

Technical Appendix 2.1

Summary of Other Potential Impacts – Air Quality, Human Health, Major Accidents and Disasters, and Waste

2.1 Introduction

In the Scoping Report (dated January 2026), the following topics were proposed to be scoped out of the EIA:

- Air Quality and Human Health;
- Risk of Major Accidents and Disasters.

East Ayrshire Council (EAC) stated in their Scoping Response (dated 2nd March 2026) that Air Quality and Human Health *“will require to be addressed in the EIA Report, though provided any relevant chapters make it clear that public health has been addressed where appropriate, then a specific chapter of air quality and human health would not be necessary. Where this is not clearly addressed, then a specific chapter on air quality and human health would be required”*.

Furthermore, EAC stated in their Scoping Response that, with regard to Major Accidents and Disasters, it *“consider[s] it would be necessary to include a summary or table just to highlight each of the potential risks and provide a brief explanation as to whether or not these are deemed to be relevant or necessary of further detailed consideration within the EIA Report. For any risks which are deemed worthy of fuller assessment, this should be detailed in the relevant chapter of the EIA Report”*.

In addition, in their Scoping Response, with regard to Waste, the EAC considered that *“discussion should be made within the EIA Report of the potential sources of waste and how waste will be suitably dealt with, although these matters might be able to be addressed in each relevant chapter instead of a specific section.”*

The purpose of this Technical Appendix of the Environmental Impact Assessment (EIA) Report (EIAR) is to provide the information required by the EAC, as set out in their Scoping Response, or to indicate where these topics have been addressed in the EIAR.

2.2 Air Quality and Human Health

2.2.1 Air Quality

As stated in the Scoping Report, the air quality of the Site is expected to be good due to the rural location, with few pollution sources. The main existing pollution source is likely to be local emissions from traffic on the A70.

During the construction of the Proposed Development, the movement of vehicles and the on-site plant would generate exhaust emissions. Given the short-term nature of the construction period and the limited area to be developed, effects on air quality are likely to be negligible.

Construction activities have the potential to generate dust during dry spells, which may adversely affect local air quality. Given the scale, nature and duration of construction activities, it is considered that dust from construction is unlikely to cause a nuisance, particularly with the implementation of standard mitigation measures as detailed in a Construction Environmental Management Plan (CEMP), e.g., wheel washes; dampening of loads. Section 10.5 of **Chapter 10: Traffic and Transport** of the EIAR discusses standard mitigation to be applied during construction as part of the implementation of the Construction Traffic



Management Plan (CTMP) and includes measures to minimise dust and emissions as well as potential impacts on traffic.

An operational wind farm produces no notable atmospheric emissions. The operation of the wind farm would therefore have no discernible adverse effects on local or national air quality.

Relevant mitigation measures for air quality, dust and pollution control will be captured within the site-specific CEMP.

2.2.2 Human Health

The design evolution of the Proposed Development, assumed grid connection routing corridor and abnormal indivisible load (AIL) route took potential impacts on sensitive receptors into account. **Chapter 3; Design Evolution and Alternatives** explains in more detail how these were considered and potential adverse impacts avoided wherever possible through design (often referred to as embedded mitigation). Some examples of how this was implemented include the 250 m minimum avoidance buffers for private water supplies, topple distance avoidance buffers, predicted noise levels through noise modelling, consideration of visibility splays at the Site entrance and design reviews taking predicted landscape and visual impacts, as well as other environmental impacts, into account. Residential avoidance buffers were applied to all aspects of the Proposed Development as well as the grid connection corridor and AIL route.

The potential of the Proposed Development, the proposed grid connection and AIL route to impact on human health is identified and assessed in various technical chapters and technical appendices within the EIAR, and / or in the standalone Socio-Economics, Tourism and Recreational Report being submitted as part of the application for Section 36 consent. The compliance of the Proposed Development with the relevant planning policies is discussed in the Planning Statement submitted as part of the application.

