EAST PARK ENERGY

East Park Energy

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Environmental Statement

Volume 2 – Technical Appendices

Appendix 15-4: In-Combination Climate Change Impact Assessment

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Appendix 15-4: In-Combination Climate Change Impact Assessment

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1.0 INTRODUCTION

1.1.1 The In-combination Climate Change Impact (ICCI) Assessment for the Scheme is presented in Table 1. The considers the extent to which climate change exacerbates or ameliorates the potential effects identified within each of the technical assessments presented in each of the following technical chapters:

- **ES Vol 1 Chapter 5: Landscape and Visual [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 6: Cultural Heritage and Archaeology [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 7: Ecology and Nature Conservation [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 8: Hydrology and Flood Risk [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 9: Traffic and Transport [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 10: Noise and Vibration [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 11: Air Quality [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]**;
- **ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]**; and
- **ES Vol 1 Chapter 14: Socio Economics, Land Use and Tourism [EN010141/DR/6.1]**.

1.1.2 ICCIs are unlikely to impact upon the construction phase of the Scheme given that, if consented, construction would occur in the near future when the climatic conditions are well understood and would be accounted for in the construction practices. The ICCI Assessment presented has been informed by the projected change in climate identified in **ES Vol 2 Appendix 15-3: Climate Resilience Assessment [EN010141/DR/6.2]** which includes:

- Increased winter precipitation;
- Decreased summer precipitation;
- Increase in temperatures;
- Increased frequency and magnitude of storms; and

- Changes in cloud cover.

1.1.3 This ICCI Assessment has been produced using the principles as set out in the Institute of Sustainability and Environmental Professionals (ISEP) (formally known as the Institute of Environmental Management and Assessment 'IEMA') guidelines titled: "Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation"[1] (hereafter referred to as the 'ISEP Climate Change Resilience Guidance'). Professional judgement has been used to assess how potential effects presented within the technical assessments will be affected by climate change.

2.0 ICCI ASSESSMENT

Table 1 – ICCI Assessment

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
ES Vol 1 Chapter 5: Landscape and Visual [EN010141/DR/6.1]	• Increased winter precipitation; • Decreased summer precipitation; • Increase in temperatures; and • Increased frequency and magnitude of storms.	• Drought; • Heatwaves; • Changes in annual average temperature; • Increased frequency and magnitude of wind surges; and • Surface water and fluvial flooding.	The landscape proposals, as set out **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, mitigate the landscape impacts by shielding the Scheme. The projected changes in climate have the potential to cause damage to the planting as a result of drought, flooding, or increased high wind events. These are explained further with reference to ecological impacts.	The landscape proposals, as set out on **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, includes retention of existing woodlands, creation of 'Green Lanes', enhancement of waterside meadows, planting of hedgerows and trees. The landscaping proposals consider species selection, mixes and avoidance of single species, and ensures species are suitable for local conditions. Additionally, the **outline Landscape and Ecological Management Plan (oLEMP) [EN010141/DR/7.7]**, includes specific details for the management throughout the lifetime of the Scheme. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 5: Landscape and Visual [EN010141/DR/6.1]** and the **oLEMP [EN010141/DR/7.7]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 6: Cultural Heritage and Archaeology [EN010141/DR/6.1]	• Increased winter precipitation; • Decreased summer precipitation; and • Increase in temperatures.	• Surface water and fluvial flooding; and • Drought.	The design of the Scheme has considered the setting of designated heritage assets in the local area and sought to minimise impacts through the creation of offsets and buffers from field boundaries. The effects upon the setting of heritage assets during operation is predominantly related to the potential visual impact of the completed	The landscape proposals, as set out in **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, includes retention of existing woodlands, creation of 'Green Lanes', enhancement of waterside meadows, planting of hedgerows and trees. The landscaping proposals consider species selection, mixes and avoidance of single species, and ensures species are suitable for local conditions. Additionally, the **outline Landscape and Ecological Management Plan (oLEMP) [EN010141/DR/7.7]**, includes specific details for the management throughout the lifetime of the Scheme.

