

Chapter 15

People and Communities

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15. People And Communities

15.1 Introduction

- 15.1.1 The Draft ES has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Project.
- 15.1.2 This chapter presents the assessment of the likely significant effects of the Project with respect to people and communities, including the social, economic and health aspects of individuals, communities and wider society that may be affected and is based on the information obtained to date. Following consultation, the assessment will be updated for the Final ES that will accompany the DCO application for the Project.
- 15.1.3 This chapter should be read in conjunction with the project description provided in **Chapter 2: The Project** and with respect to relevant parts of the following chapters:
- **Chapter 5: Biodiversity;**
 - **Chapter 7: Water Environment;**
 - **Chapter 9: Air Quality;**
 - **Chapter 10: Noise and Vibration;**
 - **Chapter 11: Traffic and Transport;**
 - **Chapter 13: Agriculture and Soil Resources;**
 - **Chapter 14: Land Use;** and
 - **Chapter 16: Major Accidents and Disasters.**
- 15.1.4 This chapter describes:
- the legislation, policy and technical guidance that has informed the assessment (**Section 15.2**);
 - consultation and engagement that has been undertaken and how comments from consultees relating to people and communities have been addressed (**Section 15.3**);
 - the methods used for baseline data gathering (**Section 15.4**);
 - overall baseline, including existing and future baseline (**Section 15.5**);
 - embedded environmental measures relevant to people and communities (**Section 15.6**);
 - the scope of the assessment for people and communities (**Section 15.7**);
 - the methodology applied for the assessment (**Section 15.8**);
 - the assessment of people and communities effects (**Section 15.9**);

- the assessment of cumulative (inter-project) effects (**Section 15.10**);
- a summary of In-Combination Climate Change impacts (inter-project) effects (**Section 15.11**);
- a summary of the significance conclusions (**Section 15.12**); and
- a summary of next steps to be taken ahead of preparation of the Final ES (**Section 15.13**).

15.1.5 This chapter is supported by the following appendices:

- **Appendix 15A:** Stakeholder engagement summary

Project Overview

- 15.1.6 The Project includes the construction and operation of approximately 100km of new pipeline to distribute hydrogen to industry in the North West. A number of Hydrogen Above Ground Installations (HAGIs), including Block Valve Installations (BVIs) are required to control the flow and pressure of hydrogen at key points along the proposed pipeline.
- 15.1.7 The Project connects the Hydrogen Production Plant at the Stanlow site, as the source of hydrogen, for onward distribution to the network. The pipeline transports hydrogen to the Central Hub at the centre of the network, which then serves as the connection and onward distribution point to the North, East and South corridors, which would extend to St. Helens, Partington and Northwich respectively. Branching off from each main corridor would be pipeline spurs connecting hydrogen customers to the main pipeline. Infrastructure has also been included which supports the potential blending of hydrogen with methane in the existing gas network. The Project would also link to underground hydrogen storage facilities in Cheshire used to balance supply and demand through the network
- 15.1.8 The presently anticipated maximum extent of land in which the Project may take place, which is assessed in this Draft ES, is defined by the 'Draft Order Limits', land within which is hereafter referred to as 'land within the Draft Order Limits'.
- 15.1.9 A proportionate degree of flexibility has been incorporated into the project design so that unforeseen issues that may be encountered following consent can be sufficiently mitigated. For example, previously unidentified poor ground conditions may require a pipeline section to be re-routed slightly for geotechnical reasons. Therefore, to allow for this, new infrastructure would be constructed within specified Draft Order Limits which identify a maximum distance or measurement of variation within which the works must be constructed; further detail is provided in **Chapter 2: The Project**.

Limitations and Assumptions

- 15.1.10 The assessment in this chapter reflects the approach to construction that will be adopted across the Project. Detailed information relating to project features such as individual crossings and the construction schedule in individual geographic areas, which affect people and communities, is included but the final construction

details will only be prepared once the contractor is appointed and the final, detailed design prepared. This will happen following consent.

- 15.1.11 In this regard, the nature and magnitude of the potential effects will depend on the features of specific locations regarding engineering proposals and local community needs, particularly in regard to the construction of crossings. The final engineering design is expected to be compatible with and incorporate a range of methods for mitigating potential effects on people and communities. The primary method is the use of ‘trenchless’ crossings which do not interrupt the existing use of transport and other networks because the project pipelines are installed by methods such as directional drilling, auger bore and micro-tunnels.
- 15.1.12 Where a trenchless crossing is not used, such as at minor roads, the alternative ‘trenched’ crossing uses an open cut trench, which is typically installed over a short period of five days or less and traffic control measures subject to agreement with the relevant highways authority are implemented to ensure safety and minimise disruption. While project construction plant and vehicles also occasionally need to cross the temporary works during installation, the route would otherwise remain open to the public as normal. Further detail on how construction traffic will be managed can be found within **Appendix 11B: Outline Construction Traffic Management Plan (CTMP)**.
- 15.1.13 Although slower at crossings, pipeline installation typically proceeds rapidly. As described in **Chapter 2: The Project**, once a section is prepared the installation of fabricated sections using trenched means can typically advance at 150m – 350m per day depending on pipeline diameter and local conditions. In more congested areas and when pipeline diameter and weights are larger, progress is slower but the speed of advance is still of the order of tens of metres per day.
- 15.1.14 The Applicant is committed to enabling access during construction to the PRoW, ORPA (Other Routes with Public Access) and Open Access Land (OAL), where this does not compromise safety. Where the pipeline crosses PRoWs, the Applicant will endeavour to minimise the durations of temporary closure. Further information is contained within **Appendix 11C: Outline Public Rights of Way Management Plan**.
- 15.1.15 Indirect effects from severance are generally anticipated not to be significant, because trenchless methods will be adopted where effects might otherwise be significant. Effects include those related to:
- Access to land, transport networks, services and amenities (such as for reasons related to agriculture, maintenance of public services, and use of rights of way, recreational and health facilities), which are affected by construction of crossings; and
 - Temporary disruption with specific effects on people or communities arising from changes to access, crossing construction, or for other reasons.
- 15.1.16 The Applicant intends to draw on local supply chains where possible. The requirement for temporary accommodation is currently being reviewed by the Applicant and potential construction contractors. It is unlikely that the level of temporary accommodation required will be high compared to local capacity, and demand will be distributed across the six local authority areas corresponding to the

construction crews working in different areas over the course of three years as described in **Chapter 2 : The Project**.

15.2 Relevant Legislation, Planning Policy And Technical Guidance

- 15.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to people and communities. Further information on policies relevant to the Project is provided in **Chapter 4: Legislation and policy overview**.

Legislation

- 15.2.2 There are no specific guidelines or requirements for socio-economic assessments set out in any statutory or advisory guidance regarding the preparation of Environmental Impact Assessments (EIA). However, such assessments have an established practice of including a description of the direct socio-economic consequences of the effects on the environment, as experienced by people and communities locally and, where appropriate, more widely. The method adopted is therefore one of determining the existing and future circumstances for these communities (the baseline) followed by the assessment of relevant topics and effects on individual receptors. The approach uses desk-based analysis, drawing on statistical information and professional judgment/opinion as well as relevant government and other guidance.

Planning policy

- 15.2.3 The primary national planning policy documents relevant to the consideration of the Project are the Overarching National Policy Statement for Energy (EN-1). Whilst of potential relevance, the National Policy Statement for Natural Gas Supply Infrastructure and Gas and Oil pipelines (EN-4) does not provide any additional policy on the matter of people and communities.
- 15.2.4 Other national and local policies may be deemed to be considered material to the consideration of this Project. Policy potentially relevant to the Project and to this environmental topic is summarised within **Table 15.1**.

Table 15.1 Planning policy relevant to the people and communities assessment

Policy	Policy context
National planning policy	
Overarching National Policy Statement for Energy (EN-1)¹	The recently updated NPS EN-1 is a key relevant consideration in the determination of the Development Consent Order (DCO) application. Under paragraph 4.1.5, in considering any proposed development the Secretary of State should take into account potential benefits of development proposals including <i>“contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits”</i>. In this context, the Secretary of State should take into account environment, social and economic benefits and adverse impacts at national, regional and local levels (paragraph 4.1.6). EN-1 includes a new section explicitly addressing Greenhouse Gas Emissions noting that <i>“significant levels of energy infrastructure development are vital to ensure the decarbonisation of the UK economy”</i> (paragraph 5.3.1). EN-1 states that the assessment should consider all relevant socio-economic impacts, including job creation and training, provision of additional local services, effects on tourism, effects of the influx of construction workers and cumulative effects (paragraphs 5.13.1 – 5.13.4). The section addressing Socio-Economic Impacts (5.13 in EN-1) includes specific reference to the contribution to the development of low-carbon industries at the local and regional level as well as nationally (paragraph 5.13.4). Socio-economic impacts may be linked to other impacts, for example the visual impact of a development is considered but may also have an impact on tourism and local businesses (paragraph 5.13.6). It also mentions that the <i>“Secretary of State may wish to include a requirement that specifies the approval by the local authority of an employment and skills plan...”</i> (paragraph 5.13.12). EN-1 notes that an <i>“energy infrastructure project will have a direct effect on the existing use of the proposed site and may</i>

¹ Department for Energy Security & Net Zero (2023). *Overarching National Policy Statement for Energy (EN-1)* (Online). Available at: <https://assets.publishing.service.gov.uk/media/65bbfdbc709fe1000f637052/overarching-nps-for-energy-en1.pdf> (Accessed 4 June 2024).

Policy	Policy context
	<i>have indirect effects on the use, or planned use, of land in the vicinity for other types of development” (paragraph 5.11.1).</i> <i>The ES “should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan.” (paragraph 5.11.8).</i>
The Ten Point Plan for a Green Industrial Revolution²	The Government's Ten Point Plan for a Green Industrial Revolution provides the vision for the UK to become a global leader in green technologies as well as delivering significant numbers of new jobs.
National Planning Policy Framework (NPPF)³	In chapter 8, addressing healthy and safe communities, Paragraph 101 notes that planning policies and decisions should promote public safety and that “... <i>the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications.</i>” This includes steps to reduce vulnerability, increase resilience and ensure public safety and security. Paragraph 102 notes that “<i>access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities, and can deliver wider benefits for nature and support efforts to address climate change.</i>” The same chapter notes that “<i>planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users...</i>” (paragraph 104). Paragraph 155 identifies engineering operations as a form of development “... <i>not inappropriate in the Green Belt, provided they preserve its openness and do not conflict with the purposes of including land within it...</i>”

² HM Government (2020). The Ten Point Plan for a Green Industrial Revolution. Building back better, supporting green jobs, and accelerating our path to net zero. (online) Available at: <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution> (Accessed 4 June 2024).

³ Department for Levelling Up, Housing & Communities (2023). National Planning Policy Framework (Online) Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> (Accessed 4 June 2024).

Policy	Policy context
UK Hydrogen Strategy⁴	Chapter 3, which is concerned with economic benefits for the UK, notes that the UK is well positioned to grow and develop supply chains across the full low carbon hydrogen value chain which will be vital to underpinning our vision of growth in the hydrogen economy. Chapter 3 also notes that a hydrogen economy is a key component of the opportunity offered by the net zero target to transform the UK's industrial regions, attract investment, and create secure, good quality green jobs across the UK. It will require existing and important new skills to be available in the right place at the right time. The Strategy refers to initiatives by developers and industry to support skills development, many in emerging hydrogen and CCUS clusters, providing opportunities for a new UK skills base in industrial regions across the UK.
Local planning policy	
Cheshire East Local Plan Strategy 2010-2030⁵	Sustainable Development in Cheshire East (SD1) - The policy sets out requirements for development and specifies the need to provide appropriate infrastructure to meet the energy needs of the local community as well as using appropriate technologies to reduce carbon emissions and create a low carbon economy.
Cheshire West and Chester Local Plan (Part One) Strategic Policies⁶	Sustainable Development (STRAT 1) - The policy highlights that development should make the best use of opportunities for renewable energy use and generation. Infrastructure (STRAT 11) - The policy aims for infrastructure improvements to meet the wider sustainability objectives of the borough, including new infrastructure schemes intended to mitigate and adapt to climate change. High Quality Design and Sustainable Construction (ENV6) - The aim of the policy is for development to incorporate energy efficiency measures and provide for renewable energy

⁴ Department for Business, Energy & Industrial Strategy (2021). *UK Hydrogen Strategy*. (Online) Available at: <https://www.gov.uk/government/publications/uk-hydrogen-strategy> (Accessed 4 June 2024).

⁵ Cheshire East Council (2017). *Local Plan Strategy 2010-2030* (Online). Available at: <https://consult.cheshirewestandchester.gov.uk/kse/event/24907/section/ID-3252194-629#ID-3252194-629> (Accessed 4 June 2024).

⁶ Cheshire West and Chester Council (2015). *The Local Plan (Part One) Strategic Policies*. (Online). Available at: <https://consult.cheshirewestandchester.gov.uk/kse/event/24907/section/ID-3252194-629#ID-3252194-629> (Accessed 4 June 2024).

Policy	Policy context
	generation either on site or through carbon offsetting measures. Health and Well-being (SOC5) – The policy aims to incorporate measures into developments that improve the health and well-being on residents. The policy also aims to prevent developments that give rise to significant adverse impacts on health, quality of life, and residential amenity. Alternative Energy Supplies (ENV7) – The policy aims to encourage renewable and low-carbon energy proposals which do not have an unacceptable impact on the environment, amenity, or local operations.
Cheshire West and Cheshire Local Plan (Part Two) Land Allocations and Detailed Policies⁷	Impact on residential amenity (DM2) – “... all proposals for new development will be expected to safeguard the quality of life for residents within the development and those living nearby. Development will only be supported where it does not result in a significant adverse impact upon the residential amenity of the occupiers of existing properties or future occupiers of the proposed development...”. Sustainable Construction (DM4) – “...all development proposals (including changes of use) will be expected to achieve the highest levels of energy and water efficiency that is practical and viable, and to maximise opportunities to incorporate sustainable design features where feasible... Where the Council considers it likely that the proposal will result in significant adverse environmental effects during the construction phase a Construction Environmental Management Plan (CEMP) will be required.”
Halton Core Strategy⁸ and Halton Delivery and Allocations Local Plan⁹	Infrastructure Provision (CS7) - New infrastructure will be supported where required to help deliver national priorities or locally identified requirements and where contributions to agreed objectives outweighs the potential for adverse impacts.

⁷ Cheshire West and Chester Council (2015). *The Local Plan (Part Two) Land Allocations and Detailed Policies* (Online). Available at:

<https://cheshirewestandchester.objective.co.uk/file/5448701> (Accessed 4 June 2024).

⁸ Halton Borough Council (2013). *Halton's Local Plan Core Strategy April 2013* (Online). Available at:

<https://www3.halton.gov.uk/Documents/planning/planning%20policy/CoreStrategy.pdf> (Accessed 4 June 2024).

⁹ Halton Borough Council (2022). *Halton Delivery and Allocations Local Plan* (Online). Available at:

<https://www3.halton.gov.uk/Documents/planning/planning%20policy/newdalp/DALP%20Adopted.pdf> (Accessed 4 June 2024).

Policy	Policy context
	Sustainable Development and Climate Change (CS(R)19) - The policy indicates support for proposals for decentralised renewable and low carbon energy schemes provided they avoid harm to the local environment. Managing Pollution and Risk (CS(R)23) - The policy specifies that the maximum level of acceptable individual risk from a development does not exceed 10 chances per million and that the population exposed to risk is not increased. The policy also aims to ensure that any proposals for new or expanded hazardous installations are carefully considered in terms of environmental, social, economic factors and manage flood risk.
St Helens Borough Local Plan up to 2037¹⁰	Renewable and Low Carbon Energy Development (LPC13) - The policy indicates support for proposals for decentralised renewable and low carbon energy schemes provided they avoid harm to the local environment.
Trafford District Council Local Plan: Core Strategy¹¹	Climate Change (L5) - The policy recognises the role that commercial and community low carbon, renewable and decentralised energy generation and distribution facilities can play in reducing CO2 emissions and providing viable energy supply options.
Warrington Local Plan¹²	Renewable and Low Carbon Energy Development (ENV7) - The policy states that proposals for low carbon or renewable energy developments "... will be permitted provided that they satisfy the requirements of other relevant Plan policies and would not result in unacceptable harm to the local environment."

¹⁰ St Helens Borough Council (2022). *St Helens Borough Local Plan up to 2037: A balanced plan for a better future* (Online). Available at:

https://www.sthelens.gov.uk/media/4315/St-Helens-Borough-Local-Plan-up-to-2037/pdf/Local_Plan_Written_Statement_-_FINAL_adoption_version.pdf?m=1658409100420 (Accessed 4 June 2024).

¹¹ Trafford Council (2012). *Trafford Local Plan: Core Strategy* (Online). Available at: <https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf> (Accessed 4 June 2024).

¹² Warrington Borough Council (2023). *Warrington Local Plan* (Online). Available at: <https://www.warrington.gov.uk/sites/default/files/2023-12/Warrington%20local%20plan%20-%202021-22%20-%202038-39%20-%20Adopted%20December%202023.pdf> (Accessed 4 June 2024).

Technical guidance

15.2.5 A summary of the technical guidance for people and communities is given in **Table 15.2**.

Table 15.2 Technical guidance relevant to the people and communities assessment

Technical guidance document	Context
The Green Book (and supplementary guidance)¹³	The advice in The Green Book provides a broad framework for how policies, programmes and projects in the UK should be appraised and evaluated to inform decision making. Published by UK Government's HM Treasury, it covers assessment guidelines for economic and social effects and advice on the scoping of costs and benefits, the selection of time periods for and the use of discount rates. It contains and references further supplementary guidance on specific socio-economic effects, such as health, crime and air quality.
The Additionality Guide¹⁴	Provides more specific guidance on how to assess impact of a policy intervention (or a private sector investment) on the local, regional and national economy. Additionality is the <i>"extent to which something happens as a result of an intervention that would have not occurred in the absence of intervention."</i> While withdrawn in 2022, with some elements incorporated into the Green Book, it remains relevant due to the guidance provided by clear illustrations of issues related to additionality.
The DLUHC Appraisal Guide¹⁵	This is a guidance document provided by the Department for Levelling Up, Housing and Communities (previously Department of Communities and Local Government (DCLG) and Department of Housing, Communities and Local Government (DHCLG)) directed at Government economists in their assessment of economic appraisal of development proposals, including housing and other commercial

¹³ HM Treasury (2022). The Green Book Central Government Guidance on Appraisal and Evaluation. (Online) Available at: https://assets.publishing.service.gov.uk/media/6645c709bd01f5ed32793cbc/Green_Book_2022_updated_links_.pdf (Accessed July 2024).

¹⁴ Homes & Communities Agency (2014). Additionality Guide Fourth Edition. (Online) Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378177/additionality_guide_2014_full.pdf (Accessed December 2021).

¹⁵ Department for Levelling Up Housing and Communities (2023) The DLUHC Appraisal Guide. (Online) Available at: <https://www.gov.uk/government/publications/dluhc-appraisal-guide/dluhc-appraisal-guide> (Accessed July 2024).

Technical guidance document	Context
	development. Whilst not aimed at socio-economic assessment in EIA which does not involve cost benefit analysis calculations or assessing value for money, it contains relevant technical guidance for socio-economic impact assessment and links to data sources.
Guidance produced by Public Health England: Health and Environmental Impact Assessment: A Briefing for Public Health Teams in England¹⁶ (2017)	This guidance is targeted towards national and regional public authorities in the assessment of future policies and plans, although it does still contain useful guidance that can be applied to a development project.
Glasson, J, Socio-economic impacts 1: economic impacts¹⁷ (2009)	This general reference for Environmental Impact Assessment is an established source of socio-economic guidance for practitioners.
International Association for Impact Assessment: Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects¹⁸	The guidance provides a thorough source of detailed methodologies for conducting activities supporting social assessment particularly those for identifying and representing community issues and assessing methods of resolution.
The World Health Organization Health	The guidance, tools and methods are recognised as the leading international authority on the completion of human health impact assessments. The guidance covers a number of topic areas that are linked to health impacts from projects, including transport, housing, water and sanitation.

