

8 Climate

8.1 Introduction

This chapter of the EIAR has been prepared by WSP Ireland Consulting Ltd (WSP) and assesses the potential climatic impacts which can be reasonably expected to occur as result of the Proposed Project

The Proposed Project is the restoration of a disused quarry by import of clean soil and stone from construction and demolition. The lands on which the Proposed Project occur (the 'Application site' or Site') are located in the townland of Coolsickin or Quinsborough, Co. Kildare.

The Application Site includes a disused quarry void and associated historical working areas. It also includes a private access road that connects the disused quarry to the public road network, and agricultural lands to the east of that road where it is proposed to locate the temporary facilities required to manage the importation of clean soil and stone required for the Proposed Project.

All lands within the Application Site are within the ownership of the Applicant, Bison Quarries Ltd (BQL).

Potential climate impacts can be generated through the following processes at the Site:

- Impacts of climate change on the Proposed Project, including the sensitivity, exposure and the overall vulnerability of the Proposed Project to impacts from relevant climate hazards; and
- Impacts of the Proposed Project on the climate.

This EIAR is submitted in support of an application under Section 37L of the Planning and Development Act 2000, as amended.

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This chapter of the EIAR should be read in conjunction with the following technical chapters of the EIAR: Chapter 4 (Ecology and Biodiversity), Chapter 6 (Water), Chapter 7 (Air Quality).

8.1.1 Technical Scope

This assessment has been made with guidance from the 'Guidelines on the information to be contained in environmental impact assessment reports', published by the EPA in May 2022. The guidelines were drafted by the EPA with a view to facilitating compliance with EIA Directive (2014/52/EU).

8.1.2 Geographical and Temporal Scope

The assessment directly covers the physical extent of the EIA boundary¹ as shown in Figure 8-1. In the context of the EIAR, the EIA boundary contains lands that were historically quarried, the site entrance and private access road, and the proposed location of temporary facilities required for the Proposed Project. The EIA boundary encompasses the Section 37L Planning Application Boundary², which is shown in Figure 8-1.

The temporal scope of this assessment covers the proposed 10 year construction phase, comprising enabling works and infilling works, and the subsequent 3 year restoration phase, largely comprising aftercare and maintenance activities. A detailed description of the Proposed Project phasing is presented in Chapter 2 (Project Description) of this EIAR.

