development has been recognised through the 2009 Consent, and also reinforced through the 2010 Consent.

2.2 Rationale for Proposing that the Consent is Varied

2.2.1 Subsequent to the introduction of the Variation Regulations, in July 2013, DECC issued guidance on 'Varying Consents granted under Section 36 of the Electricity Act 1989 for Generating Stations in England and Wales' (the Variation Guidance) (URN 13D/140).

2.2.2 The Variation Guidance states (at paragraph 12) that:

"Generating station development consents are often not implemented until some years after they are granted. Each consent reflects technology and industry practice at the time it was applied for, but such practices do not stand still, even in relatively mature sectors. This means that when a developer comes to construct a generating station, it will sometimes be uneconomic or have more detrimental effects on the environment to do so according to all of the details specified in the consent. In practice, this means changes to the original proposals to make the project feasible. The changes concerned may not be very great, but they may nevertheless involve work which would not be consistent with the terms of the existing consent [...]"

2.2.3 Accordingly, the proposed changes to the Development, and the rationale for these proposed changes, comprise:

- An increase in permitted generating capacity from up to 295 MW to up to 299 MW.

The application to vary the 2010 Consent seeks that the permitted generating capacity is increased to 299 MW, an increase of only 4 MW. This would allow for the installation of the preferred CFB boiler, which has a capacity of 299 MW, without any design modifications having to be made.

- The potential to use a variety of biomass fuel types.

Condition 4(45) of the 2009 Consent states "unless agreed in writing with the Council, [...] only untreated wood [to] be used as fuel in the operation of the Development" (with the exception of hydrocarbon fuels used for the start up of the main and auxiliary boilers and use in the standby-generator). Since the granting of the 2009 Consent and the 2010 Consent, the biomass fuel market has developed and improved the variety of biomass fuels that are currently available. As a result, the design of the Development has progressed and the preferred CFB boiler has the ability to mix fuels and the flexibility to be fuelled on a range of blended biomass fuels which will result in economically more efficient operations.

The main addition to the fuel strategy is the use of wood pellets in combination with wood chips. It should be noted that the wood pellets will still remain, once blended, within the parameters already agreed with Environment Agency but MGT is formally seeking an amendment to the Environmental Permit to reflect that fuel flexibility.

- An amendment to the boundary of the Development site.

The fuel for the Development was originally to be unloaded on a dedicated berth on the River Tees (QE II Quay), which directly adjoined the Development site, and then transported onto the Development site via a conveyor. The intention now is to use the berth on Teesdock (No 1 Quay) which also directly adjoins the Development site but on the eastern boundary, necessitating a change in the route for the conveyor and thus the redline boundary of the Development. The amendment to the boundary of the Development site is considered sufficient to allow for the construction and operation of the new conveyor route however the detailed design of the conveyor is on-going and the final footprint of the conveyor will not be known until this is complete. The actual footprint will not cover the full area of the 'extension' of the Development site.

- Further design revisions to the indicative physical proportions and layout of some of the buildings.

As a result of further detailed design work and the proposed use of a variety of biomass fuel type, some further variation to the indicative physical proportions and layout of some of the buildings (including storage and handling facilities) is required.

Any design revisions will be within the following parameters:

- *The proposed design revisions will not result in any increase in the volume of development on the site from that currently permitted, however there may be changes in the dimensions of individual buildings;*
- *the pellet storage and ash silos will be no higher than 65 m;*
- *there will be no change to the height of the highest buildings on the Development site – the CFB Exhaust (stack) which will remain at 95 m; and the CFB Boiler House which will remain 71 m.*

MGT will ensure the design of the Development accords with relevant Best Available Techniques for the storage of biomass fuels (woodchip and wood pellets). The Environmental Permit will contain a pre-operational condition requiring the approval by the Environment Agency of the design of the storage, handling and use of wood pellets (in addition to those already approved for wood chip).

3 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY AND ENVIRONMENTAL STATEMENT CONTENT

3.1 Introduction

3.1.1 When applying for Consent under Section 36 of the Act, the Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000 (the Environmental Impact Assessment (EIA) Regulations) require an EIA be undertaken for development of thermal generating stations with a heat output of 300 MWth or more.

3.1.2 As the Development exceeds this threshold, the original application for Consent was accompanied by the July 2008 ES. In determining the information to be provided in the July 2008 ES, EIA Regulation 4(1) states that:

"An applicant shall submit in relation to any application for a Section 36 Consent [...] which relates to EIA Development an Environmental Statement which includes:

- a) at least the information referred to in Part II of Schedule 4; and,*
- b) such of the information referred to in Part I of Schedule 4 as is reasonably required to assess the environmental effects of the proposed development and which, having regard in particular to current knowledge and methods of assessment, the applicant can reasonably be required to compile, taking into account the terms of any scoping opinion given".*

3.1.3 When applying to vary a Consent granted under Section 36 of the Act, the Variation Regulations provide that the EIA Regulations apply with certain specified modifications. In particular:

- Variation Regulation 2(1) states that the proposed development means *"the generating station, or extension of a generating station, which the applicant would be authorised to construct under a relevant Section 36 Consent if that consent were varied as requested in a variation application"*; and,
- Variation Regulation 7(6) states that Part 2 of Schedule 4 of the EIA Regulations (Content of an Environment Statement) is to be read as requiring the ES to include:
 - [A description of] *"the main respects in which the applicant considers that the likely significant effects on the environment of the proposed development would differ from those described in any Environmental Statement prepared in connection with the relevant Section 36 Consent; and,*
 - *A Non-Technical Summary of the differences"*.

3.2 Environmental Impact Assessment Methodology

3.2.1 In order to provide the information required by Schedule 4 of the EIA Regulations as modified by the Variation Regulations, the EIA methodology for this June 2015 ES Addendum comprised the following key items:

- Consultation with a variety of stakeholders / key consultees (including: DECC; Redcar and Cleveland Borough Council (the local planning authority); and, governmental and non-governmental organisations regarding the key issues on which this June 2015 Addendum should focus;
- Establishment of the proposed changes to the Development;
- Determination of the main respects in which there is potential for the Development to interact with the surrounding environment in a way that differs from that described in the July 2008 ES and the January 2010 ES Addendum;
- If there is potential for the Development to interact with the surrounding environment in a way that materially differs from that previously described,

identification and assessment of the likely effects on the environment of the Development; and,

- Determination of how significant effects on the environment will be prevented, reduced or offset through design evolution or mitigation measures and, wherever relevant, how potentially significant effects on the environment will be monitored.

3.3 Environmental Statement Content

3.3.1 Accordingly, based on Schedule 4 of the EIA Regulations as modified by the Variation Regulations, the required content of the overall ES (i.e. the combination of the July 2008 ES, the January 2010 ES Addendum and this June 2015 ES Addendum) is provided in Table 3.1. A link to the location of the required content is also provided.

3.3.2 Therefore, the information in this June 2015 ES Addendum used in combination with the information the July 2008 ES and the January 2010 ES Addendum provides the results of a comprehensive and independent assessment of the likely significant effects on the environment of the Development, and the mitigation and monitoring measures designed to prevent, reduce and (where possible) offset and significant adverse effects on the environment.

