



# **Frodsham Solar**

## **Environmental Statement: Volume 1**

### **Chapter 13: Cumulative and In-Combination Effects**

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## 13.0 CUMULATIVE AND IN-COMBINATION EFFECTS

### 13.1 Introduction

13.1.1 This chapter of the Environmental Statement (ES) provides an assessment of the likely cumulative and in-combination significant effects which could result from the Proposed Development. For a detailed description of the Proposed Development, refer to **ES Volume 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]**.

13.1.2 The effects assessment within this chapter typically fall within two distinct categories, comprising:

- i) Cumulative inter-project effects – effects arising from the residual (post-mitigation) environmental effects of the Proposed Development combining and interacting with the residual environmental effects of one or more other committed developments within the zone of influence for the various technical topics assessed in the ES. **Chapters 5 to 12** of this ES assess where there are inter-cumulative effects, and a summary is provided in this chapter.
- ii) In-combination intra-project effects – are those arising from the interaction and combination of different residual environmental effects of the Proposed Development affecting a single receptor. Individually the effects may not be significant, but the accumulation of effects may, collectively, give rise to a significant overall effect. The assessment of intra-project effects is undertaken within this chapter with reference to the findings from **Chapters 5 to 12** of this ES.

13.1.3 **ES Volume 1 Chapter 4: Methodology [EN010153/DR/6.1]** sets out the legislation policy and guidance relevant to cumulative effects assessment. Table 4-3 and 4-4 provide details of consultation responses received as part of the EIA Scoping Opinion and the PEIR consultation, respectively, along

with actions taken by the Application in response to comments received. As such these are not repeated in this chapter.

## 13.2 Assessment Methodology

13.2.1 There is currently no universally recognised method or best practice for assessing cumulative effects. However, several guidance documents exist, including PINS Advice on CEA<sup>i</sup>, which has informed the approach taken to the cumulative and in-combination assessment.

### *Cumulative Inter-Project Effects*

13.2.1.1 A detailed description of the assessment methodology used for the cumulative inter-project effects assessment, which has been undertaken and reported within each technical chapter, is described in Section 6 of **ES Volume 1 Chapter 4: Methodology [EN010153/DR/6.1]**.

13.2.1.2 In summary, the assessment is based upon the methodology set out in the PINS Advice on CEA<sup>i</sup> which involves a four-stage approach as follows:

- i) **Stage 1** - Establish a Zone of Influence (ZOI) for the environmental topics scoped into the EIA and use this to identify a long list of 'other development' projects which have the potential to give rise to significant cumulative effects.
- ii) **Stage 2** – Consider whether the 'other development' identified in the long list has the potential to cause significant cumulative effects due to overlap in temporal scope or scale and nature of the development.
- iii) **Stage 3** - Gather available information on shortlisted 'other projects'.
- iv) **Stage 4** - Assess each shortlisted 'other project' to determine the likelihood of significant cumulative effects arising.

13.2.2 The long list of cumulative 'other development' is set out within **ES Vol 2 Appendix 4-4: Long List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]**. The geographical location of the long list is shown on **ES Vol 3 Figure 4-1: Long List and Short List Cumulative Schemes –**

**10km [EN010153/DR/6.3]** (showing the full 10km search area) and **ES Vol 3 Figure 4-2: Long List and Short List Cumulative Schemes – 1km [EN010153/DR/6.3]** (showing schemes within 1km).

- 13.2.3 The developments identified for shortlisting are listed in **ES Vol 2 Appendix 4-5: Short List of other ‘reasonably foreseeable’ developments [EN010153/DR/6.2]** and are illustrated on **ES Vol 3 Figure 4-3: Short List Cumulative Schemes – 1km [EN010153/DR/6.3]**.