¹⁶ Public Health England (2017). Health and Environmental Impact Assessment: A Briefing for Public Health Teams in England. (Online) Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/629207/Health_and_environmental_impact_assessment.pdf (Accessed July 2024).

¹⁷ Glasson, J (2009). Methods of Environmental and Social Impact Assessment 4th Edition pp.475-514: Socio-economic impacts 1: Overview and economic impacts. Routledge; Oxfordshire, UK.

¹⁸ International Association for Impact Assessment (2015). Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects. (Online) Available at: https://www.iaia.org/uploads/pdf/SIA_Guidance_Document_IAIA.pdf (Accessed July 2024).

Technical guidance document	Context
Impact Assessment (HIA) methods¹⁹	
Public Health England Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime²⁰	This guidance provides an overview of the considerations regarding health highlighting the need for a specific focus on population and health which also covers wider determinants such as socio-economic outcomes. Employment is noted as generally good for physical and mental health and well-being while business activity, regeneration, tourism, leisure, social cohesion, social networks and community engagement are aspects identified as potentially relevant.
International Union for the Conservation of Nature: Social Impact Assessment in Environmental & Social Management System²¹	The guidance provides a succinct summary of the key elements in assessment as well as supplementary guidance focusing on the context and use of natural resources.
Design Manual for Roads and Bridges, Population and Human Health (LA112), Highways England²²	The methodology specified in this guidance is generally applicable to a range of aspects of linear infrastructure including pipeline networks.

¹⁹ World Health Organisation (2021). Health impact assessment (HIA) tools and methods. (Online) Available at: <https://www.who.int/tools/health-impact-assessments> (Accessed August 2024).

²⁰ Public Health England (2021). Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime. Available at: <https://khub.net/documents/135939561/390856715/Advice+on+the+content+of+environmental+statements+accompanying+an+application+under+the+Nationally+Significant+Infrastructure+Planning+Regime.pdf/a86b5521-46cc-98e4-4cad-f81a6c58f2e2?t=1615998516658>

²¹ International Union for the Conservation of Nature (2016). Environmental & Social Management System: Social Impact Assessment (SIA). (Online) Available at: <https://www.iucn.org/sites/default/files/2022-05/esms-social-impact-assessment-sia-guidance-note.pdf> (Accessed July 2024).

²² Highways England (2020). LA 112 Population and human health. Revision 1. (Online) Available at: <https://www.standardsforhighways.co.uk/tses/attachments/1e13d6ac-755e-4d60-9735-f976bf64580a?inline=true> (Accessed July 2024).

15.3 Consultation And Engagement

Overview

- 15.3.1 The assessment has been informed by consultation responses, statutory and technical engagement. An overview of the approach to consultation is provided in **Section 3.7 of Chapter 3: Approach to preparing the Draft ES**.

Scoping Opinion

- 15.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 08 March 2022. A summary of the relevant responses received in the Scoping Opinion in relation to people and communities and confirmation of how these have been addressed within the assessment is presented in **Appendix 15A: Stakeholder engagement summary**.

Statutory Consultation

- 15.3.3 Statutory consultation took place between 12 September and 10 November 2022 in accordance with the Planning Act 2008. Prescribed and non-prescribed consultees and members of the public were consulted. Various methods of consultation and engagement were used in accordance with the Statement of Community Consultation (SoCC) including letters, website, public exhibitions, publicity and advertising in newspapers and webinar briefings.
- 15.3.4 Cadent Gas Ltd (Cadent) ("the Applicant") prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. The Applicant sought feedback on the environmental information presented in that report. Feedback received during statutory consultation was considered by the Applicant and incorporated, where relevant into the design of the Project and its assessment and is presented in this Draft ES.
- 15.3.5 A summary of the relevant responses received during the statutory consultation, together with any subsequent discussions held in relation to people and communities and confirmation of how these have been considered within the assessment to date is presented in **Appendix 15A: Stakeholder Summary**.
- 15.3.6 Technical engagement with consultees in relation to people and communities is ongoing.

15.4 Data Gathering Methodology

Desk study

- 15.4.1 Data sources are project data provided by the Applicant and data available from publicly available sources. The Office for National Statistics has been the primary source of baseline information. Other sources are referenced where applicable.

Survey work

15.4.2 No People and Communities survey work is required as relevant sources of evidence are available.

Data limitations

15.4.3 The nature and magnitude of the potential effects will depend on the detailed features of specific locations, engineering designs and local community needs.

15.4.4 The final engineering design at individual locations is expected to be compatible with and incorporate a range of methods for mitigating potential effects on People and Communities, primarily through use of appropriate trenchless crossing methods selected specifically to avoid significant effects. Data on proposed engineering methods for implementing crossings is considered suitable for general assessment and the Draft ES has addressed aspects at individual locations following a design freeze.

15.5 Overall Baseline

Current baseline

Demography

15.5.1 The population across the six local councils was over 1.5m people in 2022, amounting to 2.7% of the population of England. The largest of the six was Cheshire East (26.6%), with Cheshire West and Chester only slightly smaller (23.6%) The other four councils made up the remaining half of the population with Halton the smallest (8.4%) having approximately 130,000 residents. See **Table 15.3**.

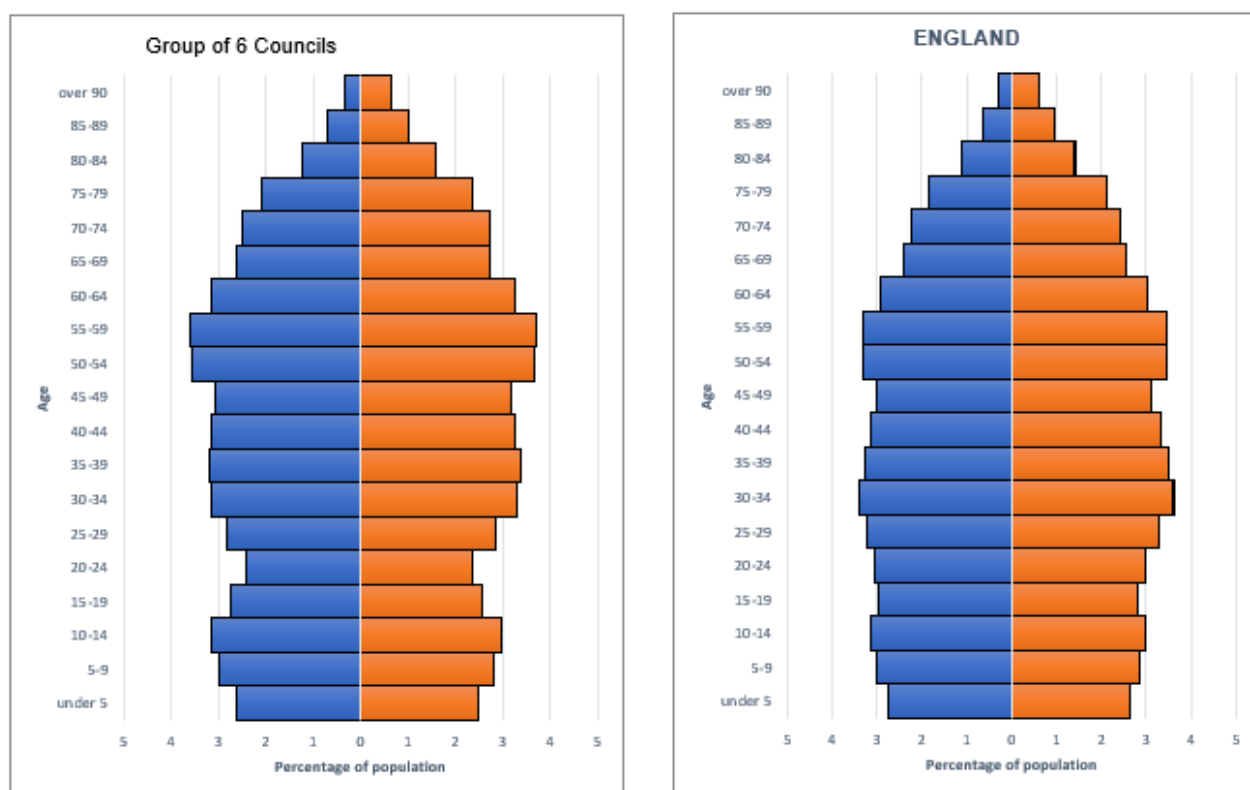
Table 15.3 Population of six local councils in 2022 (total)

Council	Population	Share
Cheshire West and Chester	361,694	23.6%
Cheshire East	406,527	26.6%
Halton	128,964	8.4%
Warrington	211,580	13.8%
Trafford	236,301	15.4%
St. Helens	184,728	12.1%
Total	1,529,794	100.0%

Source: ONS: Population estimates for UK, England and Wales, Scotland and Northern Ireland²³

15.5.2 The age distribution of the population in the six local councils differs from that in England, showing a slightly older population on average. In the six local councils 58.5% of the population are under 50 compared with 62% in England. See **Graphic 15.1** for further details.

Graphic 15.1 Population distribution in six local councils (total) and England in 2022 - % of total population

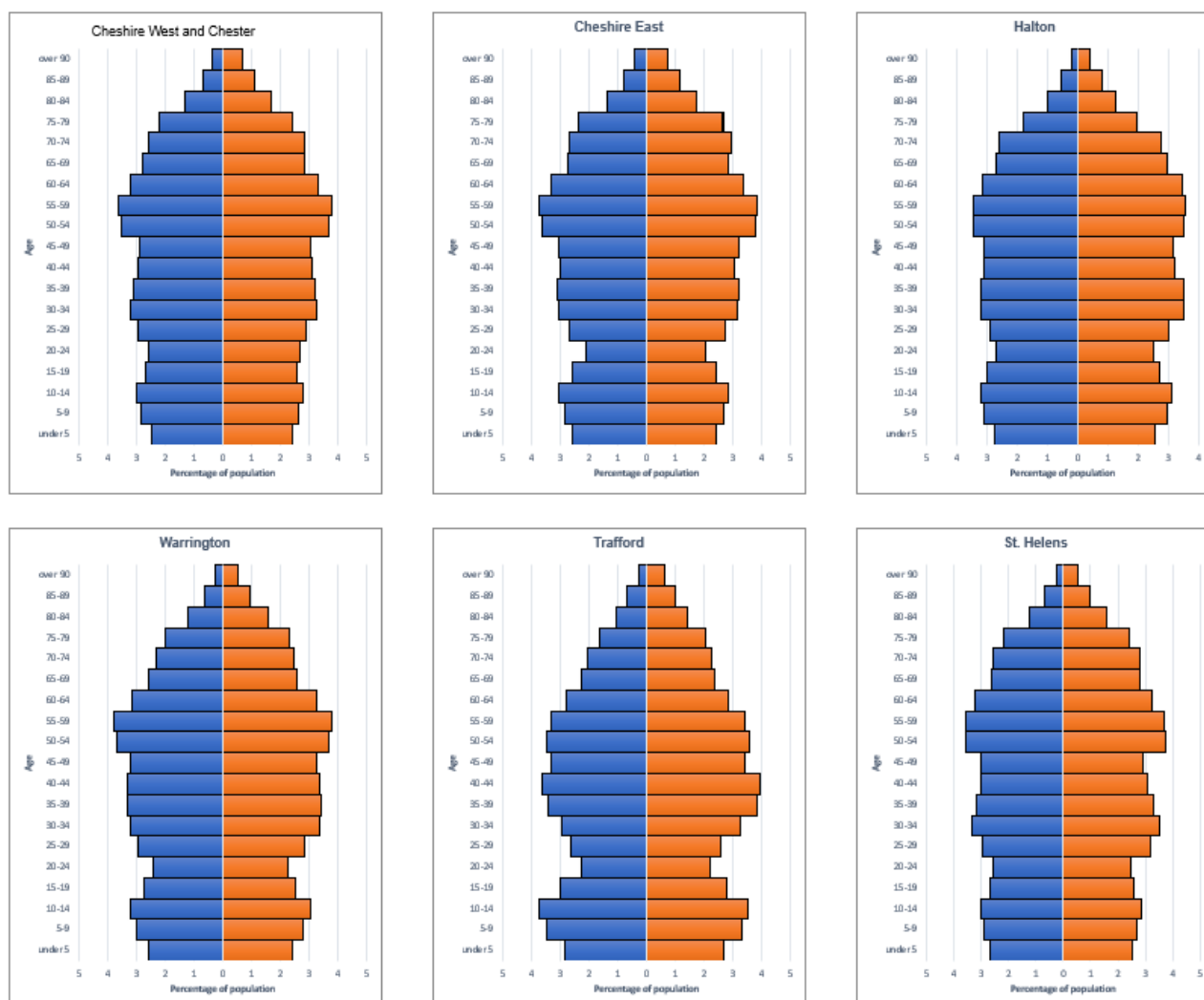


Source: ONS: Population estimates for UK, England and Wales, Scotland and Northern Ireland²³

15.5.3 The age distribution for the six local councils individually shows more marked differences. The majority of the older population are in the two Cheshire councils where the population under 50 is 57.4% and 55.8% in Cheshire West and Cheshire East respectively. In Trafford the proportion under 50 (62.9%) exceeds the value for England and the next highest proportion is in Halton (60.5%) with Warrington at 59.2% and St Helens at 58.4% (See **Graphic 15.2**).

²³ Office for National Statistics (2024). Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2022. (Online) Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2022> (Accessed July 2024).

Graphic 15.2 Population distribution in individual six local councils in 2022 - % of total population



Source: ONS: Population estimates for UK, England and Wales, Scotland and Northern Ireland^{23,24}

Employment

15.5.4 The population of working age is lowest in the two Cheshire councils, as expected from the population data. However, in none of the Councils does the proportion of 16-64 year olds reach that of the English average, though the values are in general close to the levels in England and also close to those for the North West²⁴. Warrington and Halton show the highest proportion of 16-64 year olds amongst the six local councils (See **Table 15.4**).

²⁴ North West England (ONS code E12000002) is one of nine official regions of England and consists of the administrative counties of Cheshire, Cumbria, Greater Manchester, Lancashire and Merseyside.

Table 15.4 Population of working age (16-64) in 2022 - % of total population

	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	England
All	61.3	60.1	62.2	62.5	61.6	61.7	62.5	62.8
Male	61.7	60.6	62.3	63.1	61.9	62.1	62.9	63.2
Female	61.0	59.7	62.1	61.8	61.3	61.4	62.1	62.4

Notes: *Cheshire West and Chester* and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively.

Source: ONS - Population estimates - local authority based by five-year age band²³²³.

15.5.5 Despite the smaller working age population in Cheshire East, the area shows the highest percentage (84.4%) who are economically active, above the level for Great Britain (78.6%) and with the lowest across the six local councils being in Halton (73.2%) (See **Table 15.5**). The proportion of people in employment across the six local councils is equally spread with four councils above the average for Great Britain and two below. The proportion in the North West (73.2%) as a whole is slightly lower than for Great Britain (75.5%). Cheshire East (81.6%) and Trafford (78.3%) show the highest values and Halton (68.4%) and St Helens (73.3%) the lowest. Regarding the self-employed, five of the councils possess similar proportions which are slightly below the North West average (7.2%) and Cheshire West and Chester very slightly above (7.5%). However, all fall below the Great Britain average of 9.2%. Halton and St. Helens possess the highest unemployment rate (4.1%), which is below the regional (4.5%) and above the Great Britain average (3.9%). For the other four councils, unemployment is below both the national average and the average for the North West and the lowest is in Cheshire West and Chester (3.0%).

Table 15.5 Employment status for working age population (16-64) (Apr 2023 – Mar 2024) (%)

	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	Great Britain
Economically Active	79.5	84.4	73.2	79.2	81.3	76.0	76.8	78.6
In Employment	77.7	81.6	68.4	76.4	78.3	73.3	73.2	75.5
Employees	70.0	74.5	62.4	69.6	72.8	67.4	65.9	66.1
Self Employed	7.5	6.6	5.5	6.4	5.5	5.9	7.2	9.2
Unemployed (Model-Based)*	3.0	3.3	4.1	3.4	3.4	4.1	4.5	3.9

Notes:

* % are for those aged 16 and over. % is a proportion of economically active

There are minor differences from aggregated figures for employee jobs reported by ONS separately.

Cheshire West and Chester and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively.

Source: ONS - annual population survey²⁵

²⁵ Office for National Statistics (2024), Local Authority Profiles. (Online). Available at: <https://www.nomisweb.co.uk/home/profiles.asp> (Accessed September 2024).

15.5.6 As a whole, the balance of occupations in the North West is close to the national average with the difference between them in any of the nine occupational categories varying by less than 1.4% (See **Table 15.6**). Differences at the level of individual councils are nuanced. Managerial and professional grades (categories 1,2 and 3) are together highest in Trafford (64.5%) followed by Cheshire West and Chester (60.5%), while in Halton (45.9%), Cheshire East (53.7%), St Helens (54.5%) and Warrington (54.6%). The mixed overall picture includes Cheshire West and Chester with the highest proportion of Managers amongst the six councils (12.1% compared to the Great Britain level of 10.8%) as well as Trafford possessing the highest proportion of Professional Occupations (40.6% compared to the Great Britain level of 26.6%) while St Helens is very close to the average for the North West with the differences exceeding 2% in only two occupational categories.

Table 15.6 Employment by occupation (Apr 2023 – Mar 2024) (%)

Occupation	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	Great Britain
1 Managers, Directors And Senior Officials	12.1	9.1	8.2	9.6	11.2	9.5	9.6	10.8
2 Professional Occupations	26.8	29.2	22.3	24.7	40.6	26.3	25.2	26.6
3 Associate Professional & Technical	21.6	15.1	14.9	20.0	12.7	18.5	15.3	15.3
4 Administrative & Secretarial	7.8	10.2	9.8	9.5	13.2	8.0	10.7	9.6
5 Skilled Trades Occupations	*	9.9	8.8	5.2	*	8.4	8.1	8.7
6 Caring, Leisure And Other Service Occupations	*	9.5	9.9	7.0	*	9.3	9.0	8.2
7 Sales And Customer Service Occupations	6.8	*	5.1	7.7	6.4	*	7.0	6.2
8 Process Plant & Machine Operatives	8.5	*	9.1	5.5	*	7.2	5.6	5.4
9 Elementary Occupations	6.3	5.7	10.9	10.3	*	9.1	9.2	9.0

Occupation	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	Great Britain
Total	-	-	99	99.5	-	-	99.7	99.8

Notes: * Sample size too small for reliable estimate; *Cheshire West and Chester* and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively; Totals are quoted as provided in the source and reflect the underlying statistical approaches applied by ONS.

% are for those of 16+ and % is a proportion of all persons in employment.

Source: ONS - annual population survey²⁶

²⁶ Office for National Statistics (2024), Local Authority Profiles, Annual Population Survey. (Online). Available at: <https://www.nomisweb.co.uk/home/profiles.asp> (Accessed September 2024).

- 15.5.7 In contrast to the balance of occupations, the balance of industries varies more between the councils and compared to the references of the North West and England. Within the larger industrial sectors, the main differences are: Manufacturing (Sector C) is lower in Warrington and Trafford; Transportation and storage (Sector H) are greater in Halton, Warrington and St Helens; Accommodation and food service activities (Sector I) are lower in Halton, Warrington and Trafford; Professional, scientific and technical activities (Sector M) are much greater in Trafford than in England (almost 3 times) and in Warrington (1.5 times), while these two areas also show a lower level for Human health and social work activities (Sector Q) (See Table 15.7).