TABLE 3.1: REQUIRED CONTENT OF AN ENVIRONMENTAL STATEMENT AS SET OUT IN SCHEDULE 4 OF THE EIA REGULATIONS AS MODIFIED BY THE VARIATION REGULATIONS

<i>Information Required</i>		<i>Section of the July 2008 ES</i>	<i>Section of the January 2010 ES Addendum</i>	<i>Section of this June 2015 ES Addendum</i>
PART 1				
1	Description of the development, including in particular –			
(a)	A description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;			
(b)	A description of the main characteristics of the production processes, for instance, natural and quality of materials used; and,	Section 4.	N / A	Section 5, updating the information previously provided.
(c)	An estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.			
2	A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and their inter-relationship between the above factors.	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
3	A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from –			
(a)	The existence of the development;	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
(b)	The use of natural resources; and,			
(c)	The emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment.			
4	A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
5	A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.	Non-Technical Summary.	Executive Summary	Non-Technical Summary.

Information Required		Section of the July 2008 ES	Section of the January 2010 ES Addendum	Section of this June 2015 ES Addendum
6	An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
PART 2				
1	A description of the development comprising information on the site, design and size of the development.	Section 4.	N / A	Section 4, updating the information previously provided.
2	A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
3	The data required to identify and assess the main effects which the development is likely to have on the environment.	Impact Assessment Sections 6 to 14.	Impact Assessment Sections 3 to 4.	Impact Assessment Sections 6 to 15 updating, wherever relevant, the information previously provided.
4	An outline of the main alternatives studied by the applicant and an indication of the main reasons for his choice, taking into account the environmental effects.	Section 4.	N / A	N / A
5	A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.	Non-Technical Summary.	Executive Summary	Non-Technical Summary.
a)	The main respects in which the applicant considers that the likely significant effects on the environment of the proposed development would differ from those described in any Environmental Statement that was prepared in conjunction with the relevant Section 36 Consent; and,	N / A	N / A	Impact Assessment Sections 6 to 15.
b)	A non-technical summary of the differences referred to in paragraph (a) of this Part.	N / A	N / A	Non-Technical Summary.

4 STAKEHOLDER CONSULTATIONS

4.1 Introduction

4.1.1 Details of the Variation Application will be advertised in a local paper and MGT will be issuing a letter of notification to stakeholders as part of the consultation on the Variation Application – a copy of the letter is included in Appendix H.

4.1.2 In preparing this June 2015 ES Addendum, MGT has undertaken consultation with a variety of stakeholders / key consultees, comprising: DECC; Redcar and Cleveland Borough Council (the local planning authority); the Environment Agency; and, Natural England.

4.1.3 This Section provides a summary of these consultations.

4.2 Summary of Stakeholder Consultations

DECC

4.2.1 MGT sent a brief environmental scoping e-mail to DECC. In response to this e-mail, DECC have stated (in an e-mail dated 14/04/2015) that:

- In term of the application to vary the 2010 Consent, consideration should be given to the Variation Regulations and the Variation Guidance.

The required content of an application to vary a Consent granted under Section 26 of the Electricity Act 1989 is provided in Table 1.1, along with MGTs compliance.

The rationale for proposing that the 2010 Consent, provided at Section 2.2, quotes the Variation Guidance.

- In terms of the potential to use a variety of biomass fuel types, Government policy has moved on since the granting of the 2009 Consent and the 2010 Consent, and it is now practice to include Conditions on 'Fuel Type and Fuel Sustainability'.

Further information on these Conditions is provided in Section 5.

- In terms of other changes, due to the inclusion of a wood chip dryer on the Development site, consideration should be given to the potential for cumulative effects which differ from those previously reported.

Cumulative impacts are discussed in Section 15.

Redcar and Cleveland Borough Council

4.2.2 MGT sent screening emails to Redcar and Cleveland Borough Council on 1 May 2015, 27 May 2015 and 14 April 2015 and have had a number of discussions with officers at Redcar and Cleveland Borough Council. Redcar & Cleveland Borough Council officers stated:

- It was recognised that the final layout and dimensions of the Development would still require approval from Redcar & Cleveland Borough Council under the condition 4(9) of the Consent and that condition would not be amended
- The photomontages that accompanied the January 2010 ES addendum should be updated to reflect the likely revised layout but showing the maximum height of the silos as included in the design parameters set out in the proposed variation;
- That updated air dispersion modelling should be undertaken based on the final dimensions and layout and, submitted to and agreed with the Environment Agency as a condition of the Environmental Permit for the Development;
- No new conditions were proposed by Redcar and Cleveland Borough Council to the Consent if the proposed variations were granted.

Environment Agency

4.2.3 The Environment Agency have stated (in an e-mail dated 23/04/2015) that:

- They had no objections to the proposed application to vary the 2010 Consent; and,
- The updated air dispersion modelling (due to the revisions to the indicative physical proportions and layout of some of the buildings) will be undertaken based on the final scheme for the layout. The results of this updated air dispersion modelling will be submitted to the Environment Agency to satisfy a newly proposed pre-operational condition of the Environmental Permit. An application to vary the Environmental Permit was submitted in June 2015 (a copy of the application is included in Appendix G).

Natural England

4.2.4 Natural England have stated (in an e-mail dated 23/04/2015) that:

- In terms of the increase in permitted generating capacity from 295 MW to up to 299 MW, this change is reverting back to the information in the July 2008 ES which was originally assessed by Natural England. Therefore, they agree there would be no change in impacts.
- In terms of the further design revisions, updated air dispersion modelling will be undertaken based on the final scheme for the layout to confirm that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality. Therefore, potential changes in impacts would be limited to related to landscape and visual aspects.

5 DESCRIPTION OF THE DEVELOPMENT

5.1 The Development

- 5.1.1 The Development will comprise a biomass-fuelled generating station and will comprise:
- A single Circulating Fluidised Bed (CFB) boiler;
 - A steam turbine generator;
 - One stack;
 - Air Cooled Condensers (ACCs);
 - Fuel feedstock storage areas;
 - Electrical transformers and switchgear buildings;
 - Ancillary plant and equipment; and,
 - Additional necessary buildings (including administration offices, workshops and stores) and civil engineering works.
- 5.1.2 The Development will be capable of operating continuously throughout the year, and is expected to have an operational lifetime of at least 25 years.
- 5.1.3 In the electricity generation process, the CFB boiler will burn the biomass fuels to generate steam. The steam will be used to drive steam turbine plant to rotate a generator to produce electricity.
- 5.1.4 After expanding through the steam turbine plant, most of the steam's useful heat will have been extracted and the exhaust steam will be condensed in a heat exchanger (condenser) prior to its re-use. The function of the condenser, and associated cooling system, is to provide the lowest economic heat rejection temperature for the steam / water cycle thereby optimising thermal efficiency. The cooling system for the Development will be ACCs.
- 5.1.5 Flue gases from the CFB boiler will be discharged via one 95 m high stack. Air emissions will be minimised through the appropriate selection of fuel, together with the use of state of the art emission reduction technologies (including Selective Non-Catalytic Reduction to minimise emissions of nitrogen dioxide (NO₂), fabric filters to reduce emission of particulate matter / dust (PM) and the control of the sulphur content of the fuel feed to the CFB boiler (via fuel blending) and, if required, limestone injection into the CFB boiler to control the emissions of sulphur dioxide (SO₂)).
- 5.1.6 When constructed, the Development is expected to be one of the largest of its kind in the world.

