SUNNICA ENERGY FARM

Preliminary Environmental Information Report

Chapter 17: Effect Interactions

Sunnica Ltd

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Contents

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17. Effect Interactions

17.1 Introduction

17.1.1 This chapter addresses the potential for effect interactions and cumulative effects as a result of the Scheme.

17.1.2 Effect interactions may arise where several different effects resulting from the Scheme have the potential to affect a single receptor (e.g. decrease in air quality, alongside an increase in noise disturbance). The assessment draws on the assessment of impacts provided in Chapters 6 to 16 of this PEI Report.

17.1.3 Cumulative effects are where there is the potential for two or more developments that are reasonably foreseeable and/or consented, but not yet constructed or operational, within close enough proximity to the Scheme to lead to effects on the same receptor. Such cumulative effects have been assessed within technical Chapters 6 to 16 of this PEI Report. However, a summary of the outcomes of these assessments is provided in Table 17-5 of this chapter. A detailed description of the assessment methodology for cumulative effects can be found in ***Chapter 5: EIA Methodology***.

17.2 Legislative Context

17.2.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref. 17-1) make explicit reference to the requirement for an assessment of the effect interactions between types of effect, and states that the EIA should contain:

"A description of the aspects of the environment likely to be significantly affected by the Development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors."

17.2.2 No further guidance or requirement beyond the need for the requirement for an assessment of the interrelationships between types of effect is provided.

17.2.3 The requirement for cumulative impact assessment is clearly stated in the relevant European Directive and legislation. European Directive 2011/92/EU (Ref. 17-2) on the assessments of effects of certain public and private projects on the environment requires the assessment of:

"the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent or temporary, positive and negative effects of the project".

17.2.4 Schedule 4 Part 1 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires:

"a description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from:

- *The existence of the development;*
- *The use of natural resources;*
- *The emission of pollutants, the creation of nuisances and the elimination of waste; and*
- *The description by the applicant of the forecasting methods used to assess the effects on the environment."*

17.3 Consultation Responses

17.3.1 A summary of consultation and responses relating to the interaction of effects and cumulative effects is provided in

Table 17-1: Consultation matters raised and responses for effect interactions and cumulative effects

Consultee	*Matter raised*	*Response*
Planning Inspectorate	The Inspectorate notes that paragraph 5.1.4 of the Scoping Report states that cumulative and combined effects will be included within each ES aspect Chapter.	No response required

17.4 Assessment Methodology

17.4.1 The assessment of effect interactions is based on the methodology described in ***Chapter 5: EIA Methodology*** and considers the potential for several direct or indirect effects arising from the Scheme to give rise to an effect on a single receptor. There are no specific, relevant guidelines on how the assessment of effect interactions should be undertaken, and so the assessment has been undertaken on a qualitative basis using the results of the individual assessments, informed by professional judgement.

17.4.2 Potential sources of environmental effect are not identified specifically in this chapter; this chapter instead relies on the other technical chapters (6 to 16) in this PEI Report for the identification of receptors, potential effects and their assessment. The preliminary embedded design mitigation and additional mitigation, where proposed in other technical chapters, is assumed to be implemented before consideration of the effects in this chapter, i.e., residual effects are considered in this chapter. However, to ensure a robust assessment Year 1 landscape and visual residual effects during operation are considered for the effect interactions. Similarly, this chapter draws from the other technical chapters for descriptions of aspects of the baseline environment, where required.

17.4.3 Only receptors that are expected to incur more than one potential effect have been included in the assessment (e.g. noise and dust). Receptors predicted to be affected by only a single effect (e.g. only noise) are excluded because there is considered to be no potential for effect interactions to take place. It should be noted that uncertainty in the assessment of effects, for most of the technical chapters in this PEI Report, is dealt with by making conservative, or worst-case, assumptions.

17.5 Effects Interactions

17.5.1 The interaction of two or more predicted environmental effects resulting from the Scheme may collectively cause a greater (or lesser) effect than each effect in isolation. The potential for effect interactions is assessed within this section.

17.5.2 A detailed matrix of the receptors is provided in ***PEI Report Volume 2: Appendix 17A***. The matrix sets out the residual effects on individual receptors identified in each technical chapter of this PEI Report and identifies the potential effect interactions arising from the individual impacts. Table 17-2 below summarises the potential effect interactions identified in ***PEI Report Volume 2: Appendix 17A***.