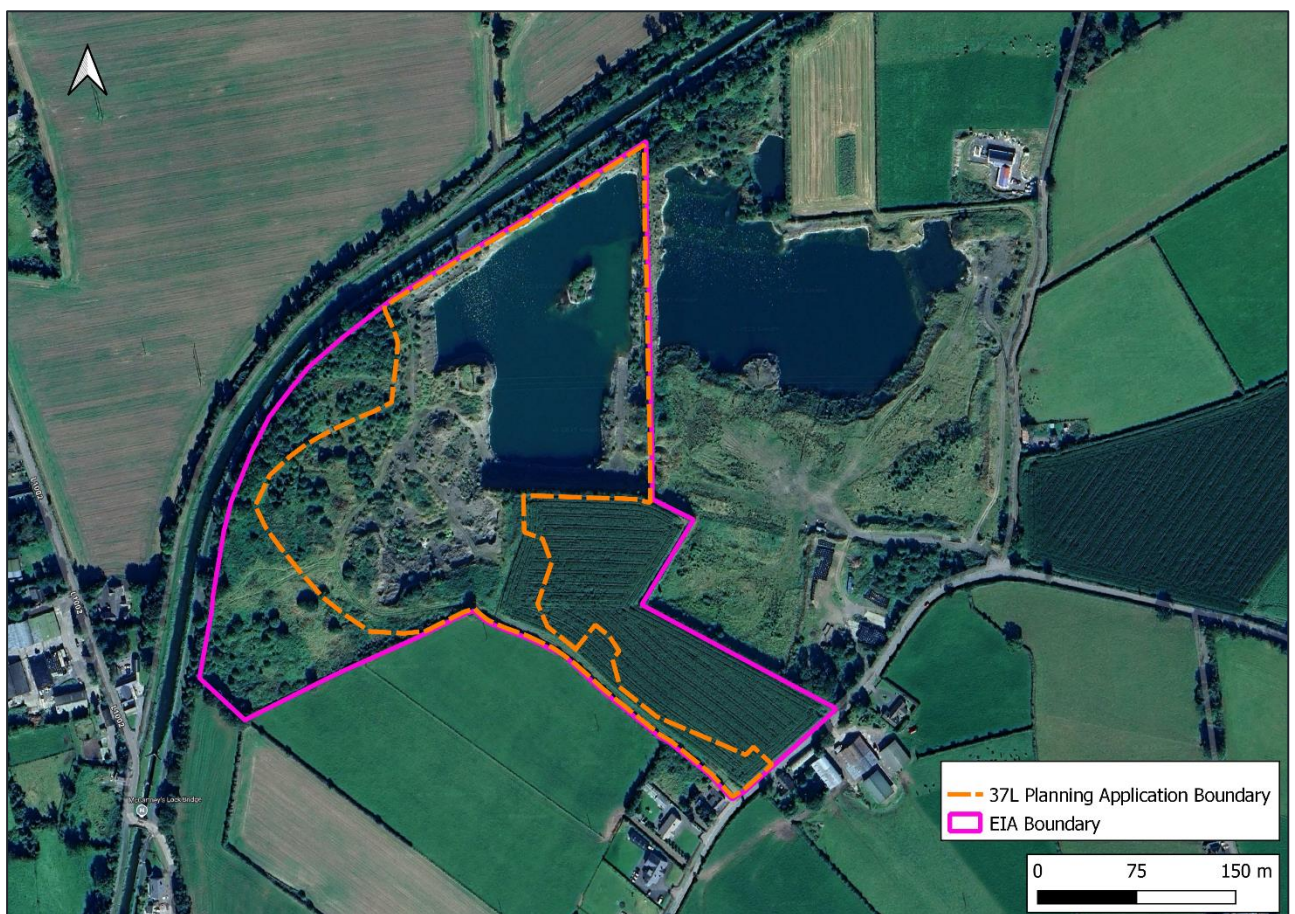


Figure 8-1 - EIA Boundary and 37L Planning Application Boundary overlain on 2024 Google Earth Satellite Aerial.

¹ Lands within the EIA boundary are referred to as the 'EIA unit'.

² Land within this boundary are referred to as the 'Application Site' or 'Site'.

8.1.3 Project Description Summary

The Proposed Project consists of the restoration of lands through the import of approximately 720,000 tonnes clean soil and stone as by-product (non-waste) from development sites to infill a disused historical quarry and raise ground levels to tie in with ground levels of surrounding land.

Restoration of the lands will be to agricultural grassland, an artificial waterbody, and a hedgerow habitat with the lands returned to their pre-extraction agricultural use.

The proposed duration of infilling is 10 years depending on market conditions for the anticipated acceptance of clean soil and stone, and a further 3 years for the completion of final restoration activities.

The Application Site is located in the townland of Coolsickin or Quinsborough, Co Kildare. The Application Site is accessed by a privately-owned access road connecting to a local road (L7049).

The following temporary facilities will be installed and maintained during the life of the Proposed Project:

- office and fully serviced welfare facilities;
- weighbridge and associated portacabin;
- closed-system wheel wash;
- 6 no. parking bays;
- 2 no. waste inspection bays and 1 no. bunded waste quarantine area;
- hardstanding area (vehicle movement and storage);
- surface water drainage infrastructure from hard standing and discharge to ground, including 2 no. interceptors and 2 no. soakaways;
- Security features, including security gates and fencing; and.
- Power supply. It is intended that approval will be sought for a connection to the ESB Network for the office and fully serviced welfare facilities. Diesel generators will be used to power mobile lighting, if required.