Proposed Changes to the Development

- 5.1.7 MGT is submitting applications to vary the Consent and the Environmental Permit to allow for a number of proposed changes to the Development. These proposed changes comprise:
- An increase in permitted generating capacity from up to 295 MW to up to 299 MW;
 - The potential to use a variety of biomass fuel types;
 - An amendment to the boundary of the Development site; and,
 - Further design revisions to the indicative physical proportions and layout of some of the buildings.

Increase in Permitted Generating Capacity from up to 295 MW to up to 299 MW

- 5.1.8 The July 2008 ES was prepared on the basis of the Development having a permitted generating capacity of 300 MW at site rated conditions. However, whilst the application was under consideration, a request was made for the permitted generating capacity to be

reduced to 295 MW. Subsequently, Condition 2 of the 2009 Consent allows for a permitted generating capacity of 295 MW.

- 5.1.9 The application to vary the 2010 Consent seeks that the permitted generating capacity is increased to 299 MW, an increase of only 4 MW. This would allow for the installation of the preferred CFB boiler, which has a capacity of 299 MW, without any design modifications having to be made.
- 5.1.10 No proposed actions or further work is deemed to be required. However, references to the Development should be considered to represent that with a permitted generating capacity of 299 MW.

Potential to Use a Variety of Biomass Fuel Types

- 5.1.11 The July 2008 ES, and the January 2010 Addendum, was prepared on the basis that the Development would be fuelled by wood chips. This was the main biomass fuel that was available at the time.
- 5.1.12 Subsequently, Condition 4(45) of the 2009 Consent states *"unless agreed in writing with the Council, [...] only untreated wood [to] be used as fuel in the operation of the Development"* (with the exception of hydrocarbon fuels used for the start up of the main and auxiliary boilers and use in the standby-generator).
- 5.1.13 Since the granting of the 2009 Consent and the 2010 Consent, the biomass fuel market has developed and improved the variety of biomass fuels that are currently available. As a result, the design of the Development has progressed and the preferred CFB boiler has the ability to mix fuels and the flexibility to be fuelled on a range of blended biomass fuels. As a result, it is now intended that the Development will be fuelled by a variety of biomass fuels. This allows for increased flexibility and diversity in the use of biomass fuels resulting in more efficient operation.
- 5.1.14 Further consideration is given to potential use of wood pellets (being the main addition to the fuel strategy for the Development) on the likely significant effects of the Development, in particular whether this would result in effects which would materially differ from those described in the July 2008 ES and the January 2010 ES Addendum. See Impact Assessment Sections 6 to 14.
- 5.1.15 In addition, in their environmental scoping response DECC stated (in an e-mail dated 14/04/2015) that Government policy had moved on since the granting of the 2009 Consent and the 2010 Consent, and it is now practise to include Conditions on 'Fuel Type and Fuel Sustainability'. These proposed Conditions are:
1. *With the exception of fuels used for the purpose of boiler start-up or combustion stabilisation, only biomass fuel feedstocks which comply with the applicable mandatory sustainability criteria may be burnt in the main boiler of the authorised Development.*
 2. *MGT must submit to a Fuel Sustainability Report to the relevant planning authority specifying the sustainability of all biomass fuel feedstocks burnt in the main boiler(s) within twelve calendar months of first commercial use. The Fuel Sustainability Report will provide the same information and level of assurance / verification which MGT is required to provide in respect of the sustainability of biomass fuel feedstocks under the applicable mandatory sustainability criteria and will report if the authorised Development has been claiming financial support on a month by month basis. Thereafter a further Fuel Sustainability Report must be submitted to the relevant planning authority at the end of each 12 month period from the date of the submission of the first submitted Fuel Sustainability Report throughout the operational life of the authorised Development.*
- 5.1.16 It is recognised that the handling and use of wood pellets presents an increased risk of fire and explosion and the design of the Development will ensure those risks are reduced and the facilities are designed to the relevant Best Available Techniques (BAT) for the storage and handling of pellets. The agreement of the final design of such arrangements

will be agreed with the Environment Agency as part of a pre-operational condition of the varied Environmental Permit (see Appendix D and Appendix G).

- 5.1.17 The application of BAT for the storage and handling of wood pellets will ensure that the potentials fire hazard / risks will be minimised as far as is reasonable practicable.

[An Amendment to the Boundary of the Development Site](#)

- 5.1.18 The fuel for the Development was originally to be unloaded on a dedicated berth on the River Tees (QE II Quay), which directly adjoined the Development site, and then transported onto the Development site via a conveyor. The intention now is to use the berth on Teesdock (No 1 Quay) which also directly adjoins the Development site but on the eastern boundary, necessitating a change in the route for the conveyor and thus the redline boundary of the Development.

- 5.1.19 The amendment to the boundary of the Development site is considered sufficient to allow for the construction and operation of the new conveyor route however the detailed design of the conveyor is on-going and the final footprint of the conveyor will not be known until this is complete. The actual footprint will not cover the full area of the 'extension' of the Development site but provides surety that the conveyor can be developed in this area.

[Further Design Revisions to Indicative Physical Proportions and Layout of Some Buildings](#)

- 5.1.20 The July 2008 ES was prepared on the basis of indicative dimensions and an original layout for the Development. Subsequently, the January 2010 ES Addendum was prepared on the basis of a revised scheme. The revised scheme was essentially the same as the scheme proposed in July 2008 but allowed for design revisions to the indicative physical proportions and layout of some of the buildings.
- 5.1.21 As a result of further detailed design work and the proposed use of a variety of biomass fuel types, some further variation to the indicative physical proportions and layout of some of the buildings is required.
- 5.1.22 A schedule of the indicative physical proportions of the Development buildings is provided in Table 5.1. The previous indicative physical proportions of the Development as reported in the July 2008 ES and the January 2010 ES Addendum is also provided.

TABLE 5.1: SCHEDULE OF THE INDICATIVE PHYSICAL PROPORTIONS OF THE DEVELOPMENT BUILDINGS²

	<i>January 2010 ES Addendum</i>			<i>This June 2015 ES Addendum</i>		
	<u>Length</u>	<u>Width</u>	<u>Height</u>	<u>Length</u>	<u>Width</u>	<u>Height</u>
Turbine House	60	32	30	71	42	32
Electrical Control Room	25	15	21	28	22	23
Boiler and ESP Electrical Container	Not Included			30	16	7
CFB Boiler House	50	50	71	82	61	71
Fabric Filters	16	40	25	53	34	26
Air Cooled Condenser	80	67	40	100	78	40
Air Cooled Condenser Electrical Container	Not Included			21	16	7
Auxiliary Air Cooled Condenser for Turbine Driven Feedwater Pump	Not Included			TBC (though within design parameters)		
Fin Fan Cooler	45	23	6	As per January 2010 ES Addendum		
Substation (HV AIS Bay and Transformer Area)	20	20	5	57	23	15
Demineralisation Water Building	16	15	8	As per January 2010 ES Addendum		
Air Compressor Building	8	15	5	As per January 2010 ES Addendum		
Fire Fighting Pump Building	14	8	5	As per January 2010 ES Addendum		
Workshop and Stores Building	40	20	12	As per January 2010 ES Addendum		
Office Administration Building	7	23	5	As per January 2010 ES Addendum		
Covered Fuel Store 1	210	46	30	210	50	35
Covered Fuel Store 2, 3 and 4	210	46	30	Not Included. Fuel Silos Added.		
Fuel Silos	Not Included			Diameter = 40		65
	<u>Diameter</u>	<u>Height</u>		<u>Diameter</u>	<u>Height</u>	
CFB Exhaust Stack	6	95		7	95	
Fly Ash Silos	12	26		18	35	
Bottom Ash Silos	18	20		12	35	
Demineralised Water Storage Tank	11	11		As per January 2010 ES Addendum		
Fire Fighting Water Storage Tank	18	19		As per January 2010 ES Addendum		
Distillate Fuel Oil Storage Tank (Start Up	6	4		As per January 2010 ES Addendum		

² Revisions are shown in **bold italic** and highlighted in light blue cells.