Table 17-2: Potential effect interactions during construction

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Landscape and Visual and Air Quality impacts						
		Landscape and visual amenity		**Air Quality**		
Recreational users on the River Lark	People using the River Lark for recreational purposes will experience reduced visual amenity from the presence of construction plant and machinery in the vicinity. There will be a slight increase in particle concentrations but not to an extent that any national air quality strategy objectives are likely to be exceeded. The combination of these impacts has the potential to result in effect interactions.	Moderate		Minor	**No significant effect interactions:** The potential increase in particulate matter temporarily suspended in the air is considered minor and would not interact with the landscape and visual amenity effects. Therefore, it is considered that the effect interactions would not increase the moderate adverse significant effect for landscape and visual amenity.	No additional mitigation is proposed, as the effect interaction will be temporary, and mitigation has already been included as part of the design as embedded mitigation.
Landscape and Visual, Transport and Access, and Air Quality impacts						
		Landscape and visual amenity	**Transport and Access**	**Air Quality**		
Residents adjacent to the B1104	Human receptors in the vicinity of the DCO Site will experience reduced visual amenity (partial change in the composition of the existing view) from the presence of construction plant and machinery in the vicinity. There will be	Moderate	Minor	Minor	**No significant effect interactions:** The air quality assessment will take account of an increase in HGVs on the local network. The potential increase in particulate matter	No additional mitigation is proposed, as the effect interaction will be temporary, and mitigation has
Residents in Freckenham		Moderate	Minor	Minor		

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Visitors to the Ark	a slight increase in particle concentrations but not to an extent that any national air quality strategy objectives are likely to be exceeded. The local transport network will experience a higher volume of Heavy Goods Vehicle (HGV) traffic. The combination of these impacts has the potential to result in effect interactions.	Moderate	Minor	Minor	temporarily suspended in the air is considered minor and would not increase the significance of the landscape and visual amenity effects or transport and access. The effect of increased HGVs on the road network is considered minor; however, there is a potential that the reduced visual amenity for these receptors could be exacerbated by the increased number of HGVs visible on the road network. Additional pressure on the residential receptors could arise from stress and potential delays from the additional traffic on the road network. These effect interactions could result in an increase in 'annoyance' amongst residents. This will be temporary. The effect interaction is not considered large enough to increase the significance from the moderate landscape and visual amenity impact or the minor transport and access impact. Therefore,	already been included as part of the design as embedded mitigation.
Residents adjacent to B1102		Moderate	Minor	Minor		
Residents at Queens Hill		Moderate	Minor	Minor		
Visitors to La Hogue Farm		Moderate	Minor	Minor		
Residents at La Hogue Farm		Moderate	Minor	Minor		
Residents adjacent to Station Road		Moderate	Minor	Minor		
Residents adjacent to Newmarket Road		Moderate	Minor	Minor		
Residents in Snailwell		Moderate	Minor	Minor		
Residents in Fordham House		Moderate	Minor	Minor		

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Visitors to the Wild Track Centre		Moderate	Minor	Minor	the effect interaction is expected to be not significant.	
Residents in Beck Road Property	Human receptors in the vicinity of the DCO Site will experience reduced visual amenity (extensive change in the composition of the existing view) from the presence of construction plant and machinery in the vicinity. There will be a slight increase in particle concentrations but not to an extent that any national air quality strategy objectives are likely to be exceeded. The local transport network will experience a higher volume of Heavy Goods Vehicle (HGV) traffic. The combination of these impacts has the potential to result in effect interactions.	Major	Minor	Minor	As above	No additional mitigation is proposed, as the effect interaction will be temporary, and mitigation has already been included as part of the design as embedded mitigation
Residents in Lee Farm		Major	Minor	Minor		
Landscape and Visual, Socioeconomics, and Air Quality impacts						
		Landscape and Visual Amenity	**Socioeconomics**	**Air Quality**		
Recreational users on PRoW W128/002/0	Human receptors in the vicinity of the DCO Site will experience reduced visual amenity (partial change in the composition of the existing view) from the presence of construction plant and	Moderate	N/A (PRoW not in Study Area of Socioeconomics assessment)	Minor	**No significant effect interactions:** The impact of the loss of the footpaths (only W257/003/0), the impacts on landscape and visual amenity	A liaison group to keep informed on progress and to allow recreational users to contact the Site