- Landscape and Visual Impacts:
 - o Potential impacts on landscape and visual sensitive receptors were assessed in **Chapter 4: Landscape and Visual Impact Assessment**.
 - o The potential of the Proposed Development to impact on residential visual amenity was assessed in **Technical Appendix 4.4**.
- Noise:
 - o The potential noise impacts of the Proposed Development were assessed in **Chapter 9: Noise**.
- Shadow Flicker:
 - o The potential for residential receptors to be affected by shadow flicker has been assessed in **Technical Appendix 1.4**.
- Private Water Supply:
 - o The potential for the construction of the Proposed Development to impact on private water supplies has been assessed in **Technical Appendix 8.5** and discussed in **Chapter 8: Geology, Hydrology, Hydrogeology and Peat** of the EIAR.
- Potential risk of peat landslide hazard to human health:
 - o Notwithstanding the mitigation measures outlined in **Technical Appendix 8.1: Peat Landslide Hazard Risk Assessment (PLHRA)**, it is recognised that specific controls are also required to safeguard construction personnel. These measures are primarily embedded within construction-phase health and safety management



procedures but Section 6.3 of **Technical Appendix 8.1** identifies some additional mitigation measures to keep construction workers safe.

- Road user safety and driver delay:
 - o The potential for the construction traffic (including AIL Vehicles) to impact on road users was assessed in **Chapter 10**.
- Site Regeneration and Biodiversity Enhancement:
 - o The Applicant's intention to improve the restoration of the Site while simultaneously restoring and enhancing biodiversity will enable the Site to be made accessible to the public again for recreational enjoyment after decades of being off-limits for public access due to past opencast mining and subsequent restoration efforts. The proposed site regeneration is discussed in **Chapter 2: Project Description** and the standalone report Socio-Economics, Tourism and Recreation Report which is being submitted as part of the application for Section 36 consent. The proposed biodiversity enhancement is discussed in **Chapter 6: Ecology** and **Technical Appendix 6.6: Biodiversity Enhancement Management Plan (BEMP)**.
- Recreation:
 - o The potential for the Proposed Development to improve recreational access to the Site is discussed in **Chapter 2** and in the aforementioned Socio-Economics, Tourism and Recreation Report.
 - o Alongside the proposed biodiversity enhancements, it is proposed that a network of walking and cycling routes be provided with shelters, viewpoints and interpretive elements for visitors to enjoy. These walking and cycling routes will likely include recreation and access enhancements and could include the establishment of a heritage trail.
 - o Furthermore, the potential for risks to visitors and staff during the construction and operational phase of the Proposed Development were discussed in **Chapter 2**. Topics covered included high wind speed conditions, potential for ice throw, lightning strikes and potential for mechanical failure, battery fire management as well as measures that either have been put in place through design or will be put in place during construction and operation to ensure public safety.

A separate chapter in the EIAR assessing potential impacts on Human Health is therefore not required.

2.3 Risk of Major Accidents and Disasters

Schedule 4 of the EIA Regulations lays out the information which is to be contained within an EIA Report. Part 8 states *"A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to legislation of the European Union such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies."*

This section reviews potential major accidents and disasters which could conceivably occur and the likelihood of them occurring to/from the Proposed Development. If potential significant



effects are identified, a cross-reference to the appropriate section of the EIA Report is provided, where the effects are assessed in detail.

2.3.1 Embedded Mitigation

2.3.1.1 Mitigation Through Design

As stated in the Scoping Report, given the nature of the Proposed Development, the risk of a major accident or disaster is considered to be extremely low. The Principal Designer ensured a Design Risk Assessment process was followed during the design phase to ensure designers fully assessed risks and mitigate to a level deemed as low as reasonably practicable during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015).

Some examples of measures that were implemented during design to minimise the potential for major accidents include:

- The application of avoidance buffers between proposed turbine locations and existing public infrastructure such as roads, railways, powerlines. Potential impacts on utilities were discussed in **Technical Appendix 1.6**.
- The application of topple distance buffers between turbines and other infrastructure including residential properties and the proposed substation and battery energy storage system (BESS). Topple distance is widely accepted to be the maximum height of the turbine plus 10%.
- Embedding Site access safety into the design by ensuring the Site entrance can accommodate two HGVs side-by-side to avoid queuing and potential blockage of the public road and potential for consequent road traffic accidents;
- Turbines have been placed on backfill shallower than 15 m to maximise structural integrity of the foundations; and
- Including two vehicular accesses and a fire water tank in the design of the BESS.

Measures that were embedded into the design to minimise the potential for accidents as a result of the construction and operation of the Proposed Development are described in **Chapter 3** and in each of the technical chapters (**Chapters 4 to 10**) of the EIAR.