TEES RENEWABLE ENERGY PLANT
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	<i>January 2010 ES Addendum</i>		<i>This June 2015 ES Addendum</i>
Fuels)			

5.1.23 However, it is noted that whilst the indicative physical proportions of the buildings is being varied the total volume of the buildings which form the Development will not vary. Furthermore, the design revisions will be subject to the following constraints:

- There will be no change to the height of the stack (CFB boiler exhaust) which will remain at being no higher than 95 m;
- There will be no change to the height of the CFB boiler house which will remain at being no higher than 71 m (above ground level); and,
- The height of the fuel silos will be limited to up to 65 m (above ground level).

5.1.24 In addition, it is noted that Condition 4(9) of the 2009 Consent requires that the commencement of the Main Development shall not take place until there has been submitted to, approved in writing by, and deposited with, the Council a scheme which shall include provisions for the (amongst others):

"Details of the siting, design, dimensions, external appearance and floor levels of all buildings and structures which are to be retained following the completion and construction of the Development".

5.1.25 Further consideration is given to the impact of the further design revisions on the likely significant effects of the Development, in particular whether this would result in effects which would materially differ from those described in the July 2008 ES and the January 2010 ES Addendum. See Impact Assessment Sections 6 to 14.

Other Changes

5.1.26 In addition, MGT have also made provision for the inclusion of a wood chip dryer on the Development site. The wood chip dryer will be capable of receiving and drying a minimum of 50,000 tonnes of wet wood chips per year from a moisture content of up to 60% to 20% (w/w). The wood chip dryer will consist of a travelling belt drying system using hot air produced using process steam from the Development. After drying, the hot air is rejected to the atmosphere.

5.1.27 The inclusion of the wood chip dryer on the Development site does not form part of the application to vary the Consent³ though its operation is included (as a directly associated activity) in the application to vary the Environmental Permit. For completeness, discussion is included (as necessary) within this June 2015 ES Addendum.

5.2 The Proposed Development Site

5.2.1 The proposed Development site is located on 14 hectares (ha) of land within the Teesport landholding approximately 5 kilometres (km) east of Middlesbrough and 6 km west of Redcar. The Teesport landholding is an industrial area, and is one of the few natural deep water tidal facilities in the UK. Teesport handles over 50 million tonnes of cargo per year.

5.2.2 The proposed site falls within the jurisdiction of Redcar and Cleveland Borough Council.

5.2.3 The proposed Development site location is shown in Insert 5.2, and the Ordnance Survey (OS) Grid Reference for the approximate centre of the site is 454300, 523230. The changes to the boundary of the Development site, proposed by the variation application are highlighted in Appendix B.

5.2.4 Locating the Development within the Teesport landholding makes the proposed site ideal in terms of: the proximity to deep water and available quay facilities for the planned reception of vessels containing the biomass fuel; and, the availability of ship unloading and fuel transfer facilities.

³ An application for outline planning permission for the wood chip dryer has been submitted to Redcar and Cleveland Borough Council (Ref: R/2015/0149/OOM).

- 5.2.5 In addition, the proposed site is well served by A-roads and is directly connected to the A66 which, in turn, is directly connected to the A1. The proposed site is also served by a rail connection into the wider National Rail Network.
- 5.2.6 The proposed site is currently unused and available for development as a biomass-fuelled generating station.

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6 AIR QUALITY

6.1 Introduction

6.1.1 This Section considers the potential effects of the Development on air quality, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

6.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

6.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 6.1 summarises the questions considered in terms of air quality.

TABLE 6.1: DETERMINATION OF DIFFERENCES – AIR QUALITY

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development release pollutants or any hazardous / toxic / noxious substances to air which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The proposed use of a variety of biomass fuel types may alter the release of pollutants to the air. However, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development.	An application to vary the Environmental Permit has been submitted to the Environment Agency in respect of the proposed increase in range of the biomass fuel types.
Are there any: <ul style="list-style-type: none"> • Areas on or around the site which are already subject to pollution / environmental damage due to poor air quality (e.g. where existing legal environmental standards are exceeded); • Areas on or around the site which contain important / high quality / scarce resources (e.g. forestry / agriculture / minerals); • Land uses on or around the site (e.g. homes / gardens / other private property / industry / commerce / recreation / public open space / community facilities / agriculture / forestry / tourism / mining or quarrying); • Areas on or around the site which are densely populated / built-up; and / or, • Areas on or around the site which are occupied by sensitive land uses (e.g. hospitals / schools / places of worship / community facilities); which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. Whilst the proposed use of a variety of biomass fuel types may alter the release of pollutants to the air, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development. However, the revisions to the indicative physical proportions and layout of some of the buildings may alter the atmospheric dispersion of these pollutants. In this regard, during consultation with the Environment Agency, it has been noted that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality.	Updated air dispersion modelling will be undertaken based on the final scheme for the layout to confirm that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality. The results of this updated air dispersion modelling will be submitted to the Environment Agency to satisfy a proposed pre-operational condition of the Environmental Permit. An application to vary the Environmental Permit has been submitted. This approach has been agreed with the Environment Agency. However, based on current level of design of the Development, an updated air dispersion modelling study has been undertaken which is presented in Appendix I to this Document.

- 6.2.2 For the purposes of this application to vary the Consent, an updated dispersion modelling study has been undertaken based on the current status of the Development design.
- 6.2.3 This study has included an analysis of the mass emission rates of the pollutants present within the flue gases from the Development based on the current or proposed emissions limits (as appropriate) included in the application to vary the Environmental Permit.
- 6.2.4 The analysis of the use of wood pellets has demonstrated that the mass emissions of each pollutant will be less than previous estimates described in the July 2008 ES and the January 2010 ES Addendum.
- 6.2.5 In addition, the updated air dispersion modelling study has considered the maximum building envelopes as provided in Table 5.1 of this Document.

Summary of Updated Air Dispersion Modelling Study

- 6.2.6 The air dispersion models established for the July 2008 ES and the January 2010 ES Addendum have been recreated using the most recent version of ADMS in order to allow for a direct comparison between these previous studies and the updates for this June 2015 ES Addendum (as discussed, in detail, in Appendix I). This has also included a revision of the Cartesian receptor grids based on the latest standing guidance from the Environment Agency.
- 6.2.7 For the purposes of this June 2015 ES Addendum, the model has been updated to reflect the dimensions and changes that, though they remain illustrative, are being proposed as part of the variation application (e.g. building dimensions) but using the maximum heights to present a worst case scenario, together with updated information regarding the anticipated composition and physical properties of the flue gases that will be emitted during operation of the Development.
- 6.2.8 Table 6.2 shows the dispersion model inputs now anticipated for the Development; underlined items are different to previous dispersion models undertaken.