#### *In-combination Intra-Project Effects*

- 13.2.4 The primary purpose of the EIA (as reported in the ES) is to identify whether the Proposed Development has the potential to give rise to significant environmental effects (adverse or beneficial) during the construction, operation and decommissioning phases. However, in going through that process, the ES will also identify other beneficial or adverse effects that are not significant in EIA terms. The assessment of intra project effects is concerned with the scenario where two or more of these less than significant effects on a single receptor or receptor group interact to produce a significant overall effect.
- 13.2.5 Consideration of intra project effects is an inherent part of the EIA assessment process for many ES topics. Some of the chapters within the ES have already addressed interactions between different types of impact relating to specified environmental resources and receptors, as follows.
- 13.2.6 **ES Vol 1 Chapter 5: Climate Change [EN010153/DR/6.1]** includes an In-Combination Climate Change Impact (ICCI) Assessment at **ES Vol 2 Appendix 5-4 [EN010153/DR/6.2]**. This considers the extent to which climate change exacerbates or ameliorates the potential effects identified within each of the technical assessments.
- 13.2.7 **ES Vol 1 Chapter 7: Terrestrial Ecology [EN010153/DR/6.1]** and **ES Vol 1 Chapter 8: Ornithology [EN010153/DR/6.1]** take into consideration the potential for air quality, dust, noise and water quality to affect ecological



receptors. As such, these chapters present an inherent in-combination assessment of these factors.

**13.2.8 ES Vol 1 Chapter 11: Cultural Heritage and Archaeology [EN010153/DR/6.1]** considers the potential for visual and landscape effects and noise to affect the setting of historic assets.

**13.2.9** The assessment process used to identify the potential for in-combination intra-project effects follows a three-stage approach.

**13.2.10 Stage 1:** Undertake the assessments for each technical assessment area where effects could result from the Proposed Development, including those topic areas scoped out of detailed assessment in the ES e.g. air quality, noise and traffic and transport.

**13.2.11 Stage 2:** Establish receptors which experience more than one residual effect type and are therefore vulnerable to in-combination effects.

**13.2.12 Stage 3:** Conduct an assessment of the nature of the residual effects impacting the identified receptor groups and determine whether these residual effects, acting in combination, amplify the overall residual effects on specific receptors to the extent that likely significant effects occur, and if so, whether additional mitigation measures should be provided to avoid or reduce those effects.

**13.2.13** A qualitative approach to determining the potential for effect interactions has been adopted using the findings of the technical assessments and professional judgment. A semantic scale describing the magnitude of the in-combination effect is not considered appropriate and can lead to a false sense of precision. As such the basis of the judgement as to whether significant in-combination effects are likely to occur is provided. This is summarised in a tabular format.

### **13.3 In-Combination Intra-Project Assessment**

- 13.3.1 As set out in previous sections, the combination of two or more environmental effects resulting from the Proposed Development may collectively cause a greater (or lesser) effect than each effect in isolation. The potential for effect interactions is presented within this section.
- 13.3.2 Having reviewed the technical assessments presented in Chapter 5 to 12, along with the other supporting assessments provided within the DCO application e.g. noise, construction dust and Transport Assessment, the following receptor groups have been identified as having the potential to experience more than one residual environmental effect:
- i) Residential properties, business premises, community facilities
  - ii) Users of Public Rights of Way (PRoW) and permissive paths; recreational users of River Weaver
  - iii) Construction operatives or maintenance workers
  - iv) Ecological receptors
  - v) Heritage Assets
- 13.3.3 As set out in paragraphs 13.2.7 and 13.2.8 in-combination effects related to ecological receptors are assessed within Chapters 7 and 8 of the ES and Cultural Heritage Assets in Chapter 11 of the ES. In-combination effects relating to climate change are considered in Chapter 7 of the ES. The only significant effects identified are temporary ecological construction phase effects on the Frodsham, Helsby and Ince Marshes Local Wildlife Site (LWS) during the construction phase. This effect relates to the land take associated with the construction works and so is not considered to be an in-combination effect in itself, albeit other effects of a lesser magnitude e.g. noise, dust and disturbance would have an in combination effect on this local wildlife designation and the species it supports. These effects are temporary and reversable and the assessment demonstrates that in the medium to long term



significant beneficial effects would occur on the LWS as a result of proposed habitat creation and management of the Site.