The Proposed Project site entrance and private access road will be upgraded and realigned. These will be retained following to completion of the Proposed Project.

A full project description is provided in Chapter 2 of this EIAR.

8.2 Legislative and Policy Context

8.2.1 Legislation

Legislative references considered specifically for the assessment of climate from quarrying activities, and relevant statutory instruments in a planning context include:

- Directive 2014/52/EU of the European Parliament and of the Council, (amending Directive 2011/92/EU);

- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, S.I. 296 of 2018; and
- Planning and Development Regulations 2001 (as amended).

8.2.2 Relevant Policies and Plans

8.2.2.1 National

The 2024 Irish Climate Action Plan (CAP24) is a comprehensive roadmap designed to guide Ireland towards achieving its climate goals. This plan is the third annual update since the introduction of the Climate Action and Low Carbon Development (Amendment) Act 2021, which legally binds Ireland to reduce its greenhouse gas emissions by 51% by 2030 and to reach net-zero emissions by 2050.

Key Objectives and Strategies:

- **Emission Reductions:** CAP24 outlines specific measures to halve Ireland's emissions by 2030. This includes sectoral emissions ceilings for key sectors such as electricity, industry, built environment, transport, and agriculture;
- **Carbon Budgets:** The plan aligns with the economy-wide carbon budgets and sectoral emissions ceilings agreed upon by the government in 2022. These budgets set limits on the total amount of greenhouse gases that can be emitted during a specific period; and
- **High-Impact Actions:** A new approach to the Annex of Actions has been implemented, focusing on high-impact actions that are crucial for meeting climate targets. This ensures that the most effective measures are prioritized.

Sector-Specific Measures:

- **Electricity:** Transitioning to renewable energy sources and enhancing grid infrastructure to support increased renewable capacity;
- **Transport:** Promoting electric vehicles, improving public transport, and encouraging active travel like cycling and walking;
- **Built Environment:** Enhancing energy efficiency in buildings through retrofitting and adopting sustainable construction practices; and
- **Agriculture:** Implementing sustainable farming practices and reducing methane emissions from livestock.

The plan emphasises the importance of governance and accountability, with a framework for ministerial accountability and oversight of government actions. It also highlights the need for public engagement and a just transition, ensuring that the shift to a low-carbon economy is fair and inclusive.

8.2.2.2 Local Authority (Kildare County Council)

The Kildare County Development Plan 2023-2029 was adopted on 09 December 2022. The key policies and objectives of this current plan are listed in Section 2.9.4 of the Project Description (Chapter 2).

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The Kildare County Council; Climate Change Adaptation Strategy, 2019–2024; was also considered in the preparation of this EIAR chapter.

8.2.3 Relevant Guidance

This assessment has been made with guidance from the ‘Guidelines on the information to be contained in environmental impact assessment reports’, published by the EPA in May 2022.

Other publications considered in this assessment include:

- European Commission; Climate Change and Major Projects, 2016; and,
- IEMA; Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2017.

8.3 Assessment Methodology and Significance Criteria

As identified above, the key objectives of this assessment are to assess:

- Impacts of climate change on the Proposed Project, including the sensitivity, exposure and the overall vulnerability of the Proposed Project to impacts from relevant climate hazards; and
- Impacts of the Proposed Project on the climate.

The assessment of the Proposed Project’s vulnerability to climate change shall review published historical regional weather data to demonstrate the current climate impacts in the study area, and will also consider any relevant events reported by site personnel.

Impacts of the Proposed Project on climate will consider aspects of its design that may impact emissions.