2.3.1.2 Mitigation During Operation

During the operational phase of the Proposed Development, routine maintenance inspections will be completed in order to ensure the safe and compliant operation of all built infrastructure. Further measures that are implemented during operation under applicable weather conditions are discussed in **Chapter 2**.

2.3.2 Major Accidents

2.3.2.1 Biological Epidemic

Any biological epidemic is unlikely to result in a major accident or disaster given that construction can be halted or postponed during any affected period. In the event of a biological epidemic the relevant Government guidelines would be adhered to at all times. No significant effects are anticipated, and as such biological epidemics are scoped out of further assessment.



2.3.2.2 Chemical Incidents

Construction of the Proposed Development has the potential to cause chemical pollution events through the spillage of fuel, paints, oils, etc. on the ground. An assessment of potential impacts from pollution events has therefore been undertaken and is presented in **Chapter 8: Geology, Hydrology, Hydrogeology and Peat**. Good practice mitigation to prevent chemical incidents will be implemented through the Construction Environmental Management Plan (CEMP) and the Operational Environmental Management Plan (OEMP).

2.3.2.3 BESS Fire

Scottish Government guidance states, *“When managed correctly, BESS can be operated safely and the likelihood of problems is low. However, the chemical nature of lithium-ion batteries used at many BESS sites can give rise to specific health and safety considerations. When faults do occur, these batteries can pose a significant fire risk due to thermal runaway”*¹.

The design of the BESS has taken the recommended mitigation measures into account such as provision of two vehicular accesses and a fire water tank. A battery safety statement is included as **Technical Appendix 2.3**. In addition, environmental emergency preparedness and response plan will be produced prior to the commencement of construction as part of the CEMP, which will include how to respond to a BESS fire.

2.3.2.4 Utilities Failure

The Proposed Development has been designed to avoid known utilities infrastructure – refer to **Chapter 3** for more detail. The potential for significant effects of the Proposed Development to impact on utilities and other existing infrastructure was assessed in **Technical Appendix 1.6** using publicly available information and information provided by key consultees during the Scoping consultation process such as Scottish Water, Scotland Gas Networks (SGN), and Scottish Power Energy Networks (SPEN), ultimately concluding that no significant effects are expected.

2.3.3 Natural Disasters

2.3.3.1 Earthquake

There have been no significant earthquakes in recent years in East Ayrshire. The most recent earthquake occurred in December 2006 approximately 33 km to the southeast of the Site near Dumfries, Dumfries and Galloway². The earthquake magnitude was 3.6, and depth was 7 km.

The choice of turbine model will be carefully considered by the Applicant and the design and construction of the foundations will take into consideration the ground conditions and risk of earthquakes. Therefore, there is a low likelihood of an earthquake occurring and there is a very low risk to the Proposed Development. No significant effect is anticipated, and earthquakes are scoped out of further assessment in the EIA Report.

2.3.3.2 Tsunamis

To escape a tsunami, it is recommended to go above 30.5 m above sea level³ or at least 1.6 km inland (ARC, 2020). The proposed Development is approximately 27 km away from

¹ Scottish Government. March 2026. Battery Energy Storage Systems: planning guidance. <https://www.gov.scot/publications/planning-guidance-battery-energy-storage-systems/pages/4/> [Accessed 04/08/2026]

² Earthquake Track, 2026. https://earthquaketrack.com/gb-sct-ayr/recent#google_vignette

³ ARC. (2020), American Red Cross: Tsunami Preparedness. Available at: <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/tsunami.html> [Accessed 05/08/2026]



the coastline and the lowest topographical elevation within the Site is approximately 192 m above sea level. The likelihood of such an event occurring at the turbine locations is extremely low and therefore no significant effect is anticipated. Tsunamis have been scoped out of further assessment.

2.3.3.3 Volcanic Eruptions

There are no active volcanoes in Scotland. Over 60 volcanic necks are known in Ayrshire, mostly within a 20 km radius of the Mauchline Basin, extending to West Kilbride in the north, Muirkirk in the east and Dalmellington in the south⁴. However, these volcanic eruptions occurred millions of years ago. Therefore, volcanic eruptions are not a risk to the Proposed Development. No effect is anticipated, and volcanic eruptions have been scoped out of further assessment.

