



# Irish Cement Limerick (P0029-06) Licence Application

## Environmental Impact Assessment Review

### Document Control Sheet

Client:	Environmental Protection Agency
Project Title:	Irish Cement Limerick (P0029-06) Licence Application
Document Title:	Environmental Impact Assessment Review
Document No:	MDR1482Rp0005

Text Pages:	45	Appendices:	-	Current Revision:	<b>A01</b>
-------------	----	-------------	---	-------------------	------------

Rev.	Status	Date	Author(s)	Reviewed By	Approved By
A01	Draft for Client	5 <sup>th</sup> Feb. 2019	JN, CD, TP	PC <i>Pallabhal</i>	PC <i>Pallabhal</i>

Copyright RPS Group Limited. All rights reserved.  
 The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Limited no other party may use, make use of or rely on the contents of this report.  
 The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS Group Limited for any use of this report, other than the purpose for which it was prepared. RPS Group Limited accepts no responsibility for any documents or information supplied to RPS Group Limited by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made.  
 RPS Group Limited has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy.  
 No part of this report may be copied or reproduced, by any means, without the written permission of RPS Group Limited



# TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	SCOPE OF SERVICES .....	1
1.2	OVERVIEW OF LICENCE APPLICATION .....	1
1.3	REGULATORY REGIME .....	2
1.4	REVIEW TEAM .....	2
<b>2</b>	<b>PLANNING CONSENT .....</b>	<b>4</b>
2.1	SUMMARY OF PLANNING CONSENT .....	4
2.2	PLANNING CONDITIONS.....	5
<b>3</b>	<b>EIA COMPLIANCE CHECK .....</b>	<b>8</b>
<b>4</b>	<b>EXAMINATION OF EIA ANALYSIS .....</b>	<b>14</b>
4.1	HUMAN BEINGS .....	14
4.1.1	Identification of Impacts.....	14
4.1.2	Description of Impacts .....	14
4.1.3	Impact Assessment.....	15
4.1.4	Interaction of Effects.....	16
4.1.5	Cumulative Effects .....	16
4.1.6	Planning Authority Assessment.....	16
4.1.7	Mitigation and Monitoring .....	16
4.1.8	Conclusion .....	16
4.2	BIODIVERSITY (INCLUDING FLORA AND FAUNA AS APPROPRIATE).....	17
4.2.1	Identification of Impacts.....	17
4.2.2	Description of Impacts.....	18
4.2.3	Impact Assessment.....	18
4.2.4	Interaction of Effects.....	19
4.2.5	Cumulative Effects .....	19
4.2.6	Planning Authority Assessment.....	19
4.2.7	Mitigation and Monitoring .....	19
4.2.8	Conclusion .....	20
4.3	LAND AND SOIL (INCLUDING GEOLOGY, EMISSIONS TO GROUND AND GROUNDWATER).....	20
4.3.1	Identification of Impacts.....	20
4.3.2	Description of Impacts.....	21
4.3.3	Impact Assessment.....	21
4.3.4	Interaction of Effects.....	21
4.3.5	Cumulative Effects .....	23
4.3.6	Planning Authority Assessment.....	23

4.3.7	Mitigation and Monitoring .....	23
4.3.8	Conclusion .....	23
4.4	WATER (INCLUDING WASTEWATER, STORM WATER, EMISSIONS TO SEWER, ETC. AS APPROPRIATE) .....	24
4.4.1	Identification of Impacts.....	24
4.4.2	Description of Impacts.....	24
4.4.3	Impact Assessment.....	25
4.4.4	Interaction of Effects.....	26
4.4.5	Cumulative Effects .....	26
4.4.6	Planning Authority Assessment.....	26
4.4.7	Mitigation and Monitoring .....	26
4.4.8	Conclusion .....	27
4.5	AIR AND CLIMATE (INCLUDING NOISE, VIBRATION, DUST AND ODOUR, AS APPROPRIATE).....	27
4.5.1	Identification of Impacts.....	27
4.5.2	Description of Impacts.....	28
4.5.3	Impact Assessment.....	29
4.5.4	Interaction of Effects.....	30
4.5.5	Cumulative Effects .....	30
4.5.6	Planning Authority Assessment.....	30
4.5.7	Mitigation and Monitoring .....	31
4.5.8	Conclusion .....	31
4.6	MATERIAL ASSETS, CULTURAL HERITAGE AND LANDSCAPE (INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE AS APPROPRIATE) .....	32
4.6.1	Landscape and Visual Impact .....	32
4.6.2	Cultural Heritage .....	35
4.6.3	Traffic and Transportation .....	37
4.6.4	Waste Management .....	38
4.6.5	Material Assets Conclusions .....	40
4.7	INTERACTION BETWEEN THE FACTORS.....	41
4.7.1	Identification of Impacts.....	41
4.7.2	Description of Impacts.....	41
4.7.3	Impact Assessment.....	41
4.7.4	Interaction of Effects.....	41
4.7.5	Cumulative Effects .....	41
4.7.6	Planning Authority Assessment.....	42
4.7.7	Mitigation and Monitoring .....	42
4.7.8	Conclusion .....	42

4.8	VULNERABILITY OF THE PROJECT TO RISKS OF MAJOR ACCIDENTS AND/OR DISASTERS	42
4.8.1	Identification of Impacts	42
4.8.2	Description of Impacts	43
4.8.3	Impact Assessment	43
4.8.4	Interaction of Effects	43
4.8.5	Cumulative Effects	43
4.8.6	Planning Authority Assessment	44
4.8.7	Mitigation and Monitoring	44
4.8.8	Conclusion	44
<b>5</b>	<b>RECOMMENDATIONS</b>	<b>46</b>
5.1	GENERAL RECOMMENDATION	46
5.2	REQUEST FOR FURTHER INFORMATION	46

### LIST OF TABLES

Table 1.1:	RPS Review Team	3
Table 3.1:	Article 94 (green) and Schedule 6 (orange) Compliance Check	9
Table 4.1:	Summary of review on Population and Human Health	17
Table 4.2:	Summary of review on Biodiversity	20
Table 4.3:	Summary of review on Land and Soil	24
Table 4.4:	Summary of review on Water	27
Table 4.5:	Summary of review on Air, Noise and Climate	32
Table 4.6:	Summary of review on Material Assets	40
Table 4.7:	Summary of review on Interactions between the Factors	42
Table 4.8:	Summary of review on Risks/Vulnerabilities to Accidents and/or Disasters	44

# 1 INTRODUCTION

## 1.1 SCOPE OF SERVICES

RPS has been appointed by the Environmental Protection Agency (EPA) to undertake a detailed review of the following application to the EPA:

- **Irish Cement Limerick application for a review of the IE Licence (Licence Register P0029-06)**

Specifically, RPS is tasked with undertaking a review of the Environmental Impact Assessment (EIA) documentation submitted by the applicant to the EPA to assist in determining if the content of the Environmental Impact Statement (EIS), in conjunction with the details provided in the licence application, adequately identify, describe and assess the direct and indirect effects of the proposed development/activities. This report sets out the findings of the review and also provides recommendations to the EPA on what, if any, information should be sought through a request for further information from the applicant.

It should be noted that a separate parallel review of the application is also being undertaken to determine compliance with Regulation 9 of the Environmental Protection Agency (Industrial Emissions) Regulations 2013 (S.I. 137 of 2013). Following this Regulation 9 review, a Regulation 10 request for further information was issued to the applicant by the EPA on the 1<sup>st</sup> November 2018. On the 12<sup>th</sup> December 2018 the applicant submitted the further information requested to the EPA. While the two reviews are separate, there is clear overlap and both reviews are considered in tandem. Where information relevant to this review has previously been sought and supplied following the Regulation 9 review, this has been addressed and considered within this report.

## 1.2 OVERVIEW OF LICENCE APPLICATION

In April 2016, Irish Cement Limerick (Licence Register P0029-05) lodged a licence review application (P0029-06) with the Environmental Protection Agency (EPA) for the following:

- Introduction of the use of alternative fuels and use of alternative raw materials on a gradual basis up to a combined total of 90,000 tonnes per annum;
- New storage areas to accommodate the new materials;
- Increase the volumetric gas flow rates from kiln 6; cement mill 6 and cement mill 7;

A number of other changes are sought as part of the application for licence review and include:

- Relocate the groundwater monitoring point GW3 to a new location (GW4);
- Increase the potassium trigger value for all groundwater monitoring points from 5mg/l to 25mg/l;
- Remove the requirement for monitoring of NO<sub>x</sub> and SO<sub>x</sub> at Coal Mill 6;
- Relocate dust deposition gauge AA3.

The characteristics of the various waste material proposed at the facility include non-hazardous and a number of hazardous streams in the list of wastes.

