Medworth Energy from Waste
Combined Heat and Power Facility

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Environmental Statement
Chapter 16: Health

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

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Contents

16. Health

16.1 Introduction

16.1.1 This chapter presents the environmental assessment of the likely significant effects of the Proposed Development with respect to health.

16.1.2 The chapter should be read in conjunction with the description of the development provided in **Chapter 3: Description of the Proposed Development (Volume 6.2)** and with respect to relevant parts of other chapters including: **Chapter 6: Traffic and Transport, Chapter 7: Noise and Vibration, Chapter 8: Air Quality, Chapter 9: Landscape and Visual, Chapter 15: Socio-economics Tourism, Recreation and Land Use** and **Chapter 17: Major Accidents and Disasters** (all **Volume 6.2**), where common Receptors have been considered and where there is an overlap or relationship between the assessment of effects. A list of terms and abbreviations can be found in **Chapter 1 Introduction, Appendix 1F Terms and Abbreviations (Volume 6.4)**.

16.2 Consultation and Stakeholder engagement

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

16.2.2 A summary of the relevant responses received in the EIA Scoping Opinion in relation to health and confirmation of how these have been considered within the assessment to date is presented in **Table 16A.1** in **Appendix 16A Summary of Consultation Responses (Volume 6.4)**.

16.2.3 Following a review of responses to the Scoping Report, additional engagement was undertaken on the approach to the assessment of potential effects upon human health. Copies of the proposed methodology were submitted to consultees in September 2020 in a Technical Note. The following were consulted:

- Fenland District Council;
- Cambridgeshire County Council;
- Borough Council of Kings Lynn and West Norfolk;
- Norfolk County Council; and
- Public Health England (note Public Health England was replaced by the UK Health Security Agency and Office for Health Improvement and Disparities on 1st April 2021).

16.2.4 Consultees were asked to provide responses in writing and a summary of the responses from the consultees who replied is presented in **Table 16A.2** in **Appendix 16A Summary of Consultation Responses (Volume 6.4)**.

16.2.5 As a result of the consultation on the Technical Note in September 2020 it was proposed that the Applicant would use the 21 wider determinants of health provided by Public Health England (PHE)[1] with the factors identified in the Mental Wellbeing Impact Assessment (MWIA) toolkit to help determine the scope of the assessment. In April 2021 a further consultation took place with the Stakeholders listed in above to agree this approach.

16.2.6 The comments received are summarised in **Table 16A.3** in **Appendix 16A Summary of Consultation Responses (Volume 6.4)**.

16.2.7 A summary of the relevant responses received to the PEIR, together with any subsequent discussions held in relation to health and confirmation of how these have been considered within the assessment to date is presented in **Table 16.A4** in **Appendix 16A Summary of Consultation Responses (Volume 6.4)**.

16.3 Relevant legislation, planning policy, technical guidance

Legislative context

16.3.1 There is no specific legislation or regulation of relevance to the consideration of human health, other than the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017[2] (the 'EIA Regulations 2017' discussed in **Chapter 5: Legislation and Policy (Volume 6.2)** of this ES which require that the EIA must describe and assess the direct and indirect effects of the Proposed Development on population and human health.

Planning policy context

16.3.2 There are a number of policies at the national and local level that are relevant to the Proposed Development. A summary of the key provisions within the overarching National Policy Statements (NPS), which provide the primary policy basis for the consideration of Nationally Significant Infrastructure Projects, is provided in **Table 16.1 Planning policy context for health: Adopted National Policy Statements**. This section should be read in conjunction with **Chapter 5: Legislation and Policy (Volume 6.2)** and the equivalent table in the other ES Chapters referenced in **Section 16.1** above.

Table 16.1 Planning policy context for health: Adopted National Policy Statements

Policy reference	Implications	Section addressed
Overarching National Policy Statement for Energy (EN-1)[3]	EN-1 sets out general assessment principles for applications relating to energy infrastructure. This includes those that the Examining Authority (and, in terms of decision-making, the	This chapter presents an assessment of the likely significant effects of the Proposed Development with respect to health.

[1] The Planning Inspectorate (January 2020) Scoping Opinion: Proposed Medworth Energy from Waste Combined Heat and Power Facility.
[2] HM Government. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. SI 2017 No. 572.
[3] Department for Energy & Climate Change. (2011) Overarching National Policy Statement for Energy (EN-1).

Policy reference	Implications	Section addressed
	Secretary of State) should take into account the potential benefits of a project including meeting needs for energy infrastructure and job creation and long term/wider benefits. EN-1 notes that energy production has the potential to impact on the health and well-being of the population and that access to energy is beneficial to society and health as a whole. However, the production, distribution, and use of energy may have negative impacts on some people's health (paragraph 4.13.1). Where a proposed project has an effect on human beings, the environmental statement should assess these effects for each element of the project, identifying any adverse health impacts, and measures to avoid, reduce or compensate for these impacts as appropriate (paragraph 4.13.2). The NPS notes that direct impacts on health may include increased traffic, air or water pollution, dust, odour, hazardous waste and substances, noise, exposure to radiation, and increases in pests (paragraph 4.13.3). Paragraph 4.13.5 notes that generally, those aspects of energy infrastructure which are most likely to have a significantly detrimental impact on health are subject to separate regulation (for example for air pollution) which will constitute effective mitigation of them, so that it is unlikely that health concerns will either constitute a reason to refuse consents or require specific mitigation under the Planning Act 2008. However, the Examining Authority (and, in terms of decision-making, the Secretary of State) will want to take account of health concerns when setting requirements relating to a range of impacts such as noise.	Individual topic chapters consider human health as a specific Receptor within their remit, where relevant and where it cannot be scoped out from assessment. This includes**: Chapter 6: Traffic and Transport, Chapter 7: Noise and Vibration, Chapter 8: Air Quality, Chapter 9: Landscape and Visual, Chapter 15, Socio-economics Tourism, Recreation and Land Use** and **Chapter 17: Major Accidents and Disasters** (all **Volume 6.2**). This chapter brings together outcomes of the individual assessments within the relevant ES chapters to assess effects upon human health within the Study Area and includes consideration of measures to avoid, reduce or (if necessary) mitigate for adverse impacts.
National Policy Statement for Renewable Energy Infrastructure (EN-3)[4]	NPS EN-3 provides additional technology specific guidance to complement NPS EN-1. It notes that where proposed waste combustion	**Chapter 8: Air Quality (Volume 6.2)** of the ES considers effects in relation to air quality.

[4] Department for Energy & Climate Change.(2011) National Policy Statement for Renewable Energy Infrastructure (EN-3)

Policy reference	Implications	Section addressed
	generation stations conform with the Waste Incineration Directive and local air quality standards, they should not be regarded as having adverse impacts on health (paragraph 2.5.43).	
National Policy Statement for Electricity Networks Infrastructure (EN-5)[5]	NPS EN-5 (Section 2.10) is relevant to the consideration of the Grid Connection component of the Proposed Development. Human health is referenced in terms of electromagnetic frequency. Reference is made to the International Commission on Non-Ionizing Radiation Protection guidelines. There is also consideration of undergrounding of cables in this context as well. See paragraphs 2.10.1 – 2.10.17.	Consideration is given to Electric and Magnetic Fields in **Section 16.9**. No overhead power lines are proposed as part of the Proposed Development.

16.3.3 In September 2021, the Department of Business, Energy and Industrial Strategy (BEIS) consulted upon a review of Energy National Policy Statements with consultation closing on 29 November 2021. The energy NPS were reviewed to reflect the policies and broader strategic approach set out in the Energy White Paper[6] and ensure a planning framework was in place to support the infrastructure requirement for the transition to net zero.

16.3.4 **Table 16.2 Planning policy context for health: Draft National Policy Statements** summarises those Draft Energy NPS which are considered to be relevant to the Proposed Development.

Table 16.2 Planning policy context for health: Draft National Policy Statements

Policy reference	Implications	Section addressed
Draft Overarching National Policy Statement for Energy (EN-1)[7]	Paragraph 4.3.1 of the draft is consistent with paragraph 4.13.1 of the adopted NPS. Paragraph 4.3.2 of the draft is consistent with paragraph 4.13.2 of the adopted NPS.	See **Table 16-1 Planning policy context for health: Adopted National Policy Statements.**

[5] Department for Energy & Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[6] Department for Business, Energy & Industrial Strategy (2020) Energy white paper: Powering our net zero future
[7] Department for Business, Energy and Industrial Strategy. (2021) Draft Overarching National Policy Statement for Energy (EN-1).

Policy reference	Implications	Section addressed
	Paragraph 4.3.3 of the draft is consistent with paragraph 4.13.3 of the adopted NPS. Paragraph 4.3.5 of the draft is consistent with 4.13.5 but notes the Secretary of State will want to take account of health concerns when setting requirements relating to a range of impacts such as noise. It states that opportunities should also be taken to mitigate indirect impacts, by promoting local improvements to encourage health and wellbeing, this includes potential impacts on vulnerable groups within society i.e., those groups within society which may be differentially impacted by a development compared to wider society as a whole.	In relation to paragraph 4.3.5 of the draft NPS, reference is made to the Applicant's **Outline Employment and Skills Strategy (Volume 7.8)** in **Section 16.9**, whereby employment and training can improve individual health and well-being. Reference is also made to the **Outline Community Benefits Strategy (Volume 7.14).** The Package will be offered irrespective of any measures required for mitigation and in this respect, any benefits occurring would be over and above those considered in this assessment.
Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)[8]	Paragraph 2.13.8 is broadly consistent with 2.5.43 of the adopted NPS but does not reference the Waste Incineration Directive. Paragraph 2.13. 8 notes that where a proposed waste combustion generating station meets the requirements of the EPR [Environmental Permitting Regulations 2016] and BAT [the Waste Incineration Best Available Techniques] conclusions and will not exceed the local air quality standards, the Secretary of State should not regard the proposed waste generating station as having adverse impacts on health.	**Chapter 8: Air Quality (Volume 6.2)** of the ES considers effects in relation to air quality.
Draft National Policy Statement for Electricity Networks Infrastructure (EN-5)[9]	Paragraphs 2.13.1 – 2.13.7 are broadly consistent with paragraphs 2.10.1 to 2.10.15 of the adopted NPS, however the text has been amended to reflect the fact that the Centre for Radiation, Chemical and Environmental Hazards now fall under the National Institute for Health Protection, previously it was part of the Health Protection Agency.	See **Table 16-1 Planning policy context for health: Adopted National Policy Statements.**

[8] Department for Energy & Climate Change (2021) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)
[9] Department for Energy & Climate Change (2021) Draft National Policy Statement for Electricity Networks Infrastructure (EN-5)

16.3.5 Other relevant national and local policies are summarised in **Table 16.3 Planning policy context for health: National and local planning policies.**

Table 16.3 Planning policy context for health: National and local planning policies

Policy reference	Implications	Section addressed
National Planning Policy Framework (NPPF)[10]	The policy framework considers health within the concept of healthy and safe communities (section 8). Paragraph 92 makes reference to planning policies and decisions aiming to achieve healthy, inclusive and safe spaces which promote social interaction, are safe and accessible and enable and support healthy lifestyles.	See comments under (EN-1) in **Table 16-2 Planning policy context for health: Draft National Policy Statements**.
National Planning Policy for Waste (2014)[11]	The NPPW sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and management. Paragraph 7 concerns the determination of planning applications. It states that consideration should be given to the likely impact upon the local environment and on amenity and the locational implications of any advice on health from the relevant health bodies. It states that waste planning authorities should avoid carrying out their own detailed assessment of epidemiological and other health studies. Appendix B sets out locational criteria for determining planning applications.	The ES adopts a proportionate approach to the consideration of health issues, following consultation on the proposed methodology and **Section 16.9** provides an assessment of health effects.
Local Policy		
Cambridgeshire County Council and Peterborough City Council Minerals and Waste Local Plan 2036 (2021)[12]	As described in **Chapter 5 Legislation and Policy (Volume 6.2)** of this ES, Cambridgeshire County Council (CCC) and Peterborough City Council Minerals and Waste Local Plan was adopted on 28 July 2021. Policy 1: Sustainable Development and Climate Change requires proposals to demonstrate how development will help to reduce greenhouse gas emissions and take into account any significant impacts on human health and wellbeing and on air quality.	Potential impacts in relation to health due to the Proposed Development are considered in **Section 16.9**, drawing on the results of the relevant ES topic chapters, this includes a broad range of topics, including those listed in the policies that are referenced in column 2.

[10] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework.
[11] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2014) National Planning Policy for Waste
[12] Cambridgeshire County Council and Peterborough City Council. (2021) Minerals and Waste Local Plan

Policy reference	Implications	Section addressed
	Policy 18 Amenity Considerations states that development must not give rise to unacceptable adverse impacts upon the amenity of existing occupiers of land or property, including risk of harm to human health or safety. Policy 23 Traffic Highways and Rights of Way includes for the protection and enhancement of existing rights of way.	
Location and Design of Waste Management Facilities (2021)	Appendix 3 of the Adopted Minerals and Waste Local Plan provides detailed criteria for siting, with separate criteria provided for urban locations. Detailed design criteria are also provided. These include criteria relating to transport, lighting, noise, air quality and pests and vermin.	The criteria in Appendix 3 form part of the policy context for the Proposed Development. Relevant topics covered in the Appendix are considered in **Section 16.9** of this chapter, drawing on the results of other relevant chapters of the ES and other supporting documents.
Fenland Local Plan (Adopted) (2014)[13]	Policy LP2 – Facilitating the Health and Wellbeing of Fenland Residents states that development proposals should contribute to the Council's goal of Fenland's residents achieving the highest attainable standard of health, irrespective of their race, religion, political belief, economic or social condition, sex or age. Development proposals should contribute to creating a healthy, safe and equitable living environment by, for example: • Creating an environment (built and social) in which communities can flourish (see all policies in this plan); • Creating opportunities for employment in accessible locations; • Promoting and facilitating healthy lifestyles; and • Avoiding adverse impacts. Policy LP16 seeks to deliver and protect high quality environments throughout the District. All new developments should: • Make a positive contribution to the local character and distinctiveness of the area;	This chapter considers the wider determinants of health which are summarised within this policy and potential impacts on relevant Receptors. An assessment of the Proposed Development against these determinants is made in **Section 16.9**. Measures already incorporated into the design, which may demonstrate a high quality design, are described in **Section 16.7**. **Chapter 6: Traffic and Transport, Chapter 8: Air Quality, Chapter 9: Landscape and Visual, Chapter 10: Historic Environment (Volume 6.2)** present details of the measures already incorporated in the design to help avoid adverse effects. **An Outline CEMP (Volume 7.12)** has also been prepared which

[13] Fenland District Council. (2014) Fenland Local Plan.

Policy reference	Implications	Section addressed
	• Not adversely impact on the amenity of neighbouring users such as noise, light pollution, loss of privacy and loss of light; • Provide a safe environment and incorporate security measures to deter crime in accordance with Policy LP17; • Identify, manage, and mitigate against any existing or proposed risks form sources of noise, emissions, pollution, contamination, odour and dust, vibration, landfill gas and protect from water body deterioration; and Not result in any unreasonable constraint(s) or threaten the operation and viability of existing or nearby or adjoining businesses or employment sites.	will be secured via a DCO Requirement. The implementation of environmental measures is described in **Section 16.11**. The **Planning Statement (Volume 7.1)** demonstrates compliance with Policy LP2 and LP16.
Fenland District Council Delivering and Protecting High Quality Environments in Fenland Supplementary Planning Document (SPD) (2014)[14]	The SPD notes the role that the planning system can play in facilitating social interaction and creating healthy, inclusive communities. Some types of development and activities have the potential to cause pollution to the air, water and land. The Council will seek to ensure that pollution levels are kept to a minimum and are acceptable to human health and safety, the environment and the amenity of adjacent and nearby land users. Policy DM6 (mitigating against harmful effects) links to Local Plan Policy LP16 and provides that proposals should ensure that they would not result in adverse levels of light, noise, smells, vibration or dust, and would not result in or add to land and water pollution (which would have an adverse impact on and human health and safety).	Those factors set out in Policy DM6 which are screened into the health assessment are considered in **Section 16.9** of this chapter.
Norfolk Core Strategy and Minerals and Waste Development Management Policies DPD (2011)[15]	Core Strategy Policy CS14 – Environmental Protection - seeks to protect Norfolk's natural and built environments. In particular, developments must ensure that there are no unacceptable adverse impacts on, and ideally improvements to, residential amenity e.g., noise, vibration, dust, lighting, and visual intrusion. Development Management Policy DM12 seeks to protect local amenity and this is a key consideration for waste management facilities.	Potential effects from the Proposed Development are considered in **Section 16.9** this includes cross referencing the findings of other chapters as relevant, including **Chapter 7: Noise and Vibration,** and **Chapter 9: Landscape and Visual (**both **Volume 6.2**).

[14] Fenland District Council (2014) Delivering and Protecting High Quality Environments in Fenland SPD.
[15] Norfolk County Council (2011) Core Strategy and Minerals and Waste Development Management Policies Development Plan Document 2010-2026.