13.3.4 Table 13-1 summarises the potential effect interactions during the construction and decommissioning phases on the remaining receptor groups. The construction and decommissioning phases have been considered together, as similar effects would occur in both phases. However, it is likely that the effects during the decommissioning phase would be of a lower magnitude than those in the construction phase, thereby providing a conservative assessment of that phase.

13.3.5 Table 13-2 summarises the potential effect interactions during the operational phase. This table considers effects related to general maintenance and operational activities. Effects that could arise during a major replacement campaign would be similar in nature to those that arise during construction, although effects during replacement campaigns are likely to be of a lower magnitude, and certain activities, such as major earthworks, would not be required. On this basis, the findings presented in Table 13-1 are considered to provide a representative and conservative assessment of potential in-combination effects that could arise during a major replacement campaign.

**Table 13-1 – Construction and Decommissioning Phase Intra Project Effects**

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Measures	Potential for Significant In-Combination Effect
Residential properties, business premises, community facilities	Construction activities will generate noise/vibration (from machinery and HGV traffic), dust/airborne emissions, increased construction traffic on local roads, and temporary visual intrusion from plant and works areas. These receptors could experience slight community severance or access issues if construction traffic disrupts local road networks (e.g. minor delays or pedestrian/cyclist intimidation).	<p>The combination of effects related to noise and dust nuisance alongside heavy vehicle movement – can exacerbate overall disruption to residents’ and businesses’ amenity beyond each impact in isolation. Multiple modest effects occurring together may cumulatively lead to a greater perceived loss of comfort and enjoyment for local people during the works.</p> <p><b>ES Vol 2 Appendix 4-1: Noise Impact Assessment [EN010153/DR/6.2]</b> only identified negligible levels of impact on residential receptors and <b>ES Vol 2 Appendix 4-2: Construction Dust Assessment [EN010153/DR/6.2]</b> only identified a very limited number of receptors within a distance where construction dust effects would occur. Both assessments identified mitigation measures that have been carried forward to the <b>Outline Construction Environmental Management Plan (oCEMP) [EN010153/DR/7.5]</b> and <b>Outline Decommissioning Environmental Management Plan (oDEMP)</b></p>	The <b>oCEMP [EN010153/DR/7.5]</b> and <b>oDEMP [EN010153/DR/7.7]</b> define best-practice controls (dust suppression, noise barriers, restricted working hours, etc.) to minimise nuisance at source. A detailed Construction Traffic Management Plan will be followed to route HGVs away from sensitive areas (avoiding Frodsham town centre to prevent noise, congestion and disturbance). Ongoing community liaison (e.g. a Community Liaison Group) will keep local occupants informed of works timing and provide a channel for concerns.	There is limited potential for in-combination effects to occur that would elevate the level of environmental effects experienced by this receptor group to a likely significant effect. As such, it is concluded that there would be no likely significant in-combination effects on this receptor group.

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Measures	Potential for Significant In-Combination Effect
		<b>[EN010153/DR/7.7].</b> In relation to visual impacts the views from properties (residential, business and community) are limited and not in close proximity, such that significant effects would not occur.		