## 1.3 REGULATORY REGIME

This licence review application was lodged in April 2016 and was accompanied by an Environmental Impact Statement (EIS) prepared by Brady Shipman Martin in April 2016. As such, the 2016 EIS is the subject of this assessment and the review will be undertaken to determine compliance with the following:

- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.
- The European Communities (Environmental Impact Assessment) (Amendment) Regulations, 2006 (S.I. No. 659 of 2006). These Regulations amend the provisions of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended) by providing for revised procedures to enhance public participation in the environmental impact assessment of projects having transboundary environmental impacts.
- The EPA *Guidelines on the information to be contained in Environmental Impact Statements* (March 2002).
- The EPA *Advice Notes on Current Practice (in preparation of Environmental Impact Statements)* (September 2003).
- *Draft Revised Guidelines on the information to be contained in Environmental Impact Statements* (EPA 2015)
- *Draft Advice Notes for preparing Environmental Impact Statements* (EPA 2015).
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (DoECLG, 2013)

While the April 2016 EIS submitted is reviewed against the above legislation and guidance which was applicable at the application date, for completeness it is also reviewed against the amended EIA Directive 2014/52/EU and its subsequent Regulations and guidelines which apply to all applications lodged post May 2017. While the EIS does not need to comply with the amended Directive, the review is undertaken in the spirit of the new legislation to assess the need for any relevant additional details required. Therefore, the following have been taken into consideration in this review:

- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).
- The EPA *Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)* (2017).
- The DHPLG published the revised *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (August 2018).

## 1.4 REVIEW TEAM

This review has been undertaken by a team of suitably competent experts to allow for a reasoned conclusion on the significant effects of the project on the environment. The details of the review team are presented in **Table 1.1** and illustrate the names, qualifications and level of experience of the review team. The team combines expertise in compiling and reviewing

environmental impact assessment with specialist expertise in the technical areas of air quality and human health which are particularly relevant to the subject application.

**Table 1.1: RPS Review Team**

<b>Name</b>	<b>Role</b>	<b>Qualifications</b>	<b>No. Years' Experience</b>
Paul Chadwick	EIS Compliance and Quality Review Technical Review of Air Quality Assessment.	B.A. Mod (Chemistry); M. Phil (atmospheric Chemistry)	18
Dr Antonia Gaughran	EIS Compliance and Quality Review	Higher Diploma in Planning and Environmental (2017-ongoing); PhD, University College Dublin (1994 – 2000); BSc (Hons) Environmental Biology, UCD (1994)	18
Dr. Andrew Buroni	Technical Review of Health Impact Assessment.	BSc (Hons) in Biological Sciences; MSc in Environmental Impact Assessment; PhD in International Health Impact Assessment (HIA)	18

## 2 PLANNING CONSENT

### 2.1 SUMMARY OF PLANNING CONSENT

In April 2016, Irish Cement Ltd. lodged an application for planning consent with Limerick City & County Council (Planning Authority Reference 16/345). The application sought a ten year consent for the following:

- Introduction of approximately 90,000 tonnes per annum of alternative fuels/raw materials to Kiln 6 – to include whole tyres, fine solids, coarse solids, free-flowing solids and pumpable fluids.
- Open tyre-storage area of 3,000m<sup>2</sup>.
- Elevated conveyor belts to move waste between structures and to feed into Kiln 6.
- Series of firewater retention tanks.
- Pumpable fluids storage tank (320m<sup>3</sup> capacity) with associated concrete bund.
- Three external silos for free-flowing solids (maximum height 26m).
- Construction of new buildings amounting to 7,840m<sup>2</sup> to handle waste deliveries and storage.
- 56m high cooling tower, of approximately 3m diameter.
- Demolition of approximately 500m<sup>2</sup> of metal-clad, covered car-parking bays (4 in number).
- Ancillary sections of internal roadway, fencing and landscaping.
- Water supply from a pumped sump in the adjacent quarry.
- Surface water discharge to Bunlicky/Clayfield Pond.

Following a number of further information requests, in March 2017 Limerick City & County Council granted planning permission subject to 16 conditions and a number of the more pertinent conditions for this review are listed below:

- Permission is for a ten-year period.
- Intake of alternative fuels/raw materials shall be limited to 90,000 tonnes per annum.
- The solid refuse fuel (SRF) component sourced from municipal waste shall not exceed 30,000 tonnes per annum.
- Fuel deliveries shall take place outside peak traffic hours – 07.30 - 09.30 and 16.00 - 18.30 hours Monday to Friday inclusive.
- No unprocessed alternative fuels shall be delivered to the plant, and no processing of alternative fuels shall be undertaken at the plan

In April 2017 both Irish Cement and two third parties (Kevin Feeney and Limerick Against Pollution) appealed the planning authority decision to An Bord Pleanála (ABP). ABP convened an oral hearing in August September 2017 to facilitate the gathering of additional information.

In April 2018, subsequently granted planning permission *‘for development to allow for the replacement of fossil fuels through the introduction of lower carbon alternative fuels and to allow for the use of alternative raw materials in the Limerick Cement Factory’* (Order Ref. PL 91.248285). The permission is subject to 13 conditions which are presented in **Section 2.2**.

In this order, ABP note the following gin relation to the EIA documentation presented:



*The Board considered the nature, scale and location of the proposed development, the documentation submitted with the application including the Environmental Impact Statement, the submissions made on file, the applicant's response to submissions, the mitigation measures proposed, and the report, assessment and conclusions of the Planning Inspector. It is considered that this information was adequate in identifying and describing the direct and indirect effects of the proposed development. The Board completed an Environmental Impact Assessment in relation to the proposed development, either by itself or in combination with other development in the vicinity and concluded that, subject to the mitigation measures proposed, and the conditions set out below, the effects of the proposed development on the environment would be acceptable. In doing so the Board adopted the report of the Inspector.*

*It is considered that, subject to compliance with the conditions set out below:*

- (a) The proposed development would be in accordance with European, national, regional and local planning policy, notably the National Hazardous Waste Management Plan and the Southern Region Waste Management Plan 2015-2021 which supports the principles of proximity and self-sufficiency in the management of waste in the State and the development of additional thermal capacity for the treatment of non-hazardous municipal waste, industrial process waste and hazardous waste, over the period of the Plans.*
- (b) The proposed development is situated in an established industrial area, is reasonably removed from nearby sensitive receptors and will be subject to an Industrial Emissions Licence which will control emissions to air, fugitive dust, noise and water. The proposed development would not, therefore, seriously injure the residential amenities of adjacent properties.*
- (c) The proposed development comprises structures which are subordinate in scale and form to the existing structures at the Cement Works site. The proposed development would not, therefore, give rise to significant visual or landscape effects or indirect effects on heritage and/or tourism.*

*The Board concluded that the proposed development would not seriously injure the amenities of the area or of residential and other property in the vicinity, would not be prejudicial to public health, would be acceptable in terms of traffic safety and convenience and would be in accordance with the proper planning and sustainable development of the area.*

## **2.2 PLANNING CONDITIONS**

Of the 15 conditions to the planning consent imposed by ABP on top of those presented by Limerick City & County Council, the following conditions are relevant to the determination of the EPA licence review application:

**Condition 2.** *The period during which the development hereby permitted may be carried out shall be 7 years from the date of this order. Reason: Having regard to the nature of the proposed development, the Board considered it appropriate to specify a period of validity of this permission in excess of five years.*

The seven year permission from ABP is from the date of the order (29<sup>th</sup> March 2018) and hence is valid up to the 29<sup>th</sup> March 2025. After this period an extension of planning permission will be required and this should be considered within the EPA licence review.

**Condition 3.** *The total of Solid Recovered Fuel (sourced from Municipal Solid Waste) to be combusted at the cement works shall not exceed 30,000 tonnes per annum.*

**Reason:** *In order to comply with the policies of the Southern Region Waste Management Plan 2015-2021, which policies are considered to be reasonable.*

**Condition 4.** *No alternative fuels/raw materials indicated as being 'Hazardous' in the Environmental Protection Agency publication "Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-hazardous" (valid from 1 June 2015), shall be combusted at the cement works. Permission is hereby granted for co-combustion of only those List of Waste codes, outlined in the additional information submission to Limerick City & County Council on the 2nd day of November 2016, which are determined to be non-hazardous, by reference to the above-mentioned EPA publication.*

**Reason:** *In the interest of sustainable waste management and in view of the limited experience in handling hazardous waste and limited proposed use at these cement works, in conjunction with the Board's decision to grant permission for the use of 50,000 tonnes/annum of hazardous waste at Platin, Co. Meath. The Board has decided that national capacity for self-sufficiency in terms of hazardous waste would be adequately catered for and the need for use of hazardous waste at this plant at this time was therefore not justified.*

As a consequence of these conditions, in August 2018 Irish Cement Limerick (ICL), submitted an unsolicited request to the EPA, that in its deliberation on P0029-06 Licence Review, the EPA only consider the remaining 63 List of Waste (LOW) codes in the application which includes alternative fuels and alternative raw materials that are classified as 'non-hazardous'.

**Condition 5.** *No unprocessed alternative fuels/raw materials shall be delivered to the cement works, and no further processing of alternative fuels/raw materials shall take place at the cement works.*

**Reason:** *In the interest of clarity and public health.*

**Condition 6.** *All environmental mitigation measures outlined in the Environmental Impact Statement, and as amended by additional information submissions to Limerick City and County Council and/or at the Oral Hearing, shall be implemented in full. Compliance with, and effectiveness of mitigation measures, shall be demonstrated in an annual report of compliance to the Planning Authority, which shall be made available for public inspection.*

**Reason:** *In the interest of environmental protection.*

It is noted that the further information relating to environmental mitigation measures submitted by the applicant to Limerick City and County Council and ABP (both in writing at any the oral hearing) have not been included in the application documentation submitted to the EPA. Given that Condition 6 bounds the applicant to operate within this mitigation regime, details of any further mitigation committed over that presented with this EIS is required.