Policy reference	Implications	Section addressed
King's Lynn and West Norfolk Local Development Framework Core Strategy (2011)[16]	Policy CS13 Community and Culture recognises key issues around inequality, health, crime and community cohesion, and the policy seeks to promote healthy and active lifestyles. Measures include ensuring that development is accessible and inclusive and considers factors such as natural surveillance, boundaries and security features, lighting and management of public space to promote safe living environments.	See comments under (EN-1) confirming how human health is considered in this ES.

Technical guidance

16.3.6 Technical guidance used to inform the assessment is listed in **Table 16.4 Technical guidance for health assessment** below.

Table 16.4 Technical guidance for health assessment

Technical guidance	Implications
Health Impact Assessment, A Practical Guide, Chadderton C et al 2012[17]	The guide provides useful background on undertaking health impact assessment in relation to the concept of social determinants of health, health inequalities, process and scope that have informed the scope and methodology of the health assessment undertaken in respect of this chapter.
Institute of Environmental Management and Assessment, Health in Environmental Impact Assessment: A Primer for a Proportionate Approach, 2017[18]	The guide includes five key principles that should underpin health in EIA: 1. Comprehensive approach to health. Consider the wider determinants of health and wellbeing. 2. Proportionate. Agree with stakeholders a focus on only the likely significant health effects of a project. 3. Consistency. Work in accordance with up-to-date policy, guidance and scientific consensus. 4. Equity. Consider the distribution of health effects across a population and if appropriate take action. 5. Reasonableness. Deliver an objective assessment based on evidence and on sound judgment. These principles have informed the approach to the preparation of the health assessment.
Health and Environmental Impact Assessment: A Briefing for Public Health Teams in England, PHE, 2017[19]	This briefing note focuses on population and human health in EIA. It describes the process of EIA and identifies ways that Directors of Public Health in England and public health teams can engage with the EIA process when there are likely to be significant effects on human health as a result of a proposed project. It provides useful guidance on how public health teams can engage with the EIA process that have informed the approach to the preparation of the health assessment.

[16] King's Lynn and West Norfolk Borough Council (2011) Local Development Framework – Core Strategy.
[17] Wales HIA Support Unit (2012) Health Impact Assessment - A Practical Guide, Chadderton et al
[18] Cave B et al (2017) Health in Environmental Impact Assessment: A Primer for a Proportionate Approach)
[19] PHE (2017) Health and Environmental Impact Assessment: A Briefing for Public Health Teams in England, Ben Cave et al)

Technical guidance	Implications
Environmental Impact Assessment Handbook – A practical guide for developers and communities – Third Edition, 2019[20]	Provides a guide to the requirements of EIA in accordance with UK regulations. Explaining the EIA process and legal procedures in a clear and straightforward way, the authors employ their extensive practical experience to cover each of the steps and associated studies needed to undertake an EIA and to produce a successful environmental statement. It includes a chapter on specific environmental topics, including health.
Ministry of Housing, Communities & Local Government, Planning Policy Guidance: Healthy and Safe Communities, 2019[21]	The design and use of the built and natural environments, including green infrastructure are major determinants of health and wellbeing. Planning and health need to be considered together in two ways: in terms of creating environments that support and encourage healthy lifestyles, and in terms of identifying and securing the facilities needed for primary, secondary and tertiary care, and the wider health and care system (taking into account the changing needs of the population). This planning policy guidance has informed the scope of the health assessment.
NHS London Healthy Urban Development Toolkit, Rapid Health Impact Assessment Tool, October 2019[22]	HUDU has developed a rapid Health Impact Assessment (HIA) tool which is less resource intensive using existing evidence to quickly assess the impacts of a development plan or proposal and recommend measures to address negative impacts and maximise benefits. The tool does not identify all issues related to health and wellbeing but focuses on the built environment and issues directly or indirectly influenced by planning decisions. The issues identified in the toolkit have informed the scope of the health assessment undertaken in this chapter.
The Royal Town Planning Institute, Mental Health and Town Planning: Building in Resilience, 2020[23]	This practice note gives advice on how planners can work within the current UK planning systems and with other professionals to take account of mental health when making changes to the built environment. The note has informed the scope of the assessment in relation to the consideration of mental health.
Mental Well-being Impact Assessment, A Toolkit for Well-being, National Mental Health Development Unit, 2011[24]	The toolkit includes a review of available evidence on what influences mental well-being and a Screening Toolkit for undertaking an initial assessment of the potential impact on mental well-being of a proposal. The Screening Toolkit has been used to inform the scope of the assessment in relation to the consideration of mental health.

16.4 Data gathering methodology

16.4.1 Data gathering to inform this health assessment has been undertaken through desk-based research, drawing on a range of publicly accessible information as identified below. The relevant Study Area and survey work is also summarised below.

[20] ICE Publishing (2019) Environmental Impact Assessment Handbook, Third Edition.
[21] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2019) Planning Policy Guidance: Healthy and Safe Communities
[22] NHS London Healthy Urban Development (2019) Rapid Health Impact Assessment Tool)
[23] The Royal Town Planning Institute (2020), Mental Health and Town Planning: Building in Resilience)
[24] National Mental Health Development Unit (2011) Mental Well-being Impact Assessment, A Toolkit for Well-being

Study Area

16.4.2 The Study Area for the Proposed Development is described below and is also shown on **Figure 1.2 Study Area** of **Appendix 16B: Health Baseline (Volume 6.4)**.

16.4.3 A single Study Area has been identified for all of the project components which form the Proposed Development. This differs from the approach taken in the PEIR where separate Study Areas were selected for the Energy from Waste (EfW) Combined Heat and Power (CHP) Facility Site, CHP Connection, Temporary Construction Compound, Access Improvements and Water Connections and the Grid Connection. This was because the PEIR included for two Grid Connection options. Option 1 comprised underground and overhead cabling to Walpole, some 10km from the EfW CHP Facility Site and within the Borough of Kings Lynn and West Norfolk (KLWN) and Norfolk County. The Proposed Development as described within **Chapter 3: Description of the Proposed Development (Volume 6.2)** now includes for a wholly underground Grid Connection to Walsoken only. Walsoken is located on the eastern side of Wisbech and is approximately 3.8km distant from the EfW CHP Facility Site. Whilst it is within KLWN its proximity to Wisbech and to the EfW CHP Facility Site is such that the Receptors with the potential to be affected will often be the same as those potentially affected by the other project components. The same Study Area can therefore be applied for the Proposed Development as a whole.

16.4.4 The Study Area is defined as:

- Local level – Medworth, Octavia Hill, Wisbech, Elm & Christchurch, Emneth & Outwell, Walsoken, West Walton and Walpole wards (Ward boundaries are shown in **Figure 1.1** of **Appendix 16B Health Baseline (Volume 6.4)**);
- District level – Fenland District and KLWN; and
- County Level – Cambridgeshire and Norfolk.

Desk study

16.4.5 The desk study comprises of desk-based research using a variety of publicly available information sources to gather information for the health baseline. A summary of the desktop data used to inform the assessment is provided in **Table 16.5 Desktop data for health assessment** below.

Table 16.5 Desktop data for health assessment

Desktop data	Source of desktop data	Details of the information
Demographic Statistics.	Office for National Statistics. Fenland District Council.	Population statistics for the baseline information.
Labour Market Statistics	NOMIS	Labour market statistics for baseline information.
Health Statistics	PHE.	Health statistics for baseline information.

Desktop data	Source of desktop data	Details of the information
	Cambridgeshire Insight. Fenland Public Health Profile. Kings Lynn and West Norfolk Public Health Profile. Joint Strategic Needs Assessments. Indices of Multiple Deprivation.	

Survey work

16.4.6 The assessment has relied on existing baseline information. This chapter draws on the assessment of effects in other chapters and any relevant survey work will be specified in those chapters, principally **Chapter 6: Traffic and Transport, Chapter 7: Noise and Vibration, Chapter 8: Air Quality, Chapter 9: Landscape and Visual and Chapter 15: Socio-economics, Tourism, Recreation and Land Use (**all **Volume 6.2)**.

16.5 Baseline

Current baseline

16.5.1 Baseline information on key determinants of health associated with population, employment, existing health facilities and health indicators is set out in the sections below. The urban area which is recognisable as Wisbech is largely within the District of Fenland but parts of the built-up area to the east of the town are in KLWN. Baseline information on health and the wider determinants of health for the Study Area are set out in the sections below. **Appendix 16.B Health Baseline (Volume 6.4)** includes additional information at the local level.

Population

16.5.2 Based on ONS data, at the time of the 2011 census, the town of Wisbech had a population of 31,573. The population had risen to 33,933 in 2016. In the 2011 census the population of Fenland was 95,262 and was made up of approximately 51% females and 49% males. In 2018, at the Fenland District level, the population of Fenland was 101,491. 71% of the population of Fenland live within the four market towns, including Wisbech. The population projection for Fenland in 2020 was 102,080, a small increase from 2018. There is an almost equal number of males (49.6% of the population) and females (50.4% of the population). [25]

16.5.3 At the Fenland District level, 96.8% of the population in Fenland are White: British or White: Other (90.4% and 6.4%). ONS mid-year population estimates 2020identify that 58.88% of the population are aged 16-64 compared to the county average of 61.87%.

16.5.4 Population data is provided at the Ward level, post 2011 by the ONS mid-year population estimates. For the wards in the Study Area Medworth had a population

[25] ONS Mid-year population estimates, 2020

of 3,114, Octavia Hill, 6,161, Emneth & Outwell 4,883, Elm & Christchurch 4,931 and Walsoken, West Walton & Walpole 5,762. Medworth ward had the highest percentage of people aged 16-64 (64.96%) and Emneth & Outwell the lowest (55.38%).

16.5.5 In KLWN the population in 2020 was 151,245 with a slightly higher percentage of females to males (51% to 49%). ONS mid-year population estimates 2020 identify that 56.04 of the population are aged 16-64, compared to the county average of 58.47%.

16.5.6 At the Cambridgeshire County level, the population estimate for Cambridgeshire and Peterborough was 859,830 in 2020 and there is also an almost equal number of males and females.

16.5.7 At the Norfolk County level, the population estimate for Norfolk was 725,981 in 2020 with an almost equal number of males and females.

Economy and Employment

16.5.8 Income and work are two of the most important determinants of health and wellbeing.[26] **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** of this ES provides an overview of the socio-economic baseline. Key factors are repeated here.

16.5.9 The overall rate of economic activity is lower in Fenland district when compared to the region and Great Britain, (76% of people in the district were economically active in the period October 2020 to September 2021), compared to 80.5% in the region and 78.5% in Great Britain.[27] These rates are those recorded during the COVID-19 pandemic.

16.5.10 In KLWN, 79.5% of the population is economically active (October 2020 to September 2021). This is lower than the East of England (80.5%) and marginally lower than England as a whole.[28]

16.5.11 ONS analyses employment based on occupation and presents these in Major Groups. An analysis of the occupational profile of the resident workforce in Fenland district (October 2020 to September 2021) shows that the proportion of people employed in Groups 8-9 (process plant and machine operatives and elementary occupations) is higher in the district at 30.7% compared with regional and national average of 15%. The rate of employment in Groups 4-5 (administrative and secretarial and skilled trade occupations) in the district is 30.5% compared to regional and national averages of 21.6% and 19.1%. Employment in Groups 1-3 occupations (managers, directors and senior officials, professional occupations, and associate professional and technical) is relatively low with 27.8% employed in these occupations in the district compared to regional averages of 48.0% and 49.7%.[29]

16.5.12 Key sectors in KLWN include Employment Groups 1-3, with 32.1% employed in the sector (managers, directors and senior officials, professional occupations, and associate professional and technical). Major Groups 4-5 (administrative and

[26] PHE (2017) Research and Analysis: social determinants of health.)
[27] Figures from Office for National Statistics: Nomis official labour market statistics [online].
[28] Figures from Office for National Statistics: Nomis official labour market statistics [online].
[29] Figures from Office for National Statistics: Nomis official labour market statistics [online].

secretarial and skilled trade occupations) are also important, employing 32.1% of the workforce. [30]

16.5.13 In Cambridgeshire there are 15,000 employed in the construction industry (4.3%) of the workforce, the main employment sectors being Education, 53,000 (15.1%) and Professional, Scientific, and Technical 49,000 (13.9%).[31]

16.5.14 Within the county of Norfolk there is 20,000 (5.6%) of the workforce employed in construction with the largest employment sectors being Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles with 62,000 (17.3%) employed and Human Health and Social Work Activities with 58,000 (15.2%).[32]

16.5.15 Average gross weekly pay in Fenland in 2021 was £546.9, this is lower than the East of England (£628.60 per week) and nationally (£613.10). [33]

16.5.16 Workers in KLWN have an average gross weekly pay of £558.60, compared to £628.60 in the region and £613.10 in Great Britain (2021). [34]

Existing health facilities

16.5.17 There is no acute hospital provision within Fenland district and residents use the main hospitals in Peterborough, Huntingdon, Cambridge, and King's Lynn for acute treatment.[35]

16.5.18 The Queen Elizabeth Hospital, King's Lynn provides acute services to a population of around 278,800 people living in Norfolk, Cambridgeshire and Lincolnshire.

16.5.19 Cambridgeshire Community Care Services NHS Trust provides community care services in Cambridgeshire, Norfolk and neighbouring areas. Services are provided for children, young people and families, integrated contraception and sexual health services, dental services, Dynamic health musculoskeletal services and pelvic health physiotherapy services and Nuero-rehabilitation services (Cambridgeshire and Bedfordshire.[36] Neuro rehabilitation services in Norfolk are provided at Colman Hospital in Norfolk.[37]

16.5.20 Anglia Community Eye Service (Eye Clinic) is located at Cromwell Road, Wisbech within the Study Area.

16.5.21 There are 5 existing GP practices serving Wisbech and other communities in the local Study Area, all of which were accepting new patients at the time this ES was prepared (see **Table 16.6 GP Facilities serving Wisbech and surrounding area**).

[30] Figures from Office for National Statistics: Nomis official labour market statistics [online accessed February 2022].
[31] Figures from Office for National Statistics: Nomis official labour market statistics [online accessed February 2022].
[32] Figures from Office for National Statistics: Nomis official labour market statistics [online accessed February 2022].
[33] Figures from Office for National Statistics: Nomis official labour market statistics [online accessed February 2022].
[34] Figures from Office for National Statistics: Nomis official labour market statistics [online accessed February 2022].
[35] Fenland District Council (2016) Fenland Infrastructure Delivery Plan.
[36] Cambridgeshire Community Services NHS Trust (2022) [online accessed May 2022].
[37] Norfolk Community Health and Care NHS Trust (2022) [online accessed May 2022].

Table 16.6 GP Facilities serving Wisbech and surrounding area[38]

GP Facility	Accepting new patients (as at February 2022)?
Trinity surgery PE13 3UZ	Yes
North Brink Practice PE13 1JU	Yes
Clarkson Surgery PE13 3AN	Yes
Upwell Health Centre PE14 9BT	Yes
St Johns Surgery PE14 7RR	Yes

Key Health Indicators

16.5.22 The Cambridgeshire and Peterborough Joint Strategic Needs Assessment (JSNA)[39] identifies local needs to support local strategy development and service planning. In order to understand whether service providers are achieving good health and care outcomes locally, it is useful to benchmark outcomes in the area against local and national averages and look at trends over time.

16.5.23 The JSNA includes themed assessments on new housing developments and the built environment. Whilst this is primarily focused on new communities it includes discussions of how features of the built environment affect health and wellbeing. The term “built environment” includes open space, networks and connectivity between areas as well as the physical structures. This includes the places where people work, live, play and socialise. The connections between these spaces, both manmade and natural features are also important. The built environment includes several material determinants of health, including housing, neighbourhood conditions and transport routes, all of which shape the social, economic and environmental conditions for which good health and wellbeing is dependent.

16.5.24 The JSNA highlights that individuals from lower income groups, older people and those with disabilities are less likely to have access to personal transport. These groups may find that access to services such as shops and health care is reduced. Consequently, they may spend a higher proportion of their income on transport.

16.5.25 Moreover, lack of availability and accessibility of municipal services such as libraries, health facilities, doctors’ surgeries, schools and social support can have a negative social impact on communities and affect both physical and mental health.

16.5.26 It has been estimated that there were 257 deaths aged 25+ attributable to air pollution in Cambridgeshire in 2010 with 54 of these deaths being in Fenland. The Cambridgeshire attributable fraction of 5.5% and Fenland fraction of 5.3% is lower

[38] NHS Find a GP [online, accessed March 2022].
[39] Cambridgeshire County Council and Peterborough City Council, Published Joint Strategic Needs Assessments.

than the English average of 5.6%. The JSNA identifies options for reducing air pollution, including a lower emission passenger transport fleet and traffic restraint.

