



4.0 Examination of Alternatives

This chapter of the *Environmental Impact Assessment Report* has been prepared by Tom Phillips + Associates and details the rationale underpinning the proposed development and an examination of alternatives.

Schedule No. 6 of the Planning and Development Regulation 2001, as amended (reflecting Annex IV of Directive 97/11/EC) specifies the information to be contained in an EIAR, and requires "*a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects*" (DoHLGH 2021).

One of the key changes between the EIA Directive 2011/92/EU and the revised Directive 2014/52/EU pertains to the "mandatory assessment of alternatives." The EIA Directive 2014/52/EU requires an EIAR to contain "A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."

The new EIA Directive 2014/52/EU came into effect in 2014 and was finally transposed and adopted into Irish law on September 1st, 2018. The new European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) are now in effect and should remain in force during the expected life of the proposed development. The EPA has prepared several guidance documents in the interim before transposition that incorporated the expected provisions of the new law (EPA 2015; 2017). The Guidelines have been drafted with the primary objective of improving the quality of EIARs with a view to facilitating compliance (with the Directive). Practitioners are expected to adhere to the guidance while preparing EIARs, for applications made on or after May 16th, 2017. Due consideration of the draft guidelines was taken with respect to the preparation of the EIAR.

On the basis of the Draft Advice Notes on Current Practice for preparing Environmental Impact Statements (EPA 2015), and Guidelines on the Information to be contained in an Environmental Impact Assessment Report (EPA 2022), which take account of the revised EIA Directive (2014/52/EU), alternatives to the current proposals have been considered as follows.

4.1 Rationale for the Proposed Development

The proposed development is intended to facilitate the continued operation of the Breedon Cement Ireland Limited operations at Kinnegad quarry. The proposed development will take place within an area already permitted for quarrying activities and will involve deepening to a level of 10m OD.

The proposed deepening of this section of the existing quarry will be consistent with the permitted depths of the adjacent permitted quarry area and is intended to facilitate the efficient extraction of material from the overall quarry site.



The existing permitted quarry area is located in an area favourable to extraction activities, due to, inter alia:

- Established long history of extraction at this location;
- Proven high quality limestone reserves – refer to EIAR Chapter 7;
- Located within market distance to a number of large urban centres with ready access to the national and regional roads network;
- Best practice industry standard extraction and processing methods are used;
- Low development costs because infrastructure is already in place at the site and the application is for the continued development of a long-established quarry.

4.2 Main Alternatives Studied

4.2.1 Alternative Locations

In considering alternative locations it is a basic principle that minerals can only be worked where they naturally occur. The current planning application is for deepening of the northwestern portion of the existing permitted limestone quarry at Killaskillen, Kinnegad, Co. Meath. The possible alternatives available to the applicant relate to:

- Further development (into lands that do not currently have the benefit of planning permission for quarrying);

or

- Development of a new replacement ‘greenfield’ quarry in County Meath to serve the established cement plant at Kinnegad.

The existing quarry and cement plant are already permitted and fully operational, as well as being licensed by the Environmental Protection Agency (EPA). The applicant has already invested several hundred million euro on the site in developing one of the most modern cement plants in Europe. This represents a significant capital investment on the part of the applicant. The limestone quarry on-site is required to provide a source of raw material to the cement plant. Consequently, the development is not ‘footloose’, and an alternative location is therefore not considered viable.

Notwithstanding the above, there is no suitable identified alternative replacement quarry location available to the applicant in County Meath.

It is generally considered preferable to allow applications for the further development of existing mineral workings in contrast to opening new quarries at ‘greenfield’ sites. The further development of the existing permitted quarry also has the benefit of lower development costs as there is already an available working quarry face and existing infrastructure in place. The further development of the existing limestone quarry at Kinnegad will assist in continuing to provide extraction from a proven aggregate resource within an established operation, with no significant increase in environmental emissions.

On the basis of the above, it is considered that the further development (deepening) of part of the existing established quarry, subject to continued implementation of best environmental management practice and compliance with appropriate planning controls (i.e. planning



conditions and recommended emission limit values for the sector) is preferable in an overall planning context, compared to the development of a new replacement 'greenfield' site at some alternative location in the Meath and / or midlands region. Furthermore, and as outlined above, the applicant has already invested several hundred million euro in developing one of the most modern cement plants in Europe on the site and an alternative location is therefore not considered viable in any event.