TABLE 6.2: UPDATED DISPERSION MODEL INPUTS

<i>Parameter</i>	<i>Units</i>	<i>Value</i>
NO _x emission level	mg/Nm ³	150
NO _x flow rate	g/s	<u>37.4</u>
SO ₂ emission level	mg/Nm ³	106
SO ₂ flow rate	g/s	<u>26.4</u>
CO emission level	mg/Nm ³	100
CO flow rate	g/s	<u>25.0</u>
Particulate emission level	mg/Nm ³	<u>15</u>
Particulate flow rate	g/s	<u>3.7</u>
HCl emission level	mg/Nm ³	20
HCl flow rate	g/s	<u>6.5</u>
Temperature	°C	<u>154</u>
Actual flue gas volume	m ³ /s	<u>385.8</u>
Flue gas velocity	m/s	<u>23.5</u>
Stack diameter	m	<u>4.6</u>
Stack height	m	95

- 6.2.9 The meteorological data used for the updated study was for the period 2003 – 2007 (inclusive), as per the previous studies. Similarly, as per previous studies, terrain effects were not considered.
- 6.2.10 Building downwash structures are those which subject the plume from the stack to wake effects. These effects act, generally, to 'pull' the plume towards the ground (close to the stack), thus limiting the ability of the flue gases to disperse. This can result in ground level concentrations of pollutants that could be higher than if the relevant buildings were not present.

- 6.2.11 The buildings used for the purposes of the updated study are based on the updated details provided in Table 5.1. Table 6.3 shows those buildings that have been included in the updated dispersion models.

TABLE 6.3: SIGNIFICANT BUILDINGS INPUT DATA (UPDATED)

<i>Building</i>	<i>Height (m)</i>	<i>Length (m)</i>	<i>Width (m)</i>
Boiler House	71	82	61
Turbine Hall	32	71	42
Fabric Filters	26	53	34
Air-cooled condenser	40	100	78
Covered fuel store	35	210	50
Fuel silos (x3)	65	40 (diameter)	

- 6.2.12 Table 6.4 and Table 6.5 present the worst case ground level concentrations predicted by the updated dispersion modelling (together with a comparison with the results of the recreated previous dispersion models). These tables compare the results of the model runs with the relevant limits for ambient air quality as prescribed by the Air Quality Standards Regulations 2010.

TABLE 6.4: MAXIMUM ANNUAL GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)

<i>Substance</i>	<i>July 2008 ES</i>	<i>January 2010 ES Addendum</i>	<i>June 2015 ES Addendum</i>	<i>Guideline / Limit Value</i>	<i>June 2015 ES Addendum as % of Guideline</i>
NO ₂	0.24	0.30	0.31	40	0.8
Particulates	0.13	0.23	0.19	40	0.5
HCl	0.10	0.16	0.18	20	0.9

- 6.2.13 The updated study has predicted that the long-term process contributions of NO₂ and HCl from the Development, as proposed in this variation application, will be slightly higher than predicted using previous input parameters. For particulates the process contribution is predicted to be lower (due to a reduction in the proposed emissions level).
- 6.2.14 All long-term process contributions shown in Table 6.4 are less than 1% of the relevant guideline value therefore the potential long term impact is considered to be insignificant.

TABLE 6.5: SHORT-TERM GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)

<i>Substance</i>	<i>Averaging Period</i>	<i>July 2008 ES</i>	<i>January 2010 ES Addendum</i>	<i>June 2015 ES Addendum</i>	<i>Guideline / Limit Value</i>	<i>June 2015 ES Addendum as % of Guideline</i>
NO ₂	Hourly	7.1	8.8	7.7	200	3.8
	15-minute	33.9	72.2	68.9	266	25.9
SO ₂	Hourly	27.8	66.0	60.1	350	17.1
	24-hour	15.7	28.3	31.9	125	25.5
Particulates	24-hour	0.6	0.8	0.7	50	1.5
CO	8-hour (rolling)	30.1	63.1	85.8	10000	0.9

- 6.2.15 The updated study indicates that, in general, the short-term process contributions from the Development, based on the proposed variation, will be lower than results obtained in the January 2010 ES Addendum. The exceptions are the 24-hour average mean for SO₂ and the 8-hour rolling mean for CO.
- 6.2.16 All process contributions are well within their respective guideline / limit value therefore the potential impacts to local air quality as a result of operation of the Development will remain not significant.

6.3 **Summary of Proposed Actions / Further Work**

- 6.3.1 The proposed changes which have potential to alter the effects of the Development on air quality include:
- The potential to use a variety of biomass fuel types; and,
 - Further design revisions to the indicative physical proportions and layout of some of the buildings.
- 6.3.2 Updated air dispersion modelling will be undertaken based on the final scheme for the layout to confirm that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality. The results of this updated air dispersion modelling will be submitted to the Environment Agency to satisfy a newly proposed pre-operational condition of the Environmental Permit.
- 6.3.3 This approach has been agreed with the Environment Agency.

7 NOISE AND VIBRATION

7.1 Introduction

7.1.1 This Section considers the potential noise and vibration effects of the Development, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

7.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

7.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 7.1 summarises the questions considered in terms of noise and vibration.

TABLE 7.1: DETERMINATION OF DIFFERENCES – NOISE AND VIBRATION

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development cause noise and vibration or the release of light / heat energy / electromagnetic radiation which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No. The changes proposed as part of the variation application will see additional land to the north east of the current boundary included within the varied boundary to allow for the Development of a conveyor that will serve the berth on Teesdock (No 1 Quay). A conveyor at this berth will represent an additional noise source. However, the proposed changes will not cause noise and vibration which materially differs from that previously reported.	No actions or further work are deemed to be required.

Questions Considered	Yes / No / ?, Briefly Describe	Proposed Actions / Further Work
<p>Are there any:</p> <ul style="list-style-type: none"> • Areas on or around the site which are already subject to pollution / environmental damage due to excessive noise / vibration (e.g. where existing legal environmental standards are exceeded); • Areas on or around the site which contain important / high quality / scarce resources (e.g. forestry / agriculture / minerals); • Land uses on or around the site (e.g. homes / gardens / other private property / industry / commerce / recreation / public open space / community facilities / agriculture / forestry / tourism / mining or quarrying); • Areas on or around the site which are densely populated / built-up; and / or, • Areas on or around the site which are occupied by sensitive land uses (e.g. hospitals / schools / places of worship / community facilities); <p>which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?</p>	<p>No.</p> <p>Noise sensitive receptors relevant to the Development were determined during pre-application consultation with the Council during the preparation of the July 2008 ES.</p> <p>The proposed changes will not cause noise and vibration which materially differs from that previously reported.</p>	<p>No actions or further work are deemed to be required.</p>

