Medworth Energy from Waste
Combined Heat and Power Facility

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Environmental Statement Chapter 2: Alternatives

Regulation reference: The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

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Contents

2. Alternatives

2.1 Introduction

2.1.1 This chapter of the Environmental Statement (ES) provides a summary of the alternatives considered by the Applicant (Medworth CHP Ltd) as the Proposed Development has evolved.

2.1.2 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) make two references to the consideration of alternatives, as follows:

- In paragraph 14(2)(d) of Part 5 it states that an ES should include, *"A description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment."*
- Paragraph 2 of Schedule 4 states that an ES should include, *"A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."*

2.1.3 PINS Advice Note 7 (Version 7, June 2020) states that PINS considers a good ES to be one that *"explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment*".

2.1.4 In addition to recognising the legal requirements relating to alternatives, the National Policy Statement for Energy (NPS EN-1) at Section 4.4 states that from "*a policy perspective this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option...in some circumstances, the relevant energy NPSs may impose a policy requirement to consider alternatives (as this NPS does in Sections 5.3, 5.7 and 5.9.")* Section 5.3 relates to biodiversity, section 5.7 relates to the flood zone sequential test and section 5.9 relates to landscape and visual impacts in designated areas.

2.1.5 Section 4.4 (paragraph 4.4.2) states that applicant's should include in their ES, as a matter of fact, information about the main alternatives they have studied and that the ES *"should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility*".

2.1.6 Section 4.4 also includes the following principles:

"The consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner;"

"The [SoS] should not reject an application for development on one site simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site, and it should have regard as appropriate to the possibility that all suitable sites for energy infrastructure of the type proposed may be needed for future proposal;"

"alternative proposals which mean the necessary development could not proceed, for example because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the [SoS] decision."" and

"alternative proposals which are vague or inchoate can be excluded on the grounds they are not important and relevant to the [SoS] decision".

2.1.7 The Consultation Draft NPS EN-1 September 2021 repeats Section 4.4 at paragraphs 4.2.11 to 4.2.13.

2.1.8 It is noted that paragraph 2.1.3 of NPS EN-3 states that the specific criteria considered by applicants in site selection, and the weight attached to them, will vary from project to project and "*it is for energy companies to decide what applications to bring forward and the Government does not seek to direct applicants to particular sites for renewable energy infrastructure...*". This statement is repeated in paragraph 2.1.3 of the Consultation Draft NPS EN-3 September 2021.

2.1.9 A summary of all terms and abbreviations used throughout the ES is provided in **Appendix 1F: Terms and Abbreviations (Volume 6.4)**.

2.2 Stakeholder engagement and public consultation

2.2.1 The assessment of alternatives has been informed by responses to non-statutory and statutory consultation and ongoing Stakeholder engagement. An overview of the approach to consultation is provided in **Chapter 4: Approach to the EIA (Volume 6.2).**

2.2.2 A summary of the relevant responses received in the EIA Scoping Opinion in relation to the assessment of alternatives and confirmation of how these have been considered within the assessment to date is presented in **Table 2.1 Summary of EIA Scoping Opinion responses in relation to the assessment of alternatives** below.

Table 2.1 Summary of EIA Scoping Opinion responses in relation to the assessment of alternatives

Consultee	Issue raised	Response
PINS	The ES should provide details of the reasonable alternatives studied and the reasoning for the selection of the chosen options.	The reasonable alternatives studied by the Applicant are outlined in **Section 2.3 – 2.8** below, together with the main reasons why the chosen options were selected.

Consultee	Issue raised	Response
PINS	The ES should also address alternative locations, where these have been considered.	A summary of the site selection process is provided in **Section 2.3**. It was concluded that the EfW CHP Facility Site was suitable for the Proposed Development. Following the completion of the site selection process, the consideration of specific alternative locations for an EfW CHP Facility was not considered to be necessary. Alternative locations for other aspects of the Proposed Development have been considered and are described in **Section 2.3, 2.4, 2.6, 2.7** and **2.8** below.
PINS	The Inspectorate would expect to see a discrete section in the ES that provides details of the reasonable alternatives studied and the reasoning for the selection of the chosen options, including a comparison of the environmental effects.	A summary of the alternatives studied by the Applicant, the main reasons for selecting particular options and a comparison of the environmental effects is provided in **Section 2.3 - 2.8** below.
Cambridgeshire County Council	Reasons why the site has been selected and whether or why other sites have not been considered should be set out and explained.	**Section 2.3** below outlines the site selection process. It was concluded that the EfW CHP Facility Site was suitable for the Proposed Development. Following completion of the site selection process, the consideration of specific alternative locations for an EfW CHP Facility was not considered to be necessary.
Cambridgeshire County Council	The proposal would be located on an allocation in the adopted Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals Plan (DPD) February 2012. However, this site was allocated for waste and recycling uses, not for Energy from Waste (See Policy SSP W1C). Accordingly, the reasons why the site has been selected for this development, and whether or why other sites have not been considered, should be explained.	**Section 2.3** below outlines the site selection process. It was concluded that the EfW CHP Facility Site was suitable for the Proposed Development. Following the completion of the site selection process, the consideration of specific alternative locations for an EfW CHP Facility was not considered to be necessary. The Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals Plan (DPD) February 2012 allocated the majority of the EfW CHP Facility Site for several suitable waste uses, including “New Waste Management Technologies”. The now adopted Minerals and Waste Local Plan identifies the site as a Waste Management Area. A summary of the site selection process is provided in **Section 2.3**.

Consultee	Issue raised	Response
Public Health England	Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, the EIA process should start at the stage of site selection, so that the environmental merits of practicable alternatives can be properly considered. Where this is undertaken, the main alternatives considered should be outlined in the ES.	A summary of the alternatives considered by the Applicant is provided in **Section 2.3 – 2.8** below.

2.2.3 A summary of the relevant responses received to the PEIR, together with any subsequent discussions held in relation to the topic of alternatives and confirmation of how these have been considered within the assessment is presented in Table 2.2 **Summary of PEIR responses for alternatives together with any subsequent engagement** below.

Table 2.2 Summary of PEIR responses for alternatives together with any subsequent engagement

Consultee	Issue raised	Response
Norfolk County Council	It is noted that the Chapter 2 Alternatives document highlights that the preferred route to Walsoken would be via an overhead cable rather than underground and it is stated that "the route avoids areas designated for their natural or historic importance. No areas of woodland or orchard would be affected." The location of the poles has not been provided within Chapter 3 Description of the Proposed Development Figure 4iii and it is not clear if new poles would be required or existing poles could be utilised (if present).	PEIR Chapter 3 Figure 3.4ii identified the pole locations up to Pole 15, (south of Broadend Road). Figure 3.4iii also identified Pole 15 and the point at which the connection would then be underground to the Walsoken DNO Substation. **ES Chapter 3 Description of the Proposed Development (Volume 6.2)** describes the route of the Grid Connection and confirms that the Applicant has chosen to place the Grid Connection underground and in the western verge of the A47 up to Walsoken, as such, poles are not required. In summary, the Proposed Development now consists of underground Grid Connection only. There will be no poles.
Natural England	Natural England believes that a satisfactory process has been applied to the identification of the facility site location, grid connection route options and selection of a preferred solution to best achieve the scheme objectives,	Comment is noted and welcomed.

Consultee	Issue raised	Response
	as described in Chapter 2 of the Report.	
Natural England	We note the scheme has been designed to allow for future opportunities, including the possible reopening of the disused railway line. Assessments have been made for 3 options for extending the facility site, and area 'A' has been selected as the preferred site. If this is taken forward, details of any ecological mitigation measures required for species/habitats will need to be presented in the ES.	Area A is related to land to accommodate the EfW CHP Facility and the temporary Construction Compound (TCC). A smaller area of land within Area A is now proposed for development. This land has been the subject of ecological surveys and mitigation, details of which are set out in **Chapter 11 Biodiversity (Volume 6.2)**.
Wisbech Town Council	The Scoping Opinion (paragraph 2.2.10) makes it clear that the submission should address alternative locations. These alternative locations should be clarified and considered, including the reasoning for the selection of the chosen options, including a comparison of environmental effects which should be included in a discrete section.	The Scoping opinion provided by PINs states that the ES should include for the consideration of alternative sites where, as a matter of fact, alternative locations have been considered by the Applicant. There is no legal or policy obligation in this case to consider alternative locations. This chapter explains the Applicant's main reasons for selecting the location of the Proposed Development, highlighting the 'essential' and 'preferable' site selection criteria that were applied in determining the suitability of the site. **Section 2.3** explains why the EfW CHP Facility Site was selected. The Applicant did not therefore consider any specific alternative locations for an EfW facility.
Wisbech Town Council	The site selection criteria used by the applicant is set out at section 2.3 of the Preliminary Environmental Information Report (PEIR). It is noted that proximity to waste fuel is not one of the essential siting criteria used by the applicant. If it had been, a location within an area with a surplus of recovery capacity would suggest that it is not an appropriate location. Rather the applicant will be reliant upon waste being transported significant distances to the facility.	The **Waste Fuel Availability Assessment (Volume 7.3)** which accompanies the application demonstrates that there is a need for a facility such as the EfW CHP Facility. Government policy encourages EfW Facilities to include CHP or be CHP ready. **Section 2.3** sets out the site selection process undertaken to identify a suitable location for an EfW facility with a potential CHP market.

2.3 Site selection process for the EfW CHP Facility and consideration of alternative layouts and design

2.3.1 **Section 2.3** describes the site selection process for the EfW CHP Facility and the alternatives considered in relation to the EfW CHP Facility Site.

Site selection process for the EfW CHP Facility

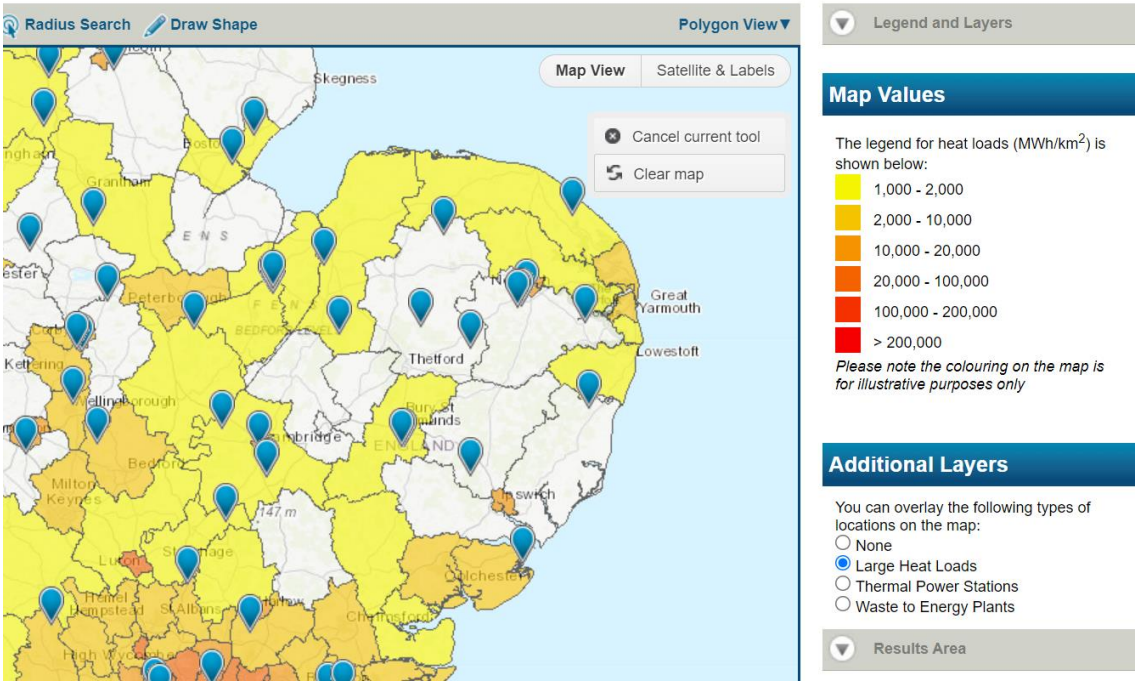
2.3.2 As part of the site selection process, the following criteria were established by the Applicant in order to determine the suitability of the EfW CHP Facility Site for an EfW CHP facility. These criteria can be divided into those which are considered to be essential and those preferable. The criteria take into account the factors described in the National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) including grid connection availability (paragraph 2.5.23 of NPS EN-3) and proximity to existing transport routes (paragraph 2.5.25 of NPS EN-3). The Draft NPS EN-3 in September 2021 also refers to grid connection availability (paragraph 2.10.3 of Draft NPS EN-3) and proximity to existing transport routes (paragraph 2.5.25 of Draft NPS EN-3).