16.5.27 The Cambridgeshire and Peterborough JSNA Core dataset includes key information around the most important health indicators affecting the residents of Cambridgeshire and Peterborough and district summaries. In Fenland it is a priority to broadly improve health determinants and outcomes and to reduce health inequalities.[40]

16.5.28 The district summary for Fenland in the JSNA includes comparative data for the County and England and identifies the following:[41]

- Health outcomes in Cambridgeshire are broadly very good. However, there is variance in health outcomes at a district level within Cambridgeshire;
- Fenland is a priority area with regards to broadly improving health determinants and outcomes and reducing health inequalities;
- Life expectancy at birth is statistically significantly lower than the England average in men and women in Fenland;
- Levels of disability and general ill-health are generally low in Cambridgeshire, but are higher in Peterborough and in Fenland;
- Overall, socio-economic deprivation is lower in Cambridgeshire than in England, but levels of socio-economic disadvantage are higher in Fenland; and
- 21% of Fenland residents live within the 20% most deprived areas nationally.

16.5.29 The JSNA references the PHE summary health profile for the district, the latest profile available is for 2019. The profile includes more detail on how figures have been calculated and the presented key points from the summary are: [42]

- PHE notes that the health of people in Fenland is varied compared with the England average;
- About 18.2% (3,255) of children live in low income families compared to 17.0% in England;
- Life expectancy is 8.6 years lower for men and 3.2 years lower for women in the most deprived areas of Fenland than in the least deprived areas;
- In Year 6, 20.6% of children in the district are classified as obese, compared to 20.2% in England;
- The rate for alcohol-specific hospital admissions in the district among those under 18 is 24.9 per 100,000 compared to 31.6 in England;
- Levels of GCSE attainment, average Attainment 8 score, (42.3) are below the average for England (46.9). The Attainment 8 score is a way of measuring how

[40] Cambridgeshire County Council and Peterborough City Council (2020) Joint Strategic Needs Assessment, Core Dataset
[41] Cambridgeshire County Council and Peterborough City Council (2018/9) Joint Strategic Needs Assessment District Summary – Fenland)
[42] PHE (2019) Local Authority Health Profile [online, accessed February 2022]

well pupils do in key stage 4 across 8 subjects and is used as a wider determinant of health; and

- The percentage of breastfeeding initiation in the district (65.3%) is below the England average (74.5%).

16.5.30 In terms of adult health, PHE notes that: [43]

- The rate for alcohol-related harm hospital admissions in Fenland is 741 per 100,000, above the average for England (663.7). The rate for intentional self-harm hospital admissions is 232 per 100,000, above the average for England (193.4).
- The percentage of adults classified as overweight or obese in the district (68.5%) is above the average for England (62.0%);
- The percentage of physically active adults in the district (aged 19+) (59%) is below the England average (66.3%).
- The rate of new sexually transmitted infections in the district (552 per 100,000) is below the average for England (850 per 100,000).
- The rate of new cases of tuberculosis in the district (4.31 per 100,000) is below the England average (9.19 per 100,000).
- The rate of killed and seriously injured on roads (55.2 per 100,000) in the district is above the England average (42.6).
- The rate of statutory homelessness in the district (0.25 per 100,000) is below the England average (0.79 per 100,000).
- The rate of recorded depression in Fenland (12.1%) is above the average for Cambridgeshire and Peterborough (9.5%) and England (10.7%). The JSNA does not comment on the possible underlying reasons for the higher rate in Fenland.
- The suicide rate for persons in Fenland (10.4 per 100,000) is similar to the average for England (9.64).

16.5.31 The percentage of people who reported having a limiting long-term illness or disability in the host ward of Medworth (2011 census) was 24.7% compared to 21% in the district and 17.6% in England.[44] **Appendix 16B (Volume 6.4)** provides additional information for the Study Area. This includes local area data from the 2011 census. This assessment has been undertaken in advance of the publication of 2021 census data which the ONS aims to begin to publish in May 2022 but was not published at the time of the assessment.

16.5.32 Fuel poverty is also relevant to wider determinants of health. A household is said to be fuel poor if it needs to spend more than 10 per cent of its income on fuel to maintain an adequate standard of warmth. This is usually defined as 21 degrees for the main living room and 18 degrees for other occupied rooms. Although the emphasis in the definition is on heating the home, fuel costs in the definition of fuel

[43] PHE (2020) Local Authority Health Profile [online, accessed February 2022]

[44] PHE (2020) Local Authority Health Profile [online, accessed February 2022]

poverty also include spending on heating water, lights and appliance usage and cooking costs. The fuel poverty ratio is calculated as required fuel costs (i.e., required usage costs) divided by income. If the ratio is greater than 0.1 then the household is fuel poor.[45]

16.5.33 In 2020 15.3% of households in Fenland were in fuel poverty, compared to a mean percentage rate of 13.2% of households in England.[46]

16.5.34 Quality of Life is defined by the World Health Organisation as "*an individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."*[47]

16.5.35 The ONS measures personal well-being by asking people to evaluate on a scale of 1 to 10, how satisfied they are with their life overall, whether they feel they have meaning and purpose in their life, and about their emotions (happiness and anxiety) during a particular period. [48] In the period April 2020 to September 2020 the average (mean) score for life satisfaction was 7.61 in Fenland, compared to 7.71 in the region and 7.66 in England. In the period April to September 2020 the average (mean) score was 7.28 in Fenland, compared to 7.58 in the region and 7.66 in England.[49] The ONS notes that the restrictions relating to the pandemic impacted on overall feelings of well-being nationally. [50]

16.5.36 The ONS measures anxiety on a scale where 0 is "not at all anxious" and 10 is "completely anxious." In the period April 2019 to March 2020 the average (mean) score for anxiety in the district was 2.80, compared to 3.05 in the region and 3.05 in England. [51]

16.5.37 The Draft Joint Health and Wellbeing Strategy for Cambridgeshire and Peterborough 2020-2024[52] identifies four key priorities across organisations to address the issues identified in the JSNA.

- Priority 1: Places that support health and wellbeing;
- Priority 2: Helping children achieve the best start in life;
- Priority 3: Staying healthy throughout life; and
- Priority 4: Quality health and social care.

16.5.38 The strategy states that people with higher education and skill levels generally have better health – both through higher incomes and a better understanding of how to stay healthy. The strategy also acknowledges that nationally, there is a strong relationship between people's social and economic circumstances and their health. On average, men who live in areas with the worst social and economic deprivation

[45] Department for Business, Energy & Industrial Strategy (2022) Fuel Poverty Statistics England (2020) data.
[46] Department for Business, Energy & Industrial Strategy (2022). Table 2: Fuel Poor Households by administrative area (2020 data).
[47] World Health Organisation (2012): WHOQOL: measuring Quality of Life
[48] ONS. Personal well-being in the UK, quarterly: April 2011 to June 2021.
[49] ONS Loneliness rates and well-being indicators by local authority (2021).
[50] ONS. Personal well-being in the UK, quarterly: April 2011 to June 2021.
[51] ONS Loneliness rates and well-being indicators by local authority (2021).
[52] Cambridgeshire County Council et al (2020) Cambridgeshire and Peterborough Joint Health and Wellbeing Strategy 2020-24, Consultation Draft.

have significant health problems by their early fifties – while in the least deprived areas they stay healthy until over age seventy.

16.5.39 Relevant initiatives that support these priorities include a Cambridgeshire and Peterborough Combined Authority 'Work and Health' pilot, and a nationally funded Mental Health pilot, to help people with long term health problems back into work, to ensure residents have access to good quality training, jobs and incomes, including young people between the ages of 16 and 24 (to help address higher rates of reported self harm). [53]

16.5.40 Fenland District Council's Health and Wellbeing Strategy (2018-2021)[54] identifies economic development and business support, housing, community safety and provision of advice and support as key areas that the Council can use to influence public health outcomes. This includes enabling economic growth and inward investment, and increasing employment outcomes for Fenland residents.

16.5.41 The Cambridgeshire and Peterborough JSNA is relevant to those parts of the Study Area that fall within Cambridgeshire and is summarised above at **Section 16.4**. The remainder of the Study Area falls within the JSNA for Norfolk and this is discussed below.

16.5.42 PHE's profile for KLWN highlights the following and includes more detail on how figures have been calculated and presented:[55]

- Life expectancy is 7.3 years lower for men and 2.9 years lower for women in the most deprived areas of King's Lynn and West Norfolk than in the least deprived areas.
- In Year 6, 21.7% of children are classified as obese, above the rate for England (20.2%).
- The rate for alcohol-specific hospital admissions among those under 18 is 34 per 100,000. This is above the average rate for England (31.6).
- Levels of GCSE attainment (average Attainment 8 score) in the district (41.3) are below the average for England (46.9).
- The percentage of breastfeeding initiations in the district (71.5%) is below the average for England (74.5%).
- The percentage for smoking during pregnancy in the district (19.5%) is above the rate in England (10.6%).
- The rate for alcohol-related harm hospital admissions (830.5 per 100,000) is above the average for England (663.7 per 100,000).
- The rate for intentional self-harm emergency hospital admissions is 249 per 100,000, above the average for England (193.4 per 100,000).
- Estimated levels of physically active adults (aged 19+) in the district (55.5 per 100,000) are below the England average (66.3 per 100,000).

[53] Cambridgeshire County Council et al (2020) Cambridgeshire and Peterborough Joint Health and Wellbeing Strategy 2020-24, Consultation Draft.
[54] Fenland District Council (2018) Health and Wellbeing Strategy (2018-2021).
[55] PHE (2019) Kings Lynn and West Norfolk Local Authority Health Profile. [online, accessed March 2022].

- The rates of new sexually transmitted infections (632.7 per 100,000) is below the average for England (850.6 per 100,000).
- The rate for new cases of tuberculosis in the district (4.39 per 100,000) is below the England average (9.19 per 100,000);
- The rate of killed and seriously injured on roads in the district (55.3 per 100,000) is above the England average (42.6 per 100,000);
- The rate of violent crime (hospital admissions for violence) in the district (35.1 per 100,000) is below the England average (44.9); and
- The rate of statutory homelessness in the district (1.16 per 100,000) is above the England average (0.79 per 100,000).

16.5.43 In 2020 16.6% of households in KLWN were in fuel poverty, compared to a mean percentage rate of 13.2% in England. [56]

16.5.44 In the period April 2019 to March 2020 the average (mean) score for life satisfaction was 7.75 in the borough, compared to 7.71 in the region and 7.66 in England. In the period April to September 2020 the average (mean) score was 7.79 in KLWN, compared to 7.58 in the region and 7.66 in England. In the period April 2019 to March 2020 the average (mean) score for anxiety in the borough was 2.89, compared to 3.05 in the region and 3.05 in England, where 0 is “not at all anxious” and 10 is “completely anxious.” [57] As acknowledged earlier, the ONS notes that the restrictions relating to the pandemic impacted on overall feelings of well-being nationally. [58]

16.5.45 The Joint Health and Wellbeing Strategy for Norfolk identifies three key priorities:[59]

- Prioritising prevention;
- Tackling inequalities in communities; and
- Integrating ways of working.

16.5.46 The strategy includes measures for tackling unhealthy lifestyles associated with smoking, physical inactivity, poor diet and levels of alcohol consumption which contribute to some of the outcomes highlighted in the PHE profile.

Future baseline

16.5.47 The population of Fenland is predicted to grow to 118,939 between 2018 and 2043, which is an increase of 17,448 people (17%). This compares to an overall growth rate of 7% in the County. The profile of the population in the district is forecast to see significant increases in those aged over 75. Increases in population of over 10% are also anticipated for the 10-14 age group and all groups between 25-44. Overall the profile of the population in the County is also expected to see significant

[56] Department for Business, Energy & Industrial Strategy (2022). Table 2: Fuel Poor Households by administrative area (2020 data).
[57] ONS Loneliness rates and well-being indicators by local authority (2021).
[58] ONS. Personal well-being in the UK, quarterly: April 2011 to June 2021.
[59] Norfolk Health and Wellbeing Board (2018) Joint Health and Wellbeing Strategy 2018-22. [online].

increases in those aged over 75 but the increase in younger age groups is not as marked as that in the district.[60]

16.5.48 The population of KLWN is predicted to grow to 160,186 people between 2018 and 2043 (5.5%). This compares to an overall growth rate of 13% in the County. The profile of the population is forecast to see significant increases in those aged over 60 and reductions in the population in most other groups below that. The exception is those aged 15-19 where a 5% increase is anticipated. Population growth at the County level is projected across a broader range of age groups but the population profile also reflects an increase in older groups. [61]

16.5.49 There is no information available to inform this assessment in relation to predicted change in health conditions of the population relating to general health and wellbeing.

16.5.50 The Fenland District Council (FDC) Infrastructure Delivery Plan (IDP) envisages that acute hospital provision would continue to be provided at main hospitals in Peterborough, Huntingdon, Cambridge, and King's Lynn for acute treatment. The IDP also notes that there will need to be an expansion and development of new or existing GP surgeries, dentists and pharmacies. These will be required in line with population growth and are partly to be delivered as part of master planning of strategic urban extensions. The shift in provision of NHS care towards a more personalised, easy to access and community based approach means growth within Fenland (to 2031) is not expected to generate the need for any additional bed space within the County's main District General hospitals.[62]

16.5.51 The IDP for KLWN focusses on the provision of infrastructure for the South East King's Lynn Strategic Growth Area, including the safeguarding of land for a new health centre, which given its location in relation to the Proposed Development is not relevant but included for context.[63]

16.6 Scope of the assessment

Spatial scope

16.6.1 The spatial scope of the assessment covers the Study Area as set out in **Section 16.4** above.

Temporal scope

16.6.2 The temporal scope of the assessment of health covers the construction and operational periods.

16.6.3 Construction is scheduled to commence in 2023 and would last for approximately 3 years. The Proposed Development is anticipated to operate from 2026 – 2066. Decommissioning would then take place after 2066.

[60] ONS Population (2020) projections for local authorities. [on line Accessed February 2022]
[61] ONS Population (2020) projections for local authorities. [on line: Accessed February 2022]
[62] Fenland District Council (2016) Fenland Infrastructure Delivery Plan [on line: Accessed February 2022]
[63] King's Lynn Borough Council (2018) Infrastructure Delivery Plan for South East King's Lynn Strategic Growth Area

16.6.4 The environmental effects associated with the decommissioning phase are expected to be of a similar level to those reported for the construction phase works, albeit with a lesser duration of one year. The likely significance of effects relating to the construction phase assessment reported in this chapter are therefore applicable to the decommissioning phase.

Potential Receptors

16.6.5 Receptors that could be subject to significant effects due to the construction and operation of the Proposed Development have been identified based on a consideration of baseline conditions, policy, response to scoping and additional engagement (outlined in **Section 16.2)**, other ES Chapters (outlined in **Section 16.1**) and the scale and magnitude of the development as proposed.

16.6.6 The Receptors that will potentially be affected by the Proposed Development comprise:

- People living and working in the Study Area – the general population living and working within the Study Areas area that might be affected by changes in noise, air quality etc;
- local community Receptors - residents and visitors using local facilities, including schools, healthcare, community facilities and open space; and
- local and regional economic Receptors – economically active or marginally attached workers (persons not in the labour force who want and are available for work) and businesses in the Study Area.

Likely significant effects

16.6.7 In order to identify likely significant effects in relation to physical and mental health, the Proposed Development has been screened using a list of 21 wider determinants of health and wellbeing under four broad themes provided by PHE in their response dated 27 December 2019 (which includes more detail on the wider determinants at Appendix 1 of their response):[64]

- Access;
- Traffic and Transport;
- Socio-economic; and
- Land use.

16.6.8 PHE also suggested the use of a Mental Wellbeing Impact Assessment (MWIA) in relation to effects on mental health. This tool provides a structured framework for engaging service users, communities and partner organisations in identifying the specific impacts on mental wellbeing of a service, policy or organisation.[65] **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing** below screens the Proposed Development against

[64] The Planning Inspectorate (January 2020) Scoping Opinion: Proposed Medworth Energy from Waste Combined Heat and Power Facility.
[65] Members of the National MWIA Collaborative (England) (2011) Mental Well-being Impact Assessment.

the 21 determinants identified by PHE, which were included in its response to the Scoping Report. The table also includes the factors identified in the MWIA toolkit (which are italicised). Where factors are very similar (such as those relating to food) they have been placed adjacent to each other. The PHE theme of 'land use' includes 'quality of urban and natural environments.' Whilst general comments are provided under this theme, this has been sub-divided into different topics (air quality, soils etc.) so that the approach to the assessment of each topic is transparent. The third column includes a summary of embedded mitigation measures. The final column indicates the Chapter of the ES that gives consideration to the issues (which the health chapter has drawn upon). A version of this table was presented in the PEIR and it has been updated to reflect the additional technical work undertaken for the Chapters of the ES since then.

16.6.9 A source-pathway-Receptor approach has been used to identify and assess health impacts that are plausible and attributable to the Proposed Development at the construction and operational stages (see column 3 of **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing**). The 21 determinants of health and factors in the MWIA toolkit are broad and not based on specific Receptors. Where a determinant of health is considered to be relevant and the potential for significant effects is identified in **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing**, the table then refers back to the Receptors identified at **Section 16.6.6**. Conclusions on potential significant effects have been made using information on other chapters in the ES where relevant, otherwise professional judgement has been used, having regard to the responses from previous consultation. Potential effects are adverse unless otherwise stated.

Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
ACCESS	• Access to local public and key services and facilities	Y – (C/O) potential for severance associated with traffic during the construction and operational phase, e.g., New Bridge Lane (east of Cromwell Road). Y – (C) potential for increased demand on services, e.g., health, which could impact on the ability of people to access services associated with the construction phase (with a maximum of up to 500 workers on site at any one time). Y (C) An influx of temporary construction workers could put pressure on the local housing market and education	**Outline Construction Traffic Management Plan (Appendix 6A Outline CTMP Volume 6.4)** prepared and the final document will be secured by a DCO Requirement. Baseline traffic surveys undertaken and Transport Assessment prepared. Provision of pedestrian crossing with tactile paving at a new crossing at the junction of New Bridge Lane and Cromwell Road. **An Outline Employment and Skills Strategy (Volume 7.8):** The	**Chapter 6: Traffic and Transport** considers the potential for severance associated with traffic during the construction and operational phases. **Moderate significant effects in EIA terms** identified in relation to severance associated with construction traffic – **considered in this Health Chapter.** The potential for **major (significant) negative effects** in relation to **severance** is identified in relation to New Bridge Lane (east of Cromwell Road) during the operational phase – **considered in this Health Chapter**. No other significant effects are identified,	**Chapter 6: Traffic and Transport and Chapter 15: Socio-economics, Tourism, Recreation and Land Use (**both **Volume 6.2)**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
		facilities to the detriment of local communities. N – (O) Given that permanent workforce consists of up to 40 personnel the Proposed Development is not anticipated to impact on access to services and facilities.	Applicant has prepared an Outline Employment and Skills Strategy. This strategy sets out how the Applicant will maximise the use of, and upskill, the local workforce during construction. This will be secured through a DCO Requirement. Outline CTMP Plan to include measures to reduce construction travel. Routing of HGVs to avoid the town of Wisbech and from the A1101 Elm Road. The Applicant aims to maximise the local workforce and deliver local employment, committing via the **Outline Employment and**	including pedestrian amenity, delay, fear and intimidation, accidents and safety and impacts on bus services – **these are not considered further in this Health Chapter** (other than where they are referred in this table). (C) – Potential for increased demand on health services **considered in this Health Chapter because it is not considered elsewhere in the ES and the potential for significant effect needs to be considered.** (C) Potential for impacts on housing and education **not considered further in this chapter**.	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			Skills Strategy (Volume 7.8)	(O) – Potential for increased demand on health services **not considered further in this Health chapter** as **a minor (not significant) effect** is anticipated given the scale of the workforce.	
	• Access to healthy affordable food	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
Good Quality Food	• *Affordable* • *Healthy* • *Accessible*	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
	• Access to the natural environment	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
	• Access to the natural environment within the urban environment	N – (C/O) no pathway for effects during construction or operation. Wisbech Park to the north of the town centre and approximately 2km	N/A	N/A	N/A

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
		from the site and associated activities.			
	• Access to leisure, recreation and physical activity opportunities within the urban and natural environments	Y – (C) Grid Connection will cross the A47 verge adjacent Halfpenny Lane and NCR63. N – no pathway for effects during operation.	**Outline CTMP (Appendix 6A, Volume 6.4)** has been prepared to support **Chapter 6: Traffic and Transport (Volume 6.2)** No public rights of way will be directly affected by the Proposed Development. Halfpenny Lane is not a PRoW at the point at which it is crossed by the Grid Connection (the verge of the A47). The Applicant has prepared and will operate an **Operational Travel**	(C) indirect impact of the Grid Connection on public rights of way considered in the ES in **Chapter 9 Landscape and Visual and Chapter 15 on Socio-economics, Tourism, Recreation and Land Use (**both **Volume 6.2). Significant visual effects for users of PRoWs** but **no significant effects** anticipated in relation to direct effects as Grid Connection work will take place overnight on a section of A47 verge which is not part of the defined PRoW. – **not considered further in this Health Chapter.** (O) no impacts anticipated during operational phase – **not**	**Chapter 6: Traffic and Transport (Volume 6.2).** **Chapter 9: Landscape and Visual (Volume 6.2).** **Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2)**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			Plan (Appendix 6C Volume 6.4). Routing of HGVs to avoid the town of Wisbech and from the A1101 Elm Road. Controlled via the **Outline CTMP (Appendix 6A, Volume 6.4)** and **Figure 6.16: Operational HGV Access Strategy (Volume 6.3).**	**considered further in this Health Chapter.**	
Environment	• *Public Space* • *Green Space* • *Safe Play Space*	N – (C/O) no pathway for effects during construction or operation. Wisbech Park to the north of the town centre and approximately 2km from the Order limits and associated activities.	N/A	N/A	N/A
Leisure	• Arts and Creativity • Culture • Sports	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
Physical Security	• *Housing* • *Safety at Home* • *Safety in Neighbourhood*	N – (C) This determinant includes consideration of issues associated with civility, vandalism and crime and fear of crime in the neighbourhood. No impacts anticipated during construction phase. It also considers issues that are examined elsewhere in this table, including access to recreation facilities and green space. (O) No impacts anticipated during the operational phase.	Considerate Constructors Scheme (CCS) committed to within the **Outline Construction Environmental Management Plan (Outline CEMP Volume 7.12)** will include consideration of impacts on neighbours and the public. **Outline CEMP (Volume 7.12)** and **Outline CTMP (Appendix 6A Volume 6.4)** will include measures to ensure that on street and anti-social parking does not impact on local communities. The Proposed Development will include provision of off-street parking during the	(C) No significant effects anticipated – **not considered further in this Health chapter.** (O) – No significant effects anticipated – **not considered further in this Health chapter.**	**Chapter 6: Traffic and Transport (Volume 6.2).** **Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2)**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			construction phase within the Temporary Construction Compound and within the EfW CHP Facility Site for the operational phase		
TRAFFIC AND TRANSPORT	• Accessibility	N – (C/O) This criteria partly relates to accessibility of the development, which given the nature of the Proposed Development is not considered to be relevant (other than for access by the workforce and visitors). Y – (C/O) the determinant also encompasses factors around walkability and	The Proposed Development would need to comply with Part M of the Building Regulations relating to access and use of buildings and their facilities[66]. **Outline Operational Travel Plan (Appendix 6A Volume 6.4)** and **Outline CTMP (Volume 7.12)**	**Chapter 6: Traffic and Transport** considers the potential for severance associated with traffic during the construction and operational phases. **The Outline CTMP (Appendix 6A Volume 6.4)** sets out routes for construction traffic to avoid populated areas. Moderately significant effects in EIA terms identified in relation to severance associated with construction traffic **–**	**Chapter 6: Traffic and Transport (Volume 6.2).**

[66] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2021) Approved Document M: access to and use of buildings, volume 1: dwellings

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
		safety so there is a potential pathway.	Routing of HGVs to avoid the town of Wisbech and from the A1101 Elm Road secured via a DCO Requirement and **Figure 6.16: Operational HGV Access Strategy (Volume 6.3)**.	**considered further in this Health chapter.** The potential for a **major (significant) negative effect** in relation to **severance** is identified in relation to New Bridge Lane (east of Cromwell Road) during the operational phase (which has been **considered further in this Health Chapter**). No other significant effects are identified, including pedestrian amenity, delay, fear and intimidation, accidents and safety and impacts on bus services. Therefore, the potential for other effects in relation to accessibility are **not considered further** **in this Health chapter**.	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
	• Accessibility to/by public transport	N – (C/O) no anticipated impacts on the ability to access public transport during the construction or operational phases. Existing number 68 (A, B and C) service operates along Cromwell Road (nearest bus stop approx. 360m).	N/A	(C/O) **Chapter 6: Traffic and Transport (Volume 6.2)** confirms no significant effects on public transport provision are anticipated. **No significant effects – not considered further in this Health chapter**.	**Chapter 6: Traffic and Transport (Volume 6.2).**
	• Opportunities for/access by cycling and walking	Y – (C) Grid Connection would cross route NCR63 on the National Cycle Network. N – (O) no pathway anticipated during operation.	**Chapter 3: Description of the Proposed Development (Volume 6.2)** explains that the Grid connection will be constructed at night in short sections, with access reinstated by day. Routing of HGVs to avoid the town of Wisbech and from the A1101 Elm Road.	(C) **No significant effects anticipated** on NCR63 as the excavation will be undertaken at night and would only cross the route at one point alongside the A47 where cyclists are required to dismount – **not considered further in this Health Chapter**. (O) – **No significant effects anticipated –**	**Chapter 3: Description of the Proposed Development (Volume 6.2).** **Chapter 6: Traffic and Transport (Volume 6.2).** **Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
				not considered further in this Health Chapter.	
	• Links between communities	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
	• Community severance	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
	• Connections to jobs	Y – (C/O) potential issues associated with severance/driver delay during construction and operation.	**Outline CTMP (Appendix 6A Volume 6.4)** has been prepared to support **Chapter 6: Traffic and Transport (Volume 6.2)**. Provision of pedestrian crossing with tactile paving at dropped crossings at the junction of New Bridge Lane and Cromwell Road.	(C) Screen in if potential for delay or if over 10% increase in traffic on a sensitive road or 30% otherwise, consistent with Guidelines for the Environmental Assessment of Road Traffic GEART. **Moderately significant effects in EIA terms identified in relation to severance associated with construction traffic – considered further in this Health chapter.**	**Chapter 6: Traffic and Transport (Volume 6.2)**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			The Applicant will source from the local supply chain where possible in line with the **Outline Employment and Skills Strategy (Volume 7.8)** which could help reduce travel.	**No significant effects in EIA terms identified in relation to driver delay associated with construction traffic – not considered further in this Health chapter.** (O) – **The potential for major (significant) negative effects in relation to severance** is identified in relation to New Bridge Lane (east of Cromwell Road) during the operational phase– **considered further in this Health chapter.** No significant effects identified in relation to driver delay or impacts on bus services – **not considered further in this Health Chapter**.	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
	• Connections to services, facilities and leisure opportunities	Y – (C/O) potential issues associated with driver delay during construction and operation.	**Outline CTMP (Appendix 6A Volume 6.4)** has been prepared to support **Chapter 6: Traffic and Transport (Volume 6.2).** The Applicant will source from the local supply chain where possible in line with the **Outline Employment and Skills Strategy (Volume 7.8)** which could help reduce travel.	(C) – **No significant effects in relation to driver delay etc during construction phase – not considered further in this Health chapter**. (O) – The potential for a **major (significant) negative effect** in relation to **severance (considered further in this Health chapter)** is identified in relation to New Bridge Lane during the operational phase. No other significant effects are identified, including pedestrian amenity, delay, fear and intimidation, accidents and safety and impacts on bus services – and these are not considered further in this Health Chapter.	**Chapter 6: Traffic and Transport (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
Transport	• *Affordable* • *Accessible* • *Sustainable*	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
SOCIO-ECONOMIC	• Employment opportunities including training opportunities	Y – (C) potential for employment during construction (potential for approximately 700 jobs over the 3 year construction period, with a maximum of 500 workers on site at any one time) over the 36 month build period. Y – (O) up to 40 direct employees on site and employment within the local supply chain associated with site operation and maintenance.	An **Outline Employment and Skills Strategy (Volume 7.8)** has been included with the application and the Applicant will maximise use of the local supply chain, local workforce and provide skills and training opportunities where this is possible.	(C/O) **Chapter 15; Socio-economics, Tourism, Recreation and Land Use (Volume 6.2)** identifies the potential for **beneficial effects associated with construction and operational phases. Given the linkages between employment and health these are also considered in this Health Chapter.** [67]	**Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2).**
Meaningful activity	• *Employment*	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.

[67] PHE (2017) Research and Analysis: social determinants of health.)

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
Education	• Life-long learning	N – (C) no pathway during construction, given temporary nature. Y – (O) the Applicant is committed to providing training and education for staff, enabling Continuing Professional Development and opportunities for staff to progress their careers on site or another site.	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.
	• Local business activity	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.
	• Regeneration	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
	• Tourism and leisure industries	Y – (C/O) potential issues associated with driver delay during construction and operation that could impact on local leisure industry. The Socio-economics, Tourism, Recreation and Land Use chapter considers any indirect effects on tourism and recreation associated with the Grid Connection. Y – (C) potential pathway associated with the need for temporary accommodation for construction workers.	(C) **Outline CTMP (Appendix 6A Volume 6.4)** has been prepared to support **Chapter 6: Traffic and Transport (Volume 6.2)**. (C) The Applicant will source from the local supply chain where possible in line with the **Outline Employment and Skills Strategy (Volume 7.8)**. This could help to minimise the need for travel.	(C/O) **Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2)** assesses the potential for any such effects as **temporary and Not Significant – not considered further in this Health Chapter**.	**Chapter 6: Traffic and Transport (Volume 6.2).** **Chapter 15: Socio-economics, Tourism, Recreation and Land Use (Volume 6.2).**
	• Community/social cohesion and access to social networks	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
	• Community engagement	Y – (C/O) Community perception of risk.	Pre-application consultation was undertaken to ensure	C/O **Considered further in this Health chapter.** PHE requested that the	This Chapter

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			that the local community were notified, consulted and given an opportunity to influence the proposals. The **Consultation Report (Volume 5.1)** summarises the pre-submission consultation activities undertaken by the Applicant and comments received by interested parties. (C/O) further community engagement will take place during the construction and operational phases in connection with the discharge of the **Outline CEMP (Volume 7.12),** which is secured by a DCO Requirement. In addition, the	Chapter consider the potential for health impacts associated with community perception of risk, including concerns associated with Electric and Magnetic Fields, considered in relation to the Grid Connection.	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			Applicant will employ a community liaison officer secured by a DCO Requirement.		
Meaningful activity	• *Volunteering/Spirituality*	N – (C/O) no pathway during construction or operation.	N/A	N/A	N/A
Financial security	• *Income* • *Credit* • *Wealth*	Y – (C/O) See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities.	See comments under Employment Opportunities. N/A
		(O) The proposal will contribute to lowering the carbon intensity of the grid **Chapter 14 Climate** - identifies (section 14.9) that the Proposed Development would contribute to a low (beneficial) significant effect on achieving carbon reductions targets set by the Government. However, no pathway in relation to reducing	N/A	N/A	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
		existing fuel poverty is anticipated because energy will not be sold direct to households.			
LAND USE	• Land use in urban and/or rural settings	N – (C/O) Land use in urban and (in terms of the Grid Connection) edge of settlement/rural setting but no pathway during construction or operation identified. Existing land use on predominant part of the EfW CHP Facility Site is waste and aggregates related activity. Construction effects along the Grid Connection route will not prevent existing land uses from continuing which are highway activities. Separate consideration will be given to specific topics associated with use of	N/A	N/A	N/A

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
		the land, e.g., soils, air and water (see below).			
	• Quality of urban and natural environments	Y – (C/O) potential for impacts on the urban and natural environment, including issues associated with amenity.	Architectural treatment and on-site landscaping. Landscaping to be developed with key Stakeholders as part of a detailed landscaping scheme secured by DCO Requirement (**Figure 3.14 Outside Landscape and Ecology Strategy Volume 6.3**). **Statutory Nuisance Statement (Volume 5.2)** submitted with the DCO Application.	**C/O Chapter 9: Landscape and Visual** includes a landscape and townscape assessment and a residential visual amenity assessment. It concludes (**Section 9.9**) that there are no instances where the Residential Visual Amenity Threshold would be breached. Yet it identifies the potential for **significant visual effects; these are not considered further in this Health Chapter** because of the small number of properties affected and, on the basis, that the health assessment considers the potential for impacts on the general population.	**Chapter 9: Landscape and Visual (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
	• Noise	Y – (C/O) this topic was scoped into the ES and includes consideration of the potential for health related effects.	Undertaking construction in accordance with good practice. **Outline CEMP (Volume 7.12).** During normal operations, limitation of hours of delivery of waste from 07:00 to 20:00 hours. There may be some occasions when waste deliveries are accepted outside the normal opening hours, for example in the case of an emergency or to accommodate the delivery of waste where vehicles have been unavoidably delayed, or in other similar circumstances.	**C/O - Considered further in this Health chapter** – **Chapter 7: Noise** identifies the potential for **significant effects** associated with noise during construction and operation. This Health chapter includes a review of significant effects and includes an assessment of potential health effects - **noise is considered in this Health chapter**. **Chapter 7 Noise and Vibration (Volume 6.2)** confirms that CFA will be the piling method utilised. Significant construction vibration effects due to the construction of the EfW CHP Facility are unlikely. During construction of the Access Improvements, vibratory rollers will be used for compaction. This activity could give rise to levels of vibration	**Chapter 7: Noise (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			Control of noise emissions from major process buildings by the building fabric and appropriate specification of noise attenuating louvres and vents. Selection of plant, and engineered noise control, where required, to control any tonal noise emissions such that the specific sound at any noise sensitive Receptors are broadband in character. All on site roads at the EfW CHP Facility Site will be subjected to regular inspection and maintenance. Any surface irregularities will be promptly remediated to ensure	that may be perceptible at the nearest dwellings, however such effects would not give rise to impacts on the general population. Vibration effects are **not therefore considered further in this Health Chapter** (CFA piling is acknowledged in **Table 16.9: Summary of the embedded environmental measures** and how these influence the health assessment).	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
			ground-borne vibration emissions due to HGV movements are controlled. Applicant commitment to the use of Continuous Flight Auger (CFA) piles. **See Chapter 7: Noise and Vibration (Volume 6.2)**.		
	• Air Quality	Y – (C/O) this topic was scoped into the ES and includes consideration of the potential for health related effects.	**Outline CEMP (Volume 7.12)** and other Chapter specific measures, including an **Outline Odour Management Plan (Volume 7.11)**.	The ES includes a Chapter on Air Quality that includes a **Human Health Risk Assessment Appendix 8B Annex G: (Volume 6.4)**. **Chapter 8** of the ES on **Air Quality (Volume 6.2)** includes findings in relation to air quality. It concludes that there will be **no significant effects associated with road traffic exhaust emissions and impacts**	**Chapter 8: Air Quality (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
				on human health associated with dust during the construction phase with mitigation in place. These effects have not therefore been considered further in this Health Chapter It also concludes that **emissions from Non-Road Mobile Machinery (NRMM)** during the construction phase can be scoped out with embedded mitigation in place, these are therefore **not considered further in this Health chapter.** **Chapter 8: Air Quality (Volume 6.2)** of the ES concludes that the potential for significant effects associated with **odour** during normal operations of the EfW CHP Facility can be scoped out since the Applicant will be required to apply to the	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
				Environment Agency (EA) for an environmental permit for the Proposed Development. The EA acts as the Competent Authority and regulates relevant activities under the Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154). **Health effects associated with odour during the normal operation of the EfW CHP Facility are therefore not considered further in this Health chapter.** Air quality effects during operation **have been included in this Chapter, drawing on the conclusions of Chapter 8 and associated Health Risk Assessment (Table 16.9**	