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Recreational users on PRoW 204/1	machinery in the vicinity. There will be a slight increase in particle concentrations during construction activities but not to an extent that any national air quality strategy objectives are likely to be exceeded. PRoWs will be impacted during the construction phase; however, the temporary closures will be supported by appropriate and clearly signed alternative routes and where possible will be planned and programmed to minimise disruption to users. The combination of these impacts has the potential to result in significant adverse effect interactions.	Moderate	Negligible	Minor	and increased particulate matter temporarily suspended have the potential to interact and increase 'annoyance' in recreational users. This will be temporary and is considered to be not significant.	Manager would be set up during construction.
Recreational users on PRoW 49/7		Moderate	Negligible	Minor		
Recreational users on PRoW W257/003/0	As above.	Major	Moderate	Minor	As above.	As above.
Recreational Users of PRoW 257/002/X		Major	Moderate	Minor		
Recreational Users of PRoW 257/002/0		Major	Moderate	Minor		

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Recreational users of the PRoW 204/5, south-east of Snailwell		Major	Moderate	Minor		
Landscape and Visual and Transport and Access impacts						
		Landscape and Visual	**Transport and Access**			
Motorists on East Fen Road	Motorists using the local road network would experience visual amenity impacts from construction plant and machinery. Road networks would be temporarily affected by an increased number of HGVs using the network to access the DCO Site, which will have an effect on motorists. The combination of these impacts has the potential to result in effect interactions.	Moderate	Minor		**No significant effect interactions:** The transport and access assessment considers how motorists would perceive changes to traffic on the road through driver delay and the impact on accidents and safety, while the landscape and visual amenity assessment considers changes to the perceived views of motorists. These effect interactions could result in an increase in 'annoyance' amongst residents, which would be temporary. The effect interaction is not considered large enough to increase the significance from the moderate landscape and visual amenity impact or the minor transport and access impact. Therefore, the effect interaction is expected	No additional mitigation is proposed.
Motorists on Beck Road		Moderate	Minor			
Motorists on Ferry Lane		Minor	Minor			
Motorists on La Hogue Road		Moderate	Minor			
Motorists on Chippenham Road		Moderate	Minor			
Recreational users and users of the training grounds at the Limekilns		Moderate	Minor			

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
					to be not significant.	
Noise and Vibration, Transport and Access and Air Quality impacts						
		Noise and Vibration	**Transport and Access**	**Air Quality**		
Residential properties on Weirs Grove and Hythe Lane, Burwell	Construction traffic has the potential to increase noise levels above those that are currently experienced for this receptor. Road networks will have an increased number of HGVs during construction, and there will be a slight increase in particle concentrations during construction activities but not to an extent that any national air quality strategy objectives are likely to be exceeded. The combination of these impacts has the potential to result in effect interactions.	Minor	Minor	Minor	**No significant effect interactions:** There is a potential for these receptors to experience effect interactions from an increase in noise and particulate matter; however, the noise and air quality assessments have been based on a worst case i.e. works being undertaken at the closest point to the receptor and it is considered unlikely that the source of noise and emissions would coincide to the extent of each of the worst case assessments assumed in the relevant chapters. There is a potential for increased 'annoyance' for these residents due to increased traffic, noise and particulate matter in the area, however this will be temporary and is considered to not be significant.	No additional mitigation is proposed.

Table 17-3 Potential effect interactions during operation

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*	*Effect interactions*	*Additional mitigation required (if any)*
There are no effect interactions identified during operation				

Table 17-4 Potential effect interactions during decommissioning

Receptor	*Description of potential effect interactions*	*Residual significance of effect determined through EIA*			*Effect interactions*	*Additional mitigation required (if any)*
Noise and vibration, transport and access and air quality impacts						
		Noise and Vibration	**Transport and Access**	**Air Quality**		
Residential properties on Weirs Grove and Hythe Lane, Burwell	There is uncertainty in the future baseline conditions as these cannot be predicted with certainty at this time; however, the impacts of decommissioning are considered to be no greater than those associated with the construction. This may result in an increase in noise levels, HGV movements and particulate matter above the future baseline conditions. .	Minor	Minor	Minor	**No significant effect interactions:** There is a potential for increased 'annoyance' for these residents due to increased traffic, emissions and noise in the area, however this will be temporary and is considered to not be significant.	No additional mitigation is proposed.