Essential siting criteria

- A location to respond to the requirement for additional EfW capacity. The Applicant identified a residual waste management capacity gap in the East of England (noting draft NPS EN-3 para 2.10.4 and 2.10.5) including opportunities to manage both existing and future waste further up the waste hierarchy and/or at a location that is more proximate to the point of arising. Having identified the need (which is explained within the **Waste Fuel Availability Assessment (WFAA) (Volume 7.3)**, the Applicant then sought to focus on areas where the capacity deficit was greatest and areas that consequently would have sufficient residual Household, Industrial and Commercial (HIC) waste available for use in an EfW facility. As set out in the **WFAA (Volume 7.3),** Cambridgeshire County Council (CCC) disposed of approximately 88,500 tonnes of local authority collected HIC waste to non-hazardous landfill in 2019/2020 that could be managed further up the waste hierarchy (the second highest amount in the East of England). CCC also had the second highest amount of HIC waste from commercial sources disposed to non-hazardous landfill in the East of England (approximately 236,000 tonnes of waste suitably for use as fuel in an EfW). A current shortfall in HIC treatment capacity was therefore identified in Cambridgeshire, together with a predicated shortfall up to 2035 and beyond (excluding permitted but non-operational capacity). The WFAA also demonstrates that in 2035 the counties of Essex, Hertfordshire, Norfolk, Lincolnshire and Northamptonshire, which are proximate to Cambridgeshire, would also have a capacity shortfall within their administrative areas and hence a location which is geographically located to serve these demands and respond to the waste hierarchy principles to move waste treatment away from landfill, in a location consistent with principle of proximity, was sought.
- Recognising the advantages of, and policy support for, CHP (NPS EN-1 Section 4.6 and NPS EN-3 paragraph 2.5.27), a site in proximity to potential heat and electricity customers was sought. Within the area identified as requiring

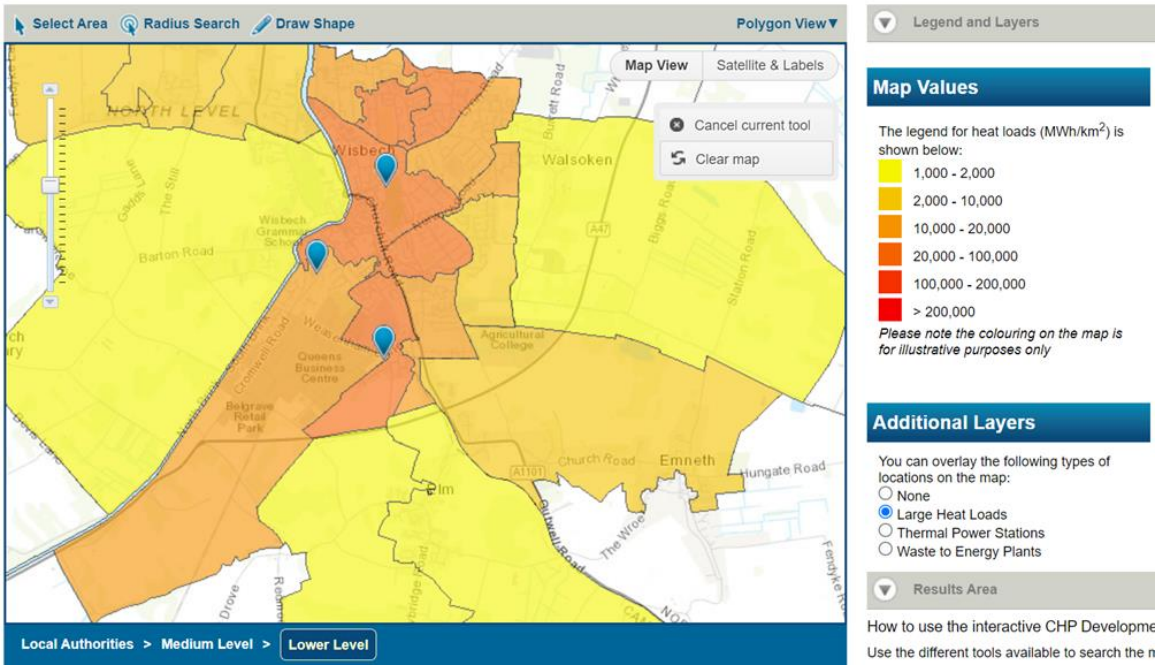
additional EfW capacity consideration was given to those areas with demand potential for CHP. **Graphic 2.1 UK CHP Development Map, East of England/South East. DBEIS Accessed 12/05/22** taken from the Department for Business, Energy & Industrial Strategy UK CHP Development Map illustrates that within the approximate area assessed within the **WFAA (Volume 7.3)** that there are two locations possessing the highest number of large heat loads: Wisbech and Norwich. Wisbech and Norwich are identified as having three large heat loads.

Graphic 2.1 UK CHP Development Map, East of England/South East. DBEIS Accessed 12/05/22



- Within Wisbech the approximate location of large heat loads is to the centre and south of the town as illustrated on **Graphic 2.2 UK CHP Development Map, Wisbech. DBEIS Accessed 12/05/22**, a site to the south of the centre would therefore have the greatest potential to respond to the potential demand for heat and power.

Graphic 2.2 UK CHP Development Map, Wisbech. DBEIS Accessed 12/05/22



- The EfW CHP Facility Site is located at the southern end of the Algores Way, an industrial area on the south side of Wisbech. There are a number of existing commercial businesses which have requirements for heat in the form of steam and/or electricity, and these requirements could be met potentially by the EfW CHP Facility. The businesses include those operating in the food production industry where steam is used to cook food products, examples being Nestle' Purina and Lamb Weston. The Applicant has prepared a **Combined heat and Power Assessment (Volume 7.6)**. The document demonstrates the viability of the EfW CHP Facility to provide heat and power.
- Ability to export electricity to the national transmission or local distribution electricity networks. The EfW CHP Facility Site is located in proximity to a 400kV overhead line and two potential distribution grid connection points (Walsoken substation and Walpole substation). In addition there are a number of potential commercial and industrial customers of electricity which could be supplied by a private wire separate to the proposed CHP Connection. Whilst there is no limit on the distance over which a grid connection can be constructed it can be assumed that the greater the distance the greater the cost of construction and potential for transmission losses, hence the greater the potential impact upon the viability of a project. The Grid Connection to the Walsoken Substation is local to the EfW CHP Facility.
- A site of sufficient size to accommodate the EfW CHP Facility is required. The Applicant set a minimum site area requirement of 3.5 hectares to accommodate an EfW CHP Facility of the type and size proposed. At approximately 4.0 hectares the initial site identification process confirmed that the EfW CHP Facility Site was of a sufficient size.

- Good access to the strategic highway network (SRN) (referred to as the 'main highway network' in paragraph 2.5.25 of NPS EN-3). The EfW CHP Facility Site is located approximately 1km from the A47, a National Trunk Road. Access to the A47 would be from Cromwell Road via New Bridge Lane. This route avoids a requirement for the majority of construction and operational vehicles to travel through substantially built-up areas to access the EfW CHP Facility Site. NPS EN-3 and the Draft NPS EN-3 recognise government encouragement of multi-modal transport expecting materials to be transported by water or rail where possible recognising that their use will be determined by the economics of the scheme. The EfW CHP Facility Site lies adjacent to the disused March to Wisbech Railway for which there are plans to bring the railway back into operation. The EfW CHP Facility Site has been selected and configured to enable a future rail connection as described within **Chapter 3: Description of the Proposed Development (Volume 6.2)**.
- The Access Improvements proposed for New Bridge Lane are consistent with those promoted in the Wisbech Access Strategy and is thus consistent with the policy of CCC and Fenland District Council (FDC), promoters of the strategy.

Preferable siting criteria

- A brownfield site used for waste-related or similar commercial activities. The majority of the EfW CHP Facility Site is a waste and aggregates recycling facility and Waste Transfer Station (WTS).
- A site allocated for waste related uses. The majority of the EfW CHP Facility Site was allocated in Cambridgeshire County Council and Peterborough City Council's Site-Specific Proposals Plan[1], under Policy SSPW1C, for waste management use, including 'New Waste Management Technologies'. It was also safeguarded in a Waste Consultation Area, designated under Policy SSP W8D and the overarching Core Strategy[2] Policy CS30 Waste Consultation Areas.
- The Minerals and Waste Local Plan[3] has now been adopted and replaces the 2011 development plan. The Plan contains no site-specific waste treatment allocations; however the broad spatial strategy supports the use of the site for waste management purposes. Specifically, the proposed EfW CHP Facility Site is an existing safeguarded Waste Management Area (Policy 10) and is consistent with the locational strategy of the Plan as established by Policy 4 in that it is within the settlement boundary of Wisbech. Further information on the site allocation is provided in **Section 5.5 of Chapter 5: Legislation and Policy (Volume 6.2)**.
- A site free of environmental designations. The EfW CHP Facility Site is not designated for its environmental importance at a national or local level. The nearest statutory designations are the Wisbech Conservation Area and the

[1] Cambridgeshire County Council and Peterborough City Council (2012). Site Specific Proposals Development Plan Document
[2] Cambridgeshire County Council and Peterborough City Council (2011). Cambridgeshire and Peterborough Minerals and Waste Development Plan.
[3] Cambridgeshire County Council and Peterborough City Council (2021). Cambridgeshire and Peterborough Minerals and Waste Local Plan.

Wisbech AQMA, both of which are located approximately 1.5-1.75km to the north/north-east.

2.3.3 Based on the above criteria, the Applicant concluded that the EfW CHP Facility Site was suitable for the Proposed Development. Following the completion of the site selection process set out above, the consideration of specific alternative locations for the EfW CHP Facility was not considered to be necessary.

Consideration of alternative layouts and design

Site Layout and Access

2.3.4 In the early stage of the design process at the time the EIA Scoping Report was submitted (December 2019), the location of the EfW CHP Facility had been defined with reference to the boundary of the existing WTS located on the EfW CHP Facility Site (see **Figure 2.1: Initial boundary of the EfW CHP Facility Site (Volume 6.3)**). An initial layout with access points was produced using this existing boundary (see **Figure 2.2: Initial EfW CHP Facility Site Layout (Volume 6.3)**).

2.3.5 The initial layout was subject to consideration of alternative layouts and design evolution from the EIA Scoping stage in December 2019 through to the statutory consultation which began in June 2021. There are four key factors which influenced the need to consider alternatives to the design presented in the EIA Scoping Report:

- The Wisbech Access Strategy (WAS);
- Proposed reopening of the disused March to Wisbech Railway;
- Consideration of the potential environmental impacts of the use of Algores Way for access; and
- Ensuring that the Proposed Development can deliver future legal and/or policy requirements relating to carbon capture and storage and biodiversity net gain (BNG).