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
				Summary of the embedded environmental measures and how these influence the health assessment refers to relevant embedded mitigation).	
	• Water	Y – (C/O) this topic was scoped into the ES and includes consideration of the potential for health related effects.	Chapter specific	No significant effects identified with embedded mitigation such as the **Outline CEMP (Volume 7.12)** see **Chapter 12: Hydrology (Volume 6.2) - not considered further in this Health chapter.**	**Chapter 12: Hydrology (Volume 6.2).**
	• Soils	Y – (C/O) this topic was scoped into the ES and includes consideration of the potential for health related effects.	Chapter specific	No health related significant effects identified in **Chapter 13: Geology, Hydrogeology and Contaminated Land (Volume 6.2) - not considered further in this Health chapter.**	**Chapter 13: Geology, Hydrogeology and Contaminated Land (Volume 6.2).**

PHE Health and Wellbeing Themes (*Themes from MWIA Toolkit are italicised*)	Wider determinants of Health and wellbeing (*factors from the MWIA toolkit are italicised)*	Source Pathway Receptor? Y = Yes N= No (C) construction (O) operation	Summary of mitigation (including embedded mitigation)	Potential Significance (*If potentially significant, screened for further assessment of impact upon Physical (P) or mental health (H), or both if not indicated)*	Other Relevant ES Chapter(s)
	• Major Accidents and Disasters	Y – (C/O) The Scoping Report determined that there would not be any significant effects arising from Major Accidents and Disasters. ES Chapter 17: Major Accidents and Disasters provides more detail in relation to embedded environmental measures and comments on the assessment used for scoping. It includes consideration of occupational health.	**Chapter 17: Major Accidents and Disasters (Volume 6.2)** states that an Integrated Management System (IMS): will be implemented to ensure compliance with all UK health and safety, and environmental legislation. See **Table 16.9** for additional measures.	**No significant effects**, including occupational health and safety, high voltage electricity, the EfW process, fire, **– not considered further in this Health Chapter.**	**Chapter 17: Major Accidents and Disasters (Volume 6.2).**

16.6.10 The health Receptors that have been scoped in for further assessment are set out in **Table 16.8 Health Receptors scoped in for further assessment**.

Table 16.8 Health Receptors scoped in for further assessment

Receptor	Relevant assessment criteria	Likely significant effects
People living and working in the Study Area	Nature and extent of community perception and risk identified during the consultation process.	Potential for health impacts associated with community perception and risk, including concerns associated with Electric and Magnetic Fields, considered in relation to the Grid Connection and concerns about potential impacts on noise, air quality etc.
Users of existing health facilities (local community Receptors)	Anticipated increase in demand for health services during the construction phase (scoped in on a precautionary basis).	Increase in demand on health facilities during the construction phase. Scoped in on a precautionary basis.
People living and working in the Study Area	Health effects arising from transport related severance during the construction phase. Links where GEART thresholds are triggered during the construction phase.	Potential for severance associated with construction traffic at New Bridge Lane (east of Cromwell Road) is identified.
People living and working in the Study Area	Health effects arising from transport related severance during the operational phase. Links where GEART thresholds are triggered during the operational phase.	The potential for severance is identified in relation to New Bridge Lane during the operational phase.
Economically active people and businesses within the Study Area	Significance of capital spend during the construction phase and potential for local spend.	Beneficial effects on health associated with capital spend during the construction phase.
Economically active people within the Study Area	Significance of employment during the construction phase and potential for local employment.	Beneficial effects on health associated with direct and indirect employment during the construction phase.
Economically active people within the Study Area	Significance of employment during the operational phase and potential for local employment and training.	Beneficial effects on health associated with direct and indirect employment during the operational phase.
People living and working in the Study Area	Noise effects arising from construction of all aspects of the Proposed Development.	Effects due to noise arising from construction of all aspects of the Proposed Development.
People living and working in the Study Area	Noise from fixed plant and vehicle movements at the EfW CHP Facility.	Effects due to noise from fixed plant and vehicle movements at the EfW CHP Facility.

Receptor	Relevant assessment criteria	Likely significant effects
People living and working in the Study Area	The significance of long-term air quality effects of road traffic and chimney emissions on human Receptors are based on the Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) 'Land-Use Planning & Development Control: Planning for Air Quality' guidance.	**Chapter 8** of the ES on **Air Quality** and accompanying **Human Health Risk Assessment Appendix 8B Annex G: (Volume 6.4)** consider the potential for significant effects during operation of the EfW CHP Facility.
People living and working in the Study Area	Intensity of electric and magnetic fields (EMF) arising from the grid connection and relationship to sensitive Receptors.	The potential for significant effects associated with EMF is discussed in **Section 16.9** on a precautionary basis.

16.6.11 The health Receptors and resulting impacts scoped out from further assessment, because the potential effects are not considered likely to be significant, are shown in **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing**. This includes instances where there is no relationship between the Proposed Development and wider determinants of health identified by PHE and the Mental Health Toolkit and also instances where other Chapters have not identified the potential for significant effects on health. These instances are not considered further.

16.7 Embedded environmental measures

16.7.1 Environmental measures have been embedded into the development proposals as outlined in **Chapter 3: Description of the Proposed Development (Volume 6.2), Section 3.5**. **Table 16.9 Summary of the embedded environmental measures and how these influence the health assessment** outlines how these embedded measures have influenced the health assessment (including the consideration of the wider determinants of health set out in **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing** above). Given the broad nature of health as a topic, this table should also be read in conjunction with the measures set out in other Chapters of the ES, including **Chapter 6: Traffic and Transport, Chapter 7: Noise and Vibration, Chapter 8: Air Quality, Chapter 9: Landscape and Visual, Chapter 15: Socio-Economics and Chapter 17: Major Accidents and Disasters, (**all **Volume 6.2)** some of the Receptors referred to are referenced in those chapters.

Table 16.9 Summary of the embedded environmental measures and how these influence the health assessment

Receptor	Changes and effects	Embedded measures and influence on assessment
People living and working within the Study Area	Dust emissions and effects on human Receptors within 350m of the Order limits.	CEMP will implement standard construction management measures consistent with **Outline CEMP (Volume 7.12)**. As per Institute of Air Quality Management (IAQM) guidance, significance of impact is determined after consideration of construction dust mitigation.
People living and working within the Study Area and community Receptors	Chimney emissions and likely effects on human Receptors.	Suitable height of chimneys to ensure adequate dispersion to ensure no significant impacts to Receptors will be used in dispersion modelling. A chimney height determination forms part of this assessment and is a standard requirement in an Environment Permit.
People living and working within the Study Area and community Receptors	Chimney emissions and likely effects on human Receptors.	Selective non-catalytic reduction (SNCR) to be implemented within furnace. Implementation of this measure will form part of the EP application to demonstrate Best Available Techniques (BAT).
People living and working within the Study Area and community Receptors	Odour effects upon human Receptors.	All waste will be kept in buildings with negative pressure. Refuse vehicles will be covered. Implementation of an Odour Management Plan consistent with the **Outline Odour Management Plan (Volume 7.11).**
People living and working in the Study Area and community Receptors	Health risks associated with community perceptions of risk during construction and operation.	Engagement with the relevant local communities will be undertaken via a community liaison officer, secured by a DCO Requirement. Measures will include: **Outline CEMP,** including registration with the Considerate Constructors Scheme (CCS). **(Volume 7.12)**, provision of a community area within the administration building. Educational support, training, apprenticeships and internships via the **Outline Education and Skills Strategy (Volume 7.8).**
Local businesses and recreational facilities. Tourism and recreation Receptors.	Construction and operation of the Proposed Development could have a range of direct and indirect effects on local businesses and recreation	**Outline CTMP (Appendix 6A, Volume 6.4):** Construction of the Proposed Development would be subject to a CTMP which would specify the routes to be taken by construction vehicles to minimise disruption

Receptor	Changes and effects	Embedded measures and influence on assessment
	facilities and more widely on tourism and recreation facilities.	to existing business and facilities. The **Outline CTMP (Volume 6.4)** will be secured via a DCO Requirement. **Outline CEMP (Volume 7.12):** An Outline CEMP has been prepared in support of the Proposed Development. It provides an outline of the measures which would be employed during construction to control the environmental effects of the Proposed Development. **The Outline CEMP (Volume 7.12)** will be secured through a DCO Requirement. Engagement with local supply chain via the **An Outline Employment and Skills Strategy (Volume 7.8)** to maximise local workforce and supply chain and minimise pressure on tourism accommodation. Night time working on Grid Connection to avoid disruption to users of NCR63 and footpath link between Halfpenny Lane PRoWs.
People living and working in the Study Area and community Receptors (users of the Local and Strategic Highway Network)	Reduction of effect on Severance, Driver Delay Pedestrian Amenity, Pedestrian Delay, Fear and Intimidation, Accidents and Safety.	See **Table 6.21** of **Chapter 6: Traffic and Transport (Volume 6.2)** for comprehensive list of measures but includes **Outline CTMP (Appendix 6A, Volume 6.4):** Construction of the Proposed Development would be subject to a CTMP which would specify the routes to be taken by construction vehicles to minimise disruption to existing business and facilities. **The Outline CTMP (Appendix 6A, Volume 6.4)** will be secured via a DCO Requirement. Provision of pedestrian crossing with tactile paving at the junction of New Bridge Lane and Cromwell Road.
People living and working in the Study Area - Users of PRoW	Direct effects to users of PRoWs.	Night time working (20:00 to 06:00) to excavate Grid Connection along a footpath which is not an adopted PRoW at the point at which it is crossed by the Grid Connection. This would be secured via a DCO Requirement to implement **Appendix 6A Outline CTMP (Volume 6.4).**
People living and working in the Study Area	Potential effects associated with construction and operational noise.	Undertaking construction in accordance with good practice. All construction activities to be undertaken within normal working hours for construction, except in circumstances

Receptor	Changes and effects	Embedded measures and influence on assessment
		listed in **Chapter 3: Description of the Proposed Development (Volume 6.2).** Any external out of core hours works which are planned in advance (as opposed to emergency) which are external (i.e., outside new buildings or buildings constructed as part of the Proposed Development) and which have the potential to give rise to significant noise emissions will be agreed with the relevant local authorities through the process set out in the CEMP, consistent with the **Outline CEMP (Volume 7.12)** either through written agreement or through the application for s61 consents. If there is a requirement for HDD of the Water Connections across the A47, night-time works may be needed. Where the potential for significant effects arises, applying BPM in accordance with the recommendations in BS 5228:1-2009+A1:2014. **Outline Operational Travel** Plan (**Appendix 6A Volume 6.4**), HGV routing restrictions within **Transport Assessment (Appendix 6B Volume 6.4)** and the provision of acoustic fence to 10 New Bridge Lane. 9 New Bridge Lane to be purchased with the agreement of the owner with powers of compulsory acquisition retained in the DCO. Purchase or acquisition to take place ahead of construction.
People living and working in the Study Area	Potential increase in ambient noise levels due to the operation of fixed and mobile plant, including on-site vehicle movements.	During normal operations, limitation of hours of delivery of waste from 07:00 to 20:00 hours. There may be some occasions when waste deliveries are accepted outside the normal opening hours, for example in the case of an emergency or to accommodate the delivery of waste where vehicles have been unavoidably delayed, or in other similar circumstances. Control of noise emissions from major process buildings by the building fabric and appropriate specification of noise attenuating louvres and vents, which will be designed to ensure noise emissions do not significantly contribute to off-site noise levels. Proposed building construction accounted for in modelling and prediction of specific sound levels. Selection of plant, and engineered noise control, where required, to control any tonal noise emissions such that the specific sound

Receptor	Changes and effects	Embedded measures and influence on assessment
		at any noise sensitive Receptors are broadband in character. When not in use all tipping hall doors will remain closed. Provision of acoustic fence to 10 New Bridge Lane. 9 New Bridge Lane to be purchased with the agreement of the owner with powers of compulsory acquisition retained in the DCO.
Occupational Health and Safety	Potential for accidents to the workforce during both construction and operation.	**Chapter 17: Major Accidents and Disasters (Volume 6.2)** states that an Integrated Management System (IMS): will be implemented to ensure compliance with all UK health and safety, and environmental legislation. The IMS will be based on the approach used at the Applicant's existing facilities, tailored to suit the Proposed Development. This IMS will achieve certification to ISO 9001, ISO 14001, ISO 50001 and ISO 45001 during the first 18 months of operation as has been achieved at other sites owned by MVV. The IMS will be developed to ensure risk assessment processes, safe systems of work, management of visitors, emergency response procedures and compliance with other requirements (such as the Provision and Use of Work Equipment Regulations (PUWER) and the Electricity at Work Regulations. The IMS processes will ensure that the risk is reduced to as low as reasonably practicable (ALARP) for occupational accidents. The IMS will implement the Applicant's existing UK Safety, Quality, Wellbeing, Energy, Environment, Community and Health (SQWEECH) policy. A QHSE Manager will be appointed for the Proposed Development to ensure compliance with health and safety legislation and relevant IMS procedures. This will be supported by regular audits to ensure adherence to IMS procedures. These measures ensure there will be no significant effects.
Major accidents involving High Voltage electricity	Potential effects to construction and operational workforce and to members of the public.	**Table 17.6 of Chapter 17: Major Accidents and Disasters** (Volume 6.2). The Grid Connection will be underground. Infrastructure at Walsoken Substation will be behind security fences. The design standard of the connection will be consistent with the standards required by UKPN as the Distribution Network Operator (DNO).

Receptor	Changes and effects	Embedded measures and influence on assessment
Major accidents involving the EfW process	Potential effects associated with major accidents involving the EfW process during operation.	**Table 17.6** of **Chapter 17: Major Accidents and Disasters (Volume 6.2)** sets out embedded environmental measures and these are summarised here. The Applicant will systematically identify potential major hazards during the design process. This will include a number of studies including a Hazard and Operability (HAZOP) study (compliant with IEC 61882) and will also review the adequacy of mitigation measures such as escape routes, secondary containment and fire suppression. The design process will apply the hierarchy of controls which prioritises inherently safe design over control and mitigation measures. Emergency response procedures will be developed to respond to, and mitigate, any reasonably foreseeable major accident hazards. The Applicant will comply with the requirements of the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR).[68] These measures ensure there will be no significant effects.

16.8 Assessment methodology

16.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Approach to the EIA (Volume 6.2)**, and specifically in **Sections 4.7** to **4.10**. However, whilst this has informed the approach that has been used in this health assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this health assessment.

General approach

16.8.2 The assessment will focus on the impacts of construction and operation of the Proposed Development on the Receptors highlighted in **Table 16.7 Screening exercise for the consideration of effects on physical and mental health and wellbeing**. The assessment focusses on the effects on the population, including vulnerable groups, rather than individuals.