17.6 Cumulative Effects

17.6.1 ***Chapter 5: EIA Methodology*** explains the process used to identify other developments that have the potential to cause cumulative effects with the Scheme. A full long list of cumulative development has been discussed and agreed with WSC and ECDC. The long list will be reviewed and revised prior to submission of the ES. A preliminary shortlist of cumulative developments has been prepared for the PEI Report based on the scale of the development, the development falling within the Zone of Influence (ZOI) of specialists topics and temporal overlap, as presented within ***PEI Report Volume 2: Appendix 5A*** and shown in Figure 5-1 of ***Chapter 5: EIA Methodology***. The final shortlist, along with inclusionary criteria and full justification will be presented within the ES to ensure a robust cumulative assessment is undertaken. The cumulative assessment methodology is also detailed in ***Chapter 5: EIA Methodology***.

17.6.2 Preliminary cumulative effects have been assessed and identified within each of the technical chapters of this PEI Report. Where the Scheme has a negligible effect, there is not considered to be the potential for any cumulative effects. Therefore, the preliminary cumulative effects assessment has focused only on minor, moderate and major impacts identified within the PEI Report. Table 17-5 below summarises these assessments.

Table 17-5: Summary of the cumulative effects identified within each of the technical chapters 6 to 16.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
Climate Change			
Consideration of cumulative effects have been scoped out of the Climate Change assessment. Please refer to ***Chapter 6: Climate Change*** of this PEI Report for further details.			
Cultural Heritage			
Impacts on the significance of designated heritage assets and setting as a result of security lighting, operational noise and associated traffic as well as a result from glint and glare on the solar panels.	Physical effects on heritage assets would be on highly localised features, wholly within the Scheme, upon where there would be no cumulative effects from other developments. Given the intervening distance and nature of the identified developments, there would be no additional cumulative effects on the setting of the archaeological remains, historic buildings or historic landscapes within the Site's zone of influence other than those already identified for the Scheme in isolation. Direct archaeological impacts and potential impacts upon the setting of built heritage assets are assessed above and no cumulative impacts upon the cultural heritage resource (either archaeological or built heritage) are envisaged	Identified developments within Cultural Heritage Study Area	The assessment presented in the ES will include consideration of the cumulative effects arising from the Scheme and identified cumulative developments.
Ecology			
Loss of priority and notable habitats during construction and decommissioning. Loss of habitats supporting protected and rare bird and terrestrial invertebrate species	Construction, operational, and decommissioning effects on ecology are predicted not to be significant. All projects where either EIA or ecology assessment was required/presented do not report residual effects	All developments where either EIA or ecology assessment was required/presented.	The final cumulative assessment will be presented in the ES.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
during construction and decommissioning. Disturbance and displacement of protected bird species during construction, operation and decommissioning.	on ecology. There is therefore minimal opportunity for cumulative effects. The ecology receptors associated with the Scheme and other cumulative developments will be assessed further in the ES.		
Water Environment			
Construction works increase the potential for mobilising sediments which can runoff into watercourses. Construction works also increase the surface area of bare ground which further increases this risk, especially after compaction of heavy plant machinery. Increased impermeable area provides a greater surface area for runoff of sediments and pollutants if not mitigated correctly. Dewatering activities have the potential to affect groundwaters and surface waters. Storage of chemicals, oils and other hazardous compounds could impact the water environment if not stored correctly. Leakage of oils from heavy plant machinery may also pose a risk to waterbodies.	For all the proposed developments, it is assumed they would follow good industry practice in terms of the management of construction works and surface water runoff in the long term, compliant with all relevant environmental legislation and planning policy (relevant to flood risk). Therefore, it is not predicted that there would be any significant changes to the baseline conditions of the water resources in the area, nor any significant cumulative effects.	Outline planning application for up to 215 dwellings (8.57 ha) – Isleham. Outline application for the redevelopment of land to provide up to 350 dwellings (27.30 ha) – Burwell. Outline planning application for the development of a Garden Village (40 ha) – Kennett. Change of use from agricultural to a caravan site – Red Lodge. Outline application - demolition of Hundred Acre Farm and the construction of up to 268 dwellings (24.85 ha) – Herringswell. Outline planning application for up to 400 dwellings plus open space, foul and surface water infrastructure, two accesses on to the A142 (19.8 ha) – Newmarket Hybrid planning application consisting of a full planning application for 41 dwellings and an outline planning application for 97 dwellings (14.5 ha) – West Row.	The final cumulative assessment will be presented in the ES.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
Landscape and Visual			
Construction activity located across a greater extent of published and local landscape character areas. Additional construction activity visible for visual receptors. In operation, additional changes in land use, structures and impacts to landscape character across a greater extent of published and local landscape character areas. Additional structures visible for visual receptors.	Additional construction activity resulting in changes to landform, vegetation patterns and lowering of tranquillity. Additional visibility of construction activity within views from identified receptors. In operation, additional massing within the landscape via changes in land use with new employment and residential buildings. Additional solar panels and associated structures, resulting in an additional infrastructure character. New buildings and structures visible within views from identified receptors. As a result of the above, some receptors will experience significant cumulative effects. ***Chapter 10: Landscape and Visual*** provides more detail on these results.	Application Reference 17/01838/ESF, is for new buildings and changes of 'use' within the Horseracing Forensic Laboratory centre Application Reference 17/02205/FUL, cumulative development is for battery storage units, transformers and grid connections Application Reference 19/00155/FUL, battery units and transformer equipment Application Reference 15/00723/ESF, 40MW solar farm Policy FRD1, FRD2, FRD3 and FRD 4 – Allocations for Employment and Housing, employment land use Policy FRD 5 and FRD 6 – Allocations for Employment and Housing, housing and employment Application Reference 10/01576/SCREEN and ID: 348 – Application Reference 20/00557/ESF, solar farm	The PEI Report cumulative assessment will be reviewed in light of any changes to the proposed Scheme and presented in the ES LVIA as part of the DCO Application.
Noise and Vibration			
Any overlapping of construction phases between the Scheme and the other nearby developments has the potential to	Negligible residual effects are associated for the majority of the Scheme with one minor adverse effect predicted. Due to the nature and scale of the nearby	Application Reference 17/02205/FUL Development of a 49.9 MW battery storage	The final assessment presented in the ES will consider any changes