8.4 Baseline Conditions

8.4.1 Existing Environment

The existing environment within the EIA Boundary comprises:

- A disused quarry in the northern part of the EIA unit. Following closure of the quarry in approximately 2006, the quarry void space has filled with collected waters to approximately 9 m depth. The surrounding lands are primarily historical stockpiles and the lands have been recolonised by vegetation since the quarry closure in 2006³.
- Agricultural land in the southern part of the EIA unit. This land is used for tillage with a private access road linking this land, and the disused quarry, to the public road network.

³ Extraction and processing activities during the life of the quarry are the subject of an rEIAR prepared to support a substitute consent application. That rEIAR was prepared broadly concurrently to this EIAR and associated 37L application.

8.4.2 Climate at the site

The Irish climate is subject to strong maritime influences, such as the Atlantic Ocean and the warm North Atlantic Drift, with the effects decreasing with increasing distance from the Atlantic coast. The climate in the area of the Site is typical of the Irish climate, which is temperate maritime. The closest Met Éireann station is located at Carlow Oakpark approximately 36 km to the south of the Site. The total annual rainfall for the area recorded in Long Term Average was 851.1 mm.

8.5 Do Nothing Scenario

Without the Proposed Project it is assumed that the baseline conditions would remain as described above. The agricultural land would continue to be used for agricultural purposes. The agricultural potential of the quarried lands would not be restored. Therefore, their economic potential would not be restored within the local rural economy.

8.6 Characteristics of the Proposed Project

The Proposed Project is described in detail in Chapter 2 (Project Description) and summarised in Section 8.1.3.

Given the contents of the Project Description, the restoration phase impacts are considered to be no greater than those identified for the construction phase.

8.7 Potential Effects

8.7.1 Climate change Impacts on the Proposed Project

To assess the potential effects of climate change on the Proposed Project the approach identified in European Commissions (2016) 'Climate Change and Major Projects' assessment guidance has been considered. Although the Proposed Project is not a 'major project', this method is considered suitable guidance for such a climate change impact assessment. In designing and planning of such projects the guidance seeks to consider both climate change adaption and mitigation measures. Adapting a project is to ensure adequate resilience is built into the design to cope with relevant climate change impacts, e.g. flooding. The assessment of project adaptations required first must assess the vulnerability of the Site and also the risk of impacts from relevant climate hazards.

Climate change factors such as ocean acidification, sea-level rise and storm surges and waves have been scoped out of this climate assessment. For the Proposed Project the most applicable climate variables and hazards to consider are:

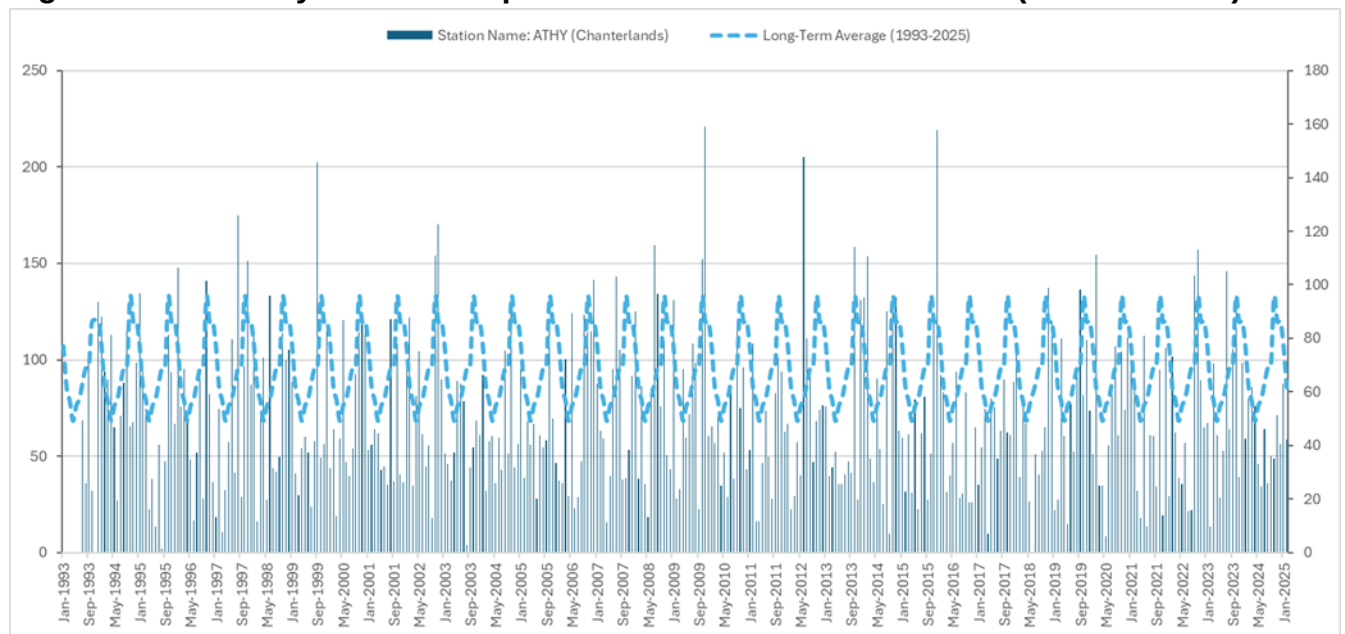
- Increasing precipitation affecting groundwater levels;
- Fluvial flooding;
- The effects of colder weather extremes effecting site operations; and
- Potential drought conditions from prolonged heat.