**Condition 7.** *No substitution of alternative fuels/raw materials shall be carried out unless and until the necessary review of the Industrial Emissions licence for the cement works has been completed or a new licence has been granted.*

**Reason:** *In the interest of orderly development, the environment and public health.*

**Condition 8.** *All alternative fuels/raw materials delivered to the cement works shall be delivered in sealed containers/covered vehicles, as appropriate.*

**Reason:** *In the interest of public health and the amenities of the area.*

**Condition 9.** *Construction and demolition waste shall be managed in accordance with a construction waste and demolition management plan, which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This plan shall be prepared in accordance with the “Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects”, published by the Department of the Environment, Heritage and Local Government in July 2006.*

**Reason:** *In the interests of sustainable waste management.*

**Condition 10.** *The applicant shall maintain and make available for inspection a complaints’ register for the construction, operational and decommissioning stages of the development detailing the nature of complaint, investigations and remediation undertaken.*

**Reason:** *In the interest of amenity and orderly development.*

The EIS review undertaken on behalf of the EPA has been cognisant of the above conditions imposed by ABP and the impact upon the operations sought under the licence application.

### 3 EIA COMPLIANCE CHECK

Article 94 and Schedule 6 of the Planning and Development Regulations 2001 to 2015 (as relevant to this application) specify the information to be contained within an EIS and this is listed in **Table 2.1**. An analysis of the nature of the information supplied by the applicant's EIS for each requirement is presented along with a determination of the compliance or otherwise with the statutory requirements.

**Table 3.1: Article 94 (green) and Schedule 6 (orange) Compliance Check**

Requirement	Information Supplied	Compliance
<p>94. An EIS shall take into account the available results of other relevant assessments under European Union or national legislation with a view to avoiding duplication of assessments and shall contain—</p> <p>(a) the information specified in paragraph 1 of Schedule 6,</p>	<p>Refer to the Schedule 6 compliance analysis presented further in this table.</p>	<p>NA</p>
<p>(b) the information specified in paragraph 2 of Schedule 6 to the extent that –</p> <p>(i) such information is relevant to a given stage of the consent procedure and to the specific characteristics of the development or type of development concerned and of the environmental features likely to be affected, and</p>	<p>Refer to the Schedule 6 compliance analysis presented further in this table.</p>	<p>NA</p>
<p>(ii) the person or persons preparing the EIS may reasonably be required to compile such information having regard, among other things, to current knowledge and methods of assessment, and</p>	<p>Section 1.12 of Volume 2 of the EIS outlines the EIS project team and assigns the relevant consultant group and principal staff to the relevant chapters within the EIS (both technical and general chapters). Each of the technical chapters provides a section on methodology which outlines the relevant current knowledge and methods of assessment employed for each assessment.</p>	<p>Yes</p>
<p>(c) a summary in non-technical language of the information required under paragraphs (a) and (b).</p>	<p>A separate stand-alone non-technical summary is provided as Volume 1 of the EIS that provides a suitably detailed but concise summary of the proposed development.</p>	<p>Yes</p>
<p>1. (a) A description of the proposed development comprising information on the site, design and size of the proposed development.</p>	<p>Chapter 3 of the EIS provides a detailed description of the proposed development including details of the current operations and an outline of the following key elements:</p> <ul style="list-style-type: none"> <li>• Proposed alternative fuels;</li> <li>• Proposed alternative raw materials; and</li> <li>• Additional infrastructure required (buildings and tanks) and the phased development of same.</li> </ul> <p>It is noted that the phasing of new infrastructure is based on a 10 year timeframe and includes phased development over the short-term (0 to 4 years), medium-term (3 to 7 years) and longer-term (6 to 10 years). Given that ABP has provided for a 7 year consent it is unclear how this affects the phased development at the site in the long term.</p>	<p>Yes but clarification required.</p>

<p>(b) A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.</p>	<p>Section 3.5 of Volume 2 of the EIS provides a high level overview of the effects on the environment but further reference is provided to the technical chapters of the EIS.</p> <p>The authors suggest that the proposed development will not have any significant impact on flora &amp; fauna, soils, geology &amp; hydrogeology, water &amp; hydrology, noise &amp; vibration, air quality, traffic, material assets, or on the landscape &amp; visual and cultural heritage environment.</p> <p>The applicant maintains that the project will have a positive socio-economic, climate and waste management impact.</p> <p>These assertions are assessed in greater detail in <b>Section 4</b> of this report along with an analysis of the proposed mitigation measures (which are presented in Section 5 of each technical chapter of Volume 2 of the EIS).</p>	<p>Yes</p>
<p>(c) The data required to identify and assess the main effects which the proposed development is likely to have on the environment.</p>	<p>Each of these elements is addressed in the Technical Chapters of the EIS and addressed in <b>Section 4</b> of this report.</p>	<p>Yes</p>
<p>(d) An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.</p>	<p>Section 2.3 of Volume 2 of the EIS presents the reasonable alternatives considered by the applicant. Given the plant and infrastructure is currently fixed at the site, an analysis of alternative site locations or alternative layouts is not particularly relevant. As such, the applicant considers alternative operating scenarios as follows:</p> <ul style="list-style-type: none"> <li>• Do-nothing' Alternative: Use the existing fuel source with a growing reliance for circa 130,000 tonnes.</li> <li>• Intermediate Replacement Alternative: Introduce alternative fuel to provide up to 50% fossil fuel replacement (i.e. 90,000 tonnes of alternative fuels).</li> <li>• 'Do Maximum' Replacement Alternative: 210,000 tonnes of alternative fuels with circa 3,000 tonnes of imported fossil fuel used as buffer fuel per annum.</li> </ul> <p>A multi-criteria analysis of environmental impact is undertaken to assess impact and the analysis finds that once compliance with the licence is achieved there are positive impacts for climate and material assets in the "Intermediate Replacement Alternative" scenario which is the proposed development. This analysis is sufficiently detailed to inform this conclusion.</p>	<p>Yes</p>

<p>2. Further information, by way of explanation or amplification of the information referred to in paragraph 1, on the following matters:-</p> <p>(a) (i) a description of the physical characteristics of the whole proposed development and the land-use requirements during the construction and operational phases;</p>	<p>Section 3 of Volume 2 of the EIS presents the overall description of the proposed development. Details are provided as follows:</p> <ul style="list-style-type: none"> <li>• Existing fuel use (current fossil fuel mix).</li> <li>• Proposed fuel use and rationale for use of same.</li> <li>• Proposed alternative raw materials and rationale for use of same.</li> <li>• Proposed infrastructural development and programming – note the information listed above relating to 10 year development plan versus 7 year planning consent.</li> </ul> <p>Construction phase is not addressed in any detail in the EIS outside of the list of proposed phasing of structures. The EIS notes the demolition of four existing car parking bay structures. While not referenced in the EIS, as a general requirement of the planning a Construction Environmental Management Plan will be prepared prior to commencement of construction but it is unclear what further information has been submitted to the planning authority to inform this requirement.</p> <p>Construction impacts are assessed throughout the technical chapters of Volume 2 of the EIS but there remains limited detail in Chapter 3.</p> <p>All development is currently within the applicants land within the site of the existing cement plant and hence no significant land use requirements.</p>	<p>No – further information required on the Construction Phase</p>
<p>(ii) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;</p>	<p>The fuel and resource use in the current operation of the plant is presented in Section 3.2 of Volume 2 of the EIS. Currently, fuel use at the site is restricted to fossil fuels (petcoke) and there are no alternative fuels permitted for use at the site. At full capacity, the plant can manufacture 1.3 million tonnes of cement, which requires approximately 130,000 tonnes of fossil fuels.</p> <p>Section 3.3 of the EIS outlines the proposed use of alternative fuels and outlines that the application seeks the use of up to 90,000 tonnes per annum of alternative fuels and alternative raw materials. At full capacity, this will reduce the need for approximately 50% of fossil fuels. The alternative fuels sought include the following:</p> <ul style="list-style-type: none"> <li>• Whole tyres</li> <li>• Fine solids</li> <li>• Free-flowing solids</li> </ul>	<p>Yes</p>

	<ul style="list-style-type: none"> <li>• Pumpable fluids</li> <li>• Coarse solids</li> </ul> <p>It is noteworthy that further information on the characteristics of each waste stream sought under the application has been sought under the Regulation 10 request for further information issue on the 1<sup>st</sup> November 2018.</p> <p><b>Note that ABP has restricted waste intake to total of 30,000 tonnes in total as Condition 3 of the planning consent (Refer Section 2.2 of this report) and no hazardous waste can be treated (Condition 4).</b></p> <p>Given the nature of the proposed development, the presentation of the main characteristics of the operational phase and the energy demand and materials used is fit for purpose.</p>	
(iii) an estimate, by type and quantity, of expected residues and emissions (including water, air and soil pollution, noise, vibration, light, heat and radiation) resulting from the operation of the proposed development;	<p>These residues are presented in greater detail in the technical chapters of the EIS as follows:</p> <ul style="list-style-type: none"> <li>• 6. Soils, Geology and Hydrogeology</li> <li>• 7. Water and Hydrology</li> <li>• 8. Air Quality and Climate</li> <li>• 9. Noise and Vibration</li> </ul> <p>These individual chapters are assessed in greater detail in <b>Section 4</b> of this report.</p>	Yes
(b) a description of the aspects of the environment likely to be significantly affected by the proposed development, including in particular:	<p>Each of the technical chapters of the EIS is presented in a standard format and structure. Section 3 of each chapter is entitled the “Existing Environment” and the baseline scenario is presented in detail for each environmental topic. Sources of reference for environmental information and scientific knowledge employed for each discipline are referenced in the final section of each chapter. These individual chapters are assessed in greater detail in <b>Section 4</b> of this report.</p>	Yes
Human Beings	Refer <b>Section 4.1</b> of this report.	NA
Fauna and Flora	Refer <b>Section 4.2</b> of this report.	NA
Soil	Refer <b>Section 4.3</b> of this report.	NA
Water	Refer <b>Section 4.4</b> of this report.	NA
Air	Refer <b>Section 4.5</b> of this report.	NA
Climatic Factors	Refer <b>Section 4.5</b> of this report.	NA