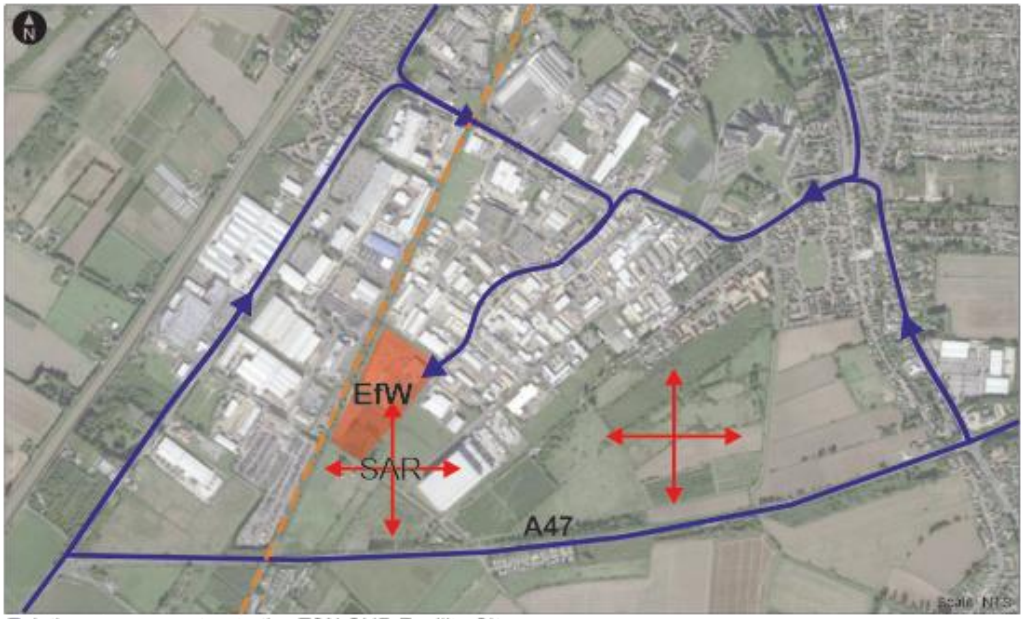
2.3.6 A summary of these proposals and the influence on the consideration of alternative site layouts and access arrangements is provided below:

Wisbech Access Strategy

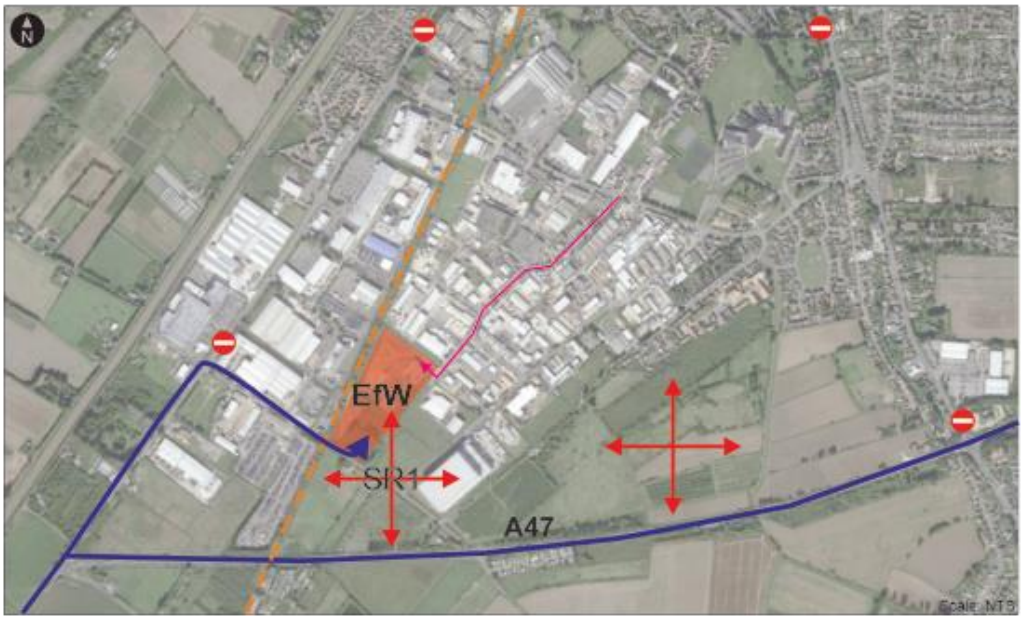
2.3.7 The WAS[4] is a package of individual transport schemes that aim to improve the transport network in Wisbech and support new housing and employment growth as identified within the Fenland Local Plan[5] and the King's Lynn and West Norfolk Local Plan[6]. Of relevance to the assessment of alternatives is the Southern Access Road (SAR), which aims to implement road improvements along New Bridge Lane to enable the proposed industrial and commercial development in the south of Wisbech, allocated in the Adopted Fenland Local Plan 2014. **Graphic 2.3 EfW CHP Facility Site's location, policy context and access arrangements** displays the EfW CHP Facility Site's location in context with the WAS SAR.

[4] Fenland District Council (2018). Wisbech Access Strategy.
[5] Fenland District Council (2014). Fenland Local Plan.
[6] King's Lynn and West Norfolk Borough Council (2011). Local Development Framework - Core Strategy.

Graphic 2.3: EfW CHP Facility Site's location, policy context and access arrangements



Existing assess routes to the EfW CHP Facility Site



Proposed HGV assess route to the EfW CHP Facility Site

EfW	EfW CHP Facility Site
	Policy LP8 - Wisbech, South Wisbech (broad location for growth), Fenland local Plan (2014)
SAR	Southern Access Road, Wisbech Assess Strategy
	HGV access routes
	Operational HGV route restrictions (unless local collections)
	Staff and visitor access route to the EfW CHP Facility Site
	Disused March to Wisbech Railway

2.3.8 Comments in the EIA Scoping Opinion, and subsequent engagement with CCC, highlighted the need for the Proposed Development to take account of the WAS (see **Chapter 6: Traffic and Transport Appendix 6D: Stakeholder Consultation (Volume 6.4)**).

2.3.9 The development of the access arrangements to the EfW CHP Facility Site (set out in more detail below) has therefore considered the proposed improvements to New Bridge Lane with the aim of ensuring that the final design is compatible with the SAR. The design has been prepared in consultation with CCC as the local highway authority.

Proposed Reopening of the disused March to Wisbech Railway

2.3.10 Comments in the EIA Scoping Opinion, feedback received during the non-statutory consultation, statutory consultation and engagement with the Cambridgeshire and Peterborough Combined Authority (CPCA) (see **Chapter 6: Traffic and Transport, Appendix 6D: Stakeholder Consultation Volume 6.4**) highlighted that it was important to Stakeholders that the use of the disused railway corridor for the CHP Connection, and the access to the EfW CHP Facility Site via New Bridge Lane, would not hinder the ability for others to bring forward the reopening of the disused March to Wisbech Railway. The land comprising the disused railway is owned by Network Rail. The location of the disused railway corridor is illustrated on **Figure 3.2: Project Components (Volume 6.3)** as the 'CHP Connection'.

2.3.11 The reopening of the disused March to Wisbech Railway is a proposal being explored by CPCA with the support of CCC and FDC. CPCA commissioned a Full Business Case[7], dated June 2020, to consider various transport options for the March to Wisbech Transport Corridor, including rail, tram-train and a guided busway. The project is identified as a Strategic Project within the CPCA Local Transport Plan.[8]

2.3.12 The reopening of the disused March to Wisbech Railway was identified as the preferred option in the Full Business Case and is proposed to provide greater transport connectivity and to support ambitions to develop the Wisbech Garden Town. For the purposes of undertaking cash-flow modelling for the Full Business Case, a high-level assumption was made that the line would be operational by 2028. It also assumes that the construction of the line would take place over a four year period starting 2024 but with a focus upon 2026 – 2027, which would coincide with the 2026 opening year of the EfW CHP Facility should the proposal be taken forward and the programme were to align with the 2020 assumptions.

2.3.13 The Full Business Case recognises the WAS, and in particular the proposals for the SAR. The Full Business Case assumes that the 'with rail' SAR design would be where the crossing over the disused railway is removed and access created from a new roundabout on the A47 onto New Bridge Lane. During discussions held with National Highways, they confirmed that they would not support a new roundabout on the A47 in this location (see **Chapter 6: Traffic and Transport Appendix 6D: Stakeholder Consultation (Volume 6.4)**), and therefore the Applicant has progressed its design on the assumption that a crossing over the March to Wisbech

[7] Mott MacDonald 26 June 2020 March to Wisbech Transport Corridor Full Business Case.
[8] Cambridgeshire and Peterborough Combined Authority. The Cambridgeshire and Peterborough Local Transport Plan.

Railway may be required in the future to ensure continued access to the EfW CHP Facility Site.

2.3.14 The Full Business Case acknowledges that the WAS is not a committed scheme, is being delivered independently and *"no attempt has been made to integrate the WAS Schemes with the GRIP 3 proposals for the March to Wisbech line*[9]*."*

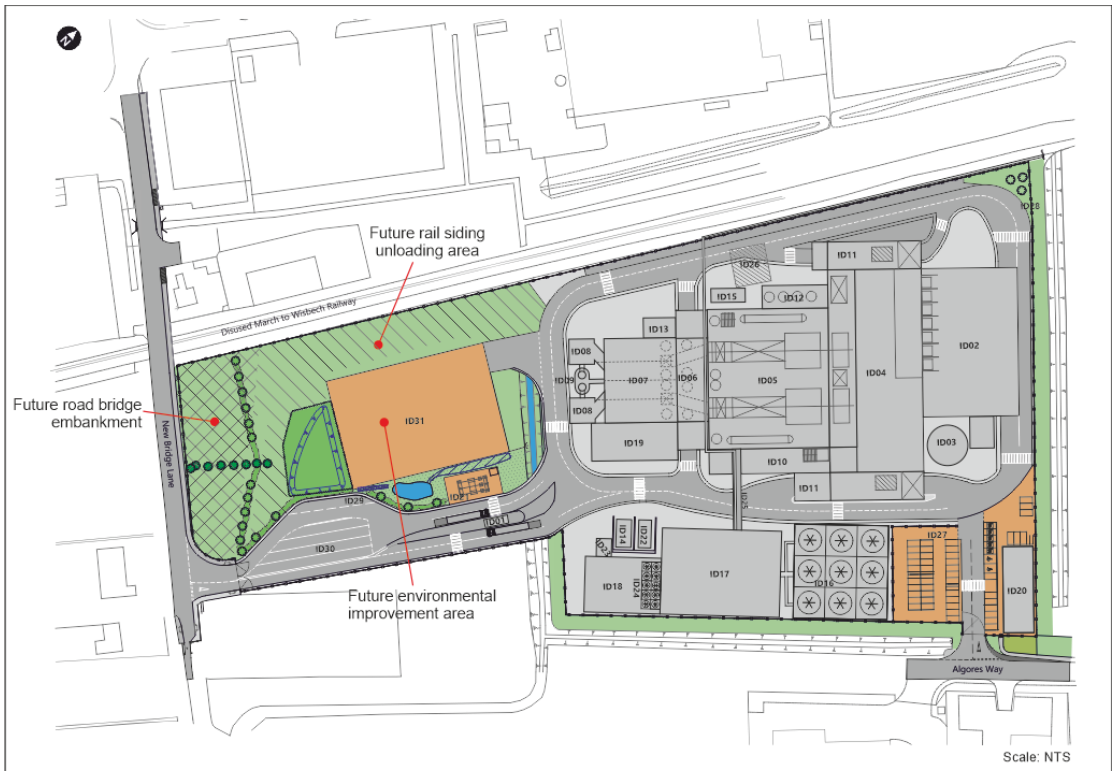
2.3.15 The site layout for the EfW CHP Facility was reconfigured since the initial site layout was produced. The siting of the access road to the EfW CHP Facility Site from New Bridge Lane and adjacent landscaping area was redesigned so as to accommodate a road bridge embankment should the reopening of the March to Wisbech Railway require a vehicle crossing in the form of a bridge as opposed to an at-grade crossing. The Proposed Development would not therefore hinder the ability for others to bring forward the reopening of the disused March to Wisbech Railway. Although there are currently no confirmed and funded plans for the reopening of the disused March to Wisbech Railway, the Applicant considers that redesigning the site layout in this manner is an appropriate and reasonable response to address Stakeholders' concerns.