- 7.2.2 The proposed amendments to the Development scheme will see the installation of a conveyor to the north / east of the boundary of the Development site as defined in the existing Consent. This conveyor could be considered to be an additional noise source at the Development.
- 7.2.3 Table 8.3 of the July 2008 ES presents typical sound power levels for the type of plant / equipment to be installed as part of the Development. Conveyors are listed; the associated sound power level is 99 dB.
- 7.2.4 Noise sensitive receptors (NSR) relevant to the Development were determined during pre-application consultation with the Council during the preparation of the July 2008 ES. The locations of these in relation to the Development are shown in Figure 8.1 of the July 2008 ES.
- 7.2.5 The nearest NSRs are '1 – Henry Street' and '4 – Bolckow Road' that are more than 1700 m from the location of the proposed new conveyor. The sound power level due to operation of the Development at these NSRs is 26 dB and 23 dB respectively.
- 7.2.6 During operation of the Development, the sound power level due to the conveyor (without taking into account screening effects of the buildings proposed for the Development) will be approximately 24 dB. For NSRs 1 and 4 (above), the resultant total sound power level due to operation of the Development will be 28.1 dB and 26.5 dB, respectively representing increases of +2.1 dB and +3.5 dB than predicted in the July 2008 ES.
- 7.2.7 These slightly higher sound pressure levels are still significantly less (-9.9 dB and -10.5 dB, respectively) than the lowest recorded background noise levels provided in

Table 8.4 of the July 2008 ES. It is therefore considered that the potential noise impact as a result of the proposed amendments to the Development scheme will remain insignificant.

7.3 Summary of Proposed Actions / Further Work

- 7.3.1 The proposed changes will not cause material differences to the noise and vibration effects previously reported. Therefore, no actions or further work are deemed to be required.

8 LANDSCAPE AND VISUAL

8.1 Introduction

8.1.1 This Section considers the potential effects of the Development on landscape and visual, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

8.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

8.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 8.1 summarises the questions considered in terms of landscape and visual.

TABLE 8.1: DETERMINATION OF DIFFERENCES – LANDSCAPE AND VISUAL

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Is the Development located in an area which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No. The Development will be located wholly within the proposed boundary of the Development site. The proposed amendment to the boundary of the Development site requires the addition of a small of land to that designated in the extant Consent but does not change the location of the Development.	The requirement to construct the Development wholly within the proposed Development site is contained in Condition 4(2) of the 2009 Consent (as amended by this variation application). No actions or further work are deemed to be required.
Do the structures associated with the Development differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings.	Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) have been prepared and are included in Appendix J.
Are there any: <ul style="list-style-type: none"> • Areas on or around the site which are protected under international / national / local legislation for their landscape value; and / or, • Areas or features of high landscape / scenic value on or around the site; which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings.	Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) have been prepared and are included in Appendix J.
Will the visibility of the Development to people differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings.	Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) have been prepared and are included in Appendix J.

- 8.2.2 The proposed changes which have potential to alter the effects of the Development on landscape and visual include further design revisions to the indicative physical proportions and layout of some of the buildings.
- 8.2.3 Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) have been prepared. The viewpoint locations have been taken from those agreed with the Council during pre-application consultation for the preparation of the July 2008 ES and allow a direct comparison with photomontages prepared on the basis of previous revisions to the design of the Development.
- 8.2.4 The substantial buildings proposed for the Development remain as per the July 2008 ES and the January 2010 ES Addendum (and the Conditions of the 2009 Consent), namely:
- CFB boiler house;
 - Turbine hall;
 - Air-cooled condensers;
 - Fuel feedstock storage area; and,
 - One 95 m stack.
- 8.2.5 The changes proposed in this variation application consist (largely) of minor variations to the physical dimensions and positioning of the proposed buildings. The proposed changes to the dimensions are provided in Table 5.1. In addition, changes in the arrangements for the fuel storage areas to accommodate the inclusion of wood pellets as fuel for the Development are proposed. These changes are indicated in Table 5.1.
- 8.2.6 It is considered that the location of the Development in an area currently of an industrial character and designated for industrial development respects the general aims of the Council.
- 8.2.7 It is however noted that given that the indicative dimensions of the structures proposed for the Development have changed since the July 2008 ES and the January 2010 ES Addendum, which may lead to different potential visual impacts are the agreed viewpoint locations.
- 8.2.8 The most substantial change is the change in arrangements for the fuel storage area which, to accommodate the storage of wood pellets, is now proposed to incorporate up to three storage silos of up to 65 m in height; previous designs included covered fuel storage buildings with a significantly larger development foot print of a height of 30 m.
- 8.2.9 At the viewpoint locations, the newly proposed silos will either been partially screened or seen within the context of the CFB boiler house (71 m height). The cumulative massing of these structures could increase the visual impact of the Development. However the distance of the viewpoints (being the closest representative sensitive receptors), given the industrial nature of the surrounding area, from the Development site means that these changes will lie largely in the background of the views. The proposed changes to the visual impact of the Development proposed in the variation application are such that the resultant changes in potential impacts will be negligible.
- 8.2.10 It is therefore considered that the potential landscape and visual impacts of the Development will not materially differ from those reported in the January 2010 ES Addendum.
- 8.3 Summary of Proposed Actions / Further Work**
- 8.3.1 The proposed changes will not cause material differences to the landscape and visual effects previously reported. Therefore, no actions or further work are deemed to be required.

9 ECOLOGY

9.1 Introduction

9.1.1 This Section considers the potential effects of the Development on ecology, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

9.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

9.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 9.1 summarises the questions considered in terms of ecology.

TABLE 9.1: DETERMINATION OF DIFFERENCES – ECOLOGY

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
<p>Are there any:</p> <ul style="list-style-type: none"> • Areas on or around the site which are protected under international / national / local legislation for their ecological value; • Other areas on or around the site which are important / sensitive for reasons of their ecology (e.g. wetlands / watercourses / other water bodies / coastal zone / mountains / forests or woodlands); and / or; • Areas on or around the site which are used by protected / important / sensitive species of fauna or flora (e.g. for breeding / nesting / foraging / resting / overwintering / migration); <p>which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?</p>	<p>Yes.</p> <p>Whilst the proposed use of a variety of biomass fuel types may alter the release of pollutants to the air, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development.</p> <p>However, the revisions to the indicative physical proportions and layout of some of the buildings may alter the atmospheric dispersion of these pollutants.</p> <p>In this regard, during consultation with the Environment Agency, it has been noted that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality.</p> <p>In addition, consultation has been undertaken with Natural England. During consultation, Natural England has confirmed that they are satisfied that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on ecology.</p>	<p>Therefore, no actions or further work are deemed to be required.</p>

9.3 Summary of Proposed Actions / Further Work

9.3.1 The proposed changes which have potential to alter the effects of the Development on ecology include:

- The potential to use a variety of biomass fuel types; and,
- Further design revisions to the indicative physical proportions and layout of some of the buildings.

Potential to Use a Variety of Biomass Fuel Types

- 9.3.2 Despite the change in fuel type, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development. An application to vary the Environmental Permit will be made in due course.