Table 15.7 Employee jobs by industry (2022) (%)

Occupation	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	England
A : Agriculture, forestry and fishing	0.9	1.2	0.0	0.1	0.0	0.2	0.4	0.6
B : Mining and quarrying	0.4	0.3	0.6	0.0	0.0	0.0	0.1	0.1
C : Manufacturing	7.6	11.5	11.1	4.3	4.7	9.1	8.9	7.5
D : Electricity, gas, steam and air conditioning supply	0.2	0.2	0.1	0.6	0.1	0.0	0.3	0.3
E : Water supply; sewerage, waste management and remediation activities	1.0	0.8	1.3	1.4	0.4	0.9	0.7	0.7
F : Construction	4.7	4.7	6.3	7.2	4.7	6.1	5.1	4.8
G : Wholesale and retail trade; repair of motor vehicles and motorcycles	15.8	15.7	15.9	13.8	15.7	15.2	14.7	14.0
H : Transportation and storage	2.9	4.7	9.5	8.0	4.1	9.1	4.7	5.1
I : Accommodation and food service activities	9.9	8.4	4.8	5.8	5.2	6.8	7.9	7.9
J : Information and communication	2.6	4.2	3.2	3.6	5.2	1.4	3.4	4.8

Occupation	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	England
K : Financial and insurance activities	5.8	3.1	2.0	1.1	2.0	0.7	2.4	3.3
L : Real estate activities	1.8	1.2	0.8	1.1	1.5	1.2	1.6	1.9
M : Professional, scientific and technical activities	10.5	10.5	9.5	15.2	26.2	6.1	9.4	9.4
N : Administrative and support service activities	8.2	7.9	7.9	15.2	12.2	13.6	8.3	9.2
O : Public administration and defence; compulsory social security	4.1	1.8	3.6	3.6	1.7	3.4	4.9	4.3
P : Education	7.6	6.8	6.3	5.1	4.7	9.1	8.0	8.5
Q : Human health and social work activities	11.7	12.6	14.3	10.1	6.4	15.2	15.1	13.2
R : Arts, entertainment and recreation	2.3	2.4	1.6	1.6	4.1	1.9	2.2	2.3
S : Other service activities	1.8	2.1	2.8	1.4	1.5	1.5	1.8	2.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (employee jobs)	170,000	190,000	63,000	138,000	172,000	65,000	3,476,500	27,151,000

Notes: *Cheshire West and Chester* and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively;

Source: ONS - Business Register and Employment Survey (from NOMIS, accessed September 2024)²⁷ and Total (employee jobs) from Local Authority Profiles²⁸

²⁷ ONS (data from 2022), Business Register and Employment Survey. (Online). Available at:

<https://www.nomisweb.co.uk/datasets/newbres6pub> (Accessed September 2024)

²⁸ Office for National Statistics (2024), Local Authority Profiles, Annual Population Survey. (Online). Available at:

<https://www.nomisweb.co.uk/home/profiles.asp> (Accessed September 2024).

Education

15.5.8 The general picture is of a population with educational qualifications close to or above the national average at a level of RQF1 and above, but below the national average at higher levels (see **Table 15.8**). At a level of RQF2 and above, all councils have a proportion of the population that exceeds the national average proportion except Halton and St Helens. At RQF3 level, three councils (Cheshire East, Warrington, and Trafford) exceed the national average proportion and at RQF4, Cheshire East, Cheshire West, Warrington, and Trafford exceed the national average; Trafford significantly. In Trafford, the proportion of the population with no qualifications is lower than the national average.

Table 15.8 Educational qualifications (Jan – Dec 2023) (% of resident population aged 16-64)

Qualification	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	England
RQF4 And Above	50.5	54.7	39.8	50.6	56.0	43.4	44.4	46.7
RQF3 And Above	67.0	75.5	57.9	73.9	74.4	59.1	65.8	67.4
RQF2 And Above	91.2	92.2	80.6	91.8	91.3	80.4	86.6	86.6
RQF1 And Above	94.2	96.8	84.6	94.5	93.4	83.8	89.6	89.2
Other Qualifications	*	*	5.5	*	*	6.0	3.6	4.7
No Qualifications	*	!	9.9	*	4.5	10.2	6.7	6.2

Note:

- * Sample size too small for reliable estimate
- ! Estimate is not available since sample size is disclosive
- % is a proportion of resident population of area aged 16-64
- Numbers and % are for those of aged 16-64

Source: ONS - annual population survey^{29 25}

²⁹ ONS (data from 2023) Annual Population Survey presented in Local Authority Profiles and Region/Nation profile on Nomis. Available at: <https://www.nomisweb.co.uk/reports/lmp/la/contents.aspx> and <https://www.nomisweb.co.uk/reports/lmp/gor/contents.aspx> (Accessed September 2024).

Earnings

- 15.5.9 Levels of pay in the North West are consistently about 10% lower than in England for jobs paid annually, weekly or hourly (see **Table 15.9**). The same table indicates that the earnings structure is otherwise very similar in the North West, in England and in the UK. Jobs paid annually show the widest difference between male and female salaries, being 116% and 83% respectively of the average in the North West. The discrepancy reduces slightly (115% and 84%) for jobs paid weekly and is more even for jobs paid hourly (106% and 93%).

Table 15.9 Employee Earnings in the UK 2023

	North West	England	UK	North West	England	UK
Annual pay - Gross [£/year]	<i>As % of England</i>					
All	32,346	35,955	35,404	90%	100%	98%
Male	37,581	42,663	41,850	88%	100%	98%
Female	26,898	28,903	28,765	93%	100%	99%
Hourly pay - Gross [£/hour]	<i>As % of England</i>					
All	18.69	20.24	20.05	92%	100%	99%
Male	19.80	21.60	21.31	92%	100%	99%
Female	17.32	18.51	18.49	94%	100%	99%
Weekly pay - Gross [£/week]	<i>As % of England</i>					
All	622.80	673.30	666.10	92%	100%	99%
Male	717.70	784.20	773.30	92%	100%	99%
Female	525.10	557.40	555.90	94%	100%	99%

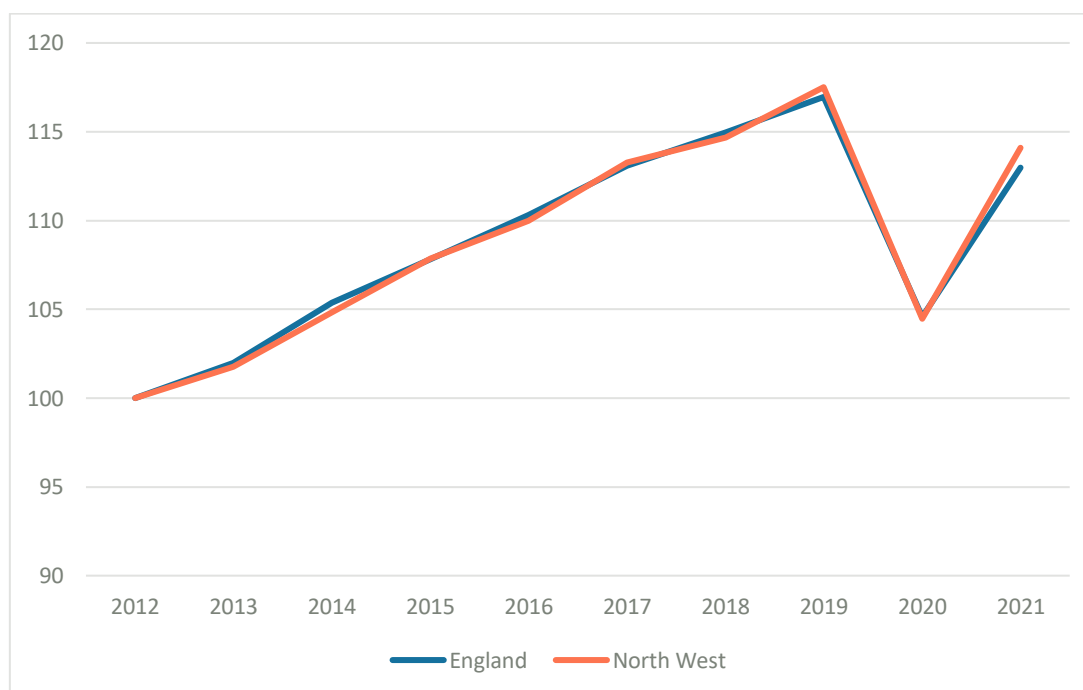
Source: ONS - Earnings and hours worked, place of work and residence by local authority: ASHE Tables 7 and 8³⁰

³⁰ Office for National Statistics (2023). Earnings and hours worked, place of work and residence by local authority: ASHE Tables 7 and 8. (Online) Available at: <https://www.ons.gov.uk/datasets/ashe-tables-7-and-8/editions/2023/versions/1> (Accessed July 2024).

Economy and Business

15.5.10 Economic growth in the North West and England is similar with the annual average growth rate slightly higher in the North West (1.60%) than in England (1.49%) for the period from 2012 to 2021, and also higher for the pre-Covid period from 2012 to 2019 in North West (2.32%) compared to England (2.27%) (see **Graphic 15.3**)³¹. The greatest growth is recorded in the recovery period post-Covid and reached 9.2% in the North West and 8.1% in England. However, the lowest growth rate was experienced in 2020 pre-Covid in the North West (-11.1%) and compared to England (-10.6%) may show a potential greater sensitivity to a downturn. The overall growth for the period from 2012 to 2021 was 1% greater in the North West (9.2%) than in England (8.1%).

Graphic 15.3 GDP in England and the North West indexed to 2012



Source: ONS - Annual GDP for England, Wales and the English regions³²

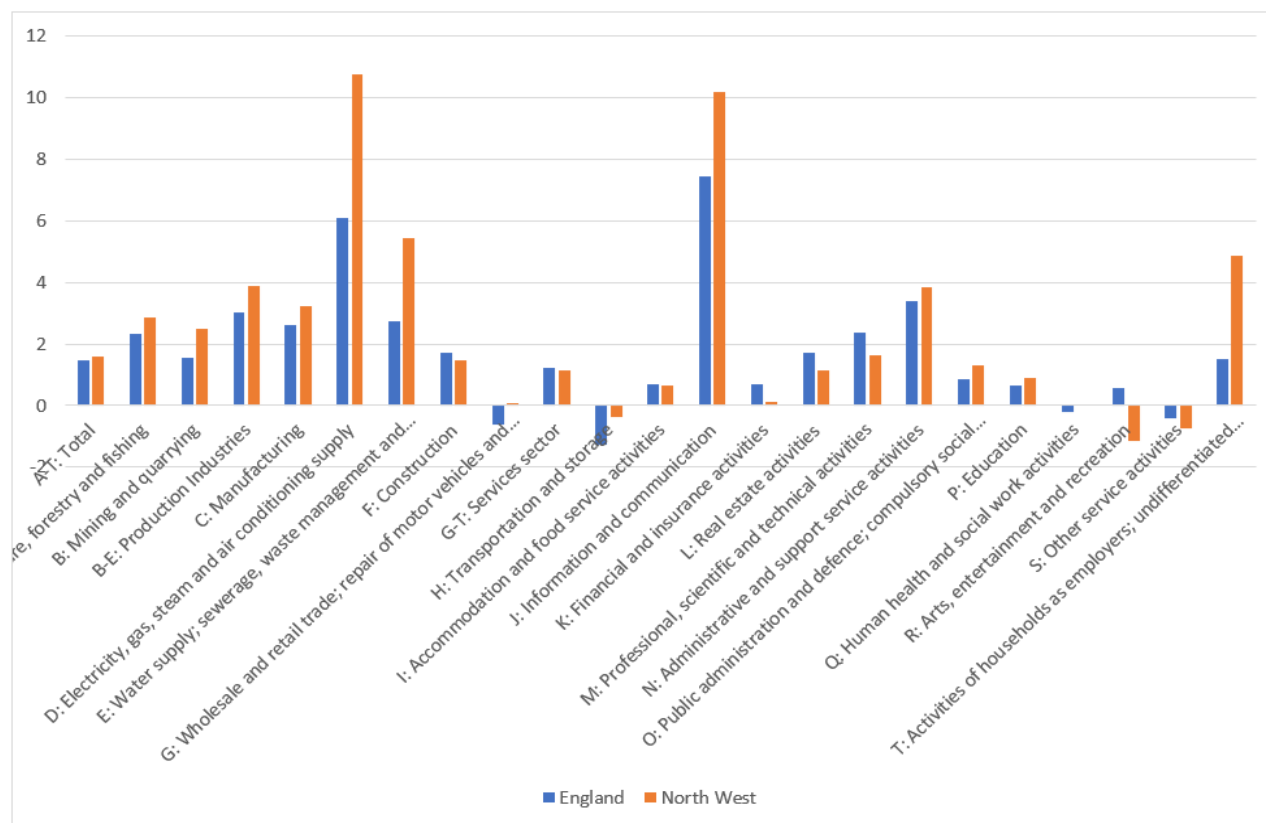
15.5.11 The differences in growth rate between the North West and England are only appreciable for some industry sectors (See Graphic 15.4). The North West sees particularly higher growth in: electricity, gas, steam and air conditioning supply (Sector D); water supply; sewerage, waste management and remediation activities (Sector E); information and communication (J); transportation and storage (Sector H); and activities of households as employers (etc.) (T). The sectors with

³¹ Note that these are referred to as Experimental statistics by the Office for National Statistics and so may be subject to methodological change. Data values for past years in this version (version 6) have been revised compared to earlier versions.

³² Office for National Statistics (2023). Annual GDP for England, Wales and the English regions. (Online) Available at: <https://www.ons.gov.uk/datasets/regional-gdp-by-year/editions/time-series/versions/6> (Accessed July 2024).

noticeably lower growth are: financial and insurance activities (Sector K); arts, entertainment and recreation (R). In the sector concerned with energy services (D), the North West has seen much greater growth than England.

Graphic 15.4 Average annual growth by economic sector in the North West and England (2012-2021)

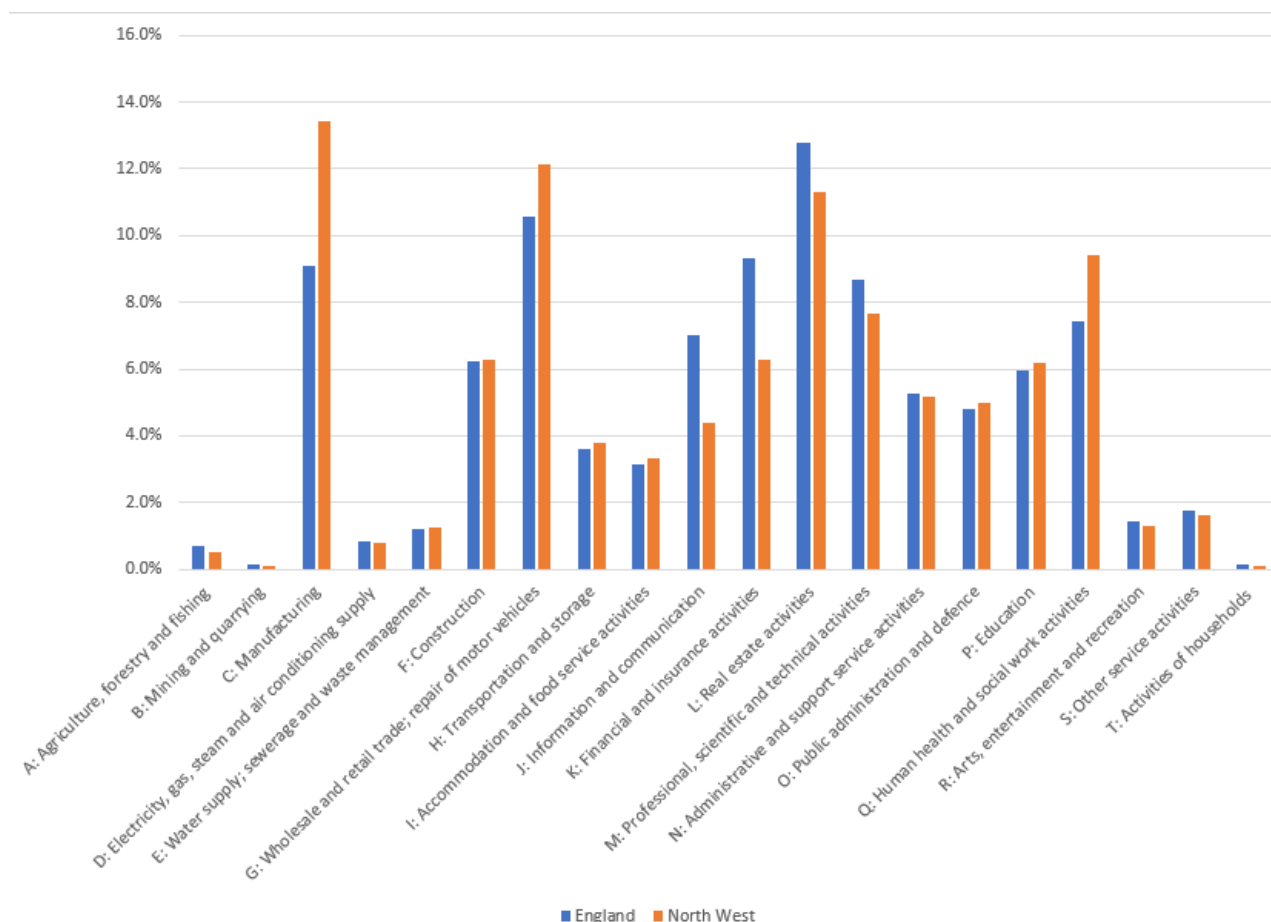


Note: Industrial sectors are classified by Standard Industrial Classification.

Source: ONS - Annual GDP for England, Wales and the English regions³²³²

15.5.12 The North West accounts for some 11.3% of the Gross Value Added (GVA) in England and the structure of the economy as shown by the relative size of economic sectors is broadly similar in both (See **Graphic 15.5**). The North West has an appreciably greater share of manufacturing (Sector C), 13.4% compared to 9.1% for England, and also significantly exceeds the level in England in trade (G) and the health sector (Q) (although by a smaller margin). The North West also exceeds England in a number of other sectors, but by very fine margins. Sectors where the North West has noticeably lower GVA than in England are Information and communication (J), finance and insurance (K), real estate (L), and professional, scientific and technical activities (M).

Graphic 15.5 Gross Value Added by economic sector in the North West and England as a proportion of totals (2022)

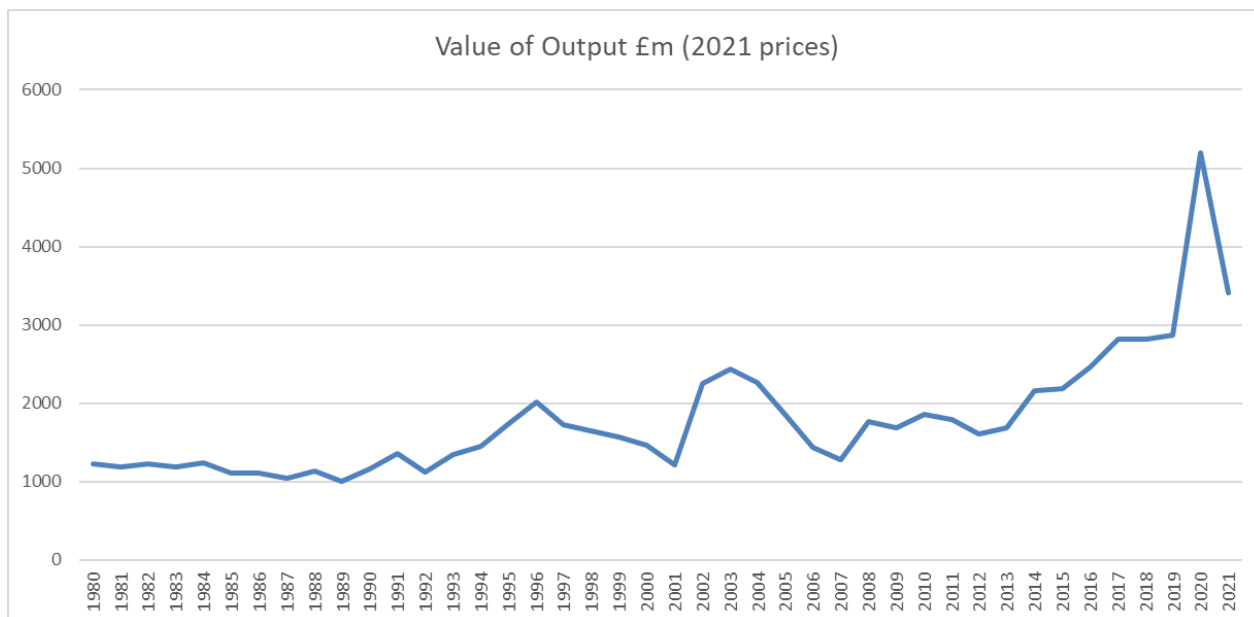


Source: ONS - Regional gross value added (balanced) by industry³³

15.5.13 The level of activity in the construction sector is shown by the level of output as recorded by ONS and Barbour ABI, a commercial provider of construction sector information (See **Graphic 15.6**). The statistics were reviewed by ONS in 2021, a year which shows an apparent outlier in the data (the extreme peak in 2020) but are now resumed and show a general trend of rising levels of output over recent years (excluding 2020 which was affected by Covid-19) indicating increasing demand in the sector.