2.3.16 In light of the proposal to reopen the disused March to Wisbech Railway, the Applicant also considered whether there would be the potential for the Proposed Development to receive waste by rail in the future. The layout of the EfW CHP Facility Site was therefore reconfigured so as to not hinder the ability for a rail siding unloading area to be consented and developed should it become a viable option in the future. An area of landscaping in the western part of the EfW CHP Facility Site could accommodate a potential future rail siding unloading area. This location was considered the best place to accommodate a future rail siding unloading area in that it is located alongside the disused March to Wisbech Railway. There would be insufficient space on the northern portion of the site alongside the main building. The location proposed would also provide easy access to the weighbridge area to weigh waste when transferred from trains into the EfW CHP Facility.

2.3.17 The potential location of a future road bridge embankment and rail siding unloading area within the EfW CHP Facility Site is illustrated on **Graphic 2.4: EfW CHP Facility Site Layout 'futureproofing'.** However, any works to facilitate a future road bridge embankment or a rail siding do not form part of the Proposed Development.

[9] GRIP: Governance for Railway Investment Projects

Graphic 2.4 EfW CHP Facility Site Layout 'futureproofing'



Site entrance

2.3.18 The existing WTS operating on the EfW CHP Facility Site is accessed from Algores Way via Weasenham Lane. Initial consideration was given as to whether to use the same access for the EfW CHP Facility. The preliminary conclusion was that the use of this access would necessitate HGVs driving a greater distance from the SRN and into the town. This would not be consistent with the Applicant's siting requirement to have good access to the SRN and would place the access further from the 'main highway network' as referenced in NPS EN-3.

2.3.19 An access route from the A47 via B198 Cromwell Road and New Bridge Lane would potentially impact fewer Receptors and be close to the SRN/main highway network (approximately 1.1km from the A47/Cromwell Road junction), see **Graphic 2.4 EfW CHP Facility Site Layout 'futureproofing'**. The EfW CHP Facility Site layout in the 'Design Case' for statutory consultation therefore proposed an entrance on New Bridge Lane, which would be used by HGVs delivering to the EfW CHP Facility. The proposal included the retention of the site access on Algores Way for staff and visitor vehicles rather than utilise the New Bridge Lane access in the interests of the safety of these site users, who would be accessing the Administration building which would be in the north-eastern corner of the site.

2.3.20 PEIR Chapter 6: Traffic and Transport contained both a preliminary assessment of the 'Design Case' and an alternative access assessment scenario whereby access would continue to be gained from the existing Algores Way entrance. This alternative preliminary assessment was undertaken to respond to a request from CCC 12 February 2021 that an option of the route described above, along B198 Cromwell Road, Weasenham Lane and Algores Way, be assessed as it would not prejudice, in its opinion, the future re-opening of the disused March to Wisbech Railway.

2.3.21 During statutory consultation some responses received commented specifically upon either the 'Design Case' or alternative access scenario. These are summarised in Table 2.3 **Summary of PEIR responses to the site entrance alternatives** below.

Table 2.3 Summary of PEIR responses to the site entrance alternatives

Consultee	Issue raised	Response
Peterborough City Council	The preference for an access via New Bridge Lane is noted and understood. However, the use of this route will be dependent on the agreement of Network Rail to re-open the crossing of Newbridge Lane which is currently closed. Currently, scenario two is the only possible access option given the comments above. Access option 1 would be subject to the agreement of Network Rail to re-open the New Bridge Lane crossing.	The Applicant has undertaken regular discussions with Network Rail with a view to agreeing the form of crossing on New Bridge Lane should the disused March to Wisbech Railway be reopened in the future. The Applicant supports the reopening of the March to Wisbech railway and the wider benefits this would bring to local community. Whilst there are currently no firm plans for its reopening, the Applicant has been in discussion with Network Rail to ensure both the Proposed Development and reopening of the railway can proceed without compromising one another. The Applicant has set aside land within the EfW CHP Facility Site to accommodate a potential future rail unloading area and, should it be required, land for a road bridge embankment. To date the Business Clearance with Network Rail has been approved and the Applicant is currently in discussions about the Technical Clearance process.

Consultee	Issue raised	Response
Fenland District Council	Regarding preferred options it is noted that the development is suggesting upgrades to New Bridge Lane. Cambridgeshire County Council has stated that their preference is through the use of Algores Way. Both options need to be assessed in more detail to fully understand any impacts. A proposal to route down Algores Way will also impact Weasenham Lane another busy route providing an opportunity for east – west travel. It is important to understand the impact of any such route on Weasenham Lane. New Bridge Lane is narrow and it is suggested that some upgrades would probably be needed should this be the preferred option.	The PEIR assessment did identify environmental effects arising as a result of the use of Algores Way by all traffic. The Applicant has prepared proposals to upgrade New Bridge Lane and this is retained and forms a component of the Proposed Development. ES **Chapter 3 Description of the Proposed Development (Volume 6.2)** confirms, both Algores Way and New Bridge Lane will be used to facilitate the construction phase of the Proposed Development. Once operational, staff and visitors will access to the EfW CHP Site from Algores Way, whilst HGV access is via New Bridge Lane. The environmental impacts of the Proposed Development including HGV access routes for construction and operation, have been assessed and reported in ES **Chapter 6 Traffic and Transport (Volume 6.1)** and accompanied by **Appendix 6B Transport Assessment (Volume 6.4).** Within these assessments, daily and peak hourly assessments are provided including detailed link and junction assessment for both the operational and construction period as appropriate. The TA concludes that traffic generated by the Proposed Development would be within the current capacity of the local and strategic road network.
Network Rail	Network Rail is currently working with Cambridgeshire and Peterborough Combined Authority to explore future transport uses for the alignment, the proposed development represents a conflict with this objective. Network Rail therefore objects to the DCO in the absence of formal engagement to date or sufficient assurances that the development does not preclude future transport uses of the alignment.	The Applicant supports the reopening of the March to Wisbech railway and the wider benefits this would bring to local community. Whilst there are currently no firm plans for its reopening, the Applicant has been in discussion with Network Rail to ensure both the Proposed Development and reopening of the railway can proceed without compromising one another. The Applicant has set aside land within the EfW CHP Facility Site to accommodate a potential future rail unloading area and, should it be required, land for a road bridge embankment. The Applicant understands that Network Rail's consultation response

Consultee	Issue raised	Response
		was submitted without appreciating that discussions had been underway between the Applicant and Network Rail since December 2019. These discussions have continued with a view to reaching agreement for the re-opening of the New Bridge Lane crossing. **Section 2.3** above sets out the measures that have been taken to ensure that the Proposed Development will not conflict with the reopening of the railway. To date the Business Clearance with Network Rail has been approved and the Applicant is currently in discussions about the Technical Clearance process.

2.3.22 A full review of responses received with respect to traffic and transport matters can be found within **Chapter 6: Traffic and Transport (Volume 6.2)**.

Conclusion with regard to site access

2.3.23 The 'Design Case' presented at statutory consultation as the Preferred Option was revisited at the close of statutory consultation and following the collection of the traffic surveys which were undertaken in October 2021. Having considered the comments received and reviewed the additional baseline material and conclusions arising from the environmental assessments, the Applicant decided that the use of New Bridge Lane as the primary access for HGVs delivering to the EfW CHP Facility would form the Proposed Development. This route is preferred over Algores Way for the following reasons:

- Access via Cromwell Road and New Bridge Lane would represent a suitable access leading off the main highway network, negating the need for HGVs to travel further into Wisbech to access Weasenham Lane that would otherwise require them to pass Wisbech Retail Park and residential properties accessed off Licking's Drove. The use of New Bridge Lane is consistent with the siting criteria and with NPS EN-3 that advises on having good access to the main highway network.
- The works proposed by the Applicant to upgrade New Bridge Lane would be consistent with and support proposals contained within the WAS.
- ES **Chapter 7: Noise and Vibration (Volume 6.2)** identifies significant effects, on a small number of Receptors, associated with the movement of traffic along New Bridge Lane notwithstanding the acquisition of 9 New Bridge Lane. However, the Applicant's is in discussion with the owner to acquire 9 New Bridge Lane to cease its residential use and intends to provide an acoustic fence to 10

New Bridge Lane. These intentions would remove one Receptor and provide mitigation to the other such that there would be no residual significant effects.

- Discussions with Network Rail indicate that a crossing of the disused March to Wisbech Railway is possible. To date the Business Clearance with Network Rail has been approved and the Applicant is currently in discussions about the Technical Clearance process. Furthermore, the Applicant has configured the EfW CHP Facility Site to accommodate a road bridge should this become necessary in the future. This road bridge does not form part of the Proposed Development.

Carbon Capture

2.3.24 In developing the site layout, the Applicant has taken into account the need to ensure that the Proposed Development can deliver future environmental requirements relating to carbon capture and storage (CCS).

2.3.25 As set out in Section 3.4 of **Chapter 3: Description of the Proposed Development (Volume 6.2)** there is currently no legal or policy requirement for the EfW CHP Facility to include carbon capture storage (CCS) apparatus or to be carbon capture ready (CCR). The Proposed Development does not therefore include the construction and operation of any carbon capture technology.

2.3.26 However, as set out in the 2020 Energy White Paper, the Department for Business, Energy and Industrial Strategy (BEIS) issued a call for evidence on an expansion to the 2009 CCR requirements to generation facilities under 300MW in July 2021. The consultation closed in September 2021, but the outcome of this consultation has not yet been published by BEIS. As the outcome of the consultation is unknown, the layout of the EfW CHP Facility Site has been designed to allow sufficient space for the plant and equipment for a CCS facility if required in the future (including plant and equipment to capture carbon dioxide (CO_2) from the flue gas emissions of the EfW CHP Facility and transport this to a storage facility).

2.3.27 Initially, land outside of the original site boundary on the northern extent of the site was considered. The final layout however provides for the laydown maintenance area that forms part of the Proposed Development in the south-east portion of the EfW CHP Facility Site could accommodate a future CCS facility; a central location on the south-east portion of the EfW CHP Facility Site, see **Graphic 2.4: EfW CHP Facility Site Layout 'futureproofing'**.

Extending the site boundary

2.3.28 Taking into consideration the potential reopening of the March to Wisbech Railway, including safeguarding land within the EfW CHP Facility Site for a potential future rail bridge embankment, rail siding unloading area and other future environmental improvements i.e., CCS, the original site boundary was reviewed to identify a suitable extension to the site. Three potential areas of land were identified (see **Figure 2.3: Additional Land Take Options (Volume 6.3)**):

- Area A – land adjacent to the south-east boundary of the initial site boundary to the north of New Bridge Lane. This land is currently undeveloped and comprises

trees and scrub. The land is owned by FDC and is identified as a broad location for growth in the Strategic Allocations of Fenland Local Plan (adopted 2014).

- Area B – land adjacent to the northern boundary of the initial site boundary and the eastern boundary of the disused March to Wisbech Railway owned by Floorspan Contracts Ltd. The site is used for the manufacturing and supply of concrete block and beams.
- Area C – land adjacent to the northern boundary of the initial site boundary to the west of Algores Way and owned by B.J. Books. The Site was formally used as a retail outlet selling books but has been closed since March 2021.