Further Design Revisions to Indicative Physical Proportions and Layout of Some Buildings

- 9.3.3 Whilst the change in fuel type may alter the release of pollutants to the air, the emission limits of the pollutants will remain within those set within the Environmental Permit for the Development. However, the revisions to the indicative physical proportions and layout of some of the buildings may alter the atmospheric dispersion of these pollutants.
- 9.3.4 In this regard, during consultation with the Environment Agency, it has been noted that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality.
- 9.3.5 Updated air dispersion modelling will be undertaken based on the final scheme for the layout to confirm that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on air quality. The results of this updated air dispersion modelling will be submitted to the Environment Agency to satisfy a newly proposed pre-operational condition of the Environmental Permit.
- 9.3.6 This approach has been agreed with the Environment Agency and an application to vary the Environmental Permit was submitted in June 2015 and is included as Appendix G to this Document.
- 9.3.7 In addition, consultation has been undertaken with Natural England. During consultation, Natural England has confirmed that they are satisfied that the proposed changes are not likely to result in material differences to the likely significant effects of the Development on ecology.
- 9.3.8 Therefore, no actions or further work are deemed to be required.

10 GROUND CONDITIONS (GEOLOGY AND LAND CONTAMINATION)

10.1 Introduction

10.1.1 This Section considers the potential effects of the Development on ground conditions (geology and land contamination), providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

10.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

10.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 10.1 summarises the questions considered in terms of ground conditions (geology and land contamination).

TABLE 10.1: DETERMINATION OF DIFFERENCES – GROUND CONDITIONS

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development involve actions causing physical changes in the locality (i.e. topography / land use) which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No. The Development will be located wholly within the proposed boundary of the Development site. The proposed amendment to the boundary of the Development site requires the addition of a small amount of land to that designated in the extant Consent but does not change the proposed land use of the site.	No actions or further work are deemed to be required.
Will the Development use natural resources (such as: land; materials / energy) in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The application to vary the Consent includes the proposed use of a variety of biomass fuel types. This will cause changes to the use of materials / energy which differ from those previously reported.	The application to vary the Consent proposes Conditions on 'Fuel Type and Fuel Sustainability'.
Is the site susceptible to earthquakes / subsidence / landslides / erosion or extreme or adverse climatic conditions (e.g. temperature inversions / fogs / severe winds) which could cause the Development to present environmental problems which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.

Questions Considered	Yes / No / ?, Briefly Describe	Proposed Actions / Further Work
Will the Development use / store / transport / handle / produce substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum??	No.	No actions or further work are deemed to be required.
Will the Development produce solid wastes which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	Yes. The application to vary the Consent includes the proposed use of a variety of biomass fuel types. Whilst this may produce solid wastes which have characteristics which differ from those previously reported, the characteristics are not expected to be significantly different to those previously reported. Permitted waste types, waste quantities and waste transfer to offsite disposal facilities will be controlled by the Environmental Permit for the Development.	An application to vary the Environmental Permit was submitted in June 2015 (included as Appendix G).
Will the Development lead to risks of contamination to land from releases of pollutants onto the ground which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.
Will there be any risk of accidents during construction / operation / decommissioning of the Development which could affect human health or the environment which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.

10.3 Summary of Proposed Actions / Further Work

10.3.1 The proposed changes which have potential to alter the effects of the Development on ground conditions (geology and land contamination) include:

- The potential to use a variety of biomass fuel types.

[Potential to Use a Variety of Biomass Fuel Types](#)

10.3.2 The application to vary the Consent includes the proposed use of a variety of biomass fuel types.

10.3.3 In terms of the use of natural resources in a way which differs from that previously reported, the application to vary the Consent proposes Conditions on 'Fuel Type and Fuel Sustainability'. These proposed Conditions are:

3. *With the exception of fuels used for the purpose of boiler start-up or combustion stabilisation, only biomass fuel feedstocks which comply with the applicable mandatory sustainability criteria may be burnt in the main boiler of the authorised Development.*
 4. *MGT must submit to a Fuel Sustainability Report to the relevant planning authority specifying the sustainability of all biomass fuel feedstocks burnt in the main boiler(s) within twelve calendar months of first commercial use. The Fuel Sustainability Report will provide the same information and level of assurance / verification which MGT is required to provide in respect of the sustainability of biomass fuel feedstocks under the applicable mandatory sustainability criteria and will report if the authorised Development has been claiming financial support on a month by month basis. Thereafter a further Fuel Sustainability Report must be submitted to the relevant planning authority at the end of each 12 month period from the date of the submission of the first submitted Fuel Sustainability Report throughout the operational life of the authorised Development.*
- 10.3.4 In terms of the production of solid wastes which differ from that previously reported, whilst the use a variety of biomass fuel types may produce solid wastes which have characteristics (e.g. composition) which differ from those previously reported, the characteristics are not expected to be materially different to those previously reported – i.e. the fly ash and boiler ash will remain non-hazardous as classified under the guidance provided in the, cross-agency, 'WM2 Hazardous waste Interpretation of the definition and classification of hazardous waste' (3rd Edition 2013). Furthermore, permitted waste types, waste quantities and waste transfer to offsite disposal facilities will be controlled by the Environmental Permit for the Development.

11 WATER RESOURCES AND FLOOD RISK

11.1 Introduction

11.1.1 This Section considers the potential effects of the Development on water resources and flood risk, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

11.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

11.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 11.1 summarises the questions considered in terms of water resources and flood risk.

TABLE 11.1: DETERMINATION OF DIFFERENCES – WATER RESOURCES AND FLOOD RISK

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development involve actions causing physical changes in the locality (i.e. changes in water bodies) which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.
Are there any: <ul style="list-style-type: none"> Inland / coastal / marine / underground waters on or around the site; and / or Areas on or around the site which contain important / high quality / scarce resources (e.g. ground waters / surface waters / fisheries); which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.
Will the Development use natural resources (such as water) in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.
Is the site susceptible to flooding or extreme or adverse climatic conditions (e.g. temperature inversions / fogs / severe winds) which could cause the Development to present environmental problems which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.

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<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development lead to risks of contamination to water from releases of pollutants into surface waters / ground waters / coastal waters / seas which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No.	No actions or further work are deemed to be required.

11.3 Summary of Proposed Actions / Further Work

- 11.3.1 The proposed changes will not cause effects on water resources and flood risk which differ from those previously reported. Therefore, no actions or further work are deemed to be required.

12 TRANSPORT AND ACCESS

12.1 Introduction

- 12.1.1 This Section considers the potential effects of the Development on transport and access, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

12.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

- 12.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 12.1 summarises the questions considered in terms of transport and access.

TABLE 12.1: DETERMINATION OF DIFFERENCES – TRANSPORT AND ACCESS

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Are there any routes or facilities on or around the site which are used by the public for access to recreation / other facilities which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No. The proposed changes to the Development will not generate any additional traffic movements to those previously reported.	No actions or further work are deemed to be required.
Are there any transport routes on or around the site which are susceptible to congestion / which could cause environmental problems which could be affected by the Development in a way which differs from that reported in the July 2008 ES and the January 2010 ES Addendum?	No. The proposed changes to the Development will not generate any additional traffic movements to those previously reported.	No actions or further work are deemed to be required.

12.3 Summary of Proposed Actions / Further Work

- 12.3.1 The proposed changes to the Development will not cause effects on transport and access which differ from those previously reported.