³³ Office for National Statistics (2024). Regional gross value added (balanced) by industry: all ITL regions. (Online) Available at: <https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry> (Accessed July 2024).

Graphic 15.6 **Output in the construction industry: sub-national and sub-sector reference tables**



Source: ONS and Barbour ABI³⁴, Output in the construction industry: sub-national and sub-sector reference tables, Quarter 1 (Jan to Mar) 2024

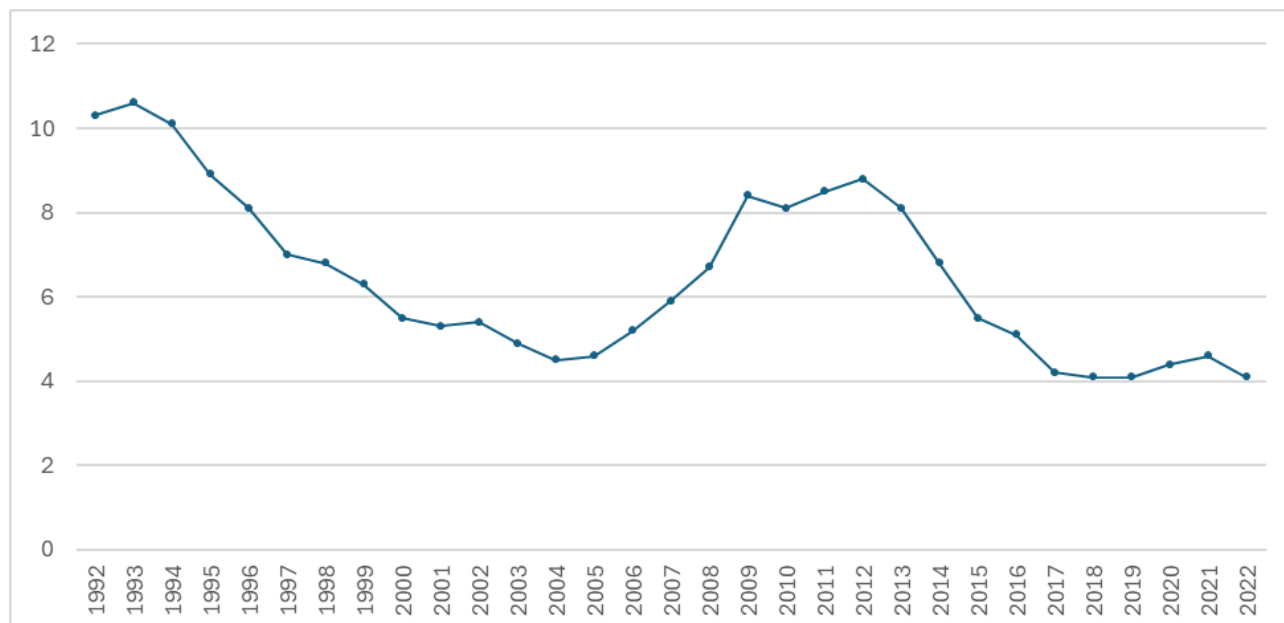
Note: These are considered adequate in the context of the requirement to show broad trends in this Draft ES, but ONS note that “*these estimates do not carry National Statistics status*” and so may not be suitable for other purposes.

Unemployment

15.5.14 The most recent data for unemployment in the North West shows the current rate of 4.1%, matching the rates in 2018 and 2019, which was the lowest rate achieved over the last 30 years (see **Graphic 15.7**). Over the same period the average rate was 6.7% and the peak was 10.6%.

³⁴ Office for National Statistics and Barbour ABI (2024). Output in the construction industry: sub-national and sub-sector reference tables, Quarter 2 (April to June) 2024. (Online). Available at:

<https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/datasets/outputinthecconstructionindustrysubnationalandsubsector> (Accessed September 2024).

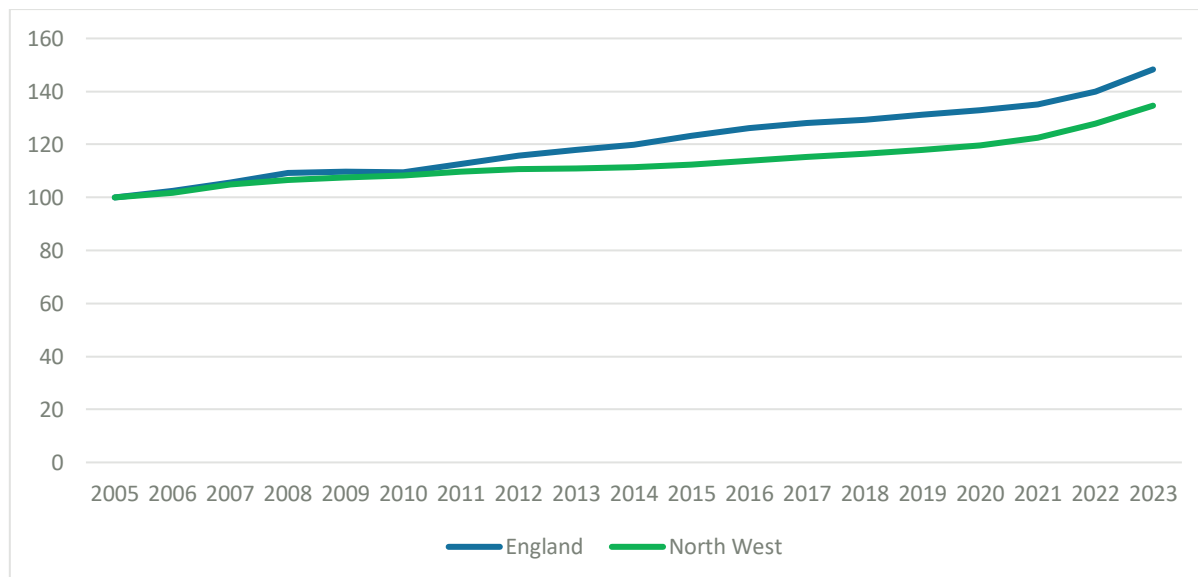
Graphic 15.7 Unemployment rate - North West (1992-2022) %

Source: ONS Table: LFS: ILO unemployment rate: North West (GOR): All: %: SA, Release date: 10-09-2024³⁵

Housing Market

15.5.15 The level of rental prices in the private housing sector is a broad indicator of the level of demand for temporary accommodation with any peaks showing more limited capacity. Over the period from 2005, rental prices show a level of change which broadly aligns with recent trend in GDP. However, while economic growth has been slightly higher in the North West, the overall increase in rental prices over the period is lower at approximately two thirds the increase in England indicating no particular constraints on accommodation (See **Graphic 15.8**).

³⁵ Office for National Statistics (2024) LFS: ILO unemployment rate: North West (GOR): All: %: SA. (Online). Available at: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/unemployment/timeseries/ycnd/lms> (Accessed September 2024).

Graphic 15.8 Private housing rental prices in England and the North West indexed to 2005

Note: ONS refer to the dataset as “An experimental price index tracking the prices paid for renting property from private landlords in the United Kingdom”

Source: ONS - Index of Private Housing Rental Prices³⁶

Life Expectancy

15.5.16 Life expectancy provides a measure of general health. **Table 15.10** shows life expectancy in the six local councils as a percentage of the value for England. For the group as a whole, life expectancy is lower than in England and reduces more for older age groups. For males, life expectancy in Cheshire West and Chester, Cheshire East, and Trafford is greater than in England for all age groups, but is lower in Halton, Warrington and St Helens. There is a similar pattern for females, although in Cheshire West and Chester it falls below the average for England in age groups over 40.

³⁶ Office for National Statistics (2021). Index of Private Housing Rental Prices, UK Statistical bulletins. (Online) Available at: <https://www.ons.gov.uk/datasets/index-private-housing-rental-prices/editions/time-series/versions/41> (Accessed September 2024).

Table 15.10 Life Expectancy for six local councils by age group

Age Group (years)	% of Life Expectancy in England							England	Life Expectancy (years)
	Cheshire West and Chester	Cheshire East	Halton	Warrington	Trafford	St. Helens	All six local councils		England
Male									
0-19	100%	101%	97%	99%	101%	97%	98%	100%	73.88
20-39	100%	102%	95%	99%	101%	96%	97%	100%	50.85
40-59	101%	102%	95%	98%	101%	95%	97%	100%	32.56
60-79	102%	103%	93%	95%	101%	94%	96%	100%	17.59
80+	104%	103%	89%	90%	105%	89%	96%	100%	7.83
Female									
0-19	100%	101%	98%	99%	101%	97%	98%	100%	77.47
20-39	100%	101%	97%	99%	101%	96%	98%	100%	54.07
40-59	99%	101%	96%	98%	101%	95%	97%	100%	35.42
60-79	99%	101%	95%	96%	102%	93%	96%	100%	19.30
80+	98%	100%	95%	92%	103%	91%	96%	100%	8.72

Notes: *Cheshire West and Chester* and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively; Aggregation to age bands based on weighting by size of population.

Source: ONS - Life Expectancy by Local Authority (data to 2019)³⁷

Mental Health

15.5.17 Mental health concerns have been scoped out of the assessment in line the Scoping Opinion from PINS, however data is provided here as a reference and in response to consultation feedback. Mental health indicators for the six councils, the North West and England are presented in **Table 15.11**. For the estimated prevalence of common mental disorders, in four of the six councils, indicators show outcomes which are better than the levels for both the North West and England. In contrast, in Halton and St Helens, indicators show outcomes which are worse than both, with the North West also having worse outcomes than England. For depression (Quality and Outcomes Framework (QOF) prevalence (18+ years)), all six councils have values higher than England, while only two councils have values higher than the North West. For depression (QOF incidence (18+ yrs) – new diagnosis), five councils have values higher than England and one council has the same value. One council has a value higher than the North West. For Mental Health (QOF prevalence (all ages)), four of the six councils have values lower than England and all councils have values lower than the North West.

Table 15.11 Mental health indicators for six local councils, the North West and England

Indicator	Cheshire (W)	Cheshire (E)	Halton	Warrington	Trafford	St. Helens	North West	England
Estimated prevalence of common mental disorders: % of population aged 16 & over (2017)	15.3%	14.0%	19.3%	15.9%	15.4%	18.4%	18.0%	16.9%

³⁷ Office for National Statistics (2020). Life Expectancy by Local Authority. (Online) Available at: <https://www.ons.gov.uk/datasets/life-expectancy-by-local-authority/editions/time-series/versions/1> (Accessed December 2021).

Indicator								
Estimated prevalence of common mental disorders: % of population aged 65 & over (2017)	9.4%	8.7%	12.1%	9.6%	9.4%	11.3%	10.9%	10.2%
Depression: Quality and Outcomes Framework (QOF) prevalence (18+ years) (2022/23)	14.5%	15.1%	18.8%	14.4%	16.3%	18.7%	16.4%	13.2%
Depression: QOF incidence (18+ yrs) – new diagnosis (2022/23)	1.8%	1.6%	2.1%	1.4%	1.7%	1.8%	1.9%	1.4%
Mental Health: QOF prevalence (all ages) (2022/23)	0.96%	0.89%	0.93%	0.97%	1.05%	1.11%	1.13%	1.00%

Notes: *Cheshire West and Chester* and *Cheshire East* are titled Cheshire (W) and Cheshire (E) respectively

Source: Office for Health Improvement and Disparities, Fingertips Public health data, Mental Health and Wellbeing JSNA³⁸

³⁸ Office for Health Improvement and Disparities (2024) Fingertips Public Health Profiles (Online). Available at: <https://fingertips.phe.org.uk/mh-jsna> (Accessed September 2024).

15.5.18 The current baseline conditions and trends are expected to continue and are considered to provide a relevant description of the conditions likely to prevail over the construction period of the Project.

15.6 Embedded Environmental Measures

15.6.1 As part of the project design process, a number of embedded environmental measures are proposed which reduce the potential for impacts on people and communities. These measures are incorporated into the overall design of the Project and include for how it will be constructed and operated. No measures have been specifically identified for the decommissioning phase of the Project. However, it is anticipated that measures equivalent to those implemented during construction would also be effective in mitigating effects on people and communities during decommissioning. **Table 15.12** outlines how these embedded measures will influence the people and communities assessment.

Table 15.12 Summary of embedded environmental measures

Embedded environmental measures	Compliance mechanism
The Applicant will prepare a Skills and Employment Strategy/Plan to be included in the application. This report will set out how the Applicant will maximise use of, and upskill, the local workforce and will draw upon wider employment strategies to be prepared by the wider HyNet programme and Cadent. The Applicant intends to draw on local workforce and supply chains where possible.	DCO requirement
All development would be subject to standard best practice mitigation measures employed to avoid and minimise potential effects on local businesses and recreational facilities and more widely on tourism and recreation facilities.	Construction Environmental Management Plan (CEMP), Construction Traffic Management Plan (CTMP), Public Rights of Way Management Plan (PRoWMP) all secured by DCO requirements.
A public-facing website and delivery of communications to provide information, community support and engagement to respond to general public interest and address concerns.	Regular maintenance of website. Records of activities provided on request.
The Applicant will provide an Outline Employment and Skills Plan detailing arrangements to promote local employment and skills development opportunities.	DCO requirement and Outline Employment and Skills Plan

Embedded environmental measures	Compliance mechanism
Work with the Warrington Employment Development team and other local agencies to maximise benefits for local people.	Engagement and recorded documentary evidence of agreements.
Noise levels above the Significant Observed Adverse Effect Level (SOAEL) will be avoided.	CEMP
Standard best practice construction measures will be implemented to minimise potential effects on local businesses and tourism/recreational facilities.	CEMP
Project construction and operational schedules will be communicated as appropriate so that potential temporary severance of other developments, communities and assets is avoided and that there is minimal disruption.	CEMP
The Applicant will establish and implement protocols where open-cut trenching is used for crossings appropriately customised for all types of crossing, including those infrequently used and on both publicly and privately-owned land. Open cut installation at minor roads would be undertaken in as short a timeframe as possible, typically five days or less, and traffic control measures will be implemented subject to agreement with the Highways Authority to ensure safety and minimise disruption. Temporary access covers to maintain traffic flow will also be installed to minimise or reduce effects.	PRoWMP secured by DCO Requirement
The Applicant is committed to enabling access during construction to the PRoW, ORPA (Other Routes with Public Access) and Open Access Land, where this does not compromise safety. Where the pipeline crosses PRoWs, the Applicant will endeavour to minimise the durations of temporary closure.	PRoWMP secured by DCO Requirement
All the National Cycle Network routes would remain open for the duration of the Project construction and operation phases and traffic management would be put in place to allow for the continued use of the routes for sustainable modes, where this does not compromise safety. This will be managed with signage, active management or traffic signal control.	PRoWMP secured by DCO Requirement

Embedded environmental measures	Compliance mechanism
Where appropriate, project construction and operational schedules will be co-ordinated to avoid cumulative effects such as multiple sources of vibration affecting sensitive receptors. Further detail will be provided in the Final ES.	CEMP
The Applicant will look to avoid construction in the proximity of Creamfields festival and Cheshire Steam Fair and at times when these events take place. A detailed construction programme will be prepared by the appointed contractor post consent.	Engagement with Creamfields and recorded documentary evidence of agreements.
Mental health concerns arising from hydrogen gas in the pipeline network will be addressed through responding to requests for information as they arise during construction and operation. The Project has committed to working with health professionals as required to provide information to those with substantial concerns.	The Applicant will develop a Construction and Operation Communications Plan, which will include information on such support processes
A Decommissioning Plan will ensure that activities meet relevant statutory requirements, reflect commitments to landowners/statutory authorities and take account of any developed technology and good practice.	Decommissioning Plan secured by DCO requirement.

15.7 Scope of The Assessment

- 15.7.1 The scope of the assessment has been refined as the project design has evolved and responds to feedback received to date as set out in **Section 15.3**.

Spatial scope

- 15.7.2 The Project requires construction and operational activities along corridors (as described in **Chapter 2**) within a clearly defined project boundary (for the purposes of this Draft ES this is termed the 'Draft Order Limits') leading to direct and indirect socio-economic and health effects on people and communities inside and outside the Draft Order Limits.
- 15.7.3 The Zone of Influence (ZoI) for a type of effect generated from the Project (including sub-contracted activities) includes geographic areas where likely significant effects of bio-physical or social changes (such as air quality, or distances to accessible labour markets) may occur. These include areas within the Draft Order Limits and to other geographic areas relevant to project implementation, such as areas supporting temporary ancillary uses, nearby areas

with infrastructure serving the Project, commuting areas for the workforce and areas affected by transport of materials and equipment.

15.7.4 The characteristics of a type of effect determine the Zol depending on:

- the times and locations of effects;
- the structure of indirect (knock-on) effects, which may extend beyond direct effects; and
- the structure of effects cumulative with those caused by other developments.

15.7.5 A practical approach which recognises that a limited set of definitions of spatial extent is appropriate for assessment where the types of impacts are similar allows the use of four typical Zols:

- the pipeline Limits of Deviation;
- the Draft Order Limits for the Project;
- a buffer 500m outside the Draft Order Limits;
- a wider extent covering effects which are local but sub-national, such as within the North West; and
- National extent.

15.7.6 As the location of activities advances along a corridor during construction, the Zol for effects associated with particular activities changes. The characterisation of effects within the Zol is also subject to the geographic definitions used in the baseline and project information, which is available.

15.7.7 The 500m buffer reflects the guidance for linear transport infrastructure (LA112)²² which provides a useful default reference in Great Britain. Roads are common linear developments with a range of precedents and use of associated guidance is likely to provide a conservative assessment as a pipeline would be expected to be less disruptive. LA112 indicates the generic types of effects to be assessed and provides indicative thresholds with a 500m buffer as a recommendation for an initial default.

15.7.8 The wider and national scales of spatial extent are appropriate for effects which involve more dispersed people and communities. These include labour markets and supply chains at regional level as well as national decarbonisation objectives and international trade.

Temporal scope

15.7.9 The temporal scope of the assessment of people and communities is consistent with the period over which the Project would be carried out and therefore covers the period of construction from Q1 2027 with commissioning in Q1 2030. The Project would be operational by Q2 2030. The design life of the pipeline and HAGIs is 40 years but it is anticipated that the actual life of the pipeline could extend well over 40 years depending on ongoing monitoring of pipeline integrity and routine maintenance and upgrading where required.