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
			Scheme, rather than buried archaeology. The landscape proposals, as set out in **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, mitigate the cultural heritage and archaeology impacts by shielding the Scheme. The projected changes in climate have the potential to cause damage to the planting as a result of drought, flooding, or increased high wind events. These are explained further with reference to ecological impacts.	No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 6: Cultural Heritage and Archaeology [EN010141/DR/6.1]** and the **oLEMP [EN010141/DR/7.7]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 7: Ecology and Nature Conservation [EN010141/DR/6.1]	• Increased winter precipitation; • Decreased summer precipitation; • Increase in temperatures; and • Increased frequency and magnitude of storms.	• Drought; • Heatwaves; • changes in annual average temperature; • Increased frequency and magnitude of wind surges; and • Surface water and fluvial flooding.	Potential damage to or loss landscaping proposals due to drought causing plants to not be able to perform essential processes. Potential damage to or loss of landscaping proposals due heatwaves causing scorching and destabilisation of soil structure. Potential longer growing season, more vigorous vegetation growth in spring and autumn because of changes in annual average temperatures.	The landscape proposals, as set out in **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, include retention of existing woodlands, creation of 'Green Lanes', enhancement of waterside meadows, planting of hedgerows and trees and inclusion of mammal gates. The landscaping proposals consider species selection, mixes and avoidance of single species, and ensure species are suitable for local conditions. Additionally, the **outline Landscape and Ecological Management Plan (oLEMP) [EN010141/DR/7.7]**, includes specific details for the management throughout the lifetime of the Scheme. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 7: Ecology and Nature Conservation [EN010141/DR/6.1]** and the **oLEMP [EN010141/DR/7.7]** as these remain

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
			Potential damage to or loss of the landscaping proposals due to high winds causing soil erosion and destabilisation. Potential damage to or loss of the landscaping proposals due to flooding causing soil erosion, destabilisation, and inundation. Damage to or loss of the landscaping proposals could affect food availability for birds, badgers, bats, amphibians, invertebrates and other small mammals at the Site.	effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 8: Hydrology and Flood Risk [EN010141/DR/6.1]	• Increased winter precipitation; and • Increased frequency and magnitude of storms.	• Surface water and fluvial flooding.	Increased winter precipitation and increased frequency and magnitude of storms could potentially increase the risk of fluvial and surface water flooding to the Scheme.	**ES Vol 2 Appendix 8-1: Flood Risk Assessment [EN010141/DR/6.1]** has considered the future water levels at the Site. All above-ground infrastructure has been designed to be within Flood Zone 1, i.e. to stand outside of the 1 in 1,000-year fluvial flood extents. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 8: Hydrology and Flood Risk [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios and ensure that there are no unacceptable flood risk impacts from the Scheme.
ES Vol 1 Chapter 9: Traffic and Transport [EN010141/DR/6.1]	• Increased winter precipitation; and • Increased frequency and magnitude of storms.	• Surface water and fluvial flooding.	Increased winter precipitation and increased frequency and magnitude of storms could potentially increase the risk of fluvial and surface water flooding to the Scheme which could	**ES Vol 1 Chapter 9: Traffic and Transport [EN010141/DR/6.1]** states traffic will be minimal.as access to the Site will primarily be for maintenance during operation and the Site is predominantly in Flood Zone 1, i.e. to standing outside of the 1 in 1,000-year

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
			cause contaminant mobilisation from road treatments (i.e. road salt).	fluvial flood extents, so contaminant mobilisation would be unlikely. **ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]** has included mitigation measures including a suitably stocked spill-kit, regular inspections of equipment, the safe storage of fuels and chemicals and a Pollution Incident Response Plan. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 9: Traffic and Transport [EN010141/DR/6.1]** and **ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 10: Noise and Vibration [EN010141/DR/6.1]	• Decreased summer precipitation; and • Increase in temperatures.	• Drought; • Heatwaves; and • Changes in annual average temperature.	Increased temperatures may cause cooling fans from the BESS, inverters, transformers, switchgear to run more often, but this results in only a slight, localised increase in noise.	Solar farms remain one of the quietest forms of energy generation, even under hot conditions. The noise assessment within **ES Vol 1 Chapter 10: Noise and Vibration [EN010141/DR/6.1]** has made conservative assumptions on the levels of noise that would be generated by various components of the Scheme, including the BESS, inverters, transformers, switchgear and transport to Site. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 10: Noise and Vibration [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 11: Air Quality [EN010141/DR/6.1]	• Decreased summer precipitation; and	• Drought; • Heatwaves; and	Increased temperatures and drought can worsen air quality by drying out	**ES Vol 1 Chapter 11: Air Quality [EN010141/DR/6.1]** has stated permanent access tracks made with