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Measures	Potential for Significant In-Combination Effect
Users of Public Rights of Way (PRoW) and permissive paths; recreational users of River Weaver	This group will be exposed to temporary PRoW closures or diversions and a short-term restriction on River Weaver use (approximately 2 weeks for safe cable stringing). They will also experience elevated noise levels and construction activity along PRoW, as well as visual impacts where views of construction works or equipment are in line of sight. Construction dust could impact the enjoyment of recreational users within or close to the construction / decommissioning activities. Overall, the key effects which could impact this receptor group are reduced recreational access, noise, construction dust, and visual amenity.	<p>In-combination impacts could diminish recreational experience – for example, a walker or cyclist might experience visual impacts of construction and loud equipment noise, compounded by PRoW management / diversion. Such combined impacts heighten the sense of disturbance beyond each issue on its own, potentially leading to greater annoyance or inconvenience for users.</p> <p>Effects from recreational users remote to the Site e.g. Frodsham Memorial / Sandstone Trail, are likely to be only affected by landscape and visual effects and no in-combination effects are considered likely to occur.</p>	A Public Rights of Way Management Plan will ensure that any footpath or restricted byway closures are well-signposted, of minimal duration, and with safe diversions provided. Outside of construction working hours, routes (including the National Cycle Network segment on site) will be re-opened for public use to reduce disruption. For the River Weaver, works requiring navigation restriction will be timed and coordinated with users (e.g. avoiding peak recreation times) to limit impact. The CEMP will include measures to control noise and dust which would reduce the potential effects on recreational user amenity as far as practicable. By maintaining partial access, communicating closures in advance, and limiting intrusive works, the in-combination effects would be limited.	The in-combination effects would only occur over a brief segment of the overall route a user experiences and effects are likely to be transient in nature as users move along linear routes through the Site. The Proposed Development would not prevent recreational activity within the Site. As such, it is concluded that there would be no likely significant in-combination effects on this receptor group.
Construction operatives or maintenance workers	Site workers would be subject to combined occupational effects during construction. These include exposure	Multiple environmental and occupational risk factors can interact	As set out in the <b>oCEMP [EN010153/DR/7.5]</b> and <b>oDEMP [EN010153/DR/7.7]</b> , comprehensive	The adoption of legislative health and safety requirements

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Measures	Potential for Significant In-Combination Effect
	to weather extremes (heat, cold, storms) noise levels and vibration from heavy machinery, and potential contact with ground contaminants.	to increase risks for workers for construction operatives.	health and safety assessments are an essential part of the construction process, with a range of regulations identifying requirements and responsibilities to maintain the safety of staff. The assessment conducted also identifies potential specific health and safety requirements, such as the use of PPE when working in locations where operatives could be exposed to contaminated soils, ground water, or ground gas.	would avoid likely significant in-combination effects on this receptor group.

**Table 13-2 – Operational Phase Intra Project Effects**

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Requirements	Potential for Significant In-Combination Effect
Residential properties, business premises, community facilities	During operation, the solar arrays and associated infrastructure introduce a permanent change to the visual character of the Site and introduce other impacts such as noise, traffic movements and glint and glare.	The combination of longer-term visual change, along with other operational impacts such as noise, traffic or and intermittent equipment noise or vehicle movements can heighten residents' perception of amenity loss compared to either effect alone.  <b>ES Vol 1 Chapter 6: Landscape and Visual Amenity</b>	None	It is concluded that there would be no likely significant in-combination effects on this receptor group.

Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Requirements	Potential for Significant In-Combination Effect
		<p><b>[EN010153/DR/6.1]</b> concludes that effects from properties would be limited with prominent existing industrial and infrastructure development already well-established in views towards the Site. Visual effects would not be significant. Furthermore, the glint and glare assessment has concluded that a maximum of low impact upon surrounding dwellings is predicted, and no further mitigation is recommended. Noise impacts during operation have been shown to be well below the monitored background levels <b>ES Vol 2 Appendix 4-1: Noise Impact Assessment [EN010153/DR/6.2]</b>, and there would be no potential for any material air quality effects during regular operation or maintenance works. Traffic movements to the Site would be de minimis during regular operation with no material impact on surrounding highways.</p>		
Users of Public Rights of Way (PRoW) and permissive paths;	The Proposed Development would alter the nature of the landscape within the Site through which existing Public Rights of Way pass. Whilst minimal, the inverters / transformers,	Effects from recreational users remote to the Site e.g. Frodsham Memorial / Sandstone Trail, are likely to be only affected by landscape and	10m buffers have been applied to PRoW and where appropriate, these have been landscaped to provide screening between the paths and the solar PV areas. The improvements	It is concluded that there would be no likely significant in-combination effects on this receptor group.