Landscape	Refer <b>Section 4.6</b> of this report.	NA
Material Assets	Refer <b>Section 4.6</b> of this report.	NA
Architectural and Archaeological Heritage and the Cultural Heritage	Refer <b>Section 4.6</b> of this report.	NA
Inter-relationship between the above factors	Refer <b>Section 4.7</b> of this report.	NA
(c) a description of the likely significant effects (including direct, indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative) of the proposed development on the environment resulting from:	Refer <b>Section 4</b> of this report.	NA
the existence of the proposed development,	Refer <b>Section 4</b> of this report.	NA
the use of natural resources,	Refer <b>Section 4</b> of this report.	NA
the emission of pollutants, the creation of nuisances and the elimination of waste,	Refer <b>Section 4</b> of this report.	NA
and a description of the forecasting methods used to assess the effects on the environment;	Refer <b>Section 4</b> of this report.	NA
(d) an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information.	This has not been specifically addressed within the EIS.	No – clarification required.

## 4 EXAMINATION OF EIA ANALYSIS

Further to the compliance checks presented in **Section 3** of this report, a critical analysis of the individual chapters (and associated appendices) of the EIS has been undertaken to determine if these chapters are presented using industry best practice and in line with current guidance for each environmental discipline. The likely significant direct and indirect effects of the development are considered under the headings set out in Article 3 of Directive 2011/922/EU on the assessment of the effects of certain public and private projects on the environment and Schedule 6 of the Planning and Development Regulations 2001 (2001 to 2015).

### 4.1 HUMAN BEINGS

#### 4.1.1 Identification of Impacts

Human beings are addressed in Chapter 4 of the EIS which identifies population, employment and economic activity and the principle potential impacts on human beings.

Tourism has not been listed as a potential impact on human beings. While it is listed in the non-technical summary, this has not been translated into Chapter 4. The main source of tourism impact is likely through visual impact on the Limerick area. The analysis presented for landscape and visual impact in Section 4.6 indicates no significant impact and hence, the omission of this aspect in the human beings chapter is not considered a significant

Human health has not been specifically identified as a potential impact from the proposed development within the EIS. While not a specific requirement of Directive 2011/922/EU, human health is now mandatory under EIA under Directive 2014/52/EU. As such, while the absence of a human health assessment in the EIS is not strictly out of compliance, it is recommended that a health assessment is requested from the applicant within the spirit of Directive 2014/52/EU and given the health concerns associated with the proposed development.

The Regulation 10 request for further information to the applicant (issued on 1<sup>st</sup> November 2018) has sought an assessment of the impacts on human health from the activity. In December 2018, the applicant submitted a human health assessment to the EPA which included the Human Health Risk Assessment (HHRA) presented as part of the planning consent process.

#### 4.1.2 Description of Impacts

The EIS states that the proposed development has the potential to increase the level of indirect employment at the plant and secure the direct employment currently at the plant by making the plant more competitive – i.e. a positive socio economic and population impact. This is considered valid as the wastes will require service from waste operators and will potentially generate further employment but this may be offset by the reduction in employment in the supply of petcoke.

Section 4.3.5 identifies risk to human health from air quality as well as other sources such as noise and water, and provides details on the proximities of the nearest residential properties. The EIS states that based on analysis presented elsewhere in the EIS, there will be no impact

to human health, however, no detailed analysis is provided in the EIS. The December 2018 human health assessment on each of the potential pathways concludes that the proposed development will have no adverse effects on human health.

It is noted that the residential details provided in the EIS is incomplete as not all aerial photographs indicate the most recent housing or recently completed schools. However, these issues have been resolved through the further information requests both for planning and licensing.

### 4.1.3 Impact Assessment

In terms of population, the impact assessment presented largely relies upon the presentation of the existing environment (Section 4.3) in terms of demographics from sources such as the Central Statistics Office (CSO), the County Development Plan, etc. coupled with a qualitative analysis of the potential change associated with the proposed development. Reference to interaction with other chapters within the EIS is also noted.

The health assessment report lists a broad range of guidance (some process specific, some health hazard specific) that has been regarded, to inform the methodology and assessment, and offers a selective critique/discussion. While this section doesn't clearly set out how the health hazards have been scoped, and a proportionate assessment defined, it does cover the core issues, namely emissions to air and noise. Transport effects (risk of accident and injury, community severance and emissions) are not considered, it is assumed that this is because the delivery of the alternative fuel would offset the conventional fuel source, with no marginal change in the hazard nature, geographic distribution or how it is managed.

The literature review was tightly focussed on alternative fuels and living in proximity to cement factories. This yielded a modest return of pertinent reference documents that reinforce the wider air quality health evidence base that define the regulatory assessment process.

Section 4 sets out how health is inherently assessed and addressed through the individual technical disciplines within the EIAR (i.e. assessed to objective levels set to be protective of health). This reinforces how this section is complementary in nature, intended to communicate how and where health has been assessed and addressed, and leads into the following sections on air quality (including Dioxins), noise and water (which is linked to air emissions).

*Air quality:* This signposts back to the air quality chapter, and confirms in simple terms that even under worst case scenarios, the facility will remain within air quality objectives set to be protective of health. There is a little discussion on ultrafine particulates, including abatement and filtration efficiency but the assessment is still captured within the air quality section as these form a fraction within PM<sub>10</sub> and PM<sub>2.5</sub>. Dioxins is the main focus of the Human Health Risk Assessment and the report summarises the findings and concludes that applying the worst case hypothetical receptor, and worst case emission and deposition, the potential risk to health is not significant over an average lifetime of exposure.

*Noise:* Signposts to the EIAR, indicates compliance with noise limits.

*Water:* Again signposts to the EIAR to inform a professional judgment of no adverse health effect.

#### 4.1.4 Interaction of Effects

Interaction with population/health and other topics within the EIS are clearly outlined and referenced throughout with the following in particular noted:

- Chapter 7 Water
- Chapter 8 Air Quality and Climate
- Chapter 9 Noise and Vibration
- Chapter 10 Landscape and Visual
- Chapter 12 Traffic

#### 4.1.5 Cumulative Effects

Cumulative human beings impact is not specifically addressed within the EIS. However, based on the nature of the impacts identified there is not considered to be a significant cumulative impact from the proposed development in conjunction with other committed development in the area.

#### 4.1.6 Planning Authority Assessment

The ABP Inspector's report notes that *"the 3rd Party appellants state that there is insufficient background information on the health of the population in the vicinity to allow a decision to be made on this application, which might further exacerbate health problems – including respiratory and pulmonary difficulties. Such is the remit of the HSE, and it would not be reasonable to expect the applicant to produce such data, or to defer consideration of any planning application in the absence of such data"*.

The inspector made this determination with view of a full dataset on health assessment and, as such, this information is required to allow for a reasoned determination on the potential impacts on population and human health.

#### 4.1.7 Mitigation and Monitoring

No specific mitigation measures are proposed in relation to population given the lack of direct effects. No health based mitigation measures other than those detailed elsewhere in the EIS (for air, noise, etc.) as required under the licence are proposed.

#### 4.1.8 Conclusion

The key findings of the review of population are considered below which includes the reasoned conclusion on the significant effects of the application on the environment. **Table 4.1** presents the need, if any, for further information on this topic from the applicant.

It is considered that the population analysis (employment and socio-economic) presented in the EIS is sufficient and addresses the likely significant effects on the environment associated with the proposed development. No further clarification or information is sought on this topic.

In relation to human health, no significant details have been provided in the EIS but in December 2018 a human health assessment which included the Human Health Risk Assessment (HHRA) was submitted by the applicant to the EPA. The health assessment presented is largely based on a literature review, the findings of the EIS analysis and the Human Health Risk Assessment submitted to the planning authority. No further clarification or information is sought on this topic.

**Table 4.1: Summary of review on Population and Human Health**

<b>Clarification Required</b>
No further clarification sought.
<b>Further Information Needed</b>
No additional further information sought at this point from the applicant.
<b>Key Significant Effects</b>
Positive impact for employment and socio economics in the area. Potential for health implications from the changes in fuel and material use on site.

## 4.2 BIODIVERSITY (INCLUDING FLORA AND FAUNA AS APPROPRIATE)

Note that in addition to the Biodiversity Chapter of the EIS, a separate determination of Appropriate Assessment (AA) under Article 6 of the EU Habitats Directive is also required to support this application. The applicant has provided the following AA documentation to the EPA as part of the application:

- Natura Impact Statement (NIS, lodged with the EPA in December 2018).