2.3.29 **Table 2.4 Alternative options considered for the extension to the EfW CHP Facility Site** presents an evaluation of these options from an environmental and planning, technical and land and commercial perspective. In each case the current owner of the EfW CHP Facility Site approached the owner of each area on behalf of the Applicant with a view to buying or leasing it.

Table 2.4 Alternative options considered for the extension to the EfW CHP Facility Site

	Area A	Area B	Area C
Environmental and Planning	Area A is located opposite a residential property (10 New Bridge Lane), which may experience visual effects and impacts on residential amenity during the construction and operation of the EfW CHP Facility. There are no heritage assets likely to be affected by Area A. Area A currently comprises woodland scrub and grassland which may provide suitable habitat for foraging and commuting bats, nesting birds, badgers and reptiles (see Chapter 11: Biodiversity (Volume 6.2). Area A is located in Flood Zone 3. Area A is undeveloped land, identified as a broad location for growth	Area B is located in a central location in the industrial estate on Algores Way. There are no residential or other sensitive Receptors which may experience landscape and visual effects as a result of using this site during the construction and operation of the EfW CHP Facility. There are no heritage assets likely to be affected by Area B. Area B is considered to have limited ecological potential due to the current manufacturing operations on site. The disused March to Wisbech Railway to the west of Area B may have potential for bats, nesting birds and reptiles (see **Chapter 11: Biodiversity (Volume 6.2)**. Area B is located in Flood Zone 3.	Area C is located in a central location in the industrial estate on Algores Way. There are no residential or other sensitive Receptors which may experience landscape and visual effects as a result of using this site during the construction and operation of the EfW CHP Facility. There are no heritage assets likely to be affected by Area C. Area C is considered to have limited ecological potential due to the nature of the site as a disused retail warehouse unit which ceased use in March 2021. Area C is located in Flood Zone 3. Area C is located on brownfield land, which currently houses a vacant retail warehouse site.

	Area A	Area B	Area C
	in the Strategic Allocations of Fenland Local Plan.	Area B is brownfield land and is currently used as a facility for manufacturing and distributing flooring materials.	
Technical	Area A was considered to be of sufficient size to accommodate the project components. The location of Area A, adjacent to New Bridge Lane, is suitable to accommodate the site entrance off New Bridge Lane and on-site vehicle queueing and the weighbridge and taking into account the potential future requirement for a bridge in the event of the reopening of the disused March to Wisbech Railway.	Area B was considered to be of sufficient size to accommodate the project components. Effective use of Area B would require the reorientation of the Facility by approximately 180 degrees compared to the latest site layout design.	Area C was not considered sufficient due to its distance from the facility chimneys and the disused March to Wisbech Railway. Whilst this solution provided sufficient space to accommodate the project components, it was deemed too far away from the facility chimneys to easily connect to any future carbon capture equipment and would not allow for the inclusion of a potential rail siding unloading area. No engineering or access issues were identified in relation to this site.
Land and commercial factors	It is noted that on 8 September 2020, FDC imposed a moratorium on all sales of land in proximity to the Proposed Development. Area A would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.	Area B would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.	Area C would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.

2.3.30 Taking account of the factors evaluated as reported in **Table 2.2 Summary of PEIR responses for alternatives together with any subsequent engagement** above, Area A was selected as the Preferred Option for an extension to the initial site boundary for the following main reasons:

- Area A offers the best location to facilitate the site entrance off New Bridge Lane and provide sufficient space for the internal access arrangements including vehicle queueing and the weighbridges to serve the EfW CHP Facility.
- The ability to locate the site entrance further to the east along New Bridge Lane from the disused March to Wisbech Railway in Area A would also provide an opportunity to design the site layout to accommodate a potential railway bridge embankment should the disused March to Wisbech Railway be reopened. Ensuring the Proposed Development does not hinder the reopening of the disused March to Wisbech Railway has been raised by a number of Stakeholders and therefore the Applicant considers that Area A provides the best location to support the March to Wisbech Railway proposal.
- The redevelopment of Area B would require the removal and demolition of existing commercial buildings, which would have additional cost and time implications as compared the use of an undeveloped site, and would lead to a loss of commercial floorspace within Wisbech.
- Area C was rejected as it was too small to provide the additional space required in an accessible location to accommodate the project components, including future environmental improvements.
- From an environmental perspective, Area A does not perform as well as Area B and C because it is located on greenfield land and may result in potential adverse landscape and visual and ecological effects when compared to Areas B and C. Area A is however located in a broad location for growth in the Adopted Fenland Local Plan 2014 and is therefore considered an appropriate location for further growth linked to the industrial estate on Algores Way. Opportunities for landscape and visual and ecological mitigation have been identified to reduce the effects resulting from the development of this land. For the reasons described in the bullet points above, the benefits of using Area A over areas B and C are considered to outweigh the potential environmental effects of using Area A.
- In view of the noise surveys undertaken to inform the assessment of noise effects reported in **Chapter 7: Noise and Vibration (Volume 6.2)** the decision to select Area A was revisited and re-affirmed by the Applicant. The potential for significant noise effects identified as a result of the construction and operation of the Proposed Development to residential Receptors located on New Bridge Lane are addressed by the additional mitigation measures put in place to mitigate the effects identified thereby reducing effects to not significant. Furthermore, in light of the fact that the Applicant still considered the use of New Bridge Lane to be the Preferred Option for the operational access for HGVs to serve a redesigned EfW CHP Facility (as a redesign would be needed to facilitate the use of Areas B or C), the potential for effects would have been broadly the same regardless of whether Areas A, B or C were selected.

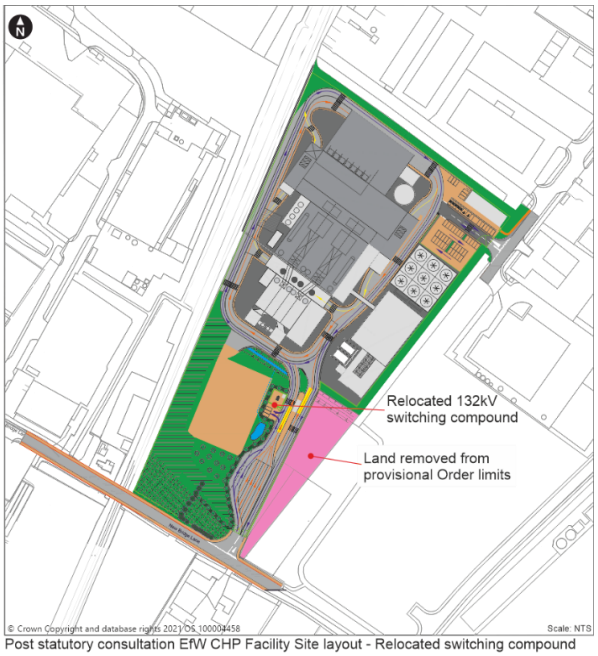
2.3.31 The Applicant revisited the land requirements for the Proposed Development following statutory consultation. It was concluded that it would not be necessary to include the whole of Area A as the Applicant had advanced discussions with UKPN over the necessary Grid Connection arrangements. Therefore, the Applicant was able to conclude the requirements for the EfW CHP Facility Site's 132kV switching compound. A small clean/air insulated (non-SF6 gas) switching compound could be

accommodated on land to the west of the gatehouse/weighbridge. Consequently, the Applicant was able to reduce the amount of additional land required to accommodate the relocation of the HGV access onto New Bridge Lane. **Graphic 2.5: EfW CHP Facility Site Layout land take post statutory consultation** highlights the reduction in land take post statutory consultation.

2.3.32 The Proposed Development therefore includes a smaller part of Area A than that presented at statutory consultation.

Graphic 2.5 EfW CHP Facility Site Layout land take post statutory consultation

Statutory consultation EfW CHP Facility Site layout



Post statutory consultation EfW CHP Facility Site layout - Relocated switching compound

Building design

2.3.33 The EfW CHP Facility would comprise a number of components in a main building envelope on the EfW CHP Facility Site. This building and the relevant components are described in **Chapter 3: Description of the Proposed Development (Volume 6.2)**. The Applicant has explored four options for the design of this building, with particular attention given to the design of the roof. These options are illustrated in **Figure 2.4: Massing Option of the EfW CHP Facility Site (Volume 6.3).** Option 2 differs from Option 1 in that the plant and machinery behind the chimneys has been enclosed. An indication of the more substantial changes considered between Options 2, 3 and 4, essentially the effects arising from a change in roof line, are demonstrated from a viewpoint east of New Bridge Lane **Figure 2.5: Viewpoint 1 Massing Options (Volume 6.3).**

2.3.34 The Preferred Option presented at statutory consultation was Option 2. It remains the Preferred Option and has been taken forward as the Proposed Development for the following main reasons:

- Option 2 includes the enclosure of low-level plant and machinery between the boiler house and chimneys, removing an element of visual clutter which is apparent with Option 1;

- A succession of flat roofs is consistent with the roofscape of surrounding buildings most notably the nearby cold store;
- The use of flat roofs minimises the height and mass of the buildings proposed on the EfW CHP Facility Site. Curved or sloping roofs as proposed with Options 3 and 4 require a greater height which results in empty space above plant and machinery; and
- Flat roofs are safer surfaces on which to undertake maintenance and repair.

2.3.35 Consideration was given to the colour and shading of external materials for statutory consultation and subsequently, two main options were presented at PEIR. The first sought to accentuate the profile of the lower buildings, in contrast to the taller boiler house through the use of darker shading to their southern elevations. Darker shading was also proposed to frame their remaining elevations.

2.3.36 The second option sought to use darker shading at the lowest levels graduating to lighter shades responding to the heights of individual buildings. It was considered that the architectural language of this second option was more reflective of the surrounding industrial landscape and that it served to emphasise the lower buildings and correspondingly lessen the visual prominence of the taller buildings. Visualisations from a selected number of locations were prepared to analyse the effectiveness of the shading options and to confirm the choice of colour palette. The use of a grey palette was preferred as it was considered to be in keeping with the cold store and the other industrial buildings in the area. The use of a neutral colour also serves to reduce the visual prominence of the buildings.

2.3.37 The design evolution process continued following statutory consultation. Two aspects were progressed. The first considered whether additional measures could be taken regarding the appearance of the EfW CHP Facility main buildings whilst the second considered the proposed Administration building which would be located at the Algores Way entrance.

The EfW CHP Facility main buildings

2.3.38 The approach to cladding, focusing upon the shading and texture of cladding panels, was revisited. Whilst the Applicant was satisfied that the adoption of a neutral, grey palette remains appropriate for the reasons set out above it did consider the use of different textures as a modification to its proposals for cladding the structure. Four options were prepared that presented a combination of shading and profile options. These are presented on **Figure 2.6: Cladding Options (Volume 6.3)**. Option 1 combined a darker shade to the lower buildings with the extensive use of 'kinetic' panelling to provide a contrast in texture as well as shade. Option 2 concentrated the 'kinetic' panelling on the Boiler House whilst Option 3 maintained the shading from Option 2 but reduced the 'kinetic' cladding to a band. Option 4 presented an alternative, vertical cladding system.

2.3.39 Option 3 is the Preferred Option. This is because the cladding panels chosen would have an element of reflection which it was considered could reflect natural lighting conditions. The panels can also be presented such that they could create a subtle image which would provide an opportunity to create an element of local distinctiveness to the building. Examples of the types of images which could be

created together with further explanation on the design evolution of the buildings and choice of cladding materials are provided within the **Design and Access Statement (Volume 7.5)** which accompanies the application.

The Administration building

2.3.40 This building has three functions, to provide the accommodation for the Administration of the EfW CHP Facility, to provide the welfare facilities for the workforce and to be a building to welcome visitors. The design is therefore required to accommodate these functions and to exhibit sustainable credentials in the way in which it would be constructed and operate.