- 15.7.10 Socio-economic and health effects largely occur concurrently with the project construction and operation phases and are not expected to demonstrate time-lags or anticipation (such as a prior increase required in supply chain capacity or delayed health effects). As project construction proceeds in stages along the proposed corridors, there will be effects of a similar type but on different groups of people and communities. The staged approach leads to significant mitigation of potential effects, as individual localities are not all affected at the same time.
- 15.7.11 The temporal scope used for assessing the construction phase is based on the overall project construction schedule and the individual stages of construction activity.
- 15.7.12 During the operational phase, all socio-economic and health effects are related to the operation of the overall network and occur at the same time. The temporal scope of the assessment covers the overall expected period of operation and accounts for changes to the baseline.
- 15.7.13 During the decommissioning phase, socio-economic and health effects are expected to be similar to those for construction.

Potential receptors

- 15.7.14 The principal People and Communities receptors that have been identified as being potentially subject to effects are summarised in **Table 15.13**.

Table 15.13 People and communities receptors subject to potential effects

Receptor	Reason for consideration
People and communities travelling and experiencing Project effects	There may be inconvenience from construction activities particularly at some times of year.
Employment markets	Project labour requirements will create demand in markets which will influence local, regional or national supply.
Potential workers, including those in the local workforce	Workers will have opportunities to earn incomes from providing labour.
Materials, equipment and services markets	Project requirements will create demand in markets which will influence local, regional or national supply.
Potential suppliers, including local business	Businesses may increase sales by supplying the project directly or indirectly, such as through services provided to workers.
Customers and producers of hydrogen	The Project enables opportunities for hydrogen customers and producers.
Landowners and developers; local authorities with	The Project will require land for certain infrastructure elements and its existence will influence future land

Receptor	Reason for consideration
statutory responsibility for planning	planning and may affect developers' perspectives of hope value.
The economy	Project expenditure will increase economic activity through its direct and indirect impacts.
Commercial markets for hydrogen infrastructure development nationally and internationally	The Project will lead to increased capability from knowledge and expertise in development/ operation of large scale hydrogen networks, which can enable new sales in future markets.
General public	The Project may lead to effects on, concerns for, or changes in the behaviour of, the general public including potential indirect effects.

Likely significant effects

15.7.15 The effects on people and communities receptors, which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 15.14**.

Table 15.14 People and communities receptors scoped in for further assessment

Receptor	Likely significant effects
People and communities travelling and experiencing Project effects	Project works leading to disruption including temporary routes, longer travel times and potential reductions in access from Project-related activity during construction; additional demand generated by the Project on the transport network; and associated indirect effects from environmental changes such as land use, air quality, noise and vibration.
People and communities with needs to access particular land and amenities	Temporary disruption in access to particular locations during construction and minor changes during operation.
Employment markets	Project requirements for labour during construction raises demand above current levels of supply.
Potential workers	Increased labour demand provides opportunities for local people seeking employment.
Materials, equipment and services markets	Project requirements for materials equipment and service raises demand above current levels of supply.

Receptor	Likely significant effects
Potential suppliers, including local business	Increased demand for materials, equipment and services provides opportunities for suppliers.
Customers and producers of hydrogen	The Project provides a network for decarbonised energy production and use.
Landowners and developers; local authorities with statutory responsibility for planning	Future development and land use may be influenced by the location of project infrastructure.
The economy	Economic activity will be increased by project expenditure.
Commercial markets for hydrogen infrastructure development nationally and internationally	Increased capability from knowledge of development and operation of large-scale hydrogen networks which may contribute to new sales in future markets.
General public	The Project may lead to effects on, concerns for, or changes in the behaviour of, the general public including potential indirect effects.

Elements scoped out of further assessment

15.7.16 The receptors/effects detailed in **Table 15.15** have been scoped out from the assessment because the potential effects are not considered likely to be significant.

Table 15.15 Summary of effects scoped out of the people and communities assessment

Receptors/potential effects	Justification
Employment effects during operation	Workforce requirements, whether working locally or remotely, are small compared to relevant markets, as agreed by PINS in the Scoping Opinion.
Tourism	The area is not a primary tourist destination and magnitudes are likely to be small compared to existing

Receptors/potential effects	Justification
	recreational and amenity use, as agreed by PINS in the Scoping Opinion (see baseline above).
Effects on individual economic sectors which do not directly supply the materials, equipment and services required by the Project	These are represented by wider economic effects, as agreed by PINS in the Scoping Opinion.
Effects on social cohesion	The nature and scale of the expected workforce is not likely to affect social cohesion, as agreed by PINS in the Scoping Opinion.
Mental health concerns arising from the use of hydrogen gas in the pipeline network	Mental health concerns arising from the use of hydrogen gas in the pipeline network will be addressed through responding to requests for information as they arise during construction and operation. The Project has committed to working with health professionals as required to provide information to those with substantial concerns.

15.8 Assessment Methodology

Introduction

15.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: Approach to preparing the Draft ES**, and specifically in **Section 3.10**. However, whilst this has informed the approach that has been used in this people and communities assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this people and communities assessment.

Assessment of effects and determining significance

15.8.2 The socio-economic and health assessment of impacts affecting people and communities is the systematic analysis of the effects of the Project on society resulting from changes to the circumstances in the environment on affected populations. The assessment has the objective of structuring both the analysis and the underlying information for decision-making within an overall aim of identifying the consequences from all types of effects on all participants in society. Both beneficial and adverse effects are assessed together with measures providing associated embedded or additional enhancement or mitigation, including those described in **Section 15.6: Embedded Environmental Measures**.

- 15.8.3 The basis of good practice in socio-economic assessment is commonly understood to be the implementation of a structured approach to answering the types of questions that arise from an overarching and general concern with people and communities in society. Questions are potentially wide-ranging and include those that individuals from any background might themselves raise due to direct effects on themselves or on people of concern to them.
- 15.8.4 Examples of the types of questions that an assessment aims to answer are:
- Will the Project result in material changes to the local, regional, or national demography, economy, economic sectors, employment opportunities or community characteristics, amenities and facilities?
 - Will a small number of people be affected in a significant way (changes to freedom of movement, employment prospects, amenity) or will significant numbers of people be affected?
 - Will people be affected over a long timescale?
 - Will there be involuntary displacement of people and businesses?
 - Will the Project result in a change similar to or larger than that experienced in the area over a similar time period in the past?
 - Does the nature of effects caused by the Project or characteristics of people affected mean they would be particularly vulnerable or particularly advantaged?
 - Ultimately, should the issue have a bearing on the decision whether to grant approval of the Project or not?
- 15.8.5 Impacts are defined in terms of their consequences on “receptors”. The objective in assessment is to consider potential effects on all affected receptors and to establish those likely to be significant.
- 15.8.6 The simplest specification of socio-economic receptors is ‘people’, but more specific characterisations may also be used such as groups or organisations they belong to (for example, ‘workforce’ or according to religious belief). An individual may appear under more than one receptor heading (for example, as a member of the workforce and as a local resident).

Identification of effects

- 15.8.7 The identification of possible effects follows the principles underpinning EIA, particularly the principle of scoping. The impacts resulting from the activities related to the Project are identified and described according to knowledge of how activities related to it will occur. Such knowledge is continuously evolving as the design and understanding of the Project advances. Socio-economic effects may also arise from specific changes to the environment and be assessed using evidence provided in support of assessment of other EIA topics.
- 15.8.8 The likely significant effects are presented in **Table 15.14** and comprise those that are currently understood to require assessment. The list is based on information currently available regarding the Project, review of previous impact assessments

for similar developments and consideration of the range of potential socio-economic and health impacts that may occur.

Assessment of Significance

15.8.9 The assessment of the significance of the effects is the primary concern and main output of the analysis. Significance has been assessed including embedded environmental measures. Where the potential for a significant environmental effect remains, 'additional measures' have been considered to avoid, reduce or compensate this effect. The assessment reports on the anticipated effects of the Project following the implementation of all mitigation to determine the 'residual effects'.

15.8.10 Criteria for significance is developed alongside the estimates of effects to meet the requirements for assessment of the specific types of effects according to the characteristics of receptors, as well as meeting good practice for criteria (such as being easy-to-use). Outcomes for assessments of significance use the categories defined in the generic project-wide approach of 'Major', 'Moderate', 'Minor' or 'Negligible'. Effects can be either beneficial or adverse.

15.8.11 The significance of effects is assessed through the evaluation of the combination of the magnitude of effects and sensitivity of receptors using the matrix defined in the generic project-wide approach. Determination of magnitudes of change and of receptor sensitivity use the generic categories of 'High', 'medium', 'low', and 'very low'.

Magnitude of change

15.8.12 The magnitude of change is a summary term used to describe the features of an effect which can be represented as varying over a range. Straightforward effects may be represented with quantitative indicators, such as employment relative to a national average, but other effects may need a semi-quantitative or qualitative approach to account for variation. A range with four levels to represent the magnitudes of effects (high, medium, low and very low) is used and covers features such as:

- a more general concept of scale or extent (for example, number of groups and/or people, households or businesses affected; spatial area affected);
- the duration and frequency of effects and whether they are permanent or time-limited (short, medium, long);
- the direction of change and its reversibility; and
- the probability of occurrence.

15.8.13 The assessment of the magnitude of change is based on a comparison with baseline conditions, which show outcomes without the Project, and with comparators from similar developments or modelled scenarios.

15.8.14 Criteria used for magnitude of change are identified in **Table 15.16**.

Table 15.16 Criteria for Magnitude of change

Magnitude of change	Guidelines used for assessment of Magnitude of change
High	The impact results in major permanent loss/gain or considerable disruption (positive or negative) to a receptor or the way a resource is currently used.
Medium	The impact results in partial loss/gain or causes some disruption (positive or negative) to a receptor or the way a resource is currently used.
Low	The impact results in minor change (positive or negative) for a receptor or the way a resource is currently used but the overall purpose and function of the resource is unaffected.
Very Low	The impact results in a change (positive or negative) attributable to the Project but comparable with levels commonly present in the baseline.

Source: WSP

Receptor sensitivity

15.8.15 The sensitivity of a receptor is a summary term that describes the ability of the receptor to withstand or absorb change within the period of time the impact is expected to occur and without a fundamental change to its character or attributes. Sensitivity to socio-economic and health effects has no single interpretation and can be seen as capturing the concept of a value that is potentially threatened or enhanced. A range with four levels of sensitivity (high, medium, low and very low) is used to describe receptors.

15.8.16 Sensitivity of receptors may depend on their current and future characteristics as well as the nature of the impact, reflecting aspects such as:

- capacity and availability of community resources;
- previous experience of socio-economic change;
- vulnerability from pre-existing social circumstances or health conditions;
- cultural values, including public interest, perceptions towards a risk or potential change, and acceptability;
- environmental vulnerability of habitats important to the socio-economic and health context (such as open space and public parks); and
- the direction, duration and reversibility of the specific impacts.

15.8.17 Criteria used for receptor sensitivity are identified in **Table 15.17**.

Table 15.17 Criteria for Receptor Sensitivity

Sensitivity	Guidelines used for assessment of sensitivity of receptors
High	Receptors/resources have limited ability to respond to the change with limited local access to alternatives.
Medium	Receptors/resources have some ability to respond to the change with slightly restricted local access to alternatives.
Low	Receptors/resources are particularly responsive to change with ready access to alternatives.
Very Low	Receptors/resources generally have adequate capacity to experience impacts without incurring a significant effect with many comparable and accessible alternatives.

Source: WSP

Determination of significance

15.8.18 The evaluation of significance is based on a set of customised criteria which:

- are widely agreed, such as legal and physical thresholds including health and environmental standards;
- can be consistently and rationally applied and documented;
- meet public concerns (particularly over health and safety);
- reflect procedure and guidance; and
- reflect precedent experience.

15.8.19 Quantitative thresholds for criteria related to specific effects are referenced if relevant and available, supplemented by professional judgement that aims to reflect whether the general population would judge the impact to be of concern or not. In this context the significance criteria defined in LA 112²² is used to guide considerations of the magnitude of effects, sensitivity of receptors and significance particularly at individual locations. Consideration covers whether:

- there is complete severance of access affecting existing connections between communities and land or other assets;
- alternatives are only available outside the local planning authority area;
- the level of use is very frequent (daily); and
- the land and assets are used by the majority ($\geq 50\%$) of the community.

15.8.20 For wider effects, a limited number of precedent studies include quantitative criteria with generic, non-project specific, benchmarks for demography,

employment, economic effects, accommodation pressure social conditions and services, such as for Hinkley Point C³⁹.

15.8.21 While specific reference to available criteria is sometimes possible, an effect may be considered significant if, in the professional judgement of the expert undertaking the assessment, it would meet at least one of the following more general criteria:

- it leads to an exceedance of a defined standard or guideline used in determining what is considered an acceptable change in environmental conditions regarding socio-economic or health outcomes;
- it is likely that the Examining Authority would reasonably consider applying a DCO requirement or obligation within a legal agreement to the consent to require specific mitigation to reduce or overcome the effect; or
- it threatens or enhances the socio-economic conditions, health or quality of life by leading to beneficial or negative socio-economic, health or quality of life effects that are quantifiable and/or noticeable to the affected population (and that where data is available, is statistically significant).

15.8.22 The assessment of significance is based on a combination of the receptor sensitivity and the magnitude of change (See **Table 15.18**) and the final summary of significance is presented in a table showing each effect and identifying whether it is beneficial or adverse together with the accompanying rationale.

Table 15.18 Significance evaluation matrix

		Magnitude of change			
		High	Medium	Low	Very low
Sensitivity or value	High	Major (significant)	Major (significant)	Moderate (potentially significant)	Minor (not significant)
	Medium	Major (significant)	Moderate (potentially significant)	Minor (not significant)	Minor (not significant)
	Low	Moderate	Minor	Minor	Negligible

³⁹ EDF Energy (2021). Hinkley Point C Environmental Appraisal Volume 2, Pre-application consultation - Stage 2, Chapter 8 Socio-economics. (Online) Available at: <https://www.edfenergy.com/sites/default/files/V2%20C08%20SOCIO%20ECONOMICS.pdf> (Accessed July 2024).

		Magnitude of change			
		High	Medium	Low	Very low
		(potentially significant)	(not significant)	(not significant)	(not significant)
	Very low	Minor (not significant)	Minor (not significant)	Negligible (not significant)	Negligible (not significant)

Consideration of magnitudes of effects and receptor sensitivity for sub-topics

15.8.23 Specific consideration is relevant to sub-topics when considering socio-economic aspects arising at individual locations.

Construction phase

15.8.24 *Use of land for construction sites, exclusion zones, laydown areas, and access routes for construction works:* The consideration of land use and accessibility at individual locations can be assessed with reference to the guidance in LA112²², which identifies the following elements: “*Private property and housing; Community Land and Assets; Development Land and Businesses; Agricultural Land holdings; and Walkers, Cyclists and Horse-Riders*”.

15.8.25 The effects of the Project on access are influenced by the types of land and the associated users. These include commuters, people using public and private services and amenities (including health and community services and amenities). Walkers, Cyclists and Horse-Riders are receptors with particular requirements that relate in particular to Public Rights of Way (PRoW).

15.8.26 Locations include those where the magnitude of effects is greater and/or receptor sensitivity is higher (such as hospitals and public parks). The effects related to individual locations are considered first for land inside the 500m buffer, including land parcels in single ownership that have a part that lies within the 500m buffer. Where effects of the Project are anticipated to extend beyond the 500m buffer, the area used for assessment is extended, taking into account the magnitude of the effects and sensitivity of the affected users.

15.8.27 *Transport movements of materials and workforce to construction sites:* The effects from transport movements are covered in **Chapter 11: Traffic and Transport** in terms of the effects of changes in access and the level of transport infrastructure use on routes and travel times for transport users. The effects at individual locations on travel times for affected users may result in impacts on different groups of people and communities (receptors) and their socio-economic and health characteristics (sensitivity).

15.8.28 *Air, water quality and noise effects from construction works and transport movements:* The air/water quality and noise effects from construction works and

transport movements at individual locations are assessed in the relevant corresponding chapters including potential dispersion of effects via air or water pathways. The effects at individual locations for affected receptors may result in impacts on different groups of people and communities (receptors) and their socio-economic and health characteristics (sensitivity).

15.8.29 *Employment of project workforce*: The Project requirement for directly-employed labour is assessed in comparison to the local and wider regional employment markets. The potential impact is judged in terms of the magnitude of the workforce requirement compared to the capacity (sensitivity) of the relevant market (receptor).

15.8.30 *Investment expenditure*: The investment expenditure by the Project would add to overall economic activity through direct, indirect and induced effects on employment and on the level of gross value added (GVA). The effects arise from the levels of expenditure anticipated for the major categories of purchase and the levels of directly and indirectly employed labour. It will be assumed that the additional demand from the Project will generally not lead to changes in market prices. The assessment in the Final ES will be based on comparison of the project expenditure with levels of regional GVA.

15.8.31 *Purchase of specialist materials, equipment and services*: The Project would require appreciable quantities of materials, equipment and services. Where supply chains are limited in capacity locally or in wider markets, demand from the Project has the potential to be unmet and/or affect overall market supply to other purchasers. The assessment in the Final ES will be based on comparison of the levels of demand for major purchases, market size and the significance judged according to the characteristics (sensitivity) of the relevant market, in particular its size and ability to increase production.

Operational phase

15.8.32 *Customers and producers of hydrogen*: The Project would attract businesses seeking a hydrogen connection to the constructed network. Individual locations may have the potential for more favourable connections due to easier access to the pipeline infrastructure and have been considered in route choices.

15.8.33 *General public and businesses potentially disrupted by operational effects*: The Project will require the operation of equipment to support network maintenance and gas distribution which may, depending on the type of operation, cause disruption to people and communities.

15.8.34 *Commercial markets for hydrogen infrastructure development nationally and internationally*: The Project would provide a newly skilled workforce with experience relevant to future hydrogen infrastructure development but does not establish a supplying organisation to international markets. The sensitivity is indicated by the potential market size, while the magnitude of effect reflects the capability gained from the Project.

15.8.35 *Perceptions of hydrogen safety*: Public concern over hydrogen is potentially affected by a known legacy of hazards related to its combustion and abandonment of its use for lighter-than-air travel. The risks have been assessed in **Chapter 16**:

Major Accidents and Disasters. The level and nature of public concern is assessed using the evidence from project consultation and literature sources available, which cover general responses to use of hydrogen and effects arising from the gas industry.

15.9 Assessment of People and Communities Effects

- 15.9.1 The assessments of all individual effects are summarised together with their rationale in **Table 15.21**. In addition, effects which are significant or potentially significant are explicitly identified as such in the fuller description provided within this section.
- 15.9.2 Effects which depend on data which is not yet available are only identified in **Table 15.21** regardless of their level of significance.

Construction phase

Employment markets

- 15.9.3 The total number of jobs provides a measure of the overall aggregate increase in employment arising from the Project. The economic and jobs benefits of the Project are anticipated to be predominantly retained in the UK, although there will be some use of international markets. A significant proportion of the project benefits are anticipated to be retained in the North West. However, the effects on employment markets depend on the magnitude and timing of labour requirements.
- 15.9.4 The employment markets are represented by the statistics on sectoral employment in the North West and in the six councils. The Project would be appreciable in that employment in the construction sector within the six councils would need to increase to meet the additional demand. The proportionate impacts of other aspects of the employment requirements of the Project are smaller. It should also be noted that some of the construction skills required are very specialist and an international pool of specialists is likely to be drawn upon.
- 15.9.5 The appreciable benefits for employers and employees from working locally produce a strong incentive for the Project to draw on labour markets within the six councils rather than the wider North West region. Evidence in trends of an overall general increase in construction activity and low levels of unemployment in the region (see **Paragraph 15.5.13**) confirms that labour supply is potentially limited.
- 15.9.6 A measure used as a general criterion for significance and applied to the development of Hinkley Point C nuclear power station⁴⁰ is that a change in overall employment of more than 2% would be considered major, as would a change of more than 10% within a particular economic sector. The underlying point of reference is annual changes in local employment markets in the local baseline.