Receptor	Summary of effects from topics with the potential to interact	Potential Effect Interaction	Mitigation Requirements	Potential for Significant In-Combination Effect
recreational users of River Weaver	and the BESS have the potential to give rise to noise impacts. There would be extensive landscaping provided as part of the Proposed Development that would enhance the landscape features such as hedgerows and field margins, as well as introduce new features such as enhanced wetlands. The Proposed Development will improve the condition of existing PRow and introduce a network of additional permissive paths.	visual effects and no in-combination effects are considered likely to occur.  Recreational users within the Site may experience in-combination effects from landscape/visual change and noise. However, the majority of PCUs would be located in positions away from PRow and any noise impacts would be minimal and transitory in the context of an area with relatively high background noise emanating from the M56 and nearby industrial facilities.	proposed to access across the Site, as well as provision of measures such as seating, signage and interpretation are intended to enhance recreational users experience when visiting the Site.	
Construction operatives or maintenance workers	Operational-phase personnel are limited to intermittent maintenance teams who would be involved in the repair and maintenance of the various components of the development. There would be a variety of operational risks, such as the use of industrial equipment for vegetation maintenance, working with electricity, and working outdoors and thereby subject to seasonal weather extremes.	Multiple environmental and occupational risk factors can interact to increase risks for workers for operational maintenance operatives.	As set out in the <b>oOEMP [EN010153/DR/7.6]</b> the requirement for comprehensive health and safety assessments is an essential part of any operational business activity. Appropriately licensed operatives will be appointed to undertake work, a safe system of working will be established prior to the commencement of any maintenance or replacement works, and Personal Protective Equipment (PPE) / Respiratory Protective Equipment (RPE) suitable for the tasks would be worn by operatives.	The adoption of legislative health and safety requirements would avoid likely significant in-combination effects on this receptor group.

## 13.4 Cumulative Inter-Project Assessment

- 13.4.1 As noted above each topic chapter has undertaken an assessment of likely significant cumulative effects in accordance with the methodology set out in Section 6 of **ES Volume 1 Chapter 4: Methodology [EN010153/DR/6.1]**. Locations of the projects assessed are shown on **ES Vol 3 Figure 4-3: Short List Cumulative Schemes – 1km [EN010153/DR/6.3]**. Table 13-3 summarises the findings of the assessments.
- 13.4.2 In most instances the distance of the other schemes from the main focus of development i.e. the Solar Array Development Area, coupled in many cases with the mitigation secured by virtue of Construction Environmental Management Plans (either conditioned or Requirements) on the various projects, avoids the likelihood of significant cumulative effects occurring. However, two of the projects, the HyNet Hydrogen Pipeline (ref. 38) and the Runcorn Spur CO<sub>2</sub> Pipeline (ref. 78) cross the Site. As such, these projects have a higher likelihood of resulting in cumulative effects.
- 13.4.3 In relation to the HyNet Hydrogen pipeline (ref. 38) the project runs along the southern boundary of the Site. Within this section of the project all of the Proposed Development is an underground pipeline and no Above Ground Installations (AGI) are proposed within the Site. The closest AGI would be on land between the River Weaver and the Weaver Navigation, immediately adjacent to the M56 viaduct, approximately 500m from the SADA. An AGI would comprise a stoned compound with some above ground pipes and small (ISO container sized) buildings that house control equipment. The distance to the AGI, its scale and location adjacent to the M56 viaduct mean that significant cumulative effects are unlikely. In relation to the pipeline section, once constructed it would have no environmental effects which would interact with the Proposed Development. Therefore no significant cumulative operational effects are anticipated. It is possible that the pipeline could be constructed at the same time as the Proposed Development. As such, should this occur, there would be cumulative construction phase effects. However, based on the information available with the Preliminary Environmental

Information Report (PEIR) for the pipeline project, there are a number of factors which reduce/avoid the potential for significant cumulative effects occurring. The PEIR sets out that the pipeline works would proceed at a rate which would mean that the pipeline would be laid in a period of approximately 1 month, meaning that effects would be short term and temporary. The PEIR also sets out that the pipeline works would be undertaken between March and September, avoiding the sensitive peak non-breeding bird period. The PEIR included a draft outline CEMP for the project which provides for a variety of best practice measures, similar to those set out in the **oCEMP [EN010153/DR/7.5]** for the Proposed Development. Furthermore, the **oCEMP [EN010153/DR/7.5]** describes the commitment to proactive collaboration throughout the construction phase with Cadent Gas, the Applicant for the HyNet Hydrogen pipeline, to co-ordinate construction programmes and environmental mitigation where practicable. Each of the technical chapters provides additional analysis in relation to the various topic areas. Based on the above it is concluded that there would be no significant cumulative effects with this development.