2.3.41 The consideration of alternatives focused upon the building form and conceptual elevational treatment with attention given to the type and mix of materials which could be employed. **Figure 2.7: Administration Building concept design (Volume 6.3)** illustrates the two initial building forms which included for curved and flat roofed alternatives, (Concept elevation 1 and 2). Concept elevation 2 was considered the Preferred Option in that it would provide potentially more accommodation space, provide opportunities for developing useable roof space and be more in keeping with the shallow pitched roofed buildings which predominate within the surrounding area.

2.3.42 Alternative cladding options investigated as part of Concept elevations 1 and 2 included a predominance of glazing with green roof or for a mix of timber and composite panels to include a green wall. Preference was for the incorporation of both a green wall and green roof combined with a predominance of timber panelling which is considered to be a more sustainable material. Adoption of a green wall is considered to provide a contrast in both colour and texture with the timber panelling whilst also promoting biodiversity and absorbing sound. A predominance of glazing as shown on Concept elevation 1 could be more likely to require mechanical ventilation to control building temperatures.

2.3.43 Conclusions drawn from an analysis of the first two concepts led to the preparation of a third Concept elevation which is also featured on **Figure 2.7: Administration Building concept design (Volume 6.3)**. This illustrates a three-story flat roofed building clad in timber with a green wall. Further iterations then included for the provision of a second green wall and rooftop viewing area and to improve BNG, a brown roof. The final design for which consent is sought is illustrated on **Figure 3.26 Administration building elevations (Volume 6.3).**

Technology and Processes

2.3.44 Based on MVV's experience of operating similar facilities in the UK and Europe, the proposed technology is considered to have a proven and safe track record, and therefore no alternative forms of thermal treatment technology were considered.

2.4 EfW CHP Facility (construction)

2.4.1 The alternatives considered by the Applicant in relation to the construction phase of the EfW CHP Facility relate to the location of the Temporary Construction Compound (TCC).

Temporary construction compound

2.4.2 At the EIA Scoping stage, two options for the TCC were identified:

- Parcels C1 – 3: land to the south of the EfW CHP Facility Site to the south of New Bridge Lane; and
- Parcel C4: land to the east of the EfW CHP Facility Site.

2.4.3 These parcels are illustrated on **Figure 2.8: EfW CHP Facility Temporary Construction Compound Options (Volume 6.3)**. Since the EIA Scoping stage in December 2019, further locations for potential construction compounds were considered:

- Parcel C5: land to the east of New Drove Lane;
- Parcel C6: land to the west of the disused March to Wisbech Railway and north of New Bridge Lane;
- Parcel C7: land to the south of New Bridge Lane, further to the east of Land Parcels C1-3; and
- Parcel C8: land to the west of New Drove Lane.

2.4.4 Parcels C5 and C6 were investigated because the landowners of these sites offered MVV an opportunity to purchase the land. C7 was identified as a potential alternative location for the construction compound due to its proximity to the EfW CHP Facility Site. An evaluation of all six potential construction compound locations from an environmental and planning, technical and land and commercial perspective is provided in **Table 2.5 EfW CHP Facility Temporary Construction Compound Options** below:

Table 2.5 EfW CHP Facility Temporary Construction Compound Options

Land Parcel	Environmental and Planning	Technical	Land and commercial factors
Parcels C1 – 3	Parcels C1-3 are located opposite a residential property (10 New Bridge Lane), which may experience temporary disturbance (air quality, noise, visual, traffic) impacts during the time the construction compound would be in operation.	Parcels C1-3 were considered of a sufficient size to accommodate the construction compound.	Parcels C1-3 would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.
Parcel C4	The closest residential property to Parcel C4 would be 10 New Bridge Lane on the opposite side of New Bridge Lane.	Parcel C4 was considered of a sufficient size to accommodate the construction compound.	Parcel C4 would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.

Land Parcel	Environmental and Planning	Technical	Land and commercial factors
		The land parcel is directly adjacent to the EfW CHP Facility Site providing immediate access for construction.	
Parcel C5	Parcel C5 would be accessed from B198 Cromwell Road/New Bridge Lane or Weasenham Lane/New Drove Lane. Both routes would result in the potential need for additional road improvements to facilitate access to the EfW CHP Facility Site, and an increased distance of travel between the EfW CHP Facility Site and the construction compound.	Parcel C5 was considered of a sufficient size to accommodate the construction compound.	Parcel C5 would be available to purchase or leased via commercial negotiations with the landowner, subject to the purchase/lease price being economically viable.
Parcel C6	Parcel C6 is located adjacent to a residential property (11 New Bridge Lane), which may experience temporary disturbance (air quality, noise, visual, traffic) impacts during the time the construction compound would be in operation.	Parcel C6 was not considered of a sufficient size to accommodate the construction compound. The land parcel is located on the western side of the disused March to Wisbech Railway and would not be usable until the at-grade crossing of New Bridge Lane had been completed.	Parcel C6 would be available to purchase or leased via commercial negotiations with the landowner, subject to the purchase/lease price being economically viable.
Parcel C7	Parcel C7 is located adjacent to a residential property (Potty Plants), which may experience temporary disturbance (air quality, noise, visual, traffic) impacts during the time the construction compound would be in operation.	Parcel C7 was considered of a sufficient size to accommodate the construction compound.	Parcel C7 would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.

Land Parcel	Environmental and Planning	Technical	Land and commercial factors
Parcel C8	Parcel C8 is located adjacent to a residential property on New Drove which may experience temporary disturbance (air quality, noise, visual, traffic) impacts during the time the construction compound would be in operation. Parcel C8 would be accessed from B198 Cromwell Road/New Bridge Lane or Weasenham Lane/New Drove. Both routes would result in the potential need for additional road improvements, and an increased distance of travel between the main EfW CHP Facility Site and the construction compound.	Parcel C8 was considered of a sufficient size to accommodate the construction compound.	Parcel C8 would need to be purchased or leased by agreement from the landowner or compulsorily acquired as part of the DCO.

2.4.5 Taking account of the factors evaluated as reported in **Table 2.5 EfW CHP Facility Temporary Construction Compound Options** above, a modified version of Parcel C4 (see **Figure 3.2: Project Components (Volume 6.3)**) was selected as the Preferred Option for the EfW CHP Facility TCC for the following reasons:

- Parcel C4 is located adjacent to the EfW CHP Facility Site providing direct access during construction without the need to transport construction materials or workers from an offsite location;
- Parcel C4 can be accessed directly from Algores Way without the need for any highways improvements; and
- Parcel C4 is of a sufficient scale to accommodate the TCC infrastructure. The area of land proposed for the TCC has been reduced from the C4 illustration away from New Bridge Lane which would reduce the impact on Receptors along New Bridge Lane (see **Figure 3.2: Project Components (Volume 6.3)**).

Construction methods

2.4.6 The detailed construction methods that would be utilised for the construction of the EfW CHP Facility would be influenced by the EPC Contractor at the time of appointment. The description of the Proposed Development in **Chapter 3: Description of the Proposed Development (Volume 6.2)** outlines those aspects of the construction methods where options remain.

2.4.7 At the PEIR stage, two types of piling techniques were considered; driven piling and continuous flight auger piling. To minimise potential vibration effects, driven piling does not form part of the Proposed Development, instead the Applicant's EPC Contractor will be required to use a continuous flight auger piling technique.

2.5 CHP Connection

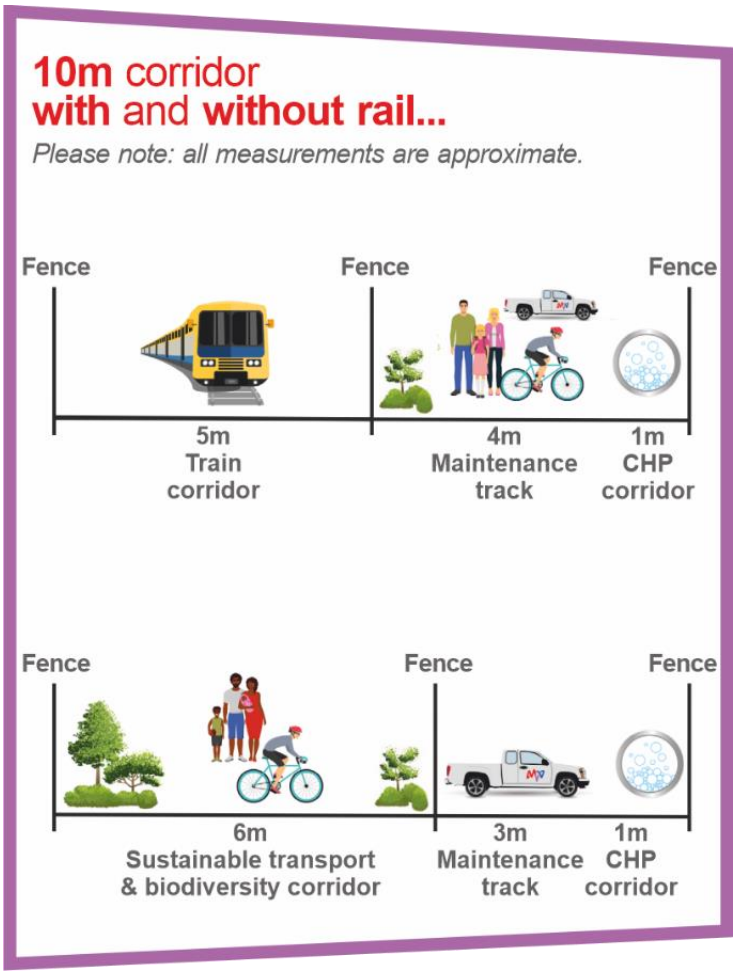
2.5.1 The route of the CHP Connection was proposed in the EIA Scoping Report (December 2019) to run along the side of the corridor of the disused March to Wisbech Railway. This route was selected because it would provide easy access to a number of potential end users of steam and electricity within the industrial estate to the north of the EfW CHP Facility. The route along the disused March to Wisbech Railway would minimise construction disruption by avoiding routes along Algores Way and other sections of the public highway. In addition, the route along the disused March to Wisbech Railway would minimise landscape and visual effects as it would sit adjacent to industrial estate infrastructure for the majority of the route up to the Nestlé Purina factory (see **Section 3.4, Chapter 3: Description of the Proposed Development (Volume 6.2)**).

2.5.2 Comments received in the EIA Scoping Opinion (see **Table 2.1 Summary of EIA Scoping Opinion responses in relation to the assessment of alternatives**) and during statutory consultation (see **Table 2.1 Summary of EIA Scoping Opinion responses in relation to the assessment of alternatives** and Table 2.2 **Summary of PEIR responses for alternatives together with any subsequent engagement** and the **Consultation Report (Volume 5.1)**) highlighted that it was important to Stakeholders that the use of the disused railway corridor for the CHP Connection would not hinder the ability for others to bring forward the reopening of the disused March to Wisbech Railway.

2.5.3 In response to these concerns, MVV published an illustrative drawing on their statutory consultation exhibition banners[10] setting out how the CHP Connection infrastructure could be accommodated alongside a reopened March to Wisbech Railway (see **Graphic 2.6: Indicative illustration of the CHP Connection**).

[10] MVV Environment Ltd (2021). MVV Medworth statutory consultation exhibition banner.

Graphic 2.6: Indicative illustration of the CHP Connection



2.5.4 The design of the CHP Connection was further developed at scale to demonstrate that the two developments would be compatible and a cross-sectional drawing prepared to support discussions with Network Rail to seek agreement on use of the disused March to Wisbech Railway for the CHP Connection, see **Figure 2.13 Indicative CHP Connection General Arrangement (Volume 6.3)**. The indicative drawing has evolved into the design which now forms part of the Proposed Development (**Figure: 3.17 CHP Connection General Arrangement (Volume 6.3)**).