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
contribute to cumulative effects. Interaction of operational noise from the Scheme and other nearby development schemes.	developments these are not anticipated to result in any adverse significant effects on common noise-sensitive receptors. The effects of cumulative construction noise are considered not significant. Operational noise emissions from nearby developments will be designed to achieve appropriate operational noise limits so as not to contribute additional noise to the area. The control and mitigation of noise effects from surrounding development will be the responsibility of the individual operator. Operational noise effects from the Scheme have been assessed to be of negligible significance for the majority of receptors with one minor adverse effect predicted. Due to the nature and scale of the nearby developments these are not anticipated to result in any adverse significant effects on common noise-sensitive receptors. The effects of cumulative operational noise effects are considered not significant.	facility bridge and associated infrastructure. Application Reference 19/00155/FUL: Application for the construction and operation of a 49.9MW battery storage facility, fencing, landscape planting and site access on land adjacent to the operational Burwell 400kV substation Application Reference 18/00383/VARM: To Vary Condition 3 (operational life) of previously approved Application Reference Number: 15/00723/ESF for Installation and operation of a solar farm and associated infrastructure.	to the Scheme and any other new information made available regarding the identified nearby developments.
Socioeconomics and Land Use			
Increase of employment opportunities through the construction of cumulative developments. Increase of additional employment floorspace from cumulative developments. Increase in generation of GVA from construction employment. Temporary disruptions of public rights of way during the construction and decommissioning phase of the Scheme.	The combined effect of the construction of the cumulative developments is likely to bring considerable additional employment to Cambridge TTWA (Travel to Work Area). Although this is expected to result in an increase in construction employment, the overall cumulative effect from the generation of construction workers is likely to remain as temporary moderate beneficial effect on the Cambridge TTWA economy, which is considered significant. If all the developments are to be realised there will be considerable additional employment from some of the	Hybrid planning application (part outline part full) for demolition, alteration and extension of blocks B, C and D (mixed employment uses), Fordham Villages 150 residential dwellings (Use Class C3), a 75-bed care home (Use Class C2), a local shop (Use Class A1) and an ancillary medical consultation facility (Use Class D1), Burwell Redevelopment of land at Newmarket Road, Burwell to provide up to 350	The scale of the construction employment generated cannot be readily quantified based on the information available for each developments as this information is commercially sensitive and not available.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
Potential for noise, air quality, visual and traffic effects arising from construction, operation or decommissioning of the Scheme to impact on the amenity of residents, businesses and users of community facilities.	cumulative developments offering new offices, retail and commercial space. There are anticipated to be five operational employees associated with the Scheme and most cumulative developments, however, will not generate considerable operational employment due to their nature as infrastructure or utilities projects or as purely residentially-led projects. Therefore, the overall combined cumulative effect from the generation of workers during operation is likely to remain in a permanent negligible effect which is not considered significant. The overall cumulative effect on public rights of way during the construction phase is likely to remain temporary medium adverse as there are no cumulative developments adjacent to the Scheme or in close proximity. The closest two cumulative developments are 50m south from the Burwell National Grid Substation Extension which will not impact any public rights of way, let alone those located within the Scheme. Therefore, the overall cumulative assessment on public rights of way and land use remains minor adverse/ negligible effect, which is not considered significant. The overall cumulative effect on residential properties, business premises and community facilities is likely to remain as a negligible effect, not significant as there are no cumulative developments adjacent to the Scheme or in close proximity.	dwellings. North Angle Farm, 37MW Solar park, south west of Soham. Burwell Housing allocation Large site for housing allocation (20ha) Employment allocation (7 ha) in Fordham Employment sites allocation, Fordham 1,300 dwellings development, land west of Mildenhall, a minimum of 5ha employment, schools, leisure facilities and public services. 140 dwellings land east of Red Lodge (north) 382 dwellings land east of Red Lodge (south) Outline application: creation of a 20-box racehorse training establishment (with associated Trainer's house) and erection of up to 63 dwellings. 55 dwellings development, Red Lodge.	The cumulative construction effects on agricultural land will be reported in the ES once the effects arising from the Scheme have been assessed in the ES.
Transport and Access			
Increased traffic flows, including staff vehicles and HGVs on the roads leading to	Additional traffic is associated with each of the developments being introduced onto the road	100 dwellings and horse industry facilities,	The final assessment presented in the ES will