- 13.4.4 The proposed Runcorn Spur CO<sub>2</sub> Pipeline (ref. 78) would cross the northern boundary of the Site, crossing Cell 1, 2 and 3 of the former Manchester Ship Canal Dredging Deposit Grounds. The project is at the pre-application stage with limited information on the project, this being restricted to pre-app consultation materials and an EIA Scoping Report. However, it is considered very likely that the project would involve similar construction techniques to the hydrogen pipeline, and so would advance at a similar rate. Commitments to the timing of works are not set out in the documentation available. However, timing of the construction works and programming with the Proposed Development is considered key to avoiding likely significant environmental effects, especially in relation to the Mersey Estuary SPA / Ramsar site.
- 13.4.5 Similar to the hydrogen pipeline the Applicant is committed to proactive collaboration throughout the construction phase with the applicant for the Runcorn Spur CO<sub>2</sub> pipeline. The oCEMP sets out that the Applicant will co-

ordinate where practicable on construction programmes and environmental mitigation measures. Specifically in relation to the Runcorn Spur CO<sub>2</sub> pipeline the following controls on programming would be implemented via the full CEMP for the Proposed Development:

- i) Construction works from neither project would be undertaken in Cells 1, 2 and 5 at the same time as the works being undertaken to create the NBBMA.
- ii) Pipeline construction works would not be undertaken within the NBBMA at the same time as construction works are undertaken within Cell 1, 2 and 5 (from either project).
- iii) Where construction works within Cells 1, 2, and 5 are undertaken simultaneously, these would be phased in order to avoid any potentially significant cumulative impacts, for example, by avoiding noisy activities from both projects being undertaken close to the boundary of the NBBMA at the same time.

13.4.6 It is anticipated that similar controls could be implemented via the planning conditions on the Runcorn Spur CO<sub>2</sub> pipeline on the basis that such a condition would be necessary to make the development acceptable; relevant to planning; relevant to the development to be permitted; enforceable; precise; and reasonable in all other respects.

13.4.7 The implementation of a planning condition requiring a CEMP to be prepared prior to the construction of the Runcorn Spur CO<sub>2</sub> pipeline is also anticipated, and is frequently applied by CWaCC on other large scale projects in this location e.g. all of the consented development at Protos. It is anticipated that implementation of the CEMPs on both projects would avoid significant cumulative effects occurring on matters such as water quality, flood risk, ground contamination, air quality, local amenity, cultural heritage and biodiversity.

**Table 13-3 – Summary of Cumulative Inter-Project Effects**

		Significant Cumulative Effect (Y/N)							
	Summary of Development Description	Distance from Order Limits (OL) / SADA	Chapter 6: Landscape and Visual Amenity	Chapter 7: Terrestrial Ecology	Chapter 8: Ornithology	Chapter 9: Flood Risk and Water Quality	Chapter 10: Ground Conditions	Chapter 11: Heritage	Chapter 12: Tourism
<b>TCPA Planning Applications</b>									
16	Proposed installation of 100MW battery storage facility, associated landscaping, access, security details and ecological improvements at land to the Southeast of junction between Weaver View and Cholmondeley Road, Runcorn. Amended by NMA (ref. 22/00438/NMA ) to 150MW capacity.	120m (OL)  600m (SADA)	N	N	N	N	N	N	N
17	Proposed installation of a 135KV substation ancillary to the use of the adjacent site as a Battery Storage Energy Facility with associated access, erection of a metering cabinet, DNO control room, customer switch room, 5 no. battery containers, power inverter and CCTV posts at land to the southeast of junction between Weaver View and Cholmondeley Road, Runcorn	120m (OL)  600m (SADA)	N	N	N	N	N	N	N
20	Post combustion Carbon Dioxide Capture Facility associated with Ince Biopower	0m (OL)  3000m (SADA)	N	N	N	N	N	N	N