The sensitivity of various aspects of the Proposed Project have been assessed in Table 8-1 with regards to the relevant climate hazards identified. On-site assets include any structures and accessible aggregate within the Site footprint.

Inputs to the Site include the raw materials required for Site function, i.e. clean soil, water and imported fuels. The Proposed Project does not have any outputs.

Incidents of increased groundwater levels and fluvial flooding in the region coincide with periods of higher precipitation. Figure 8-2 below presents rainfall data recorded at the ATHY (Chanterlands) meteorological station (number 6414), which is located ca. 20 km south of the Site, for the period July 1993 to February 2025 (Met Eireann, 2025). From the long-term averages, the wettest months of the year are shown to be between October and January, with the driest months between March and June.

Figure 8-2 - Monthly Rainfall Graph 1993 – 2025 recorded at ATHY (Chanterlands)



The closest surface water feature to the Site under baseline conditions was the Grand Canal, which runs adjacent to the north/northwest boundary and is designated as a pNHA (see Chapter 4 Ecology and Biodiversity). Any run-off event from the Site would likely be absorbed by a drainage ditch which separates the Site from the Grand Canal, or infiltrate to ground through the superficial sands and gravels, prior to reaching the canal in any significant quantity.

A river-network surface water feature is identified on the EPA Mapviewer, to the west (ca. 0.5 km) of the Site is the River Figile. The Ummeras Beg stream, a tributary of the Figile runs ca. 0.8 km north of the Site. Local topography indicates that it is likely that any surface water flows within the vicinity of the Site will have flowed towards the northwest, towards the Grand Canal, under baseline conditions.

Table 8-1 - Sensitivity of the Proposed Project to climate hazards.

Sensitivity	Climate Variables			
	Fluvial Flooding	Precipitation and Groundwater Levels	Colder Weather Extremes	Heat/Drought
On-site assets	Low	Medium	Low	Low
Inputs to site (Clean Soil & Stone, water, fuels, etc.)	Low	Medium	Low	Medium (water)
Outputs (treated water)	Low	Medium	Low	Medium
Transportation Linkage	Low	Low	Medium	Low
Highest Sensitivity Score	Low	Medium	Medium	Medium

Table 8-2 presents an assessment of the Proposed Project in relation to the current climate and future predicted climate changes. Future impacts have been assessed as low given the medium-term duration of the assessment period (10 years) in addition to the mitigations which have been built into the Proposed Project at this stage.

Table 8-2 - Exposure of the Proposed Project to future climate change.