⁴⁰ EDF Energy (2021). Hinkley Point C Environmental Appraisal Volume 2, Pre-application consultation - Stage 2, Chapter 8 Socio-economics. (Online) Available at: <https://www.edfenergy.com/sites/default/files/V2%20C08%20SOCIO%20ECONOMICS.pdf> (Accessed July 2024).

- 15.9.7 A construction market includes multiple individual site locations. The markets considered here are the regional market of the North West and a more local market covering the smaller area of the six councils, where the Project has construction works.
- 15.9.8 The average level of project employment is expected to be approximately 1,000 full time equivalent jobs over the period from May 2027 to August 2029, with a short two month highest (worst case) peak of approximately 1,600 jobs which workforce planning is likely to bring closer to the average in practice. These personnel are directly employed by the Project but their activities, which are predominantly onsite installation works draw on a supply chain, such as manufacture of pipes, which results in additional indirect employment. Using generic government estimates for multiplication factors ('multipliers') which express levels of indirect employment in terms of levels of direct employment, the average level of total employment (direct + indirect) is approximately 3,200 jobs and the peak level is approximately 5,100 jobs⁴¹.
- 15.9.9 These levels of jobs are assumed a worst case in terms of their impact on existing employment markets, as in practice a number would be jobs outside the areas considered and they would not all be in the construction sector. Note that additional jobs from induced effects (from employee spending) are not included but are considered to be even more widely dispersed and not sufficient to alter the conclusions below. The range of jobs levels from 1,000 to 5,100 are compared with employment levels in the North West regional market and the more local market of the six councils (See **Table 15.19**).
- 15.9.10 Compared to the total employment in the North West market of 3,476,500 jobs, even the greatest number of project-related jobs (5,100) makes up only 0.1% of the total, which is well below the 2% used as a reference for total employment at Hinkley Point C. Using the alternative Hinkley Point C reference, for employment by sector, 5,100 jobs would make up 11.9% of the 43,000 jobs in the construction sector within the six councils, which slightly exceeds the reference value of 10%. However, in practice, it is very probable that these jobs, particularly the jobs in the supply chain, would occur within the manufacturing and related sectors and this would reduce the effect significantly. For the majority of the project construction period, the immediate effect locally is most likely to be represented by the 1,000 direct jobs which are equivalent to 2.3% of the local employment market in the six councils. This is well below the 10% reference level at Hinkley Point C and is therefore effects upon labour supply are considered to be **minor adverse (not significant)**.

⁴¹ The multiplier for construction activities is 2.175 as identified in ONS (2022), FTE multipliers and effects. Available at: <https://www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/adhocs/14611fitemultipliersandeffectsreferenceyear2018> (Accessed September 2024).

Table 15.19 Project-related employment compared to market sizes

	Market size (employee jobs)	Project-related employment compared to market size (%)			
		Direct		Direct + Indirect	
		Average	Peak	Average	Peak
Number of Project-related Jobs		1,000	1,600	3,200	5,100
Employment market - North West					
Total employee jobs	3,476,500	0.0%	0.0%	0.1%	0.1%
C: Manufacturing	311,000	0.3%	0.5%	1.0%	1.6%
F: Construction	179,000	0.6%	0.9%	1.8%	2.8%
M: Professional, scientific and technical activities	326,000	0.3%	0.5%	1.0%	1.6%
Employment market - Six Councils					
Total employee jobs	802,025	0.1%	0.2%	0.4%	0.6%
C: Manufacturing	62,000	1.6%	2.6%	5.2%	8.2%
F: Construction	43,000	2.3%	3.7%	7.4%	11.9%
M: Professional, scientific and technical activities	114,000	0.9%	1.4%	2.8%	4.5%

Potential workers

15.9.11 In current and forecast market conditions, workers are expected to have a range of employment options with the Applicant and other employers. The Project would benefit from access to jobseekers and expects to work with local agencies and other employers to draw on local workforce and supply chains where possible to make project employment available. The level of direct and indirect employment required in the area of the Project would provide an appreciable increase in the level of local opportunity, as indicated by the levels of jobs estimated for the employment markets considered above. The Applicant will prepare a skills and employment strategy to be included in the DCO application which will set out how the Applicant will maximise use of, and upskill, the local workforce and will draw upon wider employment strategies to be prepared by the wider HyNet programme and Cadent. Effects upon potential workers are considered **minor beneficial (not significant)**.

Materials, equipment and services markets

15.9.12 The relevant markets in the North West and northern UK are large and serve many customers but demand for some project elements (such as pipe) may affect market capacity available for other buyers. If magnitudes do not disturb existing market supply, then the significance of these potentially adverse effects is expected to be confirmed as **minor adverse (not significant)**. Larger national and international markets are not expected to experience such effects.

Potential suppliers, including local business

15.9.13 Expenditure by the Project would support economic activity and jobs in the national and international supply chain, which would benefit suppliers through the additional revenue opportunities. Individual suppliers with specific locational and technical advantages may gain large orders due to project volumes, but some orders are likely to be broken down across a wider international market with a lesser impact on each supplier. If material magnitudes required are appreciable for individual suppliers, then there may be corresponding levels of **minor beneficial (not significant)** effects on people and communities in certain firms, sectors or locations from work supplying the Project.

The economy

15.9.14 Investment expenditure by the Project would lead to an increase in economic activity which is reflected in measures of gross value added (GVA). GVA effects are considered **minor beneficial (not significant)** for the economy and typically broadly correspond in terms of levels and proportions with the effects on employment. Further details in the expected GVA will be reported in the Final ES.

Commercial markets for hydrogen infrastructure development nationally and internationally

15.9.15 The international market for hydrogen infrastructure is growing rapidly. By 2030, the International Energy Agency⁴² expects that total hydrogen demand from industry will expand by 44% with low-carbon hydrogen becoming increasingly important. A shortfall in capacity is predicted with planned projects expected to be sufficient to meet only approximately 18% of this demand and rapid action required in the next ten years to meet projected net zero emissions by 2050.

15.9.16 The experience of the Project would contribute towards future technical capability through development of a workforce with relevant experience. The workforce would provide core knowledge and capability but the Project does not aim to establish a major new supply chain which can serve international markets as such effects are considered **minor beneficial (not significant)**.

People and communities travelling and experiencing areas within Project area and People and communities with needs to access particular land and amenities

15.9.17 A large number of people and communities travelling and working within the Study Area are likely to experience effects from construction activities due to the

⁴² International Energy Agency (2021). Hydrogen Tracking report. (Online) Available at: <https://www.iea.org/reports/hydrogen> (Accessed July 2024).

geographic extent of the network. Potential impacts may result in visual, land use, noise and vibration, air quality, and transport and traffic effects including potential disruption to access and/or severance.

- 15.9.18 In general, and unless specified otherwise, receptors are considered to have a high level of sensitivity to potential effects. For many people and communities, the effects of the Project are likely to be inconsequential as a result of the engineering design and embedded environmental measures. Furthermore, a number of potential effects can be assessed without need for spatial consideration as their significance does not depend on location. However, there are a number of businesses located within 500m of the Draft Order Limits which may experience construction effects depending on the type of business and types of temporary project activities. Businesses include those with agricultural land holdings with access required for farming.
- 15.9.19 In the majority of cases, impacts on businesses will result from impacts as assessed for people and communities. Exceptions are identified below where concerns may arise due to the type of business or corridor route, or where a low level of effects is anticipated but is less apparent. The majority are considered to remain largely unaffected or experience minor temporary access restrictions during construction. Pending confirmation in the Final ES, identified businesses are considered receptors of medium sensitivity which would experience impacts with a medium magnitude of change from the temporary construction activities resulting in a **moderate adverse (potentially significant)** effect.
- 15.9.20 Air quality impacts are concluded to have no significant effects as a result of construction traffic on human receptors from fugitive dust emissions, increases to pollutant concentrations, plus increases in PM₁₀ and PM_{2.5} (See **Chapter 9: Air Quality**).
- 15.9.21 Adverse health effects from noise and vibration related to construction activities are scoped out (see **Chapter 10: Noise and Vibration**). The health of human receptors will be protected via the avoidance of noise levels above the Significant Observed Adverse Effect Level (SOAEL) and controlled via a CEMP⁴³.
- 15.9.22 Temporary noise effects from the open cut trenching of the pipeline on noise-sensitive receptors (residential properties, educational, religious and medical establishments, quiet or important outside leisure areas, noise- or vibration-sensitive commercial premises) are concluded to be not significant.
- 15.9.23 Temporary noise effects from the construction of the HAGIs and access construction effects are concluded to be not significant. Temporary noise effects from construction road traffic noise are also concluded to be not significant.

⁴³ It is stated that population and human health “*should only be scoped into an EIA where the likely health consequences of the project are considered to be significant*” in advice from Public Health England (2017). *Health and Environment Impact Assessment: A Briefing for Public Health Teams in England* (Online). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/629207/Health_and_environmental_impact_assessment.pdf (Accessed September 2024).

- 15.9.24 The temporary noise and vibration effects from trenchless crossing works and from the construction, operation and deconstruction of the temporary construction compounds will be assessed in the Final ES.
- 15.9.25 There are a large number of agricultural land holdings and land used for farming within the 500m Study Area of the Project. There is the potential for indirect effects on agricultural businesses from access restrictions and/or severance, as well as from permanent loss of land, due to the construction of the Project. The assessment of effects on agricultural land, including soil resources and peat, is provided in **Chapter 13: Agriculture and Soil Resources**. In general, the receptor sensitivity and magnitude of change are considered to be a medium as access constraints can be mitigated and construction activities are temporary in duration with land uses being reinstated. Any temporary loss of agricultural area and agricultural access has been concluded to have a **moderate adverse (potentially significant)** effect. Further work will be presented on this assessment in the Final ES.
- 15.9.26 The spatially differentiated effects on people and communities travelling within the area of the Project arise from temporary construction activities leading to changes in the visual environment, in air quality, in levels of noise and vibration, in use of land and from transport and traffic.
- 15.9.27 While also assessed in **Chapter 10: Noise and Vibration** and **Chapter 11: Traffic and Transport**, effects of noise and vibration and severance are considered in this chapter in respect of further indirect effects on people and communities potentially occurring at specific locations or for particular types of businesses.
- 15.9.28 Where noise and vibration effects arise which are not concluded to be significant, effects are most likely to be related to works for trenchless crossings and temporary construction compounds to be assessed in the Final ES.
- 15.9.29 Where severance effects arise, they are most likely to be due to the open cut construction method used for crossing minor roads, or where the Draft Order Limits extend to affect potential access requirements to built infrastructure. Open cut installation at minor roads would be undertaken in as short a timeframe as possible, typically five days or less, and traffic control measures will be implemented subject to agreement with the Highways Authority to ensure safety and minimise disruption. Temporary access covers to maintain traffic flow will also be installed to minimise or reduce effects. People and communities travelling and experiencing areas within the project area will be subject to effects for a correspondingly short period of time.
- 15.9.30 Spatially differentiated effects are considered according to the four corridors which cover the geography of the network.

West Corridor

- 15.9.31 **Chapter 2: The Project** outlines the development proposals for the West Corridor (**Section 2.4**). The West Corridor of the Draft Order Limits (**Figure 2.2**, Sheet 1 to 8) is typically characterised by open fields separated by hedgerows and tree lines.

Construction activities have the potential to result in visual, land use, noise and vibration, air quality and transport/traffic effects.

- 15.9.32 The visual assessment concludes that construction activities within the West Corridor result in significant visual effects for settlements, recreational users of walking and cycling routes, and recreational canal/river users, at a number of locations. Although several settlements are identified as experiencing significant visual effects, the majority of residents within these settlements experience a zero magnitude of change with a level of effect determined as “No Effect”. Cyclists using NCR5 and NCR562 and walkers using Weaver Way and North Cheshire Way 3, as well as people using the Trent and Mersey Canal Walk and Cheshire Ring Canal Walk, would have the potential to experience potentially significant or significant visual effects due to the location and prominence of project elements during construction (see the **Chapter 8: Landscape and visual** for more details).
- 15.9.33 The potential for severance in relation to use of transport networks leads to possible effects on travel and access for people and communities. There are 41 PRoWs located within the Draft Order Limits for the West Corridor, comprising 17 footpaths, four bridleways and 20 Restricted Byways. Of these, 25 are crossed by the West Corridor (see **Appendix 11C: Outline Public Rights of Way Management Plan** for further details). There is one additional bridleway that falls within the 500m Study Area, but not within the Draft Order Limits, and forms part of the Aston Ring local recreation route. The possible effect for people and communities of the construction works is temporary severance during the anticipated construction period for a number of weeks. The Outline PRoWMP details how PRoWs will be maintained and concludes that the delivery of embedded environmental measures result in no significant effects.
- 15.9.34 **Chapter 11: Traffic and Transport** concludes that no significant transport environmental effects (severance; driver delay; non-motorised user Amenity; Non-motorised user Delay and Fear and Intimidation; and Accidents and Safety) occur at the highway links on the West Corridor.
- 15.9.35 However, pending confirmation in the Final ES, the construction works may lead to temporary disruption with a low magnitude of change and effects assessed as **moderate adverse (potentially significant)** in the following localised areas, where built infrastructure is linked to the wider transport network:
- north of River Weaver, south of Lodge Lane, where the pipeline travels north west before crossing the railway near Dutton Lodge Farm;
 - on Cholmondeley Road where the pipeline travels west on the approach to Runcorn HAGI;
 - south of Aston Lane at Sutton Weaver;
 - on an unnamed track to the east of Aston at construction access point WH-20;
 - off Rake Lane, where the pipeline crosses Rake Lake and access to the built infrastructure is within the Draft Order Limits;
 - on Cryers Lane where the access to built infrastructure is within the Draft Order Limits; and

- to the south of Northwich Road where access to built infrastructure is within the Draft Order Limits.

15.9.36 Open cut installation at minor roads would be undertaken in as short a timeframe as possible, typically five days or less, and traffic control measures would be implemented (subject to agreement with the Highways Authority) to ensure safety and minimise disruption. Temporary access covers to maintain traffic flow will also be installed, where necessary. People and communities with travel and access needs are expected to be affected for this short period of time.

15.9.37 **Chapter 14: Land Use** concludes that there are no significant effects on tourism and recreation receptors during construction in the West Corridor. Tourism is scoped out of this chapter (**Chapter 15: People and Communities**), whilst these conclusions indicate that there are no effects on recreational amenity for people and communities.

West Corridor - impacts on business

15.9.38 Businesses with premises within 500m of the corridor and with the potential for specific effects related to their activities and access are considered below, including farms. The businesses experiencing potential additional effects or a less apparent low level of effects are:

- businesses on Chester Road which may experience disruption to access for both employees and customers due to two trenchless crossings with crossing compounds in close proximity and access to businesses included in the Draft Order Limits. This includes Rose Cottage Veterinary Centre which is in close proximity to a trenchless crossing compound and trenchless exit where direct effects of noise/vibration and indirect effects on people/communities will be assessed in the Final ES;
- an Eye Vet located on Halton Station Road, where direct and effects of noise and vibration and indirect effects on people and communities will be assessed in the Final ES;
- trucking and transportation businesses located at the end of Ashville Way after the trenchless crossing of Weaver Navigation before the pipeline crosses under the M56. Construction access, trenchless crossing and pipeline run through the business area;
- Ashbrook Plant Hire on Northwich Road which is alongside the corridor and includes land to be occupied by the Central Hub HAGI. Continuous road access to the business would be retained with the construction and operational HAGI access being separate from that supplying the Plant Hire business. Opportunities with the business providing services to the construction industry and limited effects overall are concluded;
- businesses on Weaver View within the Draft Order Limits as the pipeline approaches Runcorn HAGI. Businesses south of Rocksavage Way may experience limited access restrictions during construction taking place on Weaver View although these will be managed consistent with the Final CTMP; and

- New Dairy Farm south of the A5117 is close to the corridor and construction access is proposed at construction access point WH-05 and will be assessed in the Final ES; and
- Weaver Sailing and Ski Club is served by a private road from the A56 which is crossed by the corridor twice near the Rocksavage HAGI with measures specified in the Outline CTMP resulting in limited effects.

North Corridor

15.9.39 **Chapter 2: The Project** outlines the development proposals for the North Corridor (**Section 2.4**). The North Corridor of the Draft Order Limits (**Figure 2.2**, Sheet 8 to 21) is typically characterised by open fields with hedgerows and tree lines separating them before Sutton Heath, where the route is more typically adjacent to residential areas and proceeds to the more industrial setting around Ravenhead. Construction activities have the potential to result in visual, land use, noise and vibration, air quality and transport/traffic effects.

15.9.40 The visual assessment concludes there to be significant visual effects on settlements, recreational users of walking and cycling routes and recreational canal/river users at a number of locations on the North Corridor due to construction. Differences in sightlines means receptors experiencing no visual effects can be near those with significant effects with the overall assessment based on the combination. Significant effects are anticipated at the eastern edge of the village at Moore due to construction activity, and significant effects are anticipated at the south-eastern edge of Higher Walton due to views of a trenchless crossing compound as well as filtered views of the construction of Higher Walton HAGI Option HWH8. Residential receptors at Bell Lane and School Lane would experience a significant effect, and significant effects are anticipated to the south of Tannery Lane. There will also be significant visual effects at localised sections along the routes NCR 62; E8; Delamere Way; Timberland Trail; Mersey Way; Trans Pennine Trail; Bridgwater Way and Palantine Plod (a 380-mile-long distance walk). However, the majority of routes within the LVIA Study Area will experience no effect. Some sections of the Manchester Ship Canal are expected to experience effects, although these are not significant. Recreational receptors in boats using the River Mersey will experience significant effects in a few locations although, from the River in general, there will be no effect (see **Chapter 8: Landscape and visual** for more details).

15.9.41 Effects of severance of communities and changes to travel and access may also occur. There are 11 PRoWs crossed by the pipeline, three that run just inside the pipeline corridor, three where a small section of PRoW enters the Draft Order Limits and two that route through a trenchless crossing area (one of the two is also crossed by the pipeline). The effect on People and Communities is temporary severance over an anticipated construction period of a number of weeks. The Outline PRoWMP details how PRoWs will be dealt with and outlines the embedded environmental measures put in place. Within 500m of the Draft Order Limits, but not within the Draft Order Limits, no effect on access or use is identified, therefore no significant effects are identified on these five PRoWs.

15.9.42 The Trans Pennine Trail (ORPA1) is also crossed by the pipeline with the duration of effect expected to be temporary (see **Appendix 11C: Outline Public Rights of Way Management Plan** for further details).

15.9.43 Pending confirmation in the Final ES, the construction works may lead to temporary disruption with a low magnitude of change and effects assessed as **moderate adverse (potentially significant)** in the following localised areas, where built infrastructure is linked to the wider transport network:

- where the pipeline crosses Higher Lane, at construction access point NH-03;
- off Summer Lane close to the trenchless crossing of the M56 where the proposed pipeline travels north;
- off Holly Hedge Lane where the Draft Order Limits crosses access to the built infrastructure;
- on School Lane, to the west of where the pipeline crosses School Lane at construction access point NH-53; and
- off Elton Head Road opposite Stratton Drive. The unnamed track to the south east of Elton Head Road is to be open cut and used for access at access point NH-58.

15.9.44 The caravan sites at Two Acre Park (Higher Walton) and Meadow Bank (Higher Walton / Moore) are residential caravan sites within the 500m Study Area. Both caravan sites are of medium sensitivity and will experience a slight increase in traffic nearby, corresponding to a low magnitude of change and an effect which is not significant.

15.9.45 Creamfields is a festival of considerable size and is located in Daresbury, approximately 500m from the Draft Order Limits of the North Corridor. The festival takes place in August each year. Cheshire Steam Fair also takes place in a nearby location in Daresbury, and in 2024 took place in mid-July. The Applicant will look to avoid construction in proximity to the festivals during this time. A detailed construction programme will be prepared by the appointed contractor post consent.