		Significant Cumulative Effect (Y/N)							
	Summary of Development Description	Distance from Order Limits (OL) / SADA	Chapter 6: Landscape and Visual Amenity	Chapter 7: Terrestrial Ecology	Chapter 8: Ornithology	Chapter 9: Flood Risk and Water Quality	Chapter 10: Ground Conditions	Chapter 11: Heritage	Chapter 12: Tourism
25 & 28	25 - Development of a hydrogen production facility and electricity generating plant, comprising of a waste reception and handling building, gasification facility, hydrogen production facility with associated/ ancillary infrastructure which includes access roads, weighbridge, fencing / gates, lighting, surface water drainage, and electricity distribution plant. 28 - Subsequent Section 73 to vary layout.	0m (OL)  3500m (SADA)	N	N	N	N	N	N	N
27	Resource recovery facility (Plastics Recycling Facility)	0m (OL)  3350m (SADA)	N	N	N	N	N	N	N
31	Materials recycling facility, two plastics recycling facilities, a polymer laminate recycling facility and a hydrogen refuelling station	0m (OL)  3350m (SADA)	N	N	N	N	N	N	N
32	Hybrid (full and outline) planning application for a hydrogen production plant, storage and distribution facility	560m (OL)  5500m (SADA)	N	N	N	N	N	N	N



		Significant Cumulative Effect (Y/N)							
	Summary of Development Description	Distance from Order Limits (OL) / SADA	Chapter 6: Landscape and Visual Amenity	Chapter 7: Terrestrial Ecology	Chapter 8: Ornithology	Chapter 9: Flood Risk and Water Quality	Chapter 10: Ground Conditions	Chapter 11: Heritage	Chapter 12: Tourism
33	Erection of an 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, security building and other associated works	200m (OL) 4000m (SADA)	N	N	N	N	N	N	N
34	A revised application for the construction and operation of a stand-by electricity generation plant with ancillary structures including an access road, DNO metering station, transformer compound, switch room, storeroom and oil storage tanks (21/04024/FUL)	150m (OL) 3750m (SADA)	N	N	N	N	N	N	N
35	Full planning permission for the construction and operation of a post-combustion Carbon Dioxide (CO2) Capture Facility	0m (OL) 3000m (SADA)	N	N	N	N	N	N	N
78	Runcorn Carbon Dioxide Spur Pipeline to connect the Viridor's EfW in Runcorn to the HyNet Carbon Dioxide Pipeline at Ince	Within	N	N	N	N	N	N	N
83	Gowy Solar – Solar Farm located on restored areas of Gowy Landfill	4000m (OL) 8000m (SADA)	N	N	N	N	N	N	N
81	Protos West AGI – Alternative above ground installation associated with the HyNet	0m (OL)	N	N	N	N	N	N	N

		Significant Cumulative Effect (Y/N)							
	Summary of Development Description	Distance from Order Limits (OL) / SADA	Chapter 6: Landscape and Visual Amenity	Chapter 7: Terrestrial Ecology	Chapter 8: Ornithology	Chapter 9: Flood Risk and Water Quality	Chapter 10: Ground Conditions	Chapter 11: Heritage	Chapter 12: Tourism
	Carbon Dioxide Pipeline (ref. 37)	3000m (SADA)							
<b>NSIPs</b>									
37	HyNet Carbon Dioxide Pipeline – CO <sub>2</sub> pipeline proposed from Ellesmere Port to Talacre, Flintshire	0m (OL) 3000m (SADA)	N	N	N	N	N	N	N
38	HyNet Hydrogen Pipeline – 100km of pipeline and associated infrastructure to distribute hydrogen to industry and for blending with the natural gas network in the North West.	Within	N	N	N	N	N	N	N

## 13.5 References

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<sup>i</sup> Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment> [Last accessed: 05 April 2025]