[68] HM Government (2002) The Dangerous Substances and Explosive Atmospheres Regulations

Determination of significance

16.8.3 The EIA Regulations 2017 recognise that developments will affect different environmental elements to differing degrees, and that not all of these are of sufficient concern to warrant detailed investigation or assessment through the EIA process. The EIA Regulations 2017 require the ES to only discuss in depth those effects that are likely to be significant.*".*

16.8.4 The EIA Regulations 2017 do not define significance and it will be necessary to state how this will be defined for the EIA. The significance of an effect resulting from a development during construction or operation is most commonly assessed by reference to the sensitivity (or value) of a Receptor and the magnitude of the effect. This approach provides a mechanism for identifying areas where mitigation measures may be required and to identify the most appropriate measures to alleviate the risk presented by the development.

16.8.5 The approach for determining the sensitivity and magnitude of change on health is set out below.

16.8.6 Sensitivity to development is based on a range of factors[20] and these are set out in **Table 16.10 Factors characterising population sensitivity** below:

Table 16.10 Factors characterising population sensitivity

Factor	Commentary
Inequalities	Disproportionate or differential effects between groups, not only relevant reference to those defined by the Equality Act 2010[69] but also in relation to other factors such as socio-economic status. The Groups identified in the Equality Act relate to: • age • disability • gender reassignment • marriage and civil partnership • pregnancy and maternity • race • religion or belief • sex • sexual orientation
Deprivation	Populations already stressed by limited resources or high burdens
Health status	Particularly multiple or complex long-term health conditions, or reliance on access to the healthcare facilities, staff or resource
Life stage	Including for the very young, the very old or working age people, such as whether likely to be home during the day or dependent on carers or public transport
Outlook	People with strong views or high degrees of uncertainty may anticipate risks and thus be affected by not only actual changes but also by the possibility of change

[69] Her Majesty's Government (2010) Equality Act.)

16.8.7 Within a defined population, people will range in level of sensitivity, both in terms of mental and physical health and this can vary by individual health pathway. As such it is not considered appropriate to identify sensitivity classifications and apply those to a population uniformly. On this basis, while the health baseline provides context to inform refinement of the Proposed Development and further inform mitigation, a precautionary approach has been applied to the assessment of significance by assuming that the population within the Study Area is uniformly of high sensitivity to the particular effect being assessed. The exception to this approach is where other chapters of this ES provide an assessment of the sensitivity of the population to change, for example the sensitivity of specific Receptors to noise. Assumptions in relation to sensitivity are made explicit in **Section 16.9** below.

16.8.8 The magnitude of potential changes on health is based on a range of factors[20] and these are identified in **Table 16.11 Factors characterising magnitude** below.

Table 16.11 Factors characterising magnitude

Factor	Commentary
Severity	Risks of new health conditions, progression of existing conditions, changes in quality of life or day-to-day functioning, or a widening or narrowing of inequalities.
Extent	Whether for most people, many people or a few people and if there is a substantial population displacement or influx.
Frequency	Whether continuous or a few times a day, week, month or year and whether short-term (acute) or long-term (chronic) changes in health outcomes.
Reversibility	Whether resultant health outcomes are permanent or reversible once the project change ceases.
Exposure	Consider exposure levels relative to the duration and size of the population exposed; the degree of resource sharing with the project is also relevant.

16.8.9 The main factors considered relevant when defining the magnitude of change are set out in **Table 16.12 Health and magnitude of change**.

Table 16.12 Health and magnitude of change

Magnitude of Change	Definition
Very High	Where the extent of changes on Receptors is very large scale and a very large number of people would be affected or where other technical chapters conclude that there may be very significant effects that this assessment considers may affect relevant Receptors.
High	Where the extent of changes on Receptors is large scale and a large number of people or activities would be affected; or where other technical chapters conclude that there may be significant effects that this assessment considers may affect relevant Receptors.
Medium	Where the extent of changes on Receptors is small in scale, but a large number of people would be affected, or where other technical chapters conclude that there may be an effect that this assessment considers may affect relevant Receptors.
Low	Where the extent of changes on Receptors is small in scale and would only affect a small number of people or would be at a considerable distance from Receptors or where other technical chapters conclude that there may be an effect that this assessment considers may affect relevant Receptors.
Very Low	Where the extent of changes on Receptors is very small in scale and would only affect a very small number of people (including individual properties or groups of properties); or would be at a considerable distance from Receptors and potentially un-noticeable or where other technical chapters conclude that there may be an effect that this assessment considers may affect relevant Receptors.

16.8.10 Effects that will result in a change identified as major are considered to be significant in terms of this assessment and effects that result in a moderate change are considered to be probably significant, taking account of the significance evaluation matrix at **Table 16.12 Significance Evaluation Matrix** below. Where probable is identified a conclusion as to whether it would be significant is made.

16.8.11 Where effects are referenced from other chapters, e.g., air quality and noise, judgements on the significance of effects reflect the methodologies adopted in those Chapters, which reflect relevant technical guidance, policy and legislation on relevant matters in relation to human health as it relates to those topics.

Table 16.12 Significance Evaluation Matrix

Sensitivity/importance/value	Magnitude of change: Very High	High	Medium	Low	Very Low
Very High	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)
High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)
Medium	Major (Significant)	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)
Low	Major (Significant)	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
Very Low	Moderate (Probably significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

16.9 Environmental assessment of health effects

16.9.1 The predicted construction and operational effects of the Proposed Development on the health Receptors identified in this assessment are considered in further detail in the sections below including explanation of any Receptors scoped out from further assessment.

Health effects arising from community perceptions of risk impacting upon quality of life and wellbeing during construction and operation

16.9.2 PHE requested that the health assessment consider community perceptions of risk and how this might impact on health and quality of life (the latter is defined in **Section 16.5** above). There are a number of factors which influence quality of life, including the presence of stress and anxiety. The baseline data suggests that levels of stress and anxiety at the district level are broadly reflective of those at the county and national level.[70]

16.9.3 Non-statutory consultation was undertaken between 16 March and 4 May 2020 and 18 September and 29 October 2020. The consultation asked which topics (which are covered in the ES) were most important to them and why and any further thoughts on the project which should be considered as the proposals are developed. A total of 45 pieces of feedback were received in response to the first non-statutory feedback from members of the public and non-prescribed consultees and 17 pieces

[70] ONS Loneliness rates and well-being indicators by local authority (2021).

of feedback were received from this group in response to the second non statutory consultation.

16.9.4 Statutory consultation was undertaken between 28 June 2021 and 13 August 2021. 657 submissions of feedback were received from members of the public and non-prescribed consultees from the statutory consultation. Assuming that all responses received at the statutory consultation stage were submitted from within the town of Wisbech this would equate to 2% of the resident population.

16.9.5 Consultation responses highlighted those areas of perceived perception of risk (primarily associated with the operational phase) that would impact on human health, quality of life and wellbeing. These concerns largely related to specific topics considered in the ES, for example concerns about impacts on health associated with:

- emissions to air, including concerns about specific emissions, e.g., metals and particulates;
- odour;
- noise;
- additional traffic;
- lighting;
- electric and magnetic fields;
- risk of fire; and
- soil pollution and impacts on the food chain.

16.9.6 There were also specific concerns relating to the siting of the Proposed Development in an area of relative deprivation and impacts on mental health for those affected by the Proposed Development.

16.9.7 The factors identified through non-statutory and statutory consultation include matters that have been considered in the ES or technical documents accompanying the application.

16.9.8 It is difficult to gauge the scale of concern and the community perceptions of risk and then how this might impact on health and quality of life within the population but measures to address potential causes of such concerns are identified in **Chapters 6: Traffic and Transport, Chapter 7: Noise and Vibration**, **Chapter 17: Major Accidents and Disasters (all Volume 6.2)** as well as in supporting documents such as the **Outline CTMP** (**Appendix 6A Volume 6.4)** and **Outline CEMP (Volume 7.12)**. In addition, and separate to the DCO process, the Applicant will require an environmental permit to operate the EfW CHP Facility that will be considered and issued by the EA.

16.9.9 Meaningful consultation will continue with local communities, e.g., through the measures outlined in **Table 16.9 Summary of the embedded environmental measures and how these influence the health assessment** above and this will provide the basis for identifying concerns about specific topics like air quality and transport or more general concerns. Consultation will be via a community liaison officer both during construction and operation of the Proposed Development.

Embedded mitigation will be provided for as described in **Table 16.9 Summary of the embedded environmental measures and how these influence the health assessment**. Allowing for the embedded environmental measures and continued liaison with the community through a community liaison officer, secured through DCO Requirement a Very Low magnitude of change is anticipated and with a High sensitivity this would be a Minor (**Not Significant**) effect.

Increase in demand for health services during the construction phase

16.9.10 There would be approximately 700 direct construction jobs supported over the construction phase, excluding Grid Connection, with a maximum of 500 workers on site at any one time, although levels of construction employment are not anticipated to remain uniform over the duration of the build but will, instead, ebb and flow over time to reflect the differing skill requirements of the various stages of the build programme. For instance, the early stages of the build (site enabling works, groundworks and foundation preparatory works) are anticipated to require lower levels of construction labour. In total, it is understood that construction will run for an estimated build period of 36 months, which includes commissioning. For the purpose of this assessment the peak employment level of 500 workers has been used as the basis for assessing potential impacts on health services, clearly this is a 'worse case' scenario as a proportion of workers will be local and therefore may already be registered for and potentially using healthcare services locally to some degree.

16.9.11 The Scoping Report determined that there would not be any significant effects arising from Major Accidents and Disasters. ES **Chapter 17: Major Accidents and Disasters (Volume 6.2)** provides more detail in relation to embedded environmental measures and comments on the assessment used for scoping. It includes consideration of occupational health. In construction nationally there was an estimated 81,000 work related ill health cases (new or longstanding), 57% of which were musculoskeletal disorders. The total ill health cases equate to a rate of 3.5% of the total construction workforce, which is not statistically significantly different to that for workers across all industries (3.4%).[71] Applying this rate to the peak employment of 500 workers would equate to 17 potential cases of ill health over a twelve month period (new or longstanding). The Queen Elizabeth Hospital Kings Lynn provides acute services to a population of around 278,800 people so the additional demand associated with peak employment (0.006%) is not considered to be statistically significant.

16.9.12 The GP surgeries at **Table 16.7 GP Facilities serving Wisbech and surrounding area** that are accepting new patients had a combined total of 47,500 registered patients so the additional registrations are not considered to be statistically significant. It is unlikely that all construction workers employed at the Proposed Development at peak would wish to register with a local GP. However, even if 500 new registrations associated with peak employment where to register it would represent an increase of 1.05% based on available data.[72]

[71] Health and Safety Executive (March 2020) Construction Statistics in Great Britain. [online: Accessed February 2022].
[72] Cambridgeshire Insight (2017) Number of Patients Registered at a GP Practice. [online: Accessed February 2022].

16.9.13 Community care services include a range of children's services, contraception and sexual health, physiotherapy and neuro services. The nature of the Proposed Development means that it is unlikely to impact significantly on these services.

16.9.14 The Applicant has prepared an **Outline Employment and Skills Strategy (Volume 7.8)** that seeks to encourage the use of local labour and consequently reduce the number of non-home based workers employed during construction.

16.9.15 The sensitivity of public healthcare is judged to be high. The magnitude of change is judged to be Very Low and a Minor (**Not Significant**) effect is therefore identified in relation to effects on public health care during the construction phase.

Health effects arising from transport related severance during the construction phase

16.9.16 Severance is the separation of people from places and other people and places or the impediment of pedestrian access to essential facilities.

16.9.17 **ES Chapter 6: Traffic and Transport (Volume 6.2)** identifies the potential for a Moderate **(Significant)** impact in relation to severance under the peak construction scenario at New Bridge Lane (East of Cromwell Road), based on medium sensitivity and medium magnitude of change (**Chapter 6: Traffic and Transport**, **Table 6.29** refers). In terms of assessing effects on more vulnerable groups, such as the elderly, children or disabled persons, a high sensitivity would be appropriate but the magnitude of the impact on such groups as a whole is likely to be Very Low given the nature and location of the effect under consideration so on balance the identification of a Minor **(Not Significant)** effect in relation to Health and wellbeing is considered appropriate.

16.9.18 **ES Chapter 6: Traffic and Transport (Volume 6.2)** concludes that to address the issues related to severance at this location a formal pedestrian crossing at the junction of New Bridge Lane and Cromwell Road. This would be in addition to embedded mitigation, including the provision of an **Outline CTMP (Appendix 6A, Volume 6.4)**.

16.9.19 The crossing would not be placed on New Bridge Lane itself as there are non-continuous footways along the road and no clear desire lines between businesses. On review of the merits of providing a crossing it is concluded that the most appropriate location would be at the junction of New Bridge Lane and Cromwell Road. Currently no formal crossing exists at this location. There are footways in this location on the east side of Cromwell Road and on both sides of New Bridge Lane, representing a clear design line.

16.9.20 The proposed pedestrian crossing would include for tactile paving at dropped crossings and a small central pedestrian refuge in the centre of the junction and would be secured via a DCO Requirement relating to the New Bridge Lane Access Improvements.

16.9.21 With a crossing in place, assuming a high sensitivity to change for more vulnerable Receptors and a Very Low magnitude of change, there could be a Minor **(Not Significant)** effect in relation to health with the crossing in place although the impacts on health at the population level is limited.

Health effects arising from transport related severance during the Operational Phase

16.9.22 In **Chapter 6: Traffic and Transport (Volume 6.2)** the assessment of New Bridge Lane in the operational phase has set out that for severance, sensitivity is medium, the magnitude of change is high and there will be a Major **(Significant)** effect on the highway based on the increase in HGVs. People within more vulnerable groups, e.g., the elderly, children or disabled persons could be potentially affected, although the impacts on health at the population level is limited. Assuming high sensitivity and a Very Low magnitude of change, there would be a Minor **(Not Significant)** effect in relation to health although the impacts on health at the population level is limited.

16.9.23 The Access Improvement works proposed on New Bridge Lane including widening the road, have been designed to DMRB standards and provide for pedestrian crossings. In view of the initial assessment of significance, the Traffic and Transport assessment reported in the chapter includes for additional mitigation in the form of an additional pedestrian crossing referenced as mitigation for construction also, which would be secured via a DCO Requirement.

16.9.24 With a crossing in place, assuming a high sensitivity to change for more vulnerable Receptors and a Very Low magnitude of change, there could be a Minor **(Not Significant)** effect in relation to health at the Local level with the crossing in place although the impacts on health at the population level is limited.

Health effects arising from economic benefits during the construction phase – capital spend during the construction phase

16.9.25 There would be considerable spend by the Applicant arising from the capital cost of the construction of the Proposed Development. Whilst the exact amount of money which would be spent on the Proposed Development can only be fully determined in due course, spend of £450m is anticipated during construction though it should be noted that not all of this money may be spent in the UK (for example some equipment may need to be sourced from abroad) and that it would be temporary, i.e., spent during the course of construction. However, spend in the local area will be encouraged as set out in the **Outline Employment and Skills Strategy (Volume 7.8**). **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** concludes that the local wards are considered to be of high sensitivity to change. and assumes a Very Low magnitude of change. Minor beneficial economic effects would therefore be associated with construction which is considered to be a Minor (Not Significant) economic effect. Although the Applicant is committed to maximising local investment and would aim to become a significant presence in the economy of the local wards. Given that income and work[11] are two of the most important determinants of health and wellbeing the sensitivity of the population is judged to be High and (consistent with **Chapter 15**) the magnitude of change is Very Low – providing a Minor (**Not Significant**) beneficial effect on health associated with capital spend at the Local level.

16.9.26 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** identifies the District level as medium sensitivity to change. The **Outline Employment and Skills Strategy (Volume 7.8)** includes measures to encourage local procurement, which are described in **Chapter 15**, a Low magnitude of change. Minor beneficial economic effects would therefore be associated with construction

which is considered to be a Minor (Not Significant) effect. This conclusion is also considered appropriate in relation to the assessment of potential beneficial indirect health effects and assuming Medium sensitivity and a Low magnitude of change there would be a Minor (**Not Significant)** beneficial effect in relation to health at the District level.

16.9.27 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2),** concludes that**,** at the County level, Cambridgeshire and Norfolk are of Low sensitivity to change. Given the Applicant's commitment in supporting local businesses and suppliers to take advantage of the opportunities presented by the letting of contracts for construction in the **Outline Employment and Skills Strategy (Volume 7.8)** it is considered that across this wider geographical area there is a greater potential for economic investment than perhaps at the District level. However, the assessment concludes that against the wider economic context at County level there would be a low magnitude of change from the capital investment by the Applicant given the size of the combined economy of the two counties. Negligible beneficial economic effects would therefore be associated with construction which is a Not Significant economic effect. This conclusion is also considered appropriate in relation to the assessment of potential beneficial indirect health effects and assuming Medium sensitivity and a Low magnitude of change there would be a Minor (**Not Significant**) beneficial effect in relation to health at the County level.

Health effects arising from direct and indirect and induced employment during the construction phase

16.9.28 The Proposed Development is expected to support, approximately 700 direct construction jobs over the construction period, with up to 500 workers on site at any one time. In total, it is understood that construction will run for an estimated build period of 36 months, which includes commissioning. The Applicant will maximise the use of the local workforce for the construction of the Proposed Development by adopting an **Outline Employment and Skills Strategy (Volume 7.8)**.