2.3.3.4 Landslide

A Peat Landslide Hazard Risk Assessment (PLHRA) is included within **Chapter 8: Geology, Hydrology, Hydrogeology and Peat** and **Technical Appendix 8.1** of the EIAR. In short, the assessment concludes that the majority of the Site has been assessed to have a negligible or low likelihood of a peat landslide occurrence under baseline (pre-construction) conditions, with peat absent across the majority of the Site, which has been heavily disturbed by past mining activities. No areas of 'medium' (or greater) likelihood were identified within influencing distance of the Proposed Development, and therefore an adverse consequence and risk assessment was not required.

2.3.3.5 Severe Weather

There is potential for the Proposed Development to be impacted by severe weather including increased windstorms. However, wind turbines are designed to withstand extreme weather conditions with brake mechanisms installed within the turbines so that they only operate under specific wind speeds and will shut-down during high wind speed events. Therefore, there is very low risk to the Proposed Development from high wind speeds, no significant effect is anticipated, and high windstorms are scoped out of further assessment in the EIAR.

There is a risk that ice may accumulate on turbine blades, nacelles and towers under the right conditions. The ice may then be released from the blades and cause injury. However, turbine technology has evolved to avoid the possibility of ice throw through the shut-down of the turbines in the appropriate conditions and the detection of ice on the blades. Therefore, the risk of ice throw from the Proposed Development is considered to be very low and no significant effects are anticipated. Ice throw is therefore scoped out of further assessment.

As with all tall structures there is a possibility that the wind turbines will attract lightning strikes. Turbine technology now has appropriate lightning protection measures to ensure that the lightning is conducted harmlessly to the ground. Therefore, the likelihood of a lightning strike causing damage to the Proposed Development is considered to be low and no significant effects are anticipated. Lightning is scoped out of further assessment.

The potential for these severe weather conditions to occur and the measures embedded into the operational management of the Proposed Development were also discussed in **Chapter 2** of the EIAR.

⁴ Cameron, I B, and Stephenson, D. 1985. British regional geology: The Midland Valley of Scotland. Third edition. Reprint 2014. Keyworth, Nottingham: British Geological Survey. Available at: https://earthwise.bgs.ac.uk/index.php/Permian_volcanic_activity_Midland_Valley_of_Scotland [Accessed 05/08/2026]



2.3.3.6 Flooding

An assessment of potential flood risk was included in **Chapter 8** of the EIAR. In short, subject to adoption of a detailed drainage design, which incorporates the use of SuDS and an appropriate management of the drainage system, no increase in flooding is expected as a result of the Proposed Development.

2.3.3.7 Wildfires

Wildfires are becoming more frequent in Scotland, with East Ayrshire Council issuing an announcement in April 2025 warning of extreme fire risk and providing information to the general public on how to prevent wildfires⁵. The announcement also states that most wildfires are caused by human activity, whether on purpose or by accident.

The Applicant's proposal to open the Site for public access during the operational phase and provide recreational pathways and visitor spots could increase the potential risk for wildfires. However, as part of the recreational enhancements proposed by the Applicant for the Site, warning signs will be posted at strategic locations with advice on how to prevent wildfires. In the event of a wildfire, whether on-site or in close proximity, the Applicant will implement emergency measures which could include firefighting action and potentially taking the Proposed Development offline until the wildfire has been extinguished.

2.4 Waste

Typical sources of waste during the life of the Proposed Development could include, but not be limited to, materials such as:

- Concrete waste;
- Aggregate;
- Scrap metal;
- Domestic waste (food, packaging, paper, plastic);
- Small volumes of hazardous waste e.g. oil, fuel and lubricants and used spill kits;
- Excess peat (if unable to reuse on-site). This has been discussed in **Chapter 8** and a Peat Management Plan has been produced (**Technical Appendix 8.2**) which identifies that no peat will require to be exported from the Site.

A detailed Site Waste Management Plan will be produced as part of the detailed CEMP prior to the commencement of construction. A waste disposal protocol will form part of the OEMP. Therefore, no significant impacts from waste are predicted and no further assessment is necessary.

⁵ East Ayrshire Council. April 2025. What you need to know about wildfires and how to prevent them. Available at https://newsroom.east-ayrshire.gov.uk/news/what-you-need-to-know-about-wildfires-and-how-to-prevent-them#cc_target [Accessed 05/08/2026].