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
the Site. Severance and intimidation associated with increased construction traffic and abnormal loads.	network. However, given that the A11 and A14 will be the main shared common routes with already high volumes of traffic flow, it is unlikely that there would be a noticeable increase of traffic noise along the A11 and A14. This will be assessed further in the EIA as traffic flow data for future baseline and cumulative scenarios is available.	Warren Road, Herringswell. 52 dwellings in Eriswell. 550 dwellings, primary school and retail in Lakenheath. 131 dwellings on Beeches Road, West Row. Primary school and 375 dwellings in Lakenheath 110 dwellings in Isleham. Sustainable garden village extension to Kennett. 165 dwellings at Burrow Drive, Lakenheath. 205 dwellings on land south of Burwell Road, Exning. 175 dwellings, Broad Piece, Soham. 150 dwellings, care home and shop, Market Street, Fordham 350 dwellings, Newmarket Road, Burwell. 400 dwellings at Hatchfield Farm, Newmarket 1300 dwellings at land West of Mildenhall. 140 dwellings on land east of Red Lodge (north). 382 dwellings on land east of Red Lodge (south). 205 dwellings on land south of Burwell Road, Exning.	include consideration of the cumulative effects arising from traffic.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
		55 dwellings in Red Lodge.	
Air Quality			
Increased particulate material generated by onsite activities during the construction phase.	Any development occurring at the same time as the Scheme will be required to undertake its own dust risk assessment and implement mitigation to ensure that there are no off-site impacts. As such there are no cumulative dust effects to be considered, as the Scheme will also ensure that there are no off-site impacts from the demolition and construction phase.	All Schemes within the Air Quality Study Area.	The final assessment presented in the ES will include consideration of the cumulative effects arising from road traffic during construction.
Glint and Glare			
Increased risk of glint and glare	The combined effect of glint and glare from the Scheme and other solar developments is expected to be minimal. The solar developments in close proximity to the DCO Site are located around Burwell Substation and adjacent to the Grid Connection Route B. They are not positioned in close proximity to the developable area of the DCO Site, therefore cumulative effects are unlikely.	Application Reference 15/00723/ESF, 40MW solar farm Application Reference 10/01576/SCREEN and Application Reference 20/00557/ESF, solar farm	The PEI Report cumulative assessment will be reviewed in light of any changes to the Scheme and presented in the ES.
Ground Conditions			
Potential for contamination	During the Construction phase, provided that the requirements of relevant policy and legislation relating to land contamination and remediation are integrated within the design and appropriate mitigation measures are applied during the demolition and construction phases of each cumulative development, it is considered that the cumulative effect on ground conditions will be negligible, as suitable mitigation or remediation, where required,	All developments within 500m of the site boundary	Ground Conditions have been scoped out from the full assessment in the EIA.