16.9.29 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** concludes that the local wards are considered to be of High sensitivity to change. A Low magnitude of change arising from construction jobs at the local level has therefore been adopted. Moderate beneficial economic effects would be associated with direct employment during the construction phase, which are considered to be a Moderate (Probably Significant) beneficial economic effect. Given the range of construction jobs available from manual to highly skilled and the Applicant's commitment to improving skills in the local area this is considered to be significant. This conclusion is considered relevant in relation to potential health effects, assuming High sensitivity at the local level and a Low magnitude of change. A Moderate (Probably Significant) beneficial effect in relation to health is identified in relation to direct employment during the construction phase at the Local level.

16.9.30 The potential for a Moderate (Probably Significant) economic effect at the District level associated with direct employment during the construction phase is identified in **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)**, assuming Medium sensitivity to change and Medium magnitude of change. This conclusion is considered relevant in relation to potential health effects and,

assuming Medium sensitivity and Medium magnitude of change, a Moderate **(Probably Significant)** beneficial effect is identified in relation to health in relation to direct employment during the construction phase at the District level.

16.9.31 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** concludes that sensitivity at the County level is Low and the magnitude of change would be Very Low, economic benefits at the County level are therefore Minor (Not Significant). Given the Very Low magnitude of change envisaged, a Negligible **(Not Significant)** beneficial effect at the County level in relation to health is envisaged in relation to direct employment during the construction phase at the County level.

16.9.32 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** estimates that 777 indirect and induced construction jobs would be generated by the Proposed Development, although at the Ward level this would probably be a Low magnitude of change. With a High sensitivity and Low magnitude of change arising from any indirect jobs a Moderate (**Probably Significant**) beneficial economic effect would be experienced. Given the number of indirect and induced jobs that will be created overall, the proximity of potential suppliers and the length of time that construction will be underway (3 years) this is considered to be significant. Assuming high sensitivity in health terms this assessment is also considered appropriate in relation to potential impacts on health and a Moderate (**Probably Significant**) beneficial effect is identified in relation to indirect and induced employment at the Local level.

16.9.33 At the District level, Fenland and KLWN are considered to be of Medium sensitivity to change. A greater proportion of the 777 indirect construction related jobs would be sourced from Fenland and KLWN. The assessment concludes that there would be a Medium magnitude of change from any indirect jobs sourced from Fenland District. Moderate beneficial economic effects would therefore be associated with construction, which is considered to be a probably significant beneficial economic effect which will be significant. Assuming a medium sensitivity to change at the District level and Medium magnitude of change a Moderate **(Probably Significant)** beneficial effect in relation to health is anticipated in relation to indirect and induced employment at the District level.

16.9.34 At the County level, Cambridgeshire is considered to be of Low sensitivity to change. It concluded that many of the 777 indirect construction related jobs would be sourced from Cambridgeshire (and that this would increase further into Norfolk). With a Very Low magnitude of change from any indirect jobs given the number relative to the total employment numbers at the County level Negligible beneficial economic effects would therefore be associated with construction, which is considered to be a not significant beneficial economic effect. Given the Very Low magnitude of change envisaged, a Negligible (**Not Significant**) effect at the County level in relation to health is envisaged.

Health effects arising from Direct, Indirect and Induced Employment during the Operational Phase

16.9.35 **Section 15.9** of **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** provides an assessment of direct, indirect and induced employment and wider benefits associated with skills development and local supply chain.

16.9.36 Up to 40 full time equivalent (FTE) jobs would be created once the EfW CHP Facility is operational. The Applicant intends that the majority of these jobs would be filled locally subject to any skills and training requirements and has prepared an **Outline Employment and Skills Strategy (Volume 7.8)** to support this aspiration. Whilst the proportion of employees recruited from local wards, Fenland District and/or KLWN or further afield is difficult to predict with any certainty but it is assumed that they will be from within the Study Area.

16.9.37 Taking account of the uncertainty noted above, **Section 15.9 of Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** concludes that the provision of up to 40 FTE jobs for operation would represent a Very Low magnitude of change for the Local (locals wards which have High sensitivity), District (Fenland and King's Lynn and West Norfolk which have a Medium sensitivity) and County (Cambridgeshire and Norfolk which have a Low sensitivity) levels and thus a Not Significant employment effect..

16.9.38 The **Outline Employment and Skills Strategy (Volume 7.8)** would remain in place for the operational phase, with the intention that the majority of the operational workforce would be filled locally subject to any skills and training requirements. The intention to provide work experience, internships and apprenticeships would continue during the operational phase, with new positions being created as the Applicant's company continues to grow in the UK. These measures are consistent with the wider determinants of health relating to training and life-long learning.

16.9.39 Given that income and work are two of the most important determinants of health and wellbeing[26] and existing baseline conditions, the sensitivity of the population is High at the local level and the magnitude of change is Very Low, a Minor **(Not Significant)** beneficial effect at the Local level is identified in relation to health associated with direct employment.

16.9.40 Assuming Medium sensitivity at the District level and a Very Low magnitude of change there would be a **Negligible (Not Significant)** effect in relation to health effects associated with operational employment at the District level.

16.9.41 Assuming Low sensitivity at the County level and a Low magnitude of change there would be a **Negligible (Not Significant)** effect at the County level from health benefits associated with direct employment during the operational phase.

16.9.42 **Chapter 15: Socio economics, Tourism, Recreation and Land Use (Volume 6.2)** also considers the potential for indirect employment at the operational phase. It is estimated that 40 additional FTE jobs could support the creation of a further 24 indirect jobs at the local (Fenland and King's Lynn and West Norfolk) level, and 32 when expanded across the region/county (Cambridgeshire and Norfolk) level. The local wards are considered to be of High sensitivity to change; there would be a Very Low magnitude of change from operational indirect employment of 24 FTE local jobs particularly as this includes for the District as well as Local level. Minor beneficial employment effects would therefore be associated with direct and indirect employment during the operational phase, which is considered to be a Minor (Not Significant) beneficial employment effect. In terms of impact on public health (given the magnitude of change a Minor **(Not Significant)** beneficial effect in relation to health is also anticipated).

16.9.43 At the District level, Fenland and King's Lynn and West Norfolk are considered to be of Medium sensitivity to change; there would be a Low magnitude of change from operational indirect employment of 24 FTE. Minor beneficial economic effects would therefore be associated with direct and indirect employment during the operational phase, which is considered to be a Not Significant employment effect. In terms of impact on public health (given the magnitude of change a Minor (**Not Significant**) effect in relation to health is also anticipated).

16.9.44 At the County level, Cambridgeshire and Norfolk are considered to be of Low sensitivity to change; there would be a Low magnitude of change from direct and indirect employment of 32 FTE. Negligible beneficial economic effects would therefore be associated with direct and indirect employment during the operational phase, which is considered to be a Not Significant employment effect. Given the Very Low magnitude of change envisaged, a **Negligible** (**Not Significant**) effect at the County level in relation to health is envisaged.

Health effects associated with construction noise

16.9.45 **Chapter 7: Noise and Vibration (Volume 6.2)** provides an assessment of potential noise and vibration effects during construction. This includes consideration of the potential for effects on health and quality of life. **Chapter 7: Noise and Vibration (Volume 6.2)** sets out the methodology for identifying impact magnitudes of construction noise for different Receptors.

16.9.46 The assessment of construction noise, presented in **Appendix 7B Construction Noise Assessments (Volume 6.4)**, and summarised in **Chapter 7: Noise and Vibration Section 7.9 (Volume 6.2)**, has concluded that, during the construction phase, Significant effects are likely at residential Receptors at 9 and 10 New Bridge Lane, the dwelling known as 'Potty Plants' at the south end of New Bridge Lane and at the Newbridge Lane Traveller site, during specific phases of the construction programme.

16.9.47 With regard to non-residential Receptors, Significant effects due to construction noise are likely at industrial and commercial premises adjacent to the EfW CHP Facility Site, during specific phases of the construction programme. **Chapter 7: Noise and Vibration Section 7.10 (Volume 6.2)**concludes that significant effects due to construction noise are unlikely at all other locations assessed, throughout the construction programme.

16.9.48 Assuming Medium sensitivity (consistent with **Chapter 7: Noise and Vibration (Volume 6.2)**) and High magnitude of change, a Major **(Significant)** effect in relation to health associated with construction noise at the local level is identified.

16.9.49 Additional mitigation measures to avoid significant effects at residential and non-residential premises due to construction noise are set out in **Chapter 7: Noise and Vibration Section 7.10 (Volume 6.2)**. The assessment concludes that with the additional mitigation measures, impacts will be reduced such that the resultant effects are Not Significant. Assuming a Medium sensitivity and Low magnitude of change a Minor **(Not Significant)** effect in relation to health is identified.

16.9.50 At Cambian School, predicted construction noise levels do not exceed baseline sound levels, and will not interfere with its normal operation, therefore significant effects will be avoided.

16.9.51 The assessment of increases in road traffic noise during construction of the Proposed Development, presented in **Chapter 7: Noise and Vibration Section 7.9 (Volume 6.2)**, has concluded that significant effects are unlikely at all locations assessed.

Health effects associated with operational noise

16.9.52 The assessment of operational noise, presented in **Chapter 7: Noise and Vibration Section (Volume 6.2)**, has concluded that, during the operational phase, **Significant** effects are likely at the nearest dwellings at 9 and 10 New Bridge Lane. Significant effects due to operational noise are unlikely at all other residential and non-residential locations assessed. Additional mitigation measures to avoid significant effects due to operational noise are set out in **Chapter 7: Noise and Vibration Section (Volume 6.2)**. With the additional mitigation measures, impacts will be reduced such that the resultant effects are **Not Significant**. Given the number of dwellings involved, it can be concluded that operational noise will not impact on health within the wider population, including vulnerable groups.

Health effects associated with air quality during operation of the EfW CHP Plant

16.9.53 **ES Chapter 8: Air Quality (Volume 6.2)** includes consideration of potential impacts on health during the operational phase and includes **Appendix 8B Annex G: Human Health Risk Assessment (HHRA) (Volume 6.4).**

16.9.54 Releases to air from developments of this nature are controlled by emission limit values (ELVs) provided by the Environmental Permitting (England and Wales) Regulations 2016, as amended.[73]

16.9.55 **Chapter 8: Air Quality (Volume 6.2) Table 8.26 Impact to air quality at human Receptors** presents a summary of the maximum predicted process contribution (PC) at any human Receptor for all pollutants modelled. The PC for pollutants NO_2, PM_{10}, $PM_{2.5}$, and NH_3, is the combined traffic and chimney PC. For the remaining pollutants that are only associated with chimney emissions the PC only relates to the chimneys.

16.9.56 For the majority of pollutants, the maximum PC is predicted to be less than 5% for long-term averages and less than 10% for short-term averages (where the environmental contributions are less than 75% of the Air Quality Assessment Level (AQAL)) therefore the change in concentration as a result of the Proposed Development is considered to be Negligible.

16.9.57 The predicted NO_2 and SO_2 PC for 1-hour average and 15-minute averaging periods are predicted to be greater than 10%, which according to IAQM guidance can be classified as small (as detailed in **Section 8.8.9**).

16.9.58 Therefore, all changes in concentration at human Receptors as a result of the Proposed Development are considered to be Not Significant in **Chapter 8 Air**

[73] HM Government. The Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154), as amended

Quality (Volume 6.2). This is based on residential Receptors having a High sensitivity and a Negligible to Small magnitude of change. Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect at all levels.

16.9.59 **Chapter 8: Air Quality (Volume 6.2) Table 8.27 Impact to air quality at human Receptors in the emergency scenario** presents a summary of the maximum predicted NO_2 PC for 1-hour averaging period at the human Receptor with the highest predicted impact. The PEC is predicted to be 37% of the AQAL and therefore comfortably below the objective. As the emergency diesel generator is expected to operate 1 – 2 hours per month and a maximum of 60 hours per year, the impact at human Receptors is considered to be Not Significant in the emergency scenario in **Chapter 8: Air Quality (Volume 6.2)**. Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect at all levels.

16.9.60 **Chapter 8: Air Quality (Volume 6.2) Table 8.28 Impact to air quality at human Receptors in abnormal operation scenario** presents the model results during abnormal operating conditions of the combustion unit and associated Flue Gas Treatment (FGT) infrastructure for the specific Receptor experiencing the maximum PC and Predicted Environmental Concentration (PEC). The impact at human Receptors is considered to be Not Significant in abnormal operating scenario, as the PC for all pollutants modelled is less than 40% of AQAL, and the PEC is comfortably below the relevant objectives. Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect.

16.9.61 The HHRA has been undertaken in order to consider the possible impacts on human health arising from dioxins and furans (PCDD/F) and dioxin-like PCBs emitted from the EfW CHP Facility, see **Chapter 8: Air Quality Appendix 8B Annex F HHRA (Volume 6.4)**. Potential effects have been assessed under the worst-case scenario, namely that of an individual exposed for a lifetime to the effects of the highest airborne concentrations and consuming mostly locally grown food. Deposition and subsequent uptake of the Compounds of Potential Concern (COPCs) into the food chain is likely to be the more numerically significant pathway over direct inhalation. The HHRA concludes that for the maximally exposed individual, exposure to dioxins, furans and dioxin-like PCBs is not significant. Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect at all levels.

Effects on Human Health associated with Electric and Magnetic Fields

16.9.62 **Chapter 3: Description of the Proposed Development (Volume 6.2)** provides a detailed description of the Grid Connection at **Section 3.8**.

16.9.63 Power frequency Electric and Magnetic Fields (EMFs) arise from generation, transmission, distribution and use of electricity and will occur around power lines and electric cables and around domestic, office or industrial equipment that uses electricity. EMFs comprise electric and magnetic fields. Electric fields are the result of voltages applied to electrical conductors and equipment. Fences, shrubs and buildings easily block electric fields. Magnetic fields are produced by the flow of electric current; however unlike electric fields, most materials do not readily block

magnetic fields. The intensity of both electric fields and magnetic fields diminishes with increasing distance from the source[74].

16.9.64 All overhead power lines produce EMFs, and these tend to be highest directly under a line and decrease to the sides at increasing distance. Although putting cables underground eliminates the electric field, they still produce magnetic fields, which are highest directly above the cable. EMFs can have both direct and indirect effects on human health. The direct effects occur in terms of impacts on the central nervous system resulting in its normal functioning being affected. Indirect effects occur through electric charges building up on the surface of the body producing a microshock on contact with a grounded object, or vice versa, which, depending on the field strength and other exposure factors, can range from barely perceptible to being an annoyance or even painful [75].

16.9.65 The NPS EN-5 goes on to state that the balance of scientific evidence over several decades of research has not proven a causal link between EMFs and cancer or any other disease stating that there is no proven causal link between EMF and cancers or other health problems and that EMF from OHL do not constitute a risk to people fitted with pacemakers[76]. The Draft revised NPS EN-5 repeats this position at 2.13.6 [77].

16.9.66 NPS EN-5 includes a simplified route map for dealing with EMFs. For lines of 132kV or below the tests are that the Line[78]:

- complies with relevant exposure limits; and
- complies with policy on phasing;

16.9.67 Direct effects on humans are primarily a result of the induction of currents. Most attention focuses on known effects and in cases where the public may be exposed for considerable time, which is taken to mean in a residence and its curtilage. Protection against such effects is provided by adherence to quantitative exposure limits called ‘basic restrictions’. Government guidance states that indirect effects such as contact currents and surface charge effects are adequately protected against by application of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) ‘reference levels’; further measures relate to microshocks. However, it should be noted that all such indirect effects are generally only an issue for higher voltage OHL transmission (at 275kV or 400kV) and have not been identified as an issue for OHL at 132kV or lower[79] .

[74] Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[75] Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[76] Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[77] Department for Energy & Climate Change (2021) Draft National Policy Statement for Electricity Networks Infrastructure (EN-5)
[78] Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[79] DECC (2013) Power Lines: Control of microshocks and other indirect effects of public exposure to electric fields – a Voluntary Code of Practice.

16.9.68 As noted in national guidance NPS EN-5 above, EMF intensity is less of an issue with voltages of 132kV or lower and decreases with distance. The Grid Connection is proposed at 132kV.

16.9.69 From the EfW CHP Facility Site, the Grid Connection would run underground for its entire length to a point of connection (POC) to the National Electricity Transmission Network distribution system at UKPN's Walsoken DNO Substation.

16.9.70 The underground route would exit the EfW CHP Facility Site at New Bridge Lane then head east to the A47. Here the underground route would head north following the western verge of the A47 to Broadend Road. At Broadend Road the route would head west within the highway verge to the Applicant's proposed Walsoken Substation. The Walsoken Substation is to be located to the front of the Walsoken DNO Substation on land belonging to UKPN.