Exposure	Climatic Variables			
	Fluvial Flooding	Precipitation and Groundwater Levels	Colder Weather Extremes	Heat / Drought
Climate Events during the assessment period	Low	Low	Low	Low
Highest Score	Low	Low	Low	Low

The combination of the Site's 'Sensitivity' and 'Exposures' have shown, overall, that the Site is at a *Low* risk from climate hazards (Table 8-3), which is considered to be **Not Significant**. Further adaptations have been inbuilt into the Site as the area of former extraction is the most exposed to

potential climate impacts. Good site management in terms of groundwater monitoring and the good management of site excavations and run-off management during very extreme rainfall or flooding events have been incorporated into the construction phase. Following the implementation of these mitigation measures the overall impact from climate hazards at the site is considered to be '*Imperceptible*'.

Table 8-3 - Overall vulnerability of the Proposed Project to relevant climate change events

Vulnerability		Exposure (Current & Future Climate)*		
		Low	Medium	High
Sensitivity	Low	Fluvial Flooding	-	-
	Medium	Precipitation & Groundwater Levels Colder Weather Extremes Heat /Drought	-	-
	High	-	-	-
*Note: Exposure (Current & Future Climate) represents the degree of change and therefore represents the magnitude of impact (sensu EPA 2022 as set out in Chapter 1 of EIAR).				

8.7.2 Impacts on Climate from the Proposed Project

The Proposed Project is not considered to be of a sufficient scale to have the potential to impact the regional or local climate in any significant manner. In addition, the operation of plant and traffic movements at the Site have been screened out of the assessment as they are considered to have an insignificant effect on the local air quality (refer to Chapter 7 Air Quality).

The construction phase of the Proposed Project is not anticipated to have significant effects on local prevailing weather conditions, nor it is anticipated to increase potential of flooding in the surrounding area.

Construction operations have the potential to result in a loss of soil organic carbon in form of CO₂. Given the small area of stripping that will occur from other sites, the liberation of soil organic carbon and impact on the climate is considered to be '*Imperceptible*' adverse.

The impacts of the Proposed Project are predicted to have a level of significance no greater than *Slight*⁴. Therefore, effects are considered to be **Not Significant**.

8.8 Mitigation and Monitoring

No measures to address potential impacts to climate are required. No monitoring is proposed as part of this EIAR.

8.9 Residual Effects

The assessment concludes that the Site will not give rise to significant adverse effects to the climate during the construction phase of the proposed facility. In all cases the residual effect is therefore considered to be **Not Significant**.

8.10 Cumulative Effects

Assuming other developments in the area have incorporated widely adopted good design, practice and mitigation measures it is considered that there will be no significant cumulative effects of the Proposed Project with other developments in the locality. Therefore, cumulative effects are considered to be **Not Significant**.

8.11 Difficulties Encountered

No particular difficulties were encountered in the preparation of this chapter of the EIAR.

8.12 References

Department of the Environment, Climate and Communications. 2022. Climate Action Plan 2023.

Department of the Environment, Climate and Communications. 2023. Climate Action Plan 2024.

European Commission. 2016. Climate Change and Major Projects

EPA. 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports

EPA. 2025. EPA Map viewer. Available at <https://gis.epa.ie/EPAMaps/>

Geohive. 2025. Geohive Map viewer. Available at <https://www.arcgis.com/apps/webappviewer/index.html?id=3ae19cc156bf4706a929304bf8fc4f6>

IEMA. 2017. Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance.

⁴ Lower designation is considered appropriate given the embedded design measures and topic specific mitigation provided for the Proposed Project in the wider chapters of this EIAR, and the 10 year duration of the construction phase of the Proposed Project.



Kildare County Council. 2023. Kildare County Development Plan (CDP) 2024 – 2029.
Met Eireann. 2025. Weather Observing Stations. <https://www.met.ie/climate/weather-observing-stations>