15.9.46 **Chapter 14: Land Use** concludes that there are significant effects on: Morley Common (in the worst case where there are cumulative effects with the proposed Western Link Road, however a planning application is yet to be submitted for this proposed development); the Allotments adjacent to Centre Link Bridge, where the land is required to accommodate a trenchless crossing compound; and True Fit Golf Club at Fiddler's Ferry for route NP6 (potential significant effect for a period of up to 2 years) or for route NP7.

15.9.47 Access to Moore Quarry Warrington Anglers located on Moore Lane will be impacted by the construction access point (NH-65) located on Moore Lane at the crossing of the Manchester Ship Canal. Moore Quarry Warrington Anglers are of low sensitivity and the magnitude of change is low, therefore, the effect is not significant.

15.9.48 Pending confirmation in the Final ES, there may be effects from noise and vibration during works involving temporary use of land near Bold Heath Equestrian Centre and Bold Riding Club in Bold Heath.

15.9.49 **Chapter 11: Traffic and Transport** concluded that there would be no significant transport environmental effects (severance; driver delay; non-motorised user Amenity; Non-motorised user Delay and Fear and Intimidation; and Accidents and Safety) at Higher Lane, between A533 and Grimsditch Lane (Highways Link RN13). At the B5204 between the A570 and Rainhill Road (Highways Link RN14) with the implementation of additional mitigation measures the residual effect on severance is not significant.

North Corridor - impacts on business

15.9.50 Most businesses within the 500m of the North Corridor will remain largely unaffected or experience minor temporary access restrictions during construction. Exceptions to this where there may be temporary disruption to access for business, employees and customers are:

- access to Bennett's Farm Shop on Holly Hedge Lane is within the Draft Order Limits for the Project;
- access to a Dog Park off Station Road to the north of where the pipeline crosses the River Mersey, with Riverside Park partially included in the Draft Order Limits;
- Rose Tree Farm Boarding & Hydrotherapy where direct effects of noise/vibration and indirect effects on people/communities will be assessed in the Final ES;
- access to My Dog Paddock on Elton Head Road is shared with a construction access point (NH-58) within the Draft Order Limits;
- Bold Equestrian Centre and Riding Club, where as noted above direct effects of noise and vibration and indirect effects on people and communities will be assessed in the Final ES;
- Moore Plant Nursery where disturbance to land used for plant varieties with longer growing periods would require correspondingly longer periods for restoration;
- businesses along Gainsborough Road, Loushers Lane, Station Road, Clearwater Quays and Thelwall Lane;
- businesses on School Lane where direct effects of noise and vibration and indirect effects on people and communities will be assessed in the Final ES; and
- built infrastructure (farm buildings) to the south of Marsh Lane has its access point included in the Draft Order Limits.

East Corridor

- 15.9.51 **Chapter 2: The Project** outlines the development proposals for the East Corridor (**Section 2.4**). The East Corridor of the Draft Order Limits (**Figure 2.2**, Sheet 8, and 22 to 30) is typically characterised by open fields separated by hedgerows and tree lines. The East Corridor is predominantly located in rural areas with the end of the pipeline at Partington located on a brownfield site. Construction activities have the potential to result in visual; land use; noise/vibration; air quality; and transport/traffic effects.
- 15.9.52 The visual assessment concludes there to be significant visual effects on settlements, recreational users of walking/cycling routes, and recreational /river users, at a number of locations on the East Corridor due to construction. There is the potential for construction of the Project to result in visual; land use; noise/vibration; air quality; and transport/traffic effects. Residents living in Higher Whitley, Lower Whitley, High Legh, Broomedge, Sinderland Green and Partington would typically experience no effect from the project construction works, however some localised parts of the settlements have the potential to experience significant effects resulting from views of construction activity. Residents at Dunham Woodhouses along Dunham Road, Carrgreen Lane and Barns Lane will experience significant to no effect due to the construction of Warburton HAGI and/or construction compound, as well as a materials storage area. Significant visual effects are also identified at localised sections along the Cheshire Ring Canal Walk/Bridgewater Way, cyclists using NCR 62 and walkers along the E8 and Trans Pennine Way, plus the Bollin Valley Way long distance footpath. Significant visual effects are also identified along sections of the River Bollin from north-east of Heatley Farm and west of Dunham Woodhouses. See **Chapter 8: Landscape and visual** for more details.
- 15.9.53 Effects on severance of communities and changes to travel and access may also occur during construction. There are 18 PRoWs crossed by the pipeline (one of which also routes through a trenchless crossing area) and one PRoW that runs along the edge just inside of the Draft Order Limits (see **Appendix 11C: Outline Public Rights of Way Management Plan** for further details). Within 500m of the Draft Order Limits, there is one PRoW which runs alongside, but not within, the Draft Order Limits at Partington, which is anticipated to be re-routed as per the measures set out in the Outline PRoWMP. The effect on People and Communities is temporary severance over an anticipated construction period of a number of weeks. The Outline PRoWMP details how PRoWs will be dealt with and outlines the embedded environmental measures put in place, resulting in no significant effects on these PRoWs.
- 15.9.54 Cheshire Cycleway is located within the Draft Order Limits that runs between Sworton Heath BVI and Warburton HAGI, as well as within 500m of the Draft Order Limits that runs between Warburton HAGI and Partington. All the National Cycle Network routes would remain open for the duration of the Project construction and operation phases and traffic management would be put in place to allow for the continued use of the routes for sustainable modes, where this does not compromise safety. This will be managed with signage, active management or traffic signal control.

15.9.55 Pending confirmation in the Final ES, the construction works may lead to temporary disruption with a low magnitude of change and effects assessed as **moderate adverse (potentially significant)** in the following localised areas, where built infrastructure is linked to the wider transport network:

- Red Lane is proposed to be crossed by the pipeline using the open cut method with a construction access point (EH-04) also located off Tarporley Road. This will result in temporary severance of access to several buildings on Red Lane. Due to the width of the Lane, temporary single lane traffic measures are not feasible;
- on the approach to the open cut crossing of Arley Road, the pipeline appears to cross a private track leading to buildings/properties and a business off Arley Road. The pipeline then continues to be installed using the open cut method across Arley Road and across fields to the north of Arley Road. These fields appear to contain paddocks, with planning permission approved for a new stable block, yard area and manege, proposed barn for storage of fodder, secure housing of tractor, farm machinery and area for sheep.
- the pipeline crosses Beechtree Farm Close located to the west of West Lane, using the open cut method. This will result in the severance of buildings/property at the end of Beechtree Farm Close; and
- the Draft Order Limits cross the access to Brookhouse Lane off Tarporley Road with the potential for severance to properties/buildings at the end of Brookhouse Lane. The Draft Order Limits also cross access to properties/buildings on Marsh Lane. It is anticipated that these areas, the Draft Order Limits will be used for temporary construction works, such as access, and that traffic measures will be implemented as outlined in the Draft Outline CTMP.

15.9.56 **Chapter 11: Traffic and Transport** concludes that there would be no significant transport environmental effects (severance; driver delay; non-motorised user Amenity; Non-motorised user Delay and Fear and Intimidation; and Accidents and Safety) at the A559 between M56 J1- and Stockley Lane (Highways Link RE2), the A56 between M56 J7 and Bow Green Road (RE7), and the A6114 Southern Partington (RE11). At Arley Road between the B5356 and Reedgate Lane, residual severance effects are considered not significant with additional measures. Between Isherwood Road and Banky Lane (RE10), the residual non-motorised User Amenity, Non-motorised User Delay and Fear and Intimidation effect is not significant following implementation of additional mitigation measures.

East Corridor - impacts on business

15.9.57 There are a few businesses located within the Draft Order Limits and the 500m Study Area for the East Corridor and most will remain largely unaffected by the Project. Exceptions to this include:

- businesses at Partington off Manchester Road, north and east of Partington HAGI will be temporarily adversely affected;
- a dog grooming business off Arley Road will be temporarily adversely affected due to severance of access to the business;

- a dog paddock business in Lower Whitley;
- Matchington Farm Livery Stables where existing subdivision of land is part of stock management and this may restrict mitigation by temporary reallocation of land;
- High Legh Riding Centre off Moss Lane may be temporarily adversely affected due to a construction access point located close to its access on Moss Lane where direct effects of noise and vibration and indirect effects on people and communities will be assessed in the Final ES;

Lymm Riding School, where a trenchless crossing is proposed to take place off Spring Lane and Spring Lane is then open cut to the north of Lymm Riding School where direct effects of noise and vibration and indirect effects on people and communities will be assessed in the Final ES.; and

- the pipeline runs parallel to Caldwell's Gate Lane and open cuts an unnamed/private track where Caldwell's Gate Lane branches left before meeting Reedgate Lane. This has the potential to result in temporary severance to buildings between on the unnamed/private track between Caldwell's Gate Lane and Back Lane.

South Corridor

15.9.58 **Chapter 2: The Project** outlines the development proposals for the South Corridor (**Section 2.4**). The South Corridor of the Draft Order Limits (**Figure 2.2**, Sheet 8, and 31 to 38) would start at the Central Hub HAGI with the pipeline running approximately 17.9km south to the Hydrogen Storage Facility (HSF). Construction activities have the potential to result in visual, land use, noise/ vibration, air quality, and transport/traffic effects.

15.9.59 The visual assessment concludes there to be significant visual effects on settlements, recreational users of walking and cycling routes, and recreational canal and river users at a number of locations on the South Corridor, due to construction. Residents in the hamlet of Dones Green are anticipated to experience significant to no visual effects from construction activities, including the temporary trenchless crossing compounds, a large material storage area and the Central Hub HAGI under construction with associated construction compound. Residents in localised parts of Hartford, Bartington, Gorstage, Bryn, Cuddington and Bostock Green would also experience significant visual effects. Residents in localised parts of Acton Bridge, Davenham and Moulton would also experience significant visual effects due to construction activities. Cyclists would experience significant visual effects at some sections of the NCR 5 route, and users of RCR 70 would experience significant visual effects on a section of the route. Users of the Trent and Mersey Canal Walk where it coincides with the Cheshire Ring Canal Walk at Bartington will experience significant visual effects for a section of the route. Recreational receptors navigating a section of the River Weaver to the south of Bartington will experience significant visual effects and recreational receptors navigating the Trent and Mersey Canal will experience significant visual effects at a few locations (see **Chapter 14: Land Use** for details).

- 15.9.60 Effects of severance of communities and changes to travel and access may also occur. There are 16 PRoW crossed by the pipeline, two PRoW with a small section within Draft Order Limits and three PRoW that follow access tracks to the pipeline (with two of these PRoW also crossing the pipeline). The effect on People and Communities is temporary severance over an anticipated construction period of a number of weeks. The 'Aston Ring' bridleway is located along the River Weaver and Weaver Navigation, to the east side of the A49 and starting at Acton Bridge. The Outline PRoWMP details how PRoWs will be dealt with and outlines the embedded environmental measures put in place, which includes those suggested by the Mid-Cheshire Bridleway Association and British Horse Society. Within 500m of the Draft Order Limits, but not within the Draft Order Limits, there are five PRoWs which may experience a small increase in traffic nearby but no effect on access or use is identified, and therefore no significant effects are identified on these five PRoWs.
- 15.9.61 Cheshire Cycleway is crossed by the pipeline to the south of Acton Bridge. All the National Cycle Network routes would remain open for the duration of the Project construction and operation phases and traffic management would be put in place to allow for the continued use of the routes for sustainable modes, where this does not compromise safety. This will be managed with signage, active management or traffic signal control.
- 15.9.62 Pending confirmation in the Final ES, the construction works may lead to temporary disruption with a low magnitude of change and effects assessed as **moderate adverse (potentially significant)** in the following localised areas, where built infrastructure is linked to the wider transport network:
- an unnamed/private track to the west of Eaton Lane and located to the south west of the proposed trenchless crossing of the River Weaver near Vale Royal Locks. The CTMP includes low levels of HGV traffic (only for the delivery and retrieval of drilling equipment) but may result in some disruption of access to a property and Eaton Hall Farm and Caravan Touring site and is under consideration;
 - Niddries Lane, located in the west of Moulton with temporary severance occurring to one property located close to the West Coast Main Line;
 - Niddries Lane to the east of Vale Royal River Park. The **Chapter 14: Land Use** finds no significant effect on Vale Royal River Park, with no significant noise effects and it would be screened from construction activities so no visual impacts will occur. However, the open cutting of Niddries Lane would result in temporary accessibility restrictions to Vale Royal River Park; and
 - Jack Lane, located to the south east of Moulton, is proposed to be open cut, with temporary severance occurring to a business and buildings at the south of Jack Lane. Jack Lane would also have light construction access at the same entry point used for the business. Depending on the duration that access is required, there may be a potentially significant effect.
- 15.9.63 The caravan sites at Weavertdale and Bartington (both at Bartington) are residential caravan sites. Access to these caravan sites from Warrington Road maybe temporarily adversely affected as Warrington Road is included within the

Draft Order Limits with construction access points off Warrington Road either side of the Trent and Mersey Canal.

15.9.64 The **Chapter 14: Land Use** concludes that the golf course at Sandiway Golf Club will experience effects that are negligible to minor adverse depending on the cost of external sand supply (see the **Chapter 14: Land Use** for further details). No significant effect on Vale Royal Falconry Centre was concluded, as the Draft Order Limits have been amended to consider the fields they use for displays.

15.9.65 **Chapter 11: Traffic and Transport** concludes no significant transport environmental effects (severance; driver delay; non-motorised user Amenity; Non-motorised user Delay and Fear and Intimidation; and Accidents and Safety) at the highway links on the South Corridor.

South Corridor - impacts on business

15.9.66 There are a large number of businesses located within the 500m Study Area for the South Corridor and most will remain largely unaffected by the Project. Exceptions to this include:

- access to a business on Station Road, to the east of the A49, will be temporarily adversely affected and is included within the Draft Order Limits;
- access to businesses will be temporarily adversely affected on Bartington Hall Lane with a construction access point located where Bartington Hall Lane meets Warrington Road;
- access to Cheshire Farm Machinery Ltd by Grange Lane will require mitigation measures appropriate vehicle movements as identified in the CTMP and may be temporarily adversely affected;
- access to and operations at Cemex Forest Hill Quarry will be temporarily adversely affected, with the pipeline running through the quarry and access road shared with construction access but stakeholder engagement confirms that the pipeline route and programme can be developed to avoid any currently operational or planned future extraction works; and
- at Bostock Green there is the potential for the farming practices used to be affected by temporary land take.

15.9.67 Pending confirmation in the Final ES, the construction works may lead to temporary disruption in the following localised areas (where the Draft Order Limits with access points cross the existing road access to agricultural land):

- at Whatcroft Hall Lane there are two access points (SH-35 and SH-36), with SH-35 located at the end of the highway;
- at Whitegate Lane there are two access points (SH-22 and SH-23), with the Draft Order Limits crossing access to agricultural buildings with no other route to the buildings identified;
- at Grange Lane there is an access point (SH-09) with the Draft Order Limits running along Grange Lane where a farm is located; and

- at Eaton Lane there is an access point (SH-21) with the Draft Order Limits running along Eaton Lane where farm buildings are located.

Landowners and developers; local authorities with statutory responsibility for planning

- 15.9.68 The majority of the Project is located on Green Belt land, which would remain as Green Belt because the majority of the infrastructure is below ground. The HAGIs are the only elements above ground and require a permanent change to existing land use (although the land may still be identified as Green Belt).
- 15.9.69 Green Belt land is protected and so locations within it are rarely intended for significant development under local authority or private developer plans. As such, the potential effects on statutory planning authorities and developers are more likely where development has been proposed outside the Green Belt.
- 15.9.70 A number of potential developments that lie within 500m of the pipeline are known to the Applicant and are considered below for potential effects as a supplement to the wider consideration of specific planning applications identified in the Assessment of Cumulative (inter-project) effects (See **Section 15.10**).
- 15.9.71 The main planning allocation crossed by the Project is that for New Carrington (Trafford Council). The pipeline will however follow an existing utilities corridor between land parcels within the proposed development. The temporary effects of constructing the pipeline will be unlikely to affect development in these land parcels.
- 15.9.72 Construction access for the Project would also be taken through land allocated in the Warrington Local Plan as Warrington Waterfront (Policy MD1 - Warrington Waterfront) and the safeguarded waste management site at Ince Park in the Cheshire West and Chester Local Plan (Policy ENV 8 - Managing Waste). In the case of the former, the commitment to communications which is made within the CEMP would allow that construction of the Project in this location would be notified to the relevant local planning authority and interested parties (including local communities) in advance. Construction access would also use existing routes. In the case of Ince Park, the construction route has been designed to be consistent with development plans for this land parcel.

West Corridor

- 15.9.73 There are a number of areas of development land proposed within the 500m Study Area, some within the Green Belt. Some of these are small in scale and/or have minor temporal overlap with the Project and no expectation of other issues. Exceptions to this are the following proposals known to the Project, as of July 2024, many of which have yet to be determined/consented:
- Various developments proposed at Stanlow, with some crossing the Draft Order Limits;
 - an unauthorised change of use of land to use as a gypsy caravan site to the north of Moorditch Lane, partially within the Draft Order Limits;
 - Development of new clubhouse and boat and canoe storage at Runcorn Rowing Club on Cholmondeley Road, partially within the Draft Order Limits;

- Proposed installation of 100MW battery storage and associated infrastructure, as well as the proposed installation of a 135kV substation ancillary on Cholmondeley Road, in close proximity to the Draft Order Limits;
- Proposed filling station with ancillary convenience store north of Weaver View and in close proximity to the Draft Order Limits;
- Proposed erection of new MQC (Management Quality Control) & IQC (Internal Quality Control) laboratory building including offices and WCs at Rocksavage; and
- Erection of an agricultural building to the north of Northwich Road at Central Hub HAGI located in the same field as the Draft Order Limits and pipeline.

North Corridor

15.9.74 There are a considerable number of areas of development land within the 500m Study Area, some within the Green Belt. These are either small in scale and/or have minor temporal overlap with the Project and no expectation of other issues as of July 2024.

East Corridor

15.9.75 There are a considerable number of areas of development land within the 500m Study Area, some within Green Belt. Most are small in scale and/or minor temporal overlap with the Project and no expectation of other issues. Exceptions to this are the following proposals known to the Project as of July 2024:

- Located off Arley Road and intersecting the Project Limits of Deviation, a proposed barn for storage of fodder, secure housing of tractor, farm machinery and implements and area for sheep; provision of a new stable block, associated yard area and manege and erection of one barn;
- Erection of a forestry building partially within the Draft Order Limits to the south of Marsh Lane, east of Central Hub HAGI; and
- A number of proposed developments in Partington, including 600 new homes on Heath Farm Lane to the south of Partington Gas Works (relating to the allocation discussed in the introduction to the section), as well as construction in and around Partington Gas Works, such as Voltage Park.

South Corridor

15.9.76 There are a considerable number of areas of development land within the 500m Study Area, some within the Green Belt. Most are small in scale and/or have minor temporal overlap with the Project and no expectation of other issues. Exceptions to this are the following proposals known to the Project as of July 2024:

- Provision of a 20m x 40m equestrian riding area within the pipeline Limits of Deviation at land to the east of Weaverham Road, south of Hodge Lane;
- Erection of a barn to store equipment and feed and enable the land to be used for livestock, located on land to the south of Millington Lane where it meets the

A49 from the east. The land for development partially overlaps with the Draft Order Limits along Millington Lane;

- The rebuilding of an existing 11kw overhead line to the south of Chester Road which intersects the pipeline Limits of Deviation; and
- Hazardous Substances Consent for the presence by means of storage, compression and treatment of hydrogen gas, a hazardous substance, on, over or under land off King Street, Byley, Cheshire. This development land is partially within the Draft Order Limits at the Hydrogen Storage Facility HAGI and the storage would be used the hydrogen transported by this Project.