13 ARCHAEOLOGY AND CULTURAL HERITAGE

13.1 Introduction

- 13.1.1 This Section considers the potential effects of the Development on archaeology and cultural heritage, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

13.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

- 13.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 13.1 summarises the questions considered in terms of archaeology and cultural heritage.

TABLE 13.1: DETERMINATION OF DIFFERENCES – ARCHAEOLOGY AND CULTURAL HERITAGE

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
<p>Are there any:</p> <ul style="list-style-type: none"> Designated heritage assets (features or structures protected under international / national / local legislation of policy); and / or, Areas or features of archaeological / cultural heritage importance on or around the site; <p>which could be affected by the Development in a way which differs from those effects reported in the July 2008 ES and the January 2010 ES Addendum?</p>	<p>Yes.</p> <p>The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings.</p> <p>The changes proposed as part of the variation application will see additional land to the north east of the current boundary included within the varied boundary. It is reasonable to assume that the archaeological / cultural heritage value of this additional land is the same as that of the site defined by the Consent (and thus previously reported).</p>	<p>Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) will be prepared. See Section 8 (Landscape and Visual).</p>

13.3 Summary of Proposed Actions / Further Work

- 13.3.1 The proposed changes which have potential to alter the effects of the Development on archaeology and cultural heritage include:

- Further design revisions to the indicative physical proportions and layout of some of the buildings.

[Further Design Revisions to Indicative Physical Proportions and Layout of Some Buildings](#)

- 13.3.2 The application to vary the Consent includes revisions to the indicative physical proportions and layout of some of the buildings. Updated photomontages of the Development (based on the indicative physical proportions of the Development buildings) will be prepared. See Section 8 (Landscape and Visual).

14 SOCIO-ECONOMICS

14.1 Introduction

- 14.1.1 This Section considers the potential effects of the Development on socio-economics, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

14.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

- 14.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 14.1 summarises the questions considered in terms of socio-economics.

TABLE 14.1: DETERMINATION OF DIFFERENCES – SOCIO-ECONOMICS

<i>Questions Considered</i>	<i>Yes / No / ?, Briefly Describe</i>	<i>Proposed Actions / Further Work</i>
Will the Development result in social changes (i.e. in demography / traditional lifestyles / employment) which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	No. The proposed changes will not cause social changes which differ from those previously reported.	No actions or further work are deemed to be required.

14.3 Summary of Proposed Actions / Further Work

- 14.3.1 The proposed changes will not cause social changes which differ from those previously reported. Therefore, no actions or further work are deemed to be required.

15 CUMULATIVE IMPACTS

15.1 Introduction

This Section considers the potential cumulative effects of the Development, providing a summary of the exercise undertaken to identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum.

15.2 Determination of Potential Differences from the July 2008 ES and the January 2010 ES Addendum

- 15.2.1 To identify whether the likely significant effects would differ from those described in the July 2008 ES and the January 2010 ES Addendum, Table 15.1 summarises the questions considered in terms of cumulative effects.

TABLE 15.1: DETERMINATION OF DIFFERENCES – CUMULATIVE EFFECTS

Questions Considered	Yes / No / ?, Briefly Describe	Proposed Actions / Further Work
Are there any plans for future land uses on or around the proposed Development site which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	<p>No.</p> <p>The July 2008 ES noted that the proposed Development site was located in an area covered by Policy IND2 of the Local Plan. This Policy related to: <i>"industrial areas [...] to be reserved for port-related industrial development which particularly benefits from direct waterside access"</i>.</p> <p>Since the preparation of the July 2008 ES and the January 2010 ES Addendum, the Local Plan has been replaced by a number of Development Plan Documents (DPD).</p> <p>Subsequently, the proposed Development site is now located in an area covered by Policy CS10 (Steel, Chemical and Port Related Industries) of the Core Strategy DPD. This Policy notes that: <i>"The continued development and expansion of the chemical, steel and port industries will be supported"</i>.</p> <p>Therefore, the plans for future land uses on or around the proposed Development site are the same as those previously reported.</p>	No actions or further work are deemed to be required.
Are there any factors which should be considered which could lead to cumulative effects which differ from those reported in the July 2008 ES and the January 2010 ES Addendum?	MGT have made provision for the inclusion of a wood chip dryer on the Development site.	Consideration has been given to the potential for cumulative effects which differ from those previously reported.

15.3 Summary of Proposed Actions / Further Work

- 15.3.1 MGT have made provision for the inclusion of a wood chip dryer on the Development site. Therefore, consideration has been given to the potential for cumulative effects which differ from those previously reported.

15.4 Wood Chip Dryer – Potential for Cumulative Effects

- 15.4.1 A summary of this is provided in Table 15.2.

TABLE 15.2: WOOD CHIP DRYER – POTENTIAL FOR CUMULATIVE EFFECTS

	<i>Summary of Potential for Cumulative Effects</i>
Air Quality	<p>The wood chip dryer consists of a travelling belt drying system using process steam from the Development to produce hot air. After drying, the hot air is rejected to the atmosphere with a maximum dust content of 10 mg/Nm³.</p> <p>Based on this concentration, the mass flowrate of dust in the exhaust air from the wood chip dryer is expected to be <0.4 g/s. The environmental impact of such a release is considered to be insignificant and therefore there is no potential for material differences to any cumulative effects previously reported.</p>
Noise and Vibration	<p>The wood chip dryer will be housed within a dedicated enclosed structure such that the external walls of this structure will, as necessary, be designed with noise attenuation characteristics suitable for the reduction of any noise generated within. The exhaust fans will be outside of the enclosed structure and therefore alternative means of noise control may prove to be necessary. It is anticipated that low-noise radial fans will be implemented in the exhausts. It is considered that it will be possible for the design of the wood chip dryer to incorporate appropriate and suitable noise mitigation such that there will be no material difference to the offsite sound power levels from the Development. Therefore there is no potential for material differences to any cumulative effects previously reported.</p>
Landscape and Visual	<p>The wood chip dryer is a relatively small piece of equipment (circa 25 m (L) x 10 m (W) x 5 m (H)), and will be located on the proposed Development site alongside larger items of plant / equipment.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative landscape and visual effects.</p>
Ecology	<p>The wood chip dryer will be located on the proposed Development site where mitigation and monitoring measures will be implemented.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative ecological effects.</p>
Ground Conditions (Geology and Land Contamination)	<p>The wood chip dryer will be located on the proposed Development site where mitigation and monitoring measures will be implemented.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative effects on ground conditions.</p>
Water Resources and Flood Risk	<p>The wood chip dryer will be located on the proposed Development site where mitigation and monitoring measures will be implemented.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative effects on water resources and flood risk.</p>
Transport and Access	<p>The wood chip dryer will dry the wood chips that are transported to the proposed Development site. Therefore no additional traffic movements will be required.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative effects on transport and access.</p>

	<i>Summary of Potential for Cumulative Effects</i>
Archaeology and Cultural Heritage	<p>The wood chip dryer will be located on the proposed Development site where mitigation and monitoring measures will be implemented.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative archaeological / cultural heritage effects.</p>
Socio-Economics	<p>The wood chip dryer will be located on the proposed Development site where mitigation and monitoring measures will be implemented.</p> <p>Therefore, the wood chip dryer is not likely to give rise to cumulative socio-economic effects.</p>