4.2.2 Alternative Designs/Layout

The layout of the quarry is driven by the need to streamline the basic processes of extraction and processing of rock, as well as the need to minimise any adverse impact and optimise the quarry for a restoration scheme to beneficial after-use. The experience of the applicant, gained through the operation of the existing quarry, has provided input into the proposed deepening and the potential to incorporate same as part of the wider phasing of the quarry development. Quarry deepening will be carried out within the previously permitted area only, with minor amendments to the permitted quarry design, and this is considered to best minimise the potential impacts on the environment from a noise, dust and visual impact perspective, and as such has also dictated the preferred layout.

Extraction of the limestone reserves from below the quarry floor will not result in any additional land-take and will not result in any significant environmental impact. This EIAR demonstrates that the proposed deepening of the existing quarry development can be carried out without any significant impact on the surrounding environment, and within the recommended environmental emission threshold values for these types of development.

The proposed deepening will bring the permitted extraction depth of the site in line with adjacent areas, enabling an integrated approach to the phased extraction of the quarry and as such it is not considered that any further alternative designs needed to be explored.

Design more closely relates to the visual aesthetics of the development, which is less of a consideration in impermanent and screened quarries as compared to enduring and visual imposing residential, retail and commercial developments, public buildings or major pieces of infrastructure. Nonetheless, as negative visual impact can be a major environmental aspect associated with such developments, optimising the design alternatives is considered a priority. Visual impacts can be resolved through a number of design solutions by varying key aspects such as the location, shape, size, orientation, colour, etc. of the facilities. In this case, the main site activity, being the extraction of the limestone reserves from below the quarry floor will not result in any additional land-take, will not result in any significant environmental impact and will benefit from screening afforded by the existing quarry faces and intervening vegetation, including mature hedgerows, perimeter landscaping and screening berms. As this is an established quarry with fixed infrastructure in place, design alternatives are very limited at this point in the life cycle of the development.

As a natural consequence of the planning process, alternative schemes in terms of the working phases, face heights, direction of working and site restoration, etc. have been considered. The final scheme adopted has been determined by a process of examination and elimination to be most appropriate for the site.



4.2.3 Alternative Processes

As this is an established quarry with existing infrastructure in place, no alternative working method was considered. Conventional drilling and blasting methods are used in the breaking of quarry rock faces. Once blasting has occurred, extracted rock is loaded into dump trucks and transported to the primary crusher, which is located on the quarry floor. From here, the rock is processed in a secondary crusher, before being conveyed to the blending shed, located adjacent to the cement plant. There are no viable alternatives to this established process at the existing quarry.

While the process is largely determined by the principle of best available technology (BAT), process options can include such aspects as management of the process that affect the volumes and characteristics of emissions, residues, traffic and the use of natural resources. The precise working method and phasing to be implemented was determined following a detailed examination of various environmental issues.

4.2.4 Alternative Mitigation Measures

The mitigation measures outlined in this EIAR, where appropriate, have been developed by competent experts relevant to the aspect of the environment under consideration and represent best practice with a view to avoiding or otherwise minimising potential impacts on the environment.

There are no predicted residual impacts once mitigation measures have been successfully applied and as such alternative mitigation is not considered necessary.

4.2.5 “Do Nothing” Alternative

The “do nothing” alternative would involve the continued operation of the existing quarry to its permitted footprint and depth until such time as all reserves have been exhausted. This would be detrimental to the operation of the existing cement plant at the site, as well as the efficient and effective extraction of rock from the site, would limit the full potential of the quarry and may have an adverse impact on the local economy given the level of direct and indirect employment provided.

If no further works within the planning application area were carried out, the existing site would be restored to natural habitat after-uses as per the previously permitted restoration proposals.

4.3 Conclusion

The selection of an alternative location for the proposed development is not applicable, given that the quarry is already in operation and the application area is considered to have significant reserves to continue this operation. The quality of the remaining rock reserves, as well as the capital investment on site means that the proposed development is not footloose and cannot be accommodated in an alternative location. By continuing extraction from the existing and permitted site, cumulative impacts are minimised.