15.9.77 The sensitivity of receptors is assessed as medium. Construction effects will be temporary and short-term in any single location and the Applicant will communicate and where appropriate manage activities with other developers at the request of the relevant local planning authority consistent with the Outline CEMP and Outline CTMP.

15.9.78 The magnitude of effects of the Project related to developments above are considered negligible as regards employment, supply chains and the economy. The magnitude of severance and indirect effects are expected to be low, with an overall conclusion of **a minor adverse effect (not significant)** which will be confirmed in the Final ES.

Operational phase

General public and businesses potentially disrupted by operational effects

15.9.79 The Project will install equipment for operation and maintenance of the network with the majority placed within the HAGI compounds. The machinery will continue to deliver the Project throughout the operational period and may affect particular receptors according to the nature of effects. Noise at the HAGIs will be controlled to not exceed a maximum prescribed level and effects will be confirmed in the Final ES. On a precautionary basis and until the operational noise levels are confirmed, the effects could be **moderate adverse (potentially significant)**.

People and communities affected by project activities with temporary effects on use of land

15.9.80 The Project will restore all land after the temporary construction activities related to installation of pipeline infrastructure, construction compounds and material storage locations. For example, Morley Common will return to full use as a sports field. Permanent land take for HAGIs is considered below. The need to temporarily access the pipeline for repair or maintenance in areas that have been restored is expected to be rare and to lead to a very low level of potential effect which is **minor adverse (not significant)**.

Customers and producers of hydrogen

15.9.81 The Project provides the network essential for enabling hydrogen producers to supply hydrogen customers. A hydrogen network is required as part of the HyNet North West programme and alternatives, such as distribution of hydrogen using road transport would be very different in safety, design and level of costs. The

effects of the Project are to make the overall HyNet North West programme feasible and contribute to the body of skills and experience that will enable the sector to develop. The sensitivity of customers is high as hydrogen is key to decarbonisation and the magnitude of change is also high leading to a **major beneficial (significant)** effect.

Landowners and developers; local authorities with statutory responsibility for planning

15.9.82 Effects during operation are of a similar type to those during construction though permanent rather than short-term and temporary. The pipeline is buried in a corridor that is appreciably narrower than that required for construction and the permanent land take for HAGIs and BVIs will also be smaller than that required for their construction. Land used as construction compounds and material storage areas will have been reinstated. Operational corridors are predominantly in the Green Belt and so rarely in areas intended for significant local authority or private sector development. Where it does pass through such areas, which include New Carrington, the pipeline is within existing utility corridors and in places mitigation will be provided for its additional protection. Overall, the receptor sensitivity is considered medium while the magnitude of effects is low and assessed as **minor adverse (not significant)**.

General public - concern with hydrogen

15.9.83 In an international survey of public attitudes⁴⁴, UK research^{45,46} is quoted as noting that the level of knowledge about energy derived from hydrogen is low but, regardless of education and socio-economic background, people are eager to learn more (assumed to be reflective of their concerns with fossil fuels). Respondents were considered to be indifferent to the concept of hydrogen energy. Generally, opinions towards hydrogen were favourable noting that price and safety should not be compromised. While a very low proportion of surveyed cases, older members of society were more concerned over hydrogen production, and women were more accepting of hydrogen energy subject to safety and cost.

15.9.84 The concerns of the general public regarding hydrogen in the near locality will be identified and addressed through targeted communications commencing before construction and operation. This will include the use of a public-facing website providing a source of information to increase knowledge and awareness⁴⁷.

Chapter 16: Major Accidents and Disasters also provides consideration of risks arising from the Project. Of the number of consultation respondents, approximately

⁴⁴ Ingaldi, M; Klimecka-Tatar, D. People's Attitude to Energy from Hydrogen—From the Point of View of Modern Energy Technologies and Social Responsibility, Faculty of Management, Czestochowa University of Technology, December 2020.

⁴⁵ Ricci, M.; Flynn, R.; Bellaby, P. (Eds.) Public Attitudes towards Hydrogen Energy: Preliminary Analysis of Findings from Focus Groups in London, Teesside and Wales; Report for UK Sustainable Hydrogen Consortium; ISCPR: Ann Arbor, MI, USA; University of Salford: Salford, UK, 2006.

⁴⁶ Cherryman, S.J.; King, S.; Hawkes, F.R.; Dinsdale, R.; Hawkes, D.L. An exploratory study of public opinions on the use of hydrogen energy in Wales. Public Underst Sci. 2008, 17, 397–410.

⁴⁷

5% made comments noting a safety concern in relation to hydrogen. Additional levels of concern are considered likely to be rare and if required the Applicant will respond to cases as they arise during construction and operation. The Project has committed to working with health professionals as required to provide information to those with substantial concerns but in recognition of comments to date has assumed that effects would be **moderate adverse (potentially significant)**.

15.9.85 The opinion and concerns of the general public are likely to be affected by their operational experience of the Project. It should be noted that hydrogen infrastructure including pipeline networks is already established at a site in Runcorn⁴⁸. A record of safe and reliable hydrogen performance is likely to contribute to positive attitudes. Increased familiarity and acceptance may lead to corresponding concerns over limits to network capacity and access for additional hydrogen producers and customers.

Decommissioning phase

15.9.86 The decommissioning phase will require removing the hydrogen from the pipeline and associated equipment while leaving the pipeline in situ so as to reduce potential environmental effects. Decommissioning will otherwise be the reverse of the construction sequence with activities along the same corridors and involving the application of similar construction plant and methods. In addition, a Decommissioning Plan will ensure that activities meet relevant statutory requirements, reflect commitments to landowners/statutory authorities and take account of any developed technology and good practice. The impacts on people and communities are likely to be similar to those in the construction phase but of a lesser magnitude.

15.10 Assessment of Cumulative (Inter-Project) Effects

15.10.1 A Cumulative Effects Assessment (CEA) for the Project considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects is set out in **Chapter 3: Approach to preparing the Draft Environmental Statement**.

15.10.2 A short list of 'other developments' that may interact with the Project Zone of Influence (Zols) during their construction, operation or decommissioning, so as to lead to a cumulative landscape or visual effect, is presented in **Appendix 3A: Cumulative effects assessment: long list and short list** and on **Figure 3A.1**. This list has been generated applying criteria set out in **Chapter 3: Approach to preparing the Draft ES**.

15.10.3 Only those 'other developments' in the shortlist that fall within the people and communities CEA impact Zol (2km) have the potential to result in cumulative effects with the Project on people and communities. All 'other developments' falling outside the people and communities Zol are excluded from consideration.

⁴⁸ Inovyn currently operate a 3km hydrogen pipeline in the area.

15.10.4 A tiered approach to the CEA has been set out in **Table 3.8** in **Chapter 3: Approach to preparing the Draft ES** and can be summarised as follows:

- Tier 1: Developments under construction, permitted and submitted applications where the project is classified as ‘major development’;
- Tier 2: Other developments on the Planning Inspectorate’s Programme of Projects, and/or the relevant local planning authorities planning portal where the project is classified as ‘major’ development’ and a scoping report has been submitted.
- Tier 3: Other developments on the Planning Inspectorate’s Programme of Projects, and/or the subject of pre-application discussion with a relevant LPA, where a scoping report has not been submitted. Tier 3 also includes other developments registered on the local planning authority’s portal classed as major development, but do not require EIA or identified in the relevant Development Plan, recognising that much information on any relevant proposals will be limited.

15.10.5 On the basis of the above, the following specific other developments contained within the short list in **Appendix 3A** are considered in this CEA and presented in **Table 15.20** where they are located within the people and communities CEA impact ZoI (2km).

Table 15.20 Developments considered as part of the people and communities CEA

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
Highways New Link road	Proposed Warrington Western Link	2019/36100	Pre-application: Scoping Opinion issued	Within Draft Order Limits	33
Minerals Extension to quarry	Northern extension to the quarry Forest Hill Quarry	19/02452/MIN	Approved	Within Draft Order Limits	8
Residential 294 dwellings and associated infrastructure	Linkway Distribution Park, Sherdley Road	P/2018/0060/FUL P/2021/0405/RES	Approved Construction commenced	Adjacent to Draft Order Limits	20
Residential 151 dwellings and associated infrastructure	Land Off Hall Lane Partington	100109/FUL/20	Approved	Approximately 600m	10
Utilities infrastructure New build carbon dioxide (CO2) pipeline	Hynet CO2 Pipeline DCO	PINS Reference: EN070007	Approved	Within Draft Order Limits	14
Utilities infrastructure	Hynet Hydrogen Production Plant	21/04091/FUL	Approved	Within Draft Order Limits	15

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
Hydrogen production plant					
Energy generation (solar)	Frodsham Solar Project	PINS Reference: EN010153	Pre-application: Scoping Opinion issued	Within Draft Order Limits	9
Solar photovoltaic array					
Mixed-use Up to 320 dwellings; employment (Use Classes B1/B2/B8 including open storage); and retail/health (Use Classes A1/D1.	Carrington Village	113942/EIASCO/24	Pre-application: Scoping Report submitted	Approximately 430m	2
Employment Employment units within Class B8, with ancillary offices.	Voltage Park, Carrington	112794/FUL/24	Awaiting decision	Within Draft Order Limits	31
Highways New link road.	Carrington Relief Road	113549/EIASCO/24	Pre-application: Scoping Report submitted	Within Draft Order Limits	1
Mixed-use	The Heath Business and Technical Park	22/00569/OUT	Awaiting decision	Approximately 800m	12

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
Up to 545 dwellings, E use classes, F2 use classes and a hotel and associated infrastructure.					
Utilities infrastructure	Land to the South East of Stanlow Manufacturing Complex	23/03369/FUL	Awaiting decision	Within Draft Order Limits	30
Natural gas pipeline with ancillary above-ground infrastructure.					
Infrastructure	Land At Protos (Ince Resource Recovery Park)	24/00261/FUL	Awaiting decision	Within Draft Order Limits	24
Carbon Dioxide (CO2) Capture Facility.					
Warehouse	Enric Automated Warehouse	22/03693/FUL	Awaiting decision	Within Draft Order Limits	6
Automated warehouse (Use Class B2/B8), ancillary office space, an automated link between the automated warehouse and existing facility, a driver welfare building, HGV marshalling yard,					

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
security building and other associated works.					
Waste management	Plots 9b, 10a, 11 and 12 Protos	21/04076/FUL	Approved	Within Draft Order Limits	25
Materials Recycling Facility (MRF), two Plastics Recycling Facilities (PRFs), a Polymer Laminate Recycling Facility (PLRF) and a Hydrogen Refuelling Station					
Employment	Fiddlers Ferry Employment Land Phase 1	2023/00392/EA	Awaiting decision	Approximately 160m	7
Units for general industrial (Use Class B2) and/or storage or distribution (Use Class B8), together with ancillary offices.					
Mixed use	Warrington – Policy MD3 Fiddlers Ferry	SJ 54299 86058	2023/00392/EA (Fiddlers Ferry Employment Land Phase 1) application has been submitted	Approximately 160m	7
Land at the former Fiddlers Ferry Power Station site will be allocated to deliver a					

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
mixed-use development comprising approximately 101ha of employment land and a minimum of 860 new homes in the Plan period.			and is awaiting a decision		
Mixed use	Daresbury Park	20/00337/OUTEIA	Approved	Approximately 2km	5
Residential (Use Class C3), employment (Use Class B1) and local centre uses (Use Class A1-A4/D1) and associated infrastructure, landscaping and land remodelling.					
Demolition of existing buildings and outline planning permission with all matters reserved for up to 1,100 dwellings and up to 3,925sqm of mixed use floorspace providing for flexible use within Use	Land at Cowley Hill	P/2020/0083/OUEIA	Decided	Approximately 2km	4

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
Classes A1, A2, A3, A4, B1, C1, D1 and D2 with associated landscaping and infrastructure.					
Residential 514 dwellings with associated access and infrastructure works	Land At Gartons Lane, St Helens	P/2023/0075/FUL	Awaiting decision	Approximately 500m	17
Flood Risk Management Scheme Screening opinion for the proposed Sankey Brook Flood Risk Management Scheme	Sankey Brook Flood Risk Management Scheme	2024/00805/SCR	Awaiting decision	Approximately 800m	35
Employment Over the 18 year Plan period from 2021/22 to 2038/39 provision will be made to meet the need for 168 hectares of employment land to support both local and	Warrington – Policy DEV4 Includes land at Fiddler’s Ferry, and the existing Centre Park, and off Thelwall Lane.	Several locations	2023/00392/EA application has been submitted and is awaiting a decision at Fiddlers Ferry	Approximately 300m	32

Development type	Development name	Application reference	Status	Distance to the Project (m)	Figure Reference
wider strategic employment needs.					
Mixed use	St Helens Town Centre Development	P/2022/0212/HYBR	Approved	Approximately 420m	28
Up to 423 residential units, C1 Class uses, C3 Class uses, E(a-g) Class uses, F1(b-e) and F2(b) classes and Sui Generis uses and associated infrastructure.					

15.10.6 The potential cumulative effects arising from the developments listed in **Table 15.20** together with the Project are:

- **Employment and supply chain requirements** - these are considered not of a magnitude that would lead to significant cumulative effects, given the level of employment potentially generated by the projects and the level/nature of products and services required by the Project.
- **Potential severance** for people travelling and using local areas; Project construction and operational schedules will be communicated as appropriate in advance so that potential severance is avoided and that there is minimal disruption to communities. The Applicant has prepared Outline CEMP and CTMP and will submit final versions of these documents to the relevant local authorities for consideration prior to the commencement of development. Should the authorities identify other developments which are likely to be in construction or operation during the time that the Project is constructed any specific measures suggested by that authority can be included within these plans.
- **Indirect effects of noise and vibration, air quality and visual impacts** - Project construction and operational schedules will be communicated as appropriate in advance to avoid cumulative effects such as multiple sources of vibration affecting sensitive receptors (for example veterinary practices). As above the Final CEMP and CTMP will include measures to minimise effects arising from the Project upon land uses with the potential to be affected.

15.10.7 Overall, the magnitude of potential combined effects is assessed as very low and with the assumption that receptor sensitivity is conservatively assessed as high, results in effects which are minor (not significant).

15.11 In-Combination Climate Change Impact (ICCI) Assessment

15.11.1 The impact of future climate change has been considered throughout the assessment and in-combination climate change impacts (ICCI) have been identified. The ICCI assessment is reported in **Chapter 19: Intra-project effects**.

15.11.2 Climate change trends identified within **Chapter 18: Climate change – Climate change resilience** could lead to people and communities experiencing climate anxiety and additional stress. The operational effects of the Project on people and communities are assessed as being not significant and any additional stress from climate change and extreme weather is unlikely to exacerbate any effects.

15.12 Significance Conclusions

15.12.1 A summary of the results of the people and communities assessment is provided in **Table 15.21**.

15.12.2 Note that elements of the assessment identified with (*) depend on data which is not yet available and will be confirmed in the Final ES.

Table 15.21 Summary of significance of effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA ⁴ and Chapter section reference
Construction Phase					
People and communities travelling and experiencing areas within Project area and People and communities with needs to access particular land and amenities	High	Low(*)	Moderate adverse (potentially significant)(*)	People are generally sensitive to disruption on transport networks and project activities are widespread across the area, however awareness of this and avoidance is embedded in the engineering approaches adopted. If severance, noise and vibration effects are confirmed as not significant in the Final ES then the significance of these effects on people and communities is expected to be confirmed also as not significant. Temporary use and reinstatement of agricultural land leads to adverse effects which are moderate.	All Section 15.9
Employment markets	Medium	Low (*)	Minor adverse (not significant) (*)	Employment markets are large, but unemployment is low leading to a combined sensitivity assessed as medium. The level of project demand for construction workers is low in comparison to references for magnitudes of change though depends on skills.	

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA ⁴ and Chapter section reference
Potential workers	Medium	Low	Minor beneficial (not significant)	In current and forecast market conditions, workers are expected to have a range of employment options as well as the Project and so have a sensitivity assessed as medium. While the Project demand for construction workers is low in comparison to references for magnitudes of change.	
Materials, equipment and services markets	Low	Medium(*)	Minor adverse (not significant)(*)	Where there are relevant markets in the North West and northern UK, they are large and serve many customers but demand for some Project elements (such as pipe) may affect market capacity for other buyers. If magnitudes do not disturb existing market supply, then the significance of these adverse effects on people and communities is expected to be confirmed also as not significant. Larger national and international markets are not expected to experience such effects.	
Potential suppliers, including local business, equipment and	Medium	Low(*)	Minor beneficial (not significant) (*)	Suppliers providing the Project with large orders may result in appreciable beneficial effects concentrated for individual firms, sectors or locations.	

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA ⁴ and Chapter section reference
material manufacturers					
Landowners and developers; local authorities with statutory responsibility for planning	Medium	Low(*)	Minor adverse (not significant)(*)	The majority of the network is planned to be implemented on Green Belt land, which would remain as Green Belt, and only rarely would be expected to experience a change in use under local authority or private developer plans. Permanent land areas for HAGIs are relatively small and project requirements are considered possible to coordinate with known potential developments.	
The economy	Low	Medium(*)	Minor beneficial (not significant)(*)	The Project its supply chain will increase economic activity and value added (GVA).	
Commercial markets for hydrogen infrastructure development nationally and internationally	High	Low	Moderate beneficial (potentially significant)	The international market for hydrogen infrastructure is growing rapidly. The experience of the Project contributes towards future capability in supply but does not establish a major new supplying organisation.	
Operational Phase					

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA ⁴ and Chapter section reference
General public and businesses potentially disrupted by operational effects	High	Low(*)	Moderate adverse (potentially significant)(*)	People are generally sensitive to operational effects according to their type. If noise and vibration effects are confirmed as not significant in the Final ES then the significance of these effects on people and communities is expected to be confirmed also as not significant.	All Section 15.9
People and communities affected by project activities with temporary effects on use of land	High	Very Low	Minor adverse (not significant)	Effects on the use of land, such as the needs for pipeline maintenance are expected to be rare and short term.	
Customers and producers of hydrogen	High	High	Major beneficial (significant)	The distribution network provided by the Project is key for customers in the North West, seeking to conduct decarbonised business activities through use of hydrogen and for their suppliers.	
Landowners and developers; local authorities with statutory	Medium	Low(*)	Minor adverse (not significant)	The majority of the network is planned to be implemented on Green Belt land, which would remain as Green Belt, and only rarely would be expected to experience a change in use under local authority or private	

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA ⁴ and Chapter section reference
responsibility for planning.				developer plans. Permanent land areas for HAGIs are relatively small and project requirements are considered possible to coordinate with known potential developments.	
General public - concern with hydrogen	Medium	Medium	Moderate adverse (potentially significant)	Opinions of hydrogen are generally favourable while noting a need for safety, which is also reflected in consultation responses.	
Decommissioning Phase					
Impacts arising from decommissioning are expected to be similar to those for construction but of a lesser magnitude. No significant effects are anticipated.					

(*) The assessment of the significance of effects will be confirmed in the Final ES.

1. The sensitivity/importance/value of a receptor is defined using the criteria set out in **Section 15.815.9** and is defined as [very low, low, medium, and high].
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 15.815.9** and is defined as [very low, low, medium, and high].
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 (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 15.815.9**.
4. Local Planning Authority: Cheshire West and Chester Council (CWACC); Cheshire East Council (CEC); Halton Borough Council (HBC); Warrington Borough Council (WBC); St. Helens Borough Council (SHBC); Trafford Council (TC).

Notes: (*) The assessment of effects is pending further assessment in the Final ES, particularly regarding individual locations.

15.13 Next Steps

15.13.1 The assessment will be updated in the Final ES to incorporate the further information on noise and vibration, economic employment and GVA.

15.13.2 The people and communities assessment will continue to be refined as the Project details are finalised for the Final ES.

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