2.5.5 On the basis that the Applicant has been able to demonstrate that the CHP Connection would not hinder the ability for others to deliver the reopening of the disused March to Wisbech Railway, and giving consideration to the potential environmental impacts, the proposed location of the CHP Connection is considered suitable.

2.5.6 The design of the CHP Connection includes for the use of expansion loops to enable the pipe to expand and contract when in operation. These loops are up to 6.8m high and extend for 5m in length and are repeated at 50-60m intervals along the pipeline. The loops formed part of the design which was the subject of statutory consultation. The Applicant is aware of the proximity of the CHP Connection to residential properties fronting Victory Road, Great Eastern and Burdett Roads. Following the

close of statutory consultation, the Applicant considered an alternative to the use of expansion loops in this location. The Applicant now proposes the use of bellows which consist of a section of corrugated pipe section in the same alignment and at the same height to the rest of the pipeline. It is considered that these are preferable in environmental terms in that they would not be readily visible from the rear of the properties referred to above. Bellows are not proposed for the remainder of the CHP Connection because they are less durable than expansion loops. The Applicant expects the expansion loops to last the entire life of the Proposed Development whilst it may be necessary to replace the bellows at least once.

2.6 Grid Connection

Corridor selection process

2.6.1 Initial approaches were made to UK Power Networks (UKPN) and National Grid with a request for a Point of Connection (POC) in July 2019 and October 2019 respectively. An initial, potential POC to the National Grid 400kV Network was identified as a tie-in directly into the 400kV line to the east of Wisbech which leads to the Walpole Grid Supply Point (GSP). Initially potential POCs onto the UKPN network were identified at Walsoken substation and Walpole substation. At a meeting in August 2019, UKPN confirmed that there was insufficient capacity to facilitate a connection at Walsoken substation.

2.6.2 Two corridor options were identified to access Walpole substation:

- 132kV East and
- 132kV West.

2.6.3 To access the 400kV connection directly into the 400kV line to the east of Wisbech a third potential corridor was identified.

2.6.4 A description of the corridor options and the relative environmental performance of each was set out within the **Medworth Grid Corridor Options Report September 2020**. This was published as part of the Stage 1b non-statutory consultation and was updated for statutory consultation to reflect the continued evolution of the Grid Connection design and to include the preferred alignment of the Grid Connection. This report has been further updated to confirm the chosen POC, route alignment and infrastructure to be provided at the substation. This report is **Appendix 2A: Grid Connection Options Report (Volume 6.4)**.

2.6.5 The 132kV East corridor was identified as the preferred corridor to Walpole substation. The reasons for its selection summarised from **Appendix 2A: Grid Connection Options Report (Volume 6.4)** are that:

- The 132kV East corridor is shorter and more direct than the 132kV West corridor, which followed the Holford Rule 3 principle favouring the most direct route when all other things are equal;
- Whilst both corridors were crossed by Sustrans cycle route, the 132kV West corridor had potentially greater impacts on users of the Nene Way Long Distance Trail which crosses the corridor at two locations;

- The 132kV East corridor had fewer historic environmental Receptors in comparison to the 132kV West corridor;
- The 132kv West corridor would require two crossings of the River Nene which had a greater potential for effects on the water environment than the East option;
- Both corridor options fall within land currently identified for the potential Wisbech Garden Town however the 132kV East corridor would provide the ability to identify a route on the eastern side of the A47 to avoid an overlap with the potential Garden Town; and
- Both corridor options cross areas of Flood Zones 2 and 3. However, all floodplain within the 132kV West corridor is undefended whilst the majority of floodplain within the 132kV East benefits from flood defences.

2.6.6 Stage 1 non-statutory consultation was held between 16 March and 4 May 2020. Documents consulted upon included the Developer's EIA Scoping Report which identified the 132kV East and 400kV corridors. No comments were received which suggested a preference for one grid connection corridor over another.

2.6.7 Discussions with National Grid indicated that the cost of the 400kV connection would be in the order of £23m - £27m, advising that it was, in its opinion uneconomical.

2.6.8 Both the 132kV East and 400kV corridor options were assessed from an environmental, technical and cost perspective. The 132kV East corridor was selected for the following reasons which are summarised from **Appendix 2A: Grid Connection Options Report (Volume 6.4)**:

- Steel pylons with a maximum height of 49m above ground level (AGL) for the 400kV connection would be more visually intrusive than the 132kV wooden pole option with a maximum height of 18m AGL. Overall fewer Receptors would have views of the grid connection infrastructure.
- The increased height of the steel pylons for the 400kV connection has the potential to impact upon the setting of heritage assets to a greater extent than the shorter wood poles used for the 132kV connection.
- The greater height of the 49m overhead line for the 400kV connection may have the potential to result in an increased collision risk to certain bird species.
- Both corridors are located in Flood Zones 1, 2 and 3. Whilst the 132kV corridor is greater in length than the 400kV corridor and thus covers a wider area of flood plain, both corridors benefit from flood defences.
- The foundations for wooden poles associated with the 132kV corridor are expected to be less substantial and reduce the potential risks to groundwater and surface water Receptors during construction.
- Extensive transmission reinforcement works would be required for the 400kV connection, including works at two offsite locations: Walpole substation and Burwell Main substation.
- The 400kV connection would cost significantly more than the 132kV connection.

2.6.9 The choice of corridor was consulted upon at Stage 1b non statutory consultation. One response which referenced the Grid Connection Corridor was received from Anglian Water. This requested that consideration be given to Anglian Water's existing infrastructure when the route of the Grid Connection is being finalised.

2.6.10 As a result of the above factors, the 132kV East corridor was taken forward as the preferred corridor.

Identification of a Preferred Route Alignment

2.6.11 Having identified the preferred corridor, the next stage was to consider alternative route alignments to connect to the POC at the Walpole substation in more detail.

2.6.12 Initial optioneering work was undertaken to identify technically feasible routes for assessment. These were then reviewed and comparisons on environmental, technical, land use and commercial were made. Route optioneering took into consideration the Holford Rules (see **Appendix 2A: Grid Connection Options Report (Volume 6.4)**) which provide guidelines for the routing of high voltage transmission towers, but which are also applicable to the routing of poles for voltages at 132kV. Consideration was also given to statutory clearance limits and to the likely ease of construction relative to known ground conditions.

2.6.13 The consideration of routes also began with the assumption that majority of the connection could be overhead. This approach was informed by NPS EN-5 paragraph 2.8.9 which provides policy guidance for the consideration of whether a connection should be undergrounded. It advises that placing a connection underground may be more appropriate in landscapes of natural beauty such as National Parks, Areas of Outstanding Natural Beauty (AONB) or residential areas but that the costs of undergrounding relative to overhead, and the other environmental and archaeological consequences that might be of issue should also be a factor when arriving at a decision.

2.6.14 The preferred corridor does not pass through a landscape designated for its natural beauty nor through any residential areas. On this basis, the assumption was made that a totally underground connection would not be necessary from a policy perspective.

2.6.15 The route alignment options are shown on **Figure 2.9: 132kV Grid Connection East Alternative Routes (Volume 6.3)**. Each route was compared with the following conclusions reached.

Table 2.6 EfW CHP Facility Grid Connection Route Alignment

Route Alignment	Environmental and Planning	Technical	Land Use and commercial factors
OHL1	Land south of New Bridge Lane and between A47 and New Drove identified as Broad Location for Growth (business and potential residential).	OHL across Elm High Road/A47 junction would pass over Elm Hall Hotel. Would require long span width, high towers.	Multiple residential dwellings oversailed. Solar Farm oversailed.

Route Alignment	Environmental and Planning	Technical	Land Use and commercial factors
	Crosses priority habitat (Orchard) and adjoining wooded area north of Meadowgate Lane. Crosses the south eastern corner of the Wisbech East Strategic Allocation.	Crosses multiple 11kV (4 no.) and 33kV (1 no.) overhead lines. 132kV OHL crossing. 400kV OHL crossing (2 no.)	Crosses residential properties east of Broadend Road and Burrettgate Road.
OHL2	The alignment runs in proximity to ponds but does not oversail them.	OHL commences east of Elm High Road/A47 junction. Crosses multiple 11kV (7 no.) and 33kV (3 no.) overhead lines. Crosses A47 in two locations.	Crosses commercial building north of Broadend Road (east of A47).
Proposed UGC from EfW CHP Facility Site to Elm High Road	Land south of New Bridge Lane and between A47 and New Drove identified as Broad Location for Growth (business and potential residential). Passes between a gap and then to the north of orchards and Priority Habitat.	Crossing of Elm High Road/A47 Junction would require HDD or open cut. Crossing of ditches. Installation parallel to area of orchard.	Crosses under Elm High Road/A47 junction.

2.6.16 Given the Adopted Fenland Local Plan 2014 includes proposals for business and potentially residential development south-east of Wisbech, and given the anticipated difficulties in placing an OHL across the Elm High Road/A47 junction, the option of an underground cable to Elm High Road was selected. OHL1 could have been amended to start at a location east of the junction, relying upon the underground cable up to that point, however beyond Elm High Road it would pass closer to the existing settlement of Wisbech, cross a greater number of commercial and residential properties and the proposed Wisbech East Strategic Allocation. Whilst shorter and potentially cheaper than OHL2, it was therefore not selected. OHL2 was considered to perform better, crossing fewer properties and avoiding important habitats.

Route refinement

2.6.17 The preferred route (UGC and OHL2) was subjected to further refinement. This involved field surveys to consider any localised technical and environmental issues. Route options for passing around the solar farm located south of Walpole were also

identified in the eventuality that the connection into the Walpole substation would be from the east. These consisted of four alternative route options to the east of the solar farm. These route options are illustrated on **Figure 2.10: 132kV Grid Connection Northern Alignment Options Avoiding the Solar Farm (Volume 6.3).**

2.6.18 Each option was reviewed, and it was determined that with regard to the historic Environment, Ecology and Ornithology that there was no discernible difference between the route options but that with regard to the Water Environment there was a marginal preference for Route 4 which had the fewest IDB ditch crossings. All route options would have resulted in an alignment less direct than the initial route proposed to the west of the solar farm and would have required the identification of additional numbers of landowners.

2.6.19 Having reviewed the route options it was considered that they offered no additional environmental, technical or land use/commercial improvements over that originally selected and in view of other development proposals in proximity to the Walpole substation a subsequent, alternative approach was progressed.

2.6.20 On the 15 January 2021, land to the south-west of the Walpole substation received planning consent for a solar farm (LPA ref:20/01508/FM). In view of the potential impact of the OHL upon this proposal and informed by the results of the exercise to identify alternative eastern route options, combined with a field survey which identified a considerable number of existing OHLs converging upon the Walpole substation, the decision was taken to route the final section of the connection underground. This would be from the point where it meets Mill Road. An underground cable following the alignment of Mill Road/Walpole Bank was proposed for the Walpole connection. This would have had the benefit of not adding further to the existing views of wires in the area.

Alternative Grid Connection Construction Compound Locations

2.6.21 A construction compound was initially required along the route of the preferred Grid Connection which would be in addition to what was then referred to as TCC1, the construction compound proposed alongside the EfW CHP Facility Site. Two sites were therefore identified and reported at statutory consultation. They were at a point approximately halfway along the OHL route (as then proposed), accessed from Lynn Road (TCC2) and an alternative site on the opposite side of the A47, approximately 150m from its junction with Lynn Road (TCC3). Neither site was directly adjacent to residential properties and neither had any environmental designations.

2.6.22 Responses received at statutory consultation from Norfolk County Council stated that it might object to TCC2 given the difficulties for vehicles turning right and the potential for construction vehicles to impede traffic. TCC3 was a more acceptable location but the Council considered it may still give rise to visibility issues.