While the AA and EIS reviews overlap the following section relates to the EIS Biodiversity Chapter only and the AA elements are addressed in the Regulation 9 review process.

### 4.2.1 Identification of Impacts

Flora and Fauna is presented in Chapter 5 of Volume 2 of the EIS and is supplemented with Appendix 5.1 which provides an Ecological and Sediment Study of the Nanny. The key impacts identified in the report are listed as follows:

- Potential impact of operations on the two closest Natura 200 Network sites in the area including the Lower River Shannon cSAC (site code 002165) and the River Shannon and River Fergus Estuaries SPA (004077);
- Potential impact on Bunlicky Clayfield Pond (which is within the River Shannon and River Fergus Estuaries SPA) which is currently subject to potential impact from the existing operations. All discharges from the site to the pond are diverted through settlement tanks and hydrocarbon interceptors – via SW1 and SW2;
- Potential impact of operations on eleven proposed Natural Heritage Areas (pNHAs), in particular the Inner Shannon Estuary – South Shore pNHA (000435). This pNHA includes Bunlicky Clayfield Pond and parts of the applicant landholding; and

- Potential of operations to cause deposition of elevated levels of air emissions from the plant on sensitive ecosystems in the area.

It should be noted that the applicant has also submitted a Screening for Appropriate Assessment Report as part of the application. However, on the 1<sup>st</sup> of November 2018, the EPA, as the competent authority, made the determination that it cannot be excluded, on the basis of objective information, that the activities, individually or in combination with other plans or projects, will have a significant effect on any European site and accordingly determined that an Appropriate Assessment of the activities is required. For this reason the EPA has requested the applicant to submit a Natura Impact Statement to accompany the application. On the 1<sup>st</sup> December 2018, the applicant submitted a Natura Impact Statement (NIS) to the EPA and this will be reviewed through the Regulation 9 process.

#### **4.2.2 Description of Impacts**

Construction impacts are not considered significant given the level of control currently in place on the licenced site for storm water drainage control.

During the operation stage, the proposed development will result in an increase in hard standing areas of approximately 1.5ha which will potentially increase the nature and scale of run off from the site. However, the applicant's EIS states that levels will remain within the IE licence and there will be no significant net impact.

Acid deposition on the other designated sites has been compared to the UNECE Critical Loads to determine any significant impact but this is dependent on the accuracy of the air dispersion model.

The EIS concludes that there will be no residual effect on any biodiversity or ecological receptors, either within the site itself or associated with any site designated for nature conservation as a result of the proposed development.

#### **4.2.3 Impact Assessment**

Specific to ecology the following guidance was referenced in the impact assessment:

- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009);
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013);
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater and Coastal ('the CIEEM Guidelines, Second Edition') published by the Chartered Institute of Ecology and Environmental Management (CIEEM), January 2016.

The assessment consisted of a desktop assessment of publically available datasets and a field visit undertaken in January 2016.

#### 4.2.4 Interaction of Effects

The deposition element of this analysis relies heavily on the air dispersion model of the emissions from the stacks on the cement plant site. These emissions have been reviewed and updated by the applicant with an updated air dispersion model issued to the EPA in December 2018.

The assessment of impact on the Bunlicky Clayfield Pond from the discharges to water relies on the findings of the Water Quality Chapter. Updated information on the impact of this discharge has been provided by the applicant in December 2018 which has been considered within this review.

#### 4.2.5 Cumulative Effects

The EIS notes that in addition to the discharges from the site, the Bunlicky Clayfield Pond is also subject to discharge from the following:

- Surface water runoff from the N18;
- Two discharges from drainage ditches serving Limerick Municipal Wastewater Treatment Plant; and
- A number of other land drains and ditches.

However, no cumulative analysis is presented in the EIS and further information has been requested from the applicant on this impact through the Regulation 9 review. In the NIS presented by the applicant in December 2018 a detailed analysis of cumulative impact of these other sources on the pond has been presented.

#### 4.2.6 Planning Authority Assessment

The ABP Inspector report does not highlight any specific concerns relating to biodiversity given the protections offered by the IE Licence. Specifically in relation to the Bunlicky Clayfield Pond and the Appropriate Assessment, the ABP Direction states the following:

*The Board was satisfied that the proposed development, either individually or in combination with other plans or projects, would not be likely to have a significant effect on the Lower River Shannon Special Area of Conservation (Site Code: 002165) or the River Shannon and River Fergus Estuaries Special Protection Area (Site Code: 004077), or any other European Site, in view of the sites' conservation objectives, and that a Stage 2 Appropriate Assessment is not, therefore, required.*

The EPA determination differs from the ABP determination and an NIS has been sought from the applicant to further inform the licence application. Schedule C.5 of the current EPA licence (P0029-05) includes limits on the volume and nature of SW1 and SW2 and these limits may need to be revised to ensure adequate protection to the pond.

#### 4.2.7 Mitigation and Monitoring

No mitigation is proposed as the key potential impact is water and the reference to the operational mitigation measures required for water and air emissions control, presented in Chapters 7 and 8 of the EIS.

#### 4.2.8 Conclusion

In short, there are two key pathways considered for biodiversity impact – air emissions deposition and water quality discharge. In terms of air emissions and nitrogen deposition this has been largely addressed in the EIS and further information supplied by the applicant in December 2018.

In relation to water discharges and impact on the Bunlicky Clayfield Pond, a qualitative analysis has been provided by the applicant in the EIS that suggests no significant impact. Further quantitative details of the proposed discharge have been provided by the applicant to the EPA in December 2018 that illustrate that the proposed discharges (unchanged from the existing discharge) will not breach the EQS at the pond.

The key findings of the review of biodiversity are presented in **Table 4.2** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.2: Summary of review on Biodiversity**

<b>Clarification Required</b>
No clarifications sought at this point from the applicant.
<b>Further Information Needed</b>
No additional further information sought at this point from the applicant.
<b>Key Significant Effects</b>
Water quality impacts on the Bunlicky Clayfield Pond from the additional stormwater generated by the infrastructural developments on the site. Potential for changes in the air pollutant generation and associated deposition on sensitive ecosystems impacting on the habitats and species within these European and nationally designated sites and other relevant habitats.

### 4.3 LAND AND SOIL (INCLUDING GEOLOGY, EMISSIONS TO GROUND AND GROUNDWATER)

#### 4.3.1 Identification of Impacts

Chapter 6 of the Volume 2 of the EIS addresses soils, geology and hydrogeology and the following potential impacts from the proposed development are identified:

- Construction phase impacts from excavated contaminated materials and fuel or chemical spillages on soil and groundwater quality; and
- Operational phase impacts from additional fuel handling and storage on soil and groundwater quality.



A detailed baseline dataset has been provided and a review of all other potential sources of impact has been presented in the existing environment section a subsequently scoped out of the assessment as no potential for significant effect.

### 4.3.2 Description of Impacts

Construction phase impacts considered in the EIS include excavations for foundations across the site which may encounter areas of minor soil contamination as isolated soil contamination has been discovered during previous site surveys (albeit at levels below the relevant Generic Assessment Criteria (GAC) for commercial sites for assessment of human health risk). Site specific environmental testing is required at individual structure locations and appropriate disposal of contaminated material is proposed.

Dry working conditions are maintained in the quarry by use of water pumps which are located in the quarry sump. The level of groundwater in the Quarry Sump is maintained at circa -26m and on average 6,200m<sup>3</sup>/day is pumped from the Quarry Sump and discharged to the nearby Bunlicky Clayfield Pond. The EIS states that the proposed construction works will have an imperceptible impact on the dewatering operations within the quarry as groundwater levels are well below required formation levels for new structures.

Operational phase impacts from storage and/or spillage of materials on the underlying soils and groundwater are ruled out once appropriate measures such as bunding and run-off are implemented. Further information on groundwater risk has been provided by the applicant to the EPA in December 2018.

### 4.3.3 Impact Assessment

The EIS states that the impacts are assessed as per Institute of Geologists of Ireland (IGI 2013) Guidelines for the preparation of Soil, Geology and Hydrogeology Chapters of Environmental Impact Statements. The potential impact of the proposed development on the soils, geology and hydrogeology environment has been assessed by classifying the importance of the relevant attributes and quantifying the predicted magnitude of any impact on these attributes.

The analysis is informed by a Conceptual Site Model (CSM) which has been developed based on the know information on the site and provides a concise summary of geological and hydrogeological conditions at the site which considers the potential impact of the proposed development.

### 4.3.4 Interaction of Effects

Reference is made to River Shannon and River Fergus Estuaries (SPA), Lower River Shannon (SAC) and the Inner Shannon Estuary (pNHA) including Bunlicky Clayfield Pond covered in Chapter 5 Flora and Fauna. Reference is also made to groundwater dependant terrestrial ecosystem and a full assessment of the ecological features at the site as outlined in Chapter 5.

Reference is made to dewatering discharges which is discussed further in Chapter 7 Water.

Reference is made to the excavation and disposal of soils which may result in the generation of dust across the site and as such implies a temporary impact on air emissions.



### 4.3.5 Cumulative Effects

The EIS does not specifically address the cumulative impact of the facility and other developments. Based on the low level of other relevant development in the area, cumulative impact is not significant so the level of analysis presented is fit for purpose.