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
	• Increase in temperatures.	• changes in annual average temperature.	surfaces and increasing dust emissions.	compacted stone will be constructed on-site to reduce dust emissions. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 11: Air Quality [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]	• Increased winter precipitation; and • Decreased summer precipitation.	• Drought; and • Surface water and fluvial flooding.	Potential future increases or decreases in precipitation leading to flooding or drought respectively could affect groundwater quality underlying the Site and potential contaminants currently above the groundwater table could be mobilised.	**ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]** has included mitigation measures including a suitably stocked spill-kit, regular inspections of equipment, the safe storage of fuels and chemicals and a Pollution Incident Response Plan. No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 12: Ground Conditions [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]	• Decreased summer precipitation; and • Increase in temperatures.	• Drought; and • Heatwaves.	Drought and heatwaves can degrade soils by increasing erosion, and drying, causing the loss of organic matter.	**ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]** states there would be significant beneficial effects in relation to soils on the Site as the land would be rested from arable rotation. Additionally, the landscape proposals, as set out in **ES Vol 3 Figure 2-1: Illustrative Environmental Masterplan [EN010141/DR/6.3]**, considers species selection, mixes and avoidance of single species, and ensuring species are suitable for local conditions. Additionally, the **outline Landscape and Ecological Management Plan (oLEMP) [EN010141/DR/7.7]**, includes specific details for the management throughout the lifetime of the Scheme.

Technical chapter	Change in climate	Hazard resulting from climate change	Potential impacts of climate change	Additional mitigation requirement
				No additional mitigation is required beyond those measures set out in **ES Vol 1 Chapter 13: Land and Soils [EN010141/DR/6.1]** as these remain effective in the context of anticipated climate change scenarios.
ES Vol 1 Chapter 14: Socio Economics, Land Use and Tourism [EN010141/DR/6.1]	• Increased winter precipitation; • Decreased summer precipitation; • Increase in temperatures; and • Increased frequency and magnitude of storms.	• Heatwaves; • Increased frequency and magnitude of wind gusts; and • Surface water and fluvial flooding.	Increased frequency and intensity of wind gusts; heatwaves; and fluvial and surface water flooding could affect the local community and existing facilities from a socio-economic and land use perspective.	Mitigation measures are embedded within the Scheme proposals to reduce operational effects relating to landscape, traffic and transport, noise, and air quality (in the sections above), which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective. **ES Vol 2 Appendix 15-3 Climate Resilience Assessment [EN010141/DR/6.2]** considers the climate resilience of the on-site workers, the vehicular access to Site and the equipment within the Scheme and concludes that no likely significant impacts are likely to arise. No additional mitigation is required beyond the measures set out in the following chapters as these remain effective in the context of anticipated climate change scenarios. • **ES Vol 1 Chapter 5: Landscape and Visual [EN010141/DR/6.1]**; • **ES Vol 1 Chapter 9: Traffic and Transport [EN010141/DR/6.1]**; • **ES Vol 1 Chapter 10: Noise and Vibration [EN010141/DR/6.1]**; and • **ES Vol 1 Chapter 11: Air Quality [EN010141/DR/6.1]**.

3.0 CONCLUSION

3.1.1 Climate change has the potential to exacerbate and/or ameliorate the potential effects identified within the technical chapters. However, the mitigation measures outlined in the technical chapters remain effective in the context of anticipated climate change scenarios.

4.0 REFERENCES

[1] ISEP. (2020). *Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation.* Available at: https://www.iema.net/media/mabhqino/iema-eia-climate-change-resilience-june-2020.pdf [Last Accessed 14 August 2025].