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
	would be implemented to address any potential existing contamination. Once the Scheme is operational, it is considered that there would be a beneficial cumulative effect to the local environment as any identified contamination within each cumulative developments will be managed as part of the development works. In addition, should any remediation works, or the removal of contaminated soils associated with the preparatory ground works, basement and foundation excavations, be carried out on these sites as part of their redevelopment, this would be expected to result in a beneficial effect to the local environment		
Human Health			
Access to Healthcare Services and other Social Infrastructure impacts Accessibility and Active Travel impacts	The assessment undertaken in ***Chapter 15: Human Health*** is inherently cumulative as the traffic data which the assessment is based on includes the change in traffic generated by other committed developments. Changes in traffic flows have already been assessed as part of ***Chapter 13: Transport and Access*** and in the assessment presented within ***Chapter 15: Human Health*** and are therefore inherent as part of the assessment presented in this chapter. It is therefore concluded that the potential cumulative effects on non-motorised users will be the same as is the case for the Scheme when assessed in isolation.	All shortlisted cumulative developments.	The PEI Report cumulative assessment will be reviewed in light of any changes to the Scheme and data, such as traffic, and presented in the ES.
Access to work and training during construction	The construction phases of the Scheme and the other committed developments would both be expected to generate employment. In the absence of commercially sensitive information relating to the construction costs of each of the cumulative		

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
	developments, it is not possible to make a quantitative assessment of the employment likely to be generated from the construction stage of the other development developments. It is expected that there would be a beneficial effect on construction related employment within the local area. Similarly, once the committed developments are built there will be new commercial, retail and leisure space created that will provide further opportunities for residents to access work and training in the local area. The new employment space would provide job opportunities for existing and new residents to the area, resulting in a beneficial effect for the local community.		
Air Quality, Noise and Neighbourhood Amenity impacts	It is considered that any overlap of construction phases between the Scheme and these other nearby development developments has the potential to contribute to cumulative effects. Due to their scale none of these developments are anticipated to result in any adverse significant effects on noise-sensitive receptors. Therefore, at this stage, the potential health effect as a result of this cumulative noise effect is during the construction and the operation phases is not expected to be any greater than when considering these developments in isolation.	Application Reference 17/02205/FUL, cumulative developments is for battery storage units, transformers and grid connections Application Reference 19/00155/FUL, battery units and transformer equipment Application Reference 10/01576/SCREEN and Application Reference 20/00557/ESF, solar farm 350 dwellings with open spaces, sports provision, access and associated infrastructure. The application site it 27.30 ha.	The PEI Report cumulative assessment will be reviewed in light of any changes to the Scheme and presented in the ES.
Major Accidents and Disasters			
Increased traffic during construction and decommissioning phases of the Scheme in	The effect of road accidents is assessed in Transport	Application Reference 15/00723/ESF,	The PEI Report cumulative assessment