### 4.3.6 Planning Authority Assessment

The ABP Inspector's report notes that "*the proposed development will not involve any significant alterations to the situation which currently pertains in relation to soils, bedrock or hydrogeology on this site*". As such, ABP concluded that that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on land, soils, geology and hydrogeology.

### 4.3.7 Mitigation and Monitoring

For the construction phase mitigation measures stated include good housekeeping, safe handling, secure and contained storage of potential pollutants and hazardous materials. Any spillages will be contained and contaminated soil removed off site and disposed of in a licenced facility.

During operations, mitigation measures stated include appropriate storage of fuel types within bunded and protected areas.

Ongoing groundwater quality monitoring will continue to be carried out as part of the requirements of the IE Licence. Any soil excavation works will be visually monitored as part of the site investigations.

It is recommended that EPA revise the suite of tested parameters (including as a minimum the "relevant hazardous substances" identified in the IE Baseline Report) for groundwater, given the addition of hazardous alternative fuels at the site.

### 4.3.8 Conclusion

In summary, the key pathways considered for soil, geology and hydrogeology impacts are leaching and migration of materials and fuel or chemicals through groundwater or surface run-off.

In relation to the increased storage and handling of alternative fuels containing hazardous substances at the facility, further information has been previously sought from the applicant to assess the risk to groundwater which will clarify any uncertainties in this regard.

The key findings of the review of land and soil are presented in **Table 4.3** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.3: Summary of review on Land and Soil**

<b>Clarification Required</b>
No clarifications sought at this point from the applicant.
<b>Further Information Needed</b>
No additional further information sought at this point from the applicant.
<b>Key Significant Effects</b>
Increased storage and handling of alternative fuels containing hazardous substances at the facility could have potential impact on groundwater.

## **4.4 WATER (INCLUDING WASTEWATER, STORM WATER, EMISSIONS TO SEWER, ETC. AS APPROPRIATE)**

### **4.4.1 Identification of Impacts**

Water and Hydrology are presented Chapter 7 of Volume 2 of the EIS and the key impacts identified are listed as follows:

- Impacts on the Bunlicky Clayfield Pond;
- Operational impact on surface water from additional run-off; and
- Impact on floodplain conveyance and storage.

### **4.4.2 Description of Impacts**

Construction impacts considered include surface water run-off from ground disturbance and excavation, accidental spillage from construction plant and storage depot, inadequate containment and treatment of on-site toilet and washing facilities and run-off from cementitious materials. The EIS states that these impacts are not considered significant given the level of control currently in place on the licenced site for drainage.

The EIS concludes that there will be no significant change in the nature or quantity of runoff to surface waters as a result of the proposed use of alternative fuels and raw materials on site. However, the total additional impermeable area from these buildings will be circa 1.5 hectares and while the EIS states that all new buildings will generally be located on ground that is currently hard-standing no detailed evidence is presented. In December 2018 the applicant provided further details to the EPA on this element including a quantitative analysis of the impact of the discharges from the site relevant to the Surface Water Regulations.

The Bunlicky Clayfield Pond is man-made and was formed as a result of the extraction of clay used for the cement production process between 1938 and 1981. The EIS states that the pond can hold a volume of approximately 2.5million m<sup>3</sup>. The pond lies within the floodplain of the Shannon estuary approximately 3km west of Limerick City. It is contained within the boundary of the Inner Shannon Estuary – South Shore pNHA and partly contained within the Fergus Estuary and Inner Shannon North Shore SPA.

In addition to other external sources, there are three sources of discharge from the applicant's site to the pond:

- Groundwater diverted from the quarry;
- Discharges and surface water run-off from the cement works (SW1 and SW2); and
- Process water from the cement works.

Bunlicky Pond discharges into the River Shannon via an adjustable weir and flap valves which are intended to prevent the Shannon flowing into the pond at high tide. However, these are not 100% efficient and saline water from the Shannon estuary flows into Bunlicky Pond at high tide.

The EIS states that as there is no record of flood events in the vicinity of the Irish Cement site contained on the OPW database of events, flood risk is not considered further as no measures are proposed that may increase the risk of flooding in the area. A review of the OPW flood mapping tool (<http://www.floodinfo.ie/map/floodmaps/>) illustrates that the cement plant site does not lie within the flood probability range of river or coastal flooding.

However, the eastern section of Bunlicky Pond is listed as within the low probability area of coastal flooding from the estuary. No details have been presented in the EIS of the potential implications for operations and the subsequent impacts to the environment in the event that the pond is flooded and the subsequent fate of the discharge listed above.

The chapter concludes that there will be no significant residual impact on water and hydrology as a result of the proposed development due to provision of mitigation measures as outlined in the relevant sections. However, there remains uncertainty on the impacts from flooding that need to be resolved for this conclusion to be verified.

#### **4.4.3 Impact Assessment**

The methodology used is based on the Guidelines on Information to be contained in Environmental Impact Statements (2002) and the Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003) and also has regard to the revised Consultation Draft Guidelines on Information to be contained in the Environmental Impact Statements (2015) and the Consultation Draft Advice Notes for Preparing Environmental Impact Statements (2015).

During the operation phase, no detailed analysis has been provided in the EIS to estimate the additional run off anticipated, the nature of the pollutants associated and the resultant impact on Bunlicky Pond. In December 2018 the applicant provided a mass balance analysis of the combined surface water discharge from the site to the EPA. This analysis confirmed that the discharge at the current volumes and ELVs will achieve compliance with the relevant EQS as listed in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 at Bunlicky Pond.

#### 4.4.4 Interaction of Effects

There is direct interaction between the biodiversity and water quality element as detailed in the existing environment section of the EIS.

#### 4.4.5 Cumulative Effects

External surface waters and drainage from other sources not owned or controlled by ICL also drain to Bunlicky Pond are noted in the EIS including the following:

- Surface water run-off from the N18 (which crosses the middle of the pond on a constructed causeway);
- Two discharges from drainage ditches serving the Limerick Municipal Wastewater Treatment Plant; and
- A number of other land drains and ditches.

The ABP Inspector's report notes that inflow to the pond is an average of 14,000m<sup>3</sup> per day and approximately 50% of which is from the applicant site and 50% from the above sources (this data is not in the EIS). A cumulative analysis of this combined discharge has been presented by the applicant to the EPA in December 2018 through the NIS provided for the application.

#### 4.4.6 Planning Authority Assessment

The ABP Inspector's report notes that there will be no significant alterations in relation to the operational phase of the development, where discharges are already monitored and controlled by the IE licence.

In relation to flooding, the inspector concluded that flooding would not be likely to occur at this site and the proposed development in itself will not have any impact on flooding in the area.

#### 4.4.7 Mitigation and Monitoring

Prior to construction, the contractor will be required to develop an Environmental Management Plan which will incorporate the mitigation measures detailed. These mitigation measures should comply with the CIRIA guidelines documents (C532 Control of Water Pollution from Construction sites [2001] and C624 Development and Flood Risk – Guidance for the Construction Industry [2004]) include containment measures, list of appropriate equipment and clean-up material, maintenance schedule for equipment, and apply for the prevention of pollution to all waters during construction.

During operation all alternative fuels and raw materials shall be stored in appropriate buildings, tanks, silos etc. within bunded and protected areas. Only alternative fuels ready for use will be delivered to site and none which require processing.

The introduction of up to additional fuels will require the provision of three new fire water retention tanks:

- A 25.6m x 10.6m x 2.5m tank associated with the tyre storage / handling area;

- A 10.6m x 9.6m x 2.5m tank associated with the fine solids handling building;
- A 9.6m x 9.6m x 2.5m tank associated with the coarse solids building.

Fire Water Retention Tanks are connected to the surface water drainage network. Discharges to water will continue to be monitored by the EPA in accordance with the IE licence for the Cement Works.

#### 4.4.8 Conclusion

In relation to water discharges and impact on the Bunlicky Pond, a qualitative analysis has been provided by the applicant in the EIS that suggests no significant impact. The applicant supports this analysis with the submission of a quantitative analysis to the EPA in December 2018.

Given the flood risk at the Bunlicky Pond, further information is required on the potential implications for operations and the subsequent impacts to the environment in the event that the pond is flooded and the subsequent fate of the discharges from the applicant's site.

The key findings of the review of water are presented in **Table 4.4** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.4: Summary of review on Water**

Clarification Required
No clarifications sought at this point from the applicant.
Further Information Needed
It is recommended that the EPA request the applicant to provide an analysis on the operational implications and significant environmental impacts in the event that the Bunlicky Pond is flooded impacting upon the discharges from the facility.
Key Significant Effects
Water quality impacts on Bunlicky Pond from the additional stormwater generated by the infrastructural developments on the site.

## 4.5 AIR AND CLIMATE (INCLUDING NOISE, VIBRATION, DUST AND ODOUR, AS APPROPRIATE)

### 4.5.1 Identification of Impacts

Chapter 8 of the EIS addresses air quality and climate and Chapter 9 relates to noise. These chapters identify the following main sources of impact associated with the proposed development:

- Construction dust and noise during the site infrastructure works;
- Direct discharges to atmosphere from existing scheduled sources (stacks) from the proposed changes to the operation associated with the use of alternative fuels and alternative raw materials. This includes both impacts to human health and sensitive ecological receptors (including Bunlicky Pond which forms part of the Inner Shannon Estuary – South Shore NHA and is partially included in the Fergus Estuary and Inner Shannon, North Shore SPA);
- Changes in air quality and noise associated with the revised traffic patterns from vehicles delivering the alternative fuels and alternative raw materials to the site;
- Fugitive odour;
- Operational noise from the proposed development; and
- The effect of the development on carbon emissions (greenhouse gases).