2.6.23 In view of the comments received and in response to the continued evolution of the Grid Connection post statutory consultation the Applicant does not propose to take either of the alternative sites forward and will instead rely upon TCC1 (now referred to as the TCC).

Alternative Point of Connection

2.6.24 The Grid Connection Corridor Study September 2020 (which was published as part of the Stage 1b non-statutory consultation), reported that UKPN had informed the Applicant that an unconstrained POC to the Walsoken DNO Substation could not be provided. Subsequent discussions indicated that a constrained POC could be provided and that the level of constraint would not materially affect the operational output of the EfW CHP Facility (see **Section 3.6: Chapter 3 Description of the Proposed Development (Volume 6.2)**). Consequently, discussions continued with UKPN during and post statutory consultation to confirm whether a POC at Walsoken would provide an alternative to the Walpole POC.

2.6.25 The Applicant initially considered alternative grid connection route options to connect to Walsoken POC. These were reported at statutory consultation and were:

- Alternative Grid Connection 1 – Suggested by UKPN and running underground along Algores Way, Weasenham Lane, Ramnoth Road, Mansell Road, Arles Avenue, Meadowgate Lane, Sandy Lane and Broadend Road to Walsoken substation.
- Alternative Grid Connection 2 – Following the same underground route considered for Walpole until the Elm Hall roundabout, but remaining on the western side of the A47 underground to Broadend Road and then to Walsoken substation.
- Alternative Grid Connection 3 – Following the same underground route considered for Walpole but with termination of the OHL element at Broadend Road with the connection running underground along Broadend Road and under the A47 to the Walsoken substation.

2.6.26 The alternative options are illustrated on **Figure 2.11: Walsoken Alternative Grid Connection Options (Volume 6.3)**. A review of each option was undertaken which concluded for Alternative Grid Connection 1 that:

- Environmental – the connection would run along the existing urban highway network and as such would not affect natural habitats. It would avoid historic areas but would pass through Wisbech Air Quality Management Area 3. Construction would pass approximately 200 residential properties and could create noise and vibration in residential areas and close to schools and colleges such as the Thomas Clarkson and Meadowgate Academies.
- Technical – excavation would be undertaken within or immediately alongside the highway this would require a ‘hard dig’. Existing services and infrastructure would need to be identified and safeguarded.
- Land use and commercial - at 4.1km underground the Alternative Grid Connection 3 would be the most expensive. It would be unlikely to directly affect existing land uses although indirect effects could occur during construction which would necessitate partial closure of the highway.

2.6.27 Alternative Grid Connections 2 and 3 are similar in that they adopt the preferred underground route to Walpole DNO Substation, up to Meadowgate Lane. From this point Alternative Grid Connection Option 2 would continue underground whilst

Option 3 would be overhead. The review of Alternative Grid Connection Option 2 concluded that:

- Environmental – the connection would avoid residential areas and other sensitive land uses. It would run parallel to the A47 under land used for agricultural purposes and as tree nurseries and orchards. Excavation may affect existing vegetation. At the northern section, before it meets with Broadend Road, the land is more heavily wooded and tree removal would be likely to be required. Some of this land is identified as a Priority Habitat.
- Technical – excavation would be on private land parallel to the A47. Land is greenfield and so would be 'soft dig'. Services and associated infrastructure are less likely to be encountered than with Alternative Grid Connection 1.
- Land use and commercial – at 4.3km, with a combination of underground cables and overhead lines, from the EfW CHP Facility Site to Walsoken DNO Substation the cost of construction is likely to be less than that for Alternative Grid Connection 1. It may be necessary to HDD under Elm High Road/A47. Effects upon existing land uses are likely to be related to short-term access restrictions during construction and minimal loss of crop (trees).

2.6.28 The review of Alternative Grid Connection 3 concluded that:

- Environmental – the route avoids areas designated for their natural or historic importance. No areas of woodland or orchard would be affected. Whilst the overhead section would remain visible during operation the landscape and visual effects were considered unlikely to be significant given that the landscape is not designated and the intervening distances between visual Receptors such as residential properties and footpaths.
- Technical – OHL would be across flat, large arable fields. Ditches are narrow and easily spanned. Underground section along Broadend Road requiring HDD or alternative method to cross A47.
- Land use and commercial – at 4.8km (including 1.5km OHL) this would be potentially the lowest cost option. It may be necessary to HDD under Elm High Road/A47 and Broadend Road/A47. Effects upon existing land uses are likely to be related to short-term access restrictions during construction and minimal loss of crop.

2.6.29 Having given due consideration to the environmental, technical and land use and commercial considerations the Alternative Grid Connection 3 was selected as the preferred route should the alternative POC at Walsoken DNO Substation be chosen. The route was environmentally preferable to Alternative Grid Connections 1 and 2 and technically deliverable. It was also considered to be potentially the cheapest to deliver, although final costs would be dependent upon detailed design, particularly regarding the means by which the A47 is crossed at Elm High Road/A47 and Broadend Road/A47. This choice was reported at statutory consultation.

Choice of Walsoken POC

2.6.30 Reference is made earlier in this section to ongoing discussions with UKPN during statutory consultation. These discussions resulted in UKPN issuing a new

constrained connection offer that provided a curtailed maximum export capacity of 62MW at the Walsoken (DNO) Substation. Having received the offer the level of curtailment was not considered to be significant in that it might only restrict export of the maximum net electrical output from the CHP EfW Facility by 3.51% and mainly during the months of August, September and October each year.

2.6.31 The Applicant was required to select the most appropriate of the two connection options. Consideration was therefore given to responses received at statutory consultation relevant to either the Walpole POC and associated Grid Connection or Walsoken. **Table 5.1** of **Appendix 2A: Grid Connection Options Report (Volume 6.4)** summarises the consultation responses received. It was concluded that, whilst some responses view the prospect of any connection unfavourably, where preferences were made then they seek as short a connection as possible and one which would be underground rather than partially overhead.

2.6.32 The comparative technical complexity and cost of each potential point of connection was also considered. Combining the mix of underground and overhead infrastructure proposed at statutory consultation, relative costs of £16.1m and £4.2m for the Walpole POC and Walsoken POC respectively were calculated.

2.6.33 Finally, the comparative environmental sensitivity of the Walpole and Walsoken locations was assessed. Neither are located in an area designated for its environmental significance and both lie outside of an urban area but are located close to a small number of residential properties. The Applicant considered that both locations could satisfactorily accommodate the POC on environmental grounds.

2.6.34 Having reviewed consultation responses, the costs of the alternative connections and the environmental sensitivities of both locations the Applicant concluded that the Walsoken DNO Substation POC represented the most appropriate point of connection.

2.7 The Grid Connection route and technology

2.7.1 The alternative Grid Connection Routes presented at statutory consultation included for a mixed underground and overhead cable connection between the EfW CHP Facility and the Walpole or Walsoken POCs. Having selected Walsoken DNO Substation as the POC the Applicant reviewed responses received at statutory consultation and responses received during landowner engagement. These responses included an intention by one landowner to submit a planning application for residential development on land north of the A47, between Halfpenny Lane and Elm Low Road. This would have been potentially sterilised in part by the presence of the Applicant's proposed UCG. Other responses received indicated a preference for a wholly underground connection.

2.7.2 Consultation with National Highways resulted in an agreement that the Grid Connection could be placed within the verge of the northbound A47 in order to avoid the future residential development land. With no in-principle objection to undergrounding within the A47 verge by National Highways, the Applicant also considered a new alternative to the route presented at statutory consultation, consisting of a wholly underground connection running within New Bridge Lane, the A47 verge and Broadend Road. The environmental and costs considerations are

summarised from **Appendix 2A; Grid Connection Options Report (Volume 6.4)** as:

- All underground would result in no visual effects (operation);
- No potential for the operation of the connection to affect ecological Receptors;
- No implications for continued agricultural activities;
- A reduction in the number of waterbodies affected;
- Little potential to effect unrecorded archaeology;
- Effective mitigation of effects upon traffic by undertaking works in the hours of 20:00 to 06:00;
- Significant reduction in the potential for EMF and noise; and
- A cost of approximately £3.52m as opposed to £2.51m for a mix of underground and overhead.

2.7.3 Informed by the above considerations, the Applicant concluded that a wholly underground connection to the Walsoken DNO Substation should form part of the Proposed Development.

2.8 Alternative locations and equipment for the Walsoken Substation

2.8.1 Irrespective of whether the Walpole or Walsoken DNO Substation was selected as the point of connection there is the requirement for a second substation, one in the control of the Applicant. This second substation, known as the Walsoken Substation would contain the necessary electrical equipment to transfer the electricity generated by the EfW CHP Facility into UKPN's Walsoken DNO Substation and then into the national grid. Four alternative locations were considered for the substation each in close proximity to the existing Walsoken DNO Substation. Proximity enables the hardwiring of the signal exchange between the two sites, as opposed to a less reliable fibre optic cable and it enhances the practicalities of switching and isolation which are easier when apparatus belonging to the Applicant and DNO are in close proximity.

2.8.2 The locations are illustrated on **Figure 2.12: Alternative location options for Walsoken Substation (Volume 6.3)**. Option 1 is land within the ownership of UKPN and lies immediately to the south of its existing fenced substation. The land is oversailed in part by electrical cables and is predominantly grassland with trees and bushes planted along the Broadend Road frontage. Access would be from the existing UKPN access road from Broadend Road. Option 2 is to the east and is agricultural land with no immediate access from Broadend Road. Options 3 and 4 lie to the south of Broadend Road and are either side of the residential properties 34 and 36 Broadend Road. There is an existing access to Option 3. Both sites are currently vacant and partially overgrown with vegetation.

2.8.3 Option 1 was the Applicant's choice because it is closest to the existing Walsoken DNO Substation and benefits from an existing vehicular access from Broadend

Road. Whilst some vegetation would need to be removed, that which would be retained would provide screening. Option 1 is further away from residential properties (Options 3 and 4) and would not extend the built frontage of Broadend Road further into the countryside (Option 2).

2.8.4 The electrical equipment to be installed at the Walsoken Substation contains high levels of energy due to the operating voltage of 132kV and this requires an insulating medium. The equipment considered can either be gas insulated, air insulated or clean air insulated. Gas insulation uses sulphur hexafluoride (SF6). The Draft NPS EN-5, paragraph 2.14.1 notes that this gas is an 'extraordinarily potent greenhouse gas'. As such, applicants are required to consider carefully whether its use can be avoided.

2.8.5 For this reason, the Applicant considered the use of alternative technologies to the use of gas insulated, these being air and clean air switchgear. Of the two options taken forward for consideration the clean air switchgear is favoured because it avoids the use of SF6 and is of a lower height (3.2m) when compared with the air insulated option which would be up to 6m tall. Whilst any infrastructure installed at the Walsoken Substation would be viewed in the context of the existing UKPN infrastructure, a lower structure is more easily screened by existing landscaping.

2.9 Conclusion

2.9.1 The EIA Regulations require an ES to describe the reasonable alternatives considered by the Applicant and reasons for selection informed by environmental considerations. PINS Advice Note 7 considers a good ES to be one that "explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment". However, it is noted that NPS EN-3 states that "*it is for energy companies to decide what applications to bring forward and the Government does not seek to direct applicants to particular sites for renewable energy infrastructure...*".

2.9.2 This Chapter has set out the site selection process and alternatives considered by the Applicant and explained how the design of the Proposed Development has evolved. At each stage the Applicant has considered the potential effects upon the environment of the alternatives considered and selected a preference informed by predicted environmental performance alongside technical and other factors. The site selection process and consideration of alternatives has been wide ranging and has considered both the EfW CHP Facility and also many of the constituent parts which together form the Proposed Development. The design evolution has been informed by responses to non-statutory and statutory consultation.