16.9.71 Placing the connection underground would eliminate the electric field along the Grid Connection. A magnetic field would still be produced but this would be directly over the cable and the intensity of the magnetic field diminishes with increasing distance from the source. Given the proposed route of the cable, which is in the highway and highway verge, sensitive, human, Receptors are unlikely to come into close proximity and when traveling along the road would do so fleetingly. Exposure to magnetic fields will be Very Low. The Walsoken Substation would be fenced off consistent with relevant industry codes and standards such that members of the public would not be able to come into close proximity to the equipment thereby limiting exposure to EMFs. The sensitivity of Receptors is High but the magnitude of change is Very Low. On this basis and given that the Grid Connection will be underground and comply with the relevant industry codes and standards in relation to exposure limits and phasing the assessment is a Minor **(Not Significant)** effect upon health at all levels.

Decommissioning

16.9.72 The health effects associated with the decommissioning phase are expected to be of a similar level to those reported for the construction phase works, albeit with a lesser duration of one year. The likely significance of effects relating to the construction phase assessment reported in this chapter are therefore applicable to the decommissioning phase.

Cumulative Assessment

16.9.73 The cumulative health effects arising from the Proposed Development with other developments is provided within **Chapter 18: Cumulative Effects Assessment** this also includes for a consideration of inter-related effects.

Summary of significance

16.9.74 A summary of the results of the assessment of health related effects is provided in **Table 16.13 Summary of significance of health effects.**

Table 16.13 Summary of significance of health effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
People living and working in the Study Area and community Receptors. Community perceptions of risk impacting upon quality of life and wellbeing associated with the EfW CHP Facility and Grid Connection	High at all levels	Very Low	Minor (**Not Significant**)	Consultation responses previously received highlighted the nature of perceptions of risk. These related to factors considered in the ES and other technical documents relating to the Proposed Development, including air quality, noise, lighting and the food chain. Meaningful consultation will continue with local communities and this will provide the basis for identifying concerns about specific topics like air quality and transport, or more general concerns. Consultation would occur during both construction and operation together with the embedded mitigation as described in **Table 16.9 Summary of the embedded environmental measures**. The Applicant also proposes to appoint a community liaison officer, secured by DCO Requirement. Assuming a Very Low magnitude and High sensitivity, a Minor (**Not Significant**) effect is anticipated.
Local community Receptors. Increased demand on Public healthcare during the construction phase of the EfW CHP Facility	High at all levels	Very Low	Minor (**Not Significant**)	An **Outline Employment and Skills Strategy (Volume 7.8)** will be used to encourage the use of construction workers sourced from within the District/Borough. The number of new ill health cases associated with workers sourced from outside the district is not considered to be significant. The sensitivity of Receptors is High, magnitude of change is Very Low and a Minor (**Not Significant**) impact is identified.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
People living and working in the Study Area and community Receptors. Severance during the construction phase associated with the EfW CHP Facility.	High at all levels	Very Low	Minor (Not Significant)	In **Chapter 6: Traffic and Transport (Volume 6.2)** for Highways Link 2 – New Bridge Lane (east of Cromwell Road) the change in HGVs on the link is between 60% and 90%. The magnitude of change is Medium, and the significance of effect on severance is Moderate (significant). In terms of assessing effects on more vulnerable groups, such as the elderly, children or disabled persons, a high sensitivity would be appropriate but the magnitude of the impact on such groups as a whole is likely to be Very Low given the nature and location of the effect under consideration so on balance the identification of a Minor (Not Significant) effect in relation to health and wellbeing is considered appropriate. **Chapter 6: Traffic and Transport (Volume 6.2)** proposes a new pedestrian crossing to address this issue, which would be delivered via a DCO Requirement and, assuming high sensitivity and a Very Low magnitude of change, the residual effect is Minor (**Not Significant**).
People living and working in the Study Area and community Receptors. Severance during the Operational Phase associated with the EfW CHP Facility	High at all levels	Very Low	Minor **(Not Significant**) with residual mitigation.	In **Chapter 6: Traffic and Transport (Volume 6.2)** for Highway Link 2 the change in HGVs on the link is over 90%. The sensitivity is Medium, the magnitude of change is High, and the significance of effects on severance is therefore Major (Significant). **Chapter 6 Traffic and Transport (Volume 6.2)** proposes a new pedestrian crossing to address this issue which would be delivered via a DCO Requirement and the residual effect identified in that chapter is **Not Significant**.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
				People within more vulnerable groups, e.g., the elderly, children or disabled persons could be potentially affected, although given the location the impacts upon this group and upon health at the population level is limited. Assuming High sensitivity and a Very Low magnitude of change, there would be a Minor **(Not Significant)** effect in relation to health although the impacts on health at the population level is limited.
Economically active people and businesses within the Study Area: Capital spend during the construction phase	High – local Medium – district Low - County	Very Low	Minor (**Not Significan**t) beneficial	**Chapter 15: Socio Economics Tourism, Recreation and Land Use (Volume 6.2)** identifies the potential for Minor beneficial (**Not Significant**) effect at the local and district levels associated with capital spend during the construction phase. Given the relationship between health outcomes and employment and existing baseline conditions, the sensitivity of the population at the local level is judged to be High and the magnitude of change is Very Low – providing a Minor (**Not Significant**) beneficial effect on health associated with capital spend and employment during the construction phase at the local level. Assuming Medium sensitivity and a Low magnitude of change there would be a Minor (Not Significant) beneficial effect in relation to health at the district level. Assuming Medium sensitivity and a Low magnitude of change there would be a Minor (**Not Significant**) beneficial effect in relation to health at the County level.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
Economically active people within the Study Area – temporary direct, indirect and induced employment associated with construction	High – local Medium – district –Low - County	Low – Local District Medium – District Very Low - County	Moderate (**Probably Significant**) beneficial Local and District levels County – Minor (Not Significant) beneficial	**Chapter 15: Socio Economics, Tourism, Recreation and Land Use (Volume 6.2)** identifies the potential for beneficial economic effects associated with construction employment. Approximately 700 direct construction jobs over the construction period are anticipated, with up to 500 workers on site at any one time. There would also be 777 jobs associated with indirect and induced employment. In total, it is understood that construction will run for an estimated build period of 36 months, which includes commissioning. Assuming High sensitivity at the local level and a Low magnitude of change a Moderate **(Probably Significant)** beneficial effect in relation to health is identified at the Local and District level with a Minor **(Not Significant)** effect at the County level.
Economically active people within the Study Area: Economic benefits during the operational phase of the EfW CHP Facility. Direct indirect and induced employment.	High – Local Medium – District Low – County	Very low – Local Medium - District - – County - Low	Minor (**Not Significant**) beneficial Local Negligible (Not Significant) District and County levels	Up to 40 FTE jobs would be created as a result of the Proposed Development. An **Outline Skill and Employment Strategy**, internships, apprenticeships and opportunities for life long learning would be in place. Given the relationship between health outcomes and employment and existing baseline conditions, the sensitivity of the population is judged to be High and the magnitude of change is Very Low – providing a Minor (**Not Significant**) beneficial effect on health associated with direct employment during the operation phase at the local level.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
				Assuming Medium sensitivity at the District level and a Very Low magnitude of change there would be a Negligible **(Not Significant)** effect in relation to health effects associated with direct operational employment at the District level. Assuming Low sensitivity at the County level and a Low magnitude of change there would be a Negligible **(Not Significant)** effect at the County level from health benefits associated with direct operational employment during the operational phase. The local wards are considered to be of High sensitivity to change; there would be a Very Low magnitude of change from operational indirect employment of 24 FTE local jobs particularly as this includes for the District as well as Local level. Minor beneficial employment effects would therefore be associated with direct and indirect employment during the operational phase, which is considered to be a Minor (Not Significant) beneficial employment effect. In terms of impact on public health (given the magnitude of change a Minor **(Not Significant)** beneficial effect in relation to health is also anticipated). At the District level, Fenland and King's Lynn and West Norfolk are considered to be of Medium sensitivity to change; there would be a Low magnitude of change from operational indirect employment of 24 FTE. Minor beneficial economic effects would therefore be associated

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
				with direct and indirect employment during the operational phase, which is considered to be a Not Significant employment effect. In terms of impact on public health (given the magnitude of change a Minor **(Not Significant)** effect in relation to health is also anticipated). At the County level, Cambridgeshire and Norfolk are considered to be of Low sensitivity to change; there would be a Low magnitude of change from direct and indirect employment of 32 FTE. Negligible beneficial economic effects would therefore be associated with direct and indirect employment during the operational phase, which is considered to be a not significant employment effect. Given the Very Low magnitude of change envisaged, a Negligible **(Not Significant)** effect at the County level in relation to health is envisaged.
People living and working in the Study Area. Noise effects arising from construction of the EfW CHP Facility.	Medium	High	Major (**Significant)** concluding as Minor **(Not Significant**) with residual mitigation at the local level.	Potential for temporary significant effects on residential and non-residential Receptors, including occupants of the New Bridge Lane Traveller site. Additional mitigation measures to avoid significant effects at residential and non-residential premises due to construction noise are set out in **Section 7.10 of Chapter 7: Noise and Vibration (Volume 6.2),** it concludes that with the additional mitigation measures, impacts will be reduced such that the resultant effects are Minor **(Not Significant).**

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
				Assuming Medium sensitivity (consistent with the noise assessment) and High magnitude of change, a Major **(Significant)** effect in relation to health associated with construction noise at the Local level is identified. Assuming a Medium sensitivity and Low magnitude of change a Minor **(Not Significant)** effect in relation to health is identified with mitigation measures in place.
People living and working in the Study Area. Noise effects arising from operational noise from the EfW CHP Facility.	Medium	High	Major (**Significant**) concluding as Minor **(Not Significant**) with residual mitigation.	The assessment of operational noise, presented in **Chapter 7: Noise and Vibration (Volume 6,2) Section 7.9**, has concluded that, during the operational phase, significant effects are likely at the nearest dwellings at 9 and 10 New Bridge Lane. Significant effects due to operational noise are unlikely at all other residential and non-residential locations assessed. Additional mitigation measures to avoid significant effects due to operational noise are set out in **Section 7.10**. With the additional mitigation measures, impacts will be reduced such that the resultant effects are Minor (**Not Significant)**. Given the number of dwellings involved, it can be concluded that operational noise will not impact on health within the wider population, including vulnerable groups. Assuming a Medium sensitivity and Low magnitude of change a Minor **(Not Significant)** effect in relation to health is identified with the additional mitigation in place.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]		Rationale for the assessment conclusion
People living and working in the Study Area. Health effects associated with air quality during the operation of the EfW CHP Facility	High	Very Low	Minor **Significant**)	(**Not**	**ES Chapter 8: Air Quality (Volume 6.2)** includes consideration of potential impacts on health during the operational phase, and includes **Appendix 8B Annex G: Human Health Risk Assessment (Volume 6.4).** Embedded measures include the procurement of suitable plant and equipment; adoption of considerate layout and design and the EfW CHP Facility to be designed to achieve defined Emission Limit Values. Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect.
People living and working in the Study Area. Impacts on Human Health associated with Electric and Magnetic Fields	High	Very Low	Minor **Significant**)	(**Not**	The Grid Connection cable operates at132kV. From the onsite substation located in the southern area of the EfW CHP Facility Site, the Grid Connection would run underground for its entire length to a POC to the National Electricity Transmission Network distribution system at UKPN's Walsoken DNO Substation. The Applicant's proposed Walsoken Substation is to be located to the front of the UKPN Walsoken DNO on land belonging to UKPN. Placing the Grid Connection underground would eliminate the electric field for the majority of the route. A magnetic field would still be produced but this would be mitigated by being underground. Given the proposed route of the cable which would be within highway land, exposure to magnetic fields will be Very Low. The Walsoken Substation would be fenced off, limiting exposure to EMFs.

Receptor and summary of predicted effects	Sensitivity/ importance/ value of Receptor[1]	Magnitude of change[2]	Significance[3]	Rationale for the assessment conclusion
				Assuming High sensitivity in relation to health and a Very Low magnitude of change there would be a Minor **(Not Significant)** effect.

1. The sensitivity/importance/value of a Receptor is defined using the criteria set out in **Section 16.9** above and is defined as very low, low, medium, high and very high. Amend range as appropriate for this chapter.
2. The magnitude of change on a Receptor resulting from activities relating to the development is defined using the criteria set out in **Section 16.9** above and is defined as very low, low, medium, high and very high. Amend range as appropriate for this chapter.
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a Receptor and the magnitude of change and is expressed as major (significant), moderate (probably significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 16.9**.

16.10 Consideration of optional additional mitigation or compensation

16.10.1 Whilst the assessment set out above has concluded that it will not be necessary to implement additional mitigation measures specific to health, it is noted that the draft revised National Policy Statement for Energy (EN-1) suggests that opportunities should be taken to mitigate indirect impacts by promoting local improvements to encourage health and wellbeing. Such measures could include funding and organisation of activities for the local community and the Applicant has prepared an **Outline Community Benefits Strategy** which includes for a range of suggested actions informed by MVV's experiences at its Devonport facility and include for the Applicant to support and link with existing wellbeing initiatives in the local area. These additional measures have not been assessed as part of the Proposed Development and the **Outline Community Benefits Strategy (Volume 7.14)** is not a secured document.

16.11 Implementation of environmental measures

16.11.1 **Table 16.14 Summary of environmental measures relating to Health** describes the environmental measures embedded within the Proposed Development and the proposed means by which they will be implemented, i.e., they will have been secured through the various mechanisms shown in the table. Given the overlap between health and other Chapters, **Table 16.14 Summary of environmental measures relating to Health** should be read in conjunction with other relevant chapters, including: **Chapter 6: Traffic and Transport, Chapter 7: Noise and Vibration, Chapter 8: Air Quality, Chapter 9: Landscape and Visual, Chapter 15: Socio-economics and Chapter 17: Major Accidents and Disasters (all Volume 6.2)** as these include additional background material on the measures identified.

Table 16.14 Summary of environmental measures relating to Health

Environmental measure	Responsibility for implementation	Proposed Compliance mechanism	ES section reference
Suitable chimney height to ensure adequate dispersion	Applicant/EPC Contractor	Environmental Permit	**8.6**
SNCR to be implemented within furnace	Applicant/ EPC Contractor	Environmental Permit	**8.7**
On-going liaison with local community Community liaison officer.	Applicant	DCO Requirement	**16.9**
Employment and Skills Strategy	Applicant/ EPC Contractor	DCO Requirement	**15.9**

Environmental measure	Responsibility for implementation	Proposed Compliance mechanism	ES section reference
An **Outline Employment and Skills Strategy (Volume 7.8)** has been included with the application and the Applicant will maximise use of local workforce and provide skills and training opportunities where this is possible.			
Construction Environmental Management Plan An **Outline CEMP (Volume 6.2)** has been prepared for the ES in support of the Proposed Development. Prior to construction a CEMP would be prepared to ensure that there are no adverse effects from the construction works.	Applicant/ Contractor EPC	DCO Requirement	**15.9**
Standard Best Practice for Construction Development would be subject to standard construction best practice mitigation measures to avoid and minimise potential effects on local businesses and recreational facilities and the general amenity of the local area. Such measures, including registering for the Considerate Contractors Scheme are presented in the **Outline CEMP (Volume 7.12)** and would be secured as part of the CEMP.	Applicant/ Contractor EPC	DCO Requirement	**15.9**
An Integrated Management System (IMS) Will be implemented to ensure compliance with all UK health and safety, and environmental legislation.	Applicant	Environmental Permit	**17.4**
Outline CTMP Appendix 6A (Volume 6.4) - Construction of the Proposed Development	Applicant	DCO Requirement	**Appendix 6A (Volume 6.4)**

Environmental measure	Responsibility for implementation	Proposed mechanism	Compliance	ES section reference
would be subject to a CTMP which would specify the routes to be taken by construction vehicles to minimise disruption to existing business and facilities. **The Outline CTMP (Volume 6.4)** will be secured via a DCO Requirement.				
The Access Improvement works proposed on New Bridge Lane including widening the road have been designed to DMRB standards and provide for a pedestrian route. The improvements will also include a pedestrian crossings along New Bridge addressing the severance issue.	Applicant/ EPC Contractor	DCO Requirement		**Appendix 6B**
Design of HV Cable The detailed design, route and design standard of the Grid Connection will be in compliance with the Energy Networks Association relevant technical standards. Undergrounding of cable for entire route to the Walsoken Substation.	Applicant	Technical standard		**17.6**

16.12 Conclusion

16.12.1 The ES adopts a proportionate approach to the consideration of health issues, following consultation on the proposed methodology with PHE and other consultees.

16.12.2 To identify likely significant effects in relation to physical and mental health, the Proposed Development has been screened using a framework agreed with PHE and other consultees.

16.12.3 The framework considers a range of factors that influence health and wellbeing identified by PHE and others. These include the ability to access key services and facilities, physical security, access to green infrastructure, employment and training opportunities, noise and air quality. Health impacts associated with community perceptions of risk have also been considered.

16.12.4 This health assessment, drawing on other chapters within the ES has considered potential health impacts associated with the Proposed Development.

16.12.5 The potential for health benefits associated with employment during the construction and operational phases is identified. Potential health effects associated with transport, noise and vibration, air quality and electric and magnetic fields have also been considered. With mitigation in place, any effects, including residual effects are not considered to be significant.

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