Potential Impact	*Potential for Cumulative Effect*	*Relevant Cumulative Schemes*	*Gaps / limitations*
combination with other developments could result in a greater risk of road accidents. Other solar developments could increase the risk of birdstrike and fire.	and Access above. The combined effect birdstrike and fire from the Scheme and other solar developments is expected to be minimal. The solar developments in close proximity to the DCO Site are located around Burwell Substation and adjacent to the Grid Connection Route B. They are not positioned in close proximity to the developable area of the DCO Site, therefore cumulative effects are unlikely. In addition, it is anticipated mitigation measures outlined for the Scheme such as Battery Fire Safety Management Plan will be implemented by the other solar developments as required.	40MW solar farm Application Reference 10/01576/SCREEN and Application Reference 20/00557/ESF, solar farm	will be reviewed in light of any changes to the Scheme and presented in the ES.
Telecommunications, Television Reception and Utilities			
The Scheme has been assessed to have no effect on telecommunication, television or utilities, and as such no cumulative effects are anticipated in accordance with the methodology set out above.	N/A	N/A	N/A
Waste			
Pressure on the local recycling plants or landfill sites	If the construction phases of the Scheme align with the construction phase of another significant developments within the local area, there may be some cumulative effects associated with waste. There are a number of potential developments that, depending on construction dates, may have cumulative effects with the Scheme. This would be managed through the Construction Resource Management Plan (CRMP) and consultation with waste providers, therefore effects from cumulative volumes are not expected to be significant. Additionally,	100 dwellings and horse industry facilities, Warren Road, Herringswell. 52 dwellings in Eriswell. 550 dwellings, primary school and retail in Lakenheath. 131 dwellings on Beeches Road, West Row. Primary school and 375 dwellings in Lakenheath 110 dwellings in Isleham.	The PEI Report cumulative assessment will be reviewed in light of any changes to the Scheme and data, such as traffic, and presented in the ES.

Potential Impact	Potential for Cumulative Effect	Relevant Cumulative Schemes	Gaps / limitations
	cumulative effects may occur from increased HGVs transporting waste to recycling plants and landfill. This is assessed in ***Chapter 13: Transport and Access***.	Sustainable garden village extension to Kennett. 165 dwellings at Burrow Drive, Lakenheath. 205 dwellings on land south of Burwell Road, Exning. 175 dwellings, Broad Piece, Soham. 150 dwellings, care home and shop, Market Street, Fordham 350 dwellings, Newmarket Road, Burwell. 400 dwellings at Hatchfield Farm, Newmarket 1300 dwellings at land West of Mildenhall. 140 dwellings on land east of Red Lodge (north). Application Reference 17/02205/FUL, cumulative developments is for battery storage units, transformers and grid connections Application Reference 19/00155/FUL, battery units and transformer equipment Application Reference 10/01576/SCREEN and Application Reference 20/00557/ESF, solar farm 382 dwellings on land east of Red Lodge (south). 205 dwellings on land south of Burwell Road, Exning. 55 dwellings in Red Lodge.	

17.7 Assumptions and Limitations

17.7.1 The list of cumulative developments considered in the EIA will be refreshed prior to completion of the ES, to check for any changes in the status of developments presented in this PEI Report or new developments not currently known about.

17.7.2 For the PEI Report it has been assumed that there will be a temporal overlap between the construction and operational phase of the Scheme and proposed developments, this will be reviewed and confirmed within the ES.

17.7.3 The ZoI has been based on the Study Area of the individual specialist topics, this will be reviewed and confirmed within the ES.

17.7.4 The cumulative assessment has for the PEI Report, been assessed on a topic by topic basis rather than scheme by scheme as presented in Appendix 2 of the Planning Inspectorate Advice Note 17. It is proposed a similar approach will be undertaken for the ES.

17.8 Conclusions

17.8.1 Potential effect interactions from the Scheme includes consideration of individual effects identified in ***Chapters 6*** to ***16*** combining on a single receptor. Through consideration of information available from the PEI Report, it has been concluded there is no potential for significant effect interactions as a result of the Scheme.

17.8.2 The assessment of cumulative impacts has considered the potential for effects from other developments in the area to combine with and intensify effects caused by the Scheme.

17.8.3 There is a potential for some significant adverse cumulative effects on the landscape and visual amenity in the area as a result of a number of developments being under construction and in operation at the same time.

17.8.4 There is a potential for cumulative effects to result in significant benefits through additional employment to the Cambridge TTWA (Travel to Work Area). Additionally, significant beneficial cumulative effects are predicted to the local ground conditions as any identified contamination within each cumulative developments will be managed as part of the development works.

17.9 References

Ref. 17-1 Her Majesty's Stationary Office (HMSO) (2017) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: http://www.legislation.gov.uk/uksi/2017/572/pdfs/uksi_20170572_en.pdf [Accessed 08/07/2020]

Ref. 17-2 Directive 2011/92/EU of the European Parliament and of the Council (2011) on the assessment of the effects of certain public and private projects on the environment. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32011L0092 [Accessed 10/08/20]