The above list constitutes a relatively comprehensive list of air quality and noise impact and it is considered that most of the relevant sources with potential for significant air quality and noise effects have been identified.

The key exception relates to fugitive dust and this is particularly pertinent given the ongoing compliance investigations in relation to fugitive dust impacts and over 300 complaints relating to dust have been recorded by the applicant in 2017. It is understood that these dust issues relate to material handling and storage piles on the site rather than the point sources emissions modelled and presented in the application. On foot of these issues, on the 6th of July 2018, the EPA prosecuted the applicant at the District Court in Limerick for non-compliance with dust management. In light of this significant impact, the absence of any analysis of same in the EIS is considered a significant omission. In the Regulation 10 request for further information issued to the applicant on the 1<sup>st</sup> November 2018, a detailed analysis of fugitive dust impact has been sought.

In December 2018, the applicant submitted a revised air dispersion model that addresses all issues raised by the EPA in the Regulation 10 request for further information. In addition, modelling of fugitive dust sources has been undertaken and reported in this analysis.

In relation to climate, the EIS does note and quantify the positive climate impact associated with the replacement of petcoke with alternative fuels. Climate adaption has not been expressly addressed but this has only recently been routinely considered in EIA. It is noted that while there is no OPW record of flood events in the vicinity of the Irish Cement site, the Bunlicky Pond is located in the floodplain of the Shannon Estuary. The adaption of the proposed operation to a flood of the pond restricting discharges to the pond has not been considered within the EIS.

#### **4.5.2 Description of Impacts**

In relation to construction dusts, the EIS states that as no sensitive receptors are located within 25m of the areas of the proposed construction works, no significant effects due to construction activities are envisaged. Based on the analysis presented this is considered a valid assertion.

During the operation phase the EIS (and updated air dispersion model report, December 2018) notes that the modelling assessment predicts that all air quality standards and guidelines will be complied with and no significant impacts are predicted.



Road traffic emissions and traffic noise have been scoped out of the assessment given the low level of change in traffic patterns predicted to occur (in Chapter 12) as a result of the proposed development. Once the traffic predictions are correct this scoping is valid and no detailed analysis is required.

Operational odours are not expressly described in the EIS but the inference is that based on the existing control measures and monitoring there will be no significant impact. Based on the levels of compliance at the site this is a reasoned approach to assessing the impact.

Operational noise is assessed through presentation of the ongoing noise monitoring data coupled with an attenuation analysis the new infrastructure that will generate noise. The EIS states no significant impact and this is valid based on the data presented, however, there are a notable number of noised complaints recorded for the site (not referenced in the EIS) but noted on the EPA website. While the noise levels presented for the area show compliance with the EPA limits, the data presented does not include any tonal analysis and this is required to ensure so significant impact.

The GHG savings associated with the proposed development are predicted to be 40,000 tonnes of CO<sub>2</sub> per annum resulting in a positive effect on climate. Based on this analysis (to be verified) this positive impact finding is correct.

No detailed assessment of climate vulnerability has been presented and there is no flood risk assessment provided in the application.

### 4.5.3 Impact Assessment

To assess construction dust, the EIS employs the procedures outlined in the Transport Infrastructure Ireland (TII) document '*Guidelines for the Treatment of Air Quality during the Planning and Construction of National Road Schemes*', 2011 which is the industry standard for such assessment.

The description of direct discharges from stacks on site is carried out using a refined air dispersion model using the Breeze AERMOD computer package (Version 16216r, released January 2017) in accordance with EPA Guidance Note AG4.

For operational noise from the site, there is one major new noise source proposed (the kiln bypass cooling tower). For this new plant, a sound power level of 101dB is assumed and at a distance of 500m to the nearest sensitive receiver (NM2), a sound pressure level of 39dB is predicted at this location. However, it is unclear if the cumulative impact of the other sources in the area are accounted for in this analysis. Given the compliant levels recorded for the existing operation versus the high number of complaints, a tonal analysis of the existing operation is sought. In addition, further details of the noise footprint of the kiln bypass cooling tower are required to validate the assertion of no significant impact.

In terms of potential for road traffic emissions, the applicant quotes the TII Guidelines which advise that an air quality impact assessment should be completed on road links where a greater than 5% change in flows occurs during the operational phase. While this guidance relates to national road projects it is widely referenced on other projects in EIA and is a valid assessment. The traffic chapter (Chapter 12 of the EIS) states that no local roads are predicted to experience increases of greater than 5% during the operational phase and therefore operational traffic effects are not required to be considered further.

For noise, as no route is predicted to experience increases of more than 25% in total traffic flows no detailed assessment is required as per the DMRB Guidelines. In fact the maximum predicted increase in traffic is significantly below the 25% limit - refer to Chapter 12 of the EIS. Once the traffic considerations and predictions are valid this is a reasoned scoping of the need for estimation of emissions and noise from road traffic.

Fugitive odours are qualitatively assessed in terms of potential risk to cause nuisance. As above, in the absence of existing compliance issues at this site this assessment is considered sufficient for this application.

Fugitive dust emissions are not addressed in the EIS and this is considered a significant omission that must be rectified.

The climate mitigation assessment presents the existing and proposed scenarios along with the quantities and mix of the proposed fuels. No information is provided on the source of the information used to inform this quantification.

#### **4.5.4 Interaction of Effects**

There is interaction between the air dispersion model of the stack emissions and the biodiversity chapter in terms of deposition of pollutants on sensitive ecosystems. This interaction is stands practice and employs a standard approach to determining the significance of any impact.

The predicted traffic volumes identified in Chapter 12 (Traffic) have been used to scope the level of assessment required for the air and noise analysis of traffic impact from offsite sources.

#### **4.5.5 Cumulative Effects**

No other major emitters are considered likely to contribute to maximum predicted values due to the separation from the applicant site, as follows:

- Tarbert – 45km
- Moneypoint – 45km
- Aughinish Alumina – 20km

This is valid and given the distance there is limited scope for cumulative impact from the major sources listed above. Smaller existing sources in the area are accounted for in the background levels incorporated into the model.

#### **4.5.6 Planning Authority Assessment**

In general terms the ABP Direction states the following in relation to air, dust and noise and the control of same through the IE Licence:

*The proposed development is situated in an established industrial area, is reasonably removed from nearby sensitive receptors and will be subject to an Industrial Emissions Licence which will control emissions to air, fugitive dust, noise and water. The proposed*

*development would not, therefore, seriously injure the residential amenities of adjacent properties.*

#### 4.5.7 Mitigation and Monitoring

In terms of direct emissions to atmosphere from stacks, no additional mitigation measures are proposed as part of this development. However, it is noted that significant mitigation is currently in place (selective non catalytic reduction (SNCR) and a bag filter on kiln 6 and bag / hybrid filters on other sources) under the requirements for the IE Licence and BAT that will continue to apply.

Potential odours will be mitigated through off-site preparation of alternative fuels to required specification; enclosed delivery, primarily for 'just-in-time' use; handling within purpose-designed buildings, silos and tanks and direct feed to the kilns.

In the December 2018 further information submitted by the applicant to the EPA, a dust management procedure has been presented.

#### 4.5.8 Conclusion

As outlined earlier, a detailed review of the air dispersion modelling presented in the EIS has been undertaken previously as part of the Regulation 9 Review of the application. A series of queries and clarifications were issued by the EPA to the applicant as a Regulation 10 request for further information. In December 2018 this information has been supplied by the applicant and has been assessed for completeness. The model presents is compliant with the required standards and is suitably detailed to allow for a determination of impact.

In relation to noise, given the numbers of complaints recorded on the existing operation coupled with the installation of a new cooling tower, further information is required to validate the claim of no significant impact.

In terms of climate mitigation, a positive impact is presented and acknowledged. However, further information is required on the sources of the information employed in this analysis to verify the impact presented.

Finally, no assessment of vulnerability to climate change has been presented and with this omission, further information is sought in this regards.

The key findings of the review of air, noise and climate are presented in **Table 4.5** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.5: Summary of review on Air, Noise and Climate**

<b>Clarification Required</b>
<p>It is recommended that the EPA request the applicant to provide the details of the activity data and emission factors employed to determine the relative greenhouse gas emissions presented in Section 8.4.6 of Volume 2 of the EIS.</p> <p>It is recommended that the EPA request the applicant to furnish the tonal analysis of the baseline noise surveys undertaken at the site.</p> <p>It is recommended that the EPA request the applicant to provide details of the noise footprint of the proposed kiln bypass cooling tower proposed at the site including details of the sound power level and the associated tonal output.</p>
<b>Further Information Needed</b>
<p>The analysis of the vulnerability of the project to climate change has been referenced previously in relation to flood risk and is not repeated in this section.</p>
<b>Key Significant Effects</b>
<p>The key significant effect associated with the proposed development relates to the changes in direct emissions to atmosphere from the increased use of alternative fuels and alternative raw materials. Noise impacts may be significant and further information is required to verify.</p> <p>The proposed development will result in a positive climate impact through the reduced use of fossil fuels and increased use of alternative fuels and alternative raw materials with a lower carbon intensity.</p> <p>Climate adaption implications from flooding at the Bunlicky pond have not been addressed and have the potential to significantly impact on the environment.</p>

## **4.6 MATERIAL ASSETS, CULTURAL HERITAGE AND LANDSCAPE (INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE AS APPROPRIATE)**

### **4.6.1 Landscape and Visual Impact**

#### **4.6.1.1 Identification of Impacts**

Landscape and Visual Impact is addressed in Chapter 10 of Volume 2 of the EIS which identifies the following potential impacts from the proposed development:

- Visual effects on the landscape; and
- Effects on landscape planning context.

A series of photomontages from nine individual viewpoints have been presented in Appendix 10.1 of the EIS. These images provide clarity on the extent of the additional infrastructural works and the potential visual impact of same.

#### **4.6.1.2 Description of Impacts**

The EIS accepts that the existing facility already presents a significant and prominent built form within the landscape and will have a neutral impact on landscape planning aspects.

The EIS states that given the scale and impact of the existing plant, the proposed development and new structures will not give rise to additional significant visual impacts.

In addition, the proposed development is for the most part located on existing developed or cleared footprint in and around the existing plant. Minimal vegetation removal is required – mainly on the edge of existing plantings and for access etc. – and as such potential landscape impacts are considered to be negligible.

Based on the photomontages provided and the analysis presented in the EIS, these are considered a valid and reasoned determination of potential impacts of the proposed development.

#### **4.6.1.3 Impact Assessment**

The assessment is made with regard to the sensitivity of the landscape and its vulnerability to change, taking consideration of the location of visual receptors relative to the proposed development. The methodology used is based on the following guidelines:

- Guidelines on Information to be contained in Environmental Impact Statements (2002) and; the
- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003)
- Revised Consultation Draft Guidelines on Information to be contained in the Environmental Impact Statements (2015) and
- Consultation Draft Advice Notes for Preparing Environmental Impact Statements (2015).

A total of eight photomontages have been presented in Appendix 10.1 of the EIS from a range of viewpoints to the south east and north of the plant. The photomontages help to clarify the visual extent of the proposed development and suggest minimal visual impact.

#### **4.6.1.4 Interaction of Effects**

Interaction with Cultural Heritage is noted through the assessment of impact on Castle Mungret (Mungret College) which is a protected structure to the south of the site.

#### **4.6.1.5 Cumulative Effects**

The EIS states that the proposed development, which will be sited within the developed footprint of an existing industrial cement manufacturing facility, has little or no landscape or visual effect outside of the boundary of the existing plant and as such the proposed development will not give rise to cumulative effects.

#### **4.6.1.6 Planning Authority Assessment**

In terms of landscape and visual impact the ABP Order states the following:

*The proposed development comprises structures which are subordinate in scale and form to the existing structures at the Cement Works site. The proposed development would not, therefore, give rise to significant visual or landscape effects or indirect effects on heritage and/or tourism.*



#### 4.6.1.7 Mitigation and Monitoring

The EIS states that the applicant has undertaken extensive landscape and planting works around the plant the continuing establishment of the existing planting will have an increasingly more pronounced effect in the screening and softening of the mass of the facility. No other planting measures are proposed.

#### 4.6.1.8 Conclusion

In relation to landscape and visual impact, it is considered that the assessment completed for the application is suitably comprehensive and complies with best practice. The assumptions contained within the analysis are valid but it is noted that the assessment is largely reliant on the findings of the photomontages.

### 4.6.2 Cultural Heritage

#### 4.6.2.1 Identification of Impacts

Cultural Heritage is addressed in Section 11 of Volume 2 of the EIS and two appendices are presented to support this chapter including:

- Appendix 11.1: Historical and Archaeological Background
- Appendix 11.2: Archaeological Excavations

In terms of impact to Cultural Heritage the EIS identifies the following potential impacts:

- Recorded monuments and places: LI013-001: Castlemungret Enclosure - This monument has been removed and will not be impacted by the proposed development.
- Impacts on national monuments (one located within 1km of the site).
- Protected Structures - a Country House in Skehacreggaun townland is situated 0.57km to the south-east of the site.
- NIAH Structure No. 21901310 is situated 0.55km to the south-east of the application area and is considered too far distant to be directly or indirectly impacted by the proposed development.

#### 4.6.2.2 Description of Impacts

There are no predicted impacts on any known items of cultural heritage, archaeology or buildings of heritage interest in the application area or the vicinity.

#### 4.6.2.3 Impact Assessment

The cultural heritage assessment is contained within Section 11 of the EIS and involves detailed investigation of the cultural heritage including the archaeological, architectural and historical background of the application area, the landholding and the surrounding area of the proposed development. This area was examined using information from:

- The Record of Monuments and Places (RMP) of County Meath;

- The Meath County Development Plan 2013-2019;
- Topographical and Correspondence files and finds list of the National Museum of Ireland;
- Aerial photographs;
- Excavations reports;
- Cartographic sources; and
- Documentary sources

In addition, a field assessment was carried out on the 7<sup>th</sup> of January 2016 to identify and assess any known archaeological sites and previously unrecorded features and possible finds within the application area.

#### **4.6.2.4 Interaction of Effects**

This chapter has a direct interaction with Chapter 10 relating to Landscape and Visual Impact.

#### **4.6.2.5 Cumulative Effects**

The EIS states that the proposed development will not have any effect on cultural heritage and therefore will not give rise to any cumulative effect on the cultural heritage. Given the absence of any significant effect, there is no likely significant cumulative impact.

#### **4.6.2.6 Planning Authority Assessment**

The ABP Inspector's Report notes the following:

*The application was referred to the Executive Archaeologist for LCCC, who had no objection to the proposal. The development will not have any impact on the cultural heritage of the area.*

#### **4.6.2.7 Mitigation and Monitoring**

No direct or indirect impacts warranting specific mitigation were identified during the course of the cultural heritage assessment. No monitoring is proposed.

#### **4.6.2.8 Conclusion**

The EIS states that there are no predicted direct or indirect impacts on any known items of cultural heritage, archaeology or buildings of heritage interest in the application area or the vicinity of the site. Based on the assessment carried out and with reference to the additional reports contained in the appendices, this is considered a valid assertion.



## 4.6.3 Traffic and Transportation

### 4.6.3.1 Identification of Impacts

Traffic and Transportation are addressed in Section 12 of Volume 2 of the EIS which identifies the following potential impacts:

- Potential impact of construction related traffic
- Potential impact of operational related traffic

### 4.6.3.2 Description of Impacts

The traffic analysis compares the existing (2015) daily traffic flows from the site with the proposed construction and operation phases.

The construction phase will lead to a slight increase (from 34 to 38) in daily HGV trips from the site. LGVs increase significantly (from 12 to 84) as a result of personnel working on construction.

During the operation phase a greater impact is predicted with a rise from 34 to 66 in HGV trips and a rise from 2 to 20 in LGV trips with an overall increase in 40 trips per day from the site.

Daily two-way traffic flows along the N69, immediately adjacent to the site, and N18 (northwest of the N69) were recorded at 9,801 and 19,387 respectively in March 2015.

The additional peak hour traffic associated with the operational activity of the proposed future use of AF would result in an increase in traffic flows of 1.3% and 0.6% on the N69 and N18 respectively, and therefore, this will not have a significant impact on traffic conditions.

### 4.6.3.3 Impact Assessment

The assessment has been prepared based on the Traffic and Transport Assessment Guidelines prepared by Transport Infrastructure Ireland (TII, May 2014). The assessment has been based on traffic surveys undertaken on the surrounding road network.

Analysis has been presented based on 165,000 tonnes of material delivered to the site (90,000 tonnes alternative fuels/materials and 75,000 tonnes fossil fuel). Currently, the site can accept up to 130,000 tonnes of petcoke when at capacity. In light of the ABP decision to restrict alternative fuels to 30,000 tonnes, this should not materially alter the total traffic volume predicted for the proposed scenario as actual volumes will likely be within the range 130,000-165,000 tonnes per annum at capacity.

### 4.6.3.4 Interaction of Effects

The following interactions are noted in the EIS:

- Chapter 8 Air Quality and Climate
- Chapter 9 Noise and Vibration

#### 4.6.3.5 Cumulative Effects

The EIS states that the cumulative effects of the proposed development and other existing developments have been considered through the completion of baseline traffic counts, which is a valid assertion. There are no known committed or planned developments in the vicinity of the proposed development that would impact on the operation of the road network.

#### 4.6.3.6 Planning Authority Assessment

In terms of traffic the ABP Inspector's report states the following:

*I have elsewhere in this Report addressed the issue of peak time deliveries of alternative fuels/raw materials. At present all deliveries of petroleum coke are from the Port of Foynes – along the N69. Alternative fuels will likely come from all directions – utilising the N18, N69 and perhaps the R510. This will serve to spread the traffic more evenly, particularly where petroleum coke is delivered in batches over 8-10 week periods at present. The delivery of alternative fuels in appropriately covered trucks/tankers will not have any impact in terms of traffic safety.*

#### 4.6.3.7 Mitigation and Monitoring

Mitigation measures for construction stage operation include:

- General construction traffic strategy
- Designated construction hours
- Construction Traffic Management Plan

The proposed increase in alternative fuels and the use of raw material will not result in a significant number of vehicles to the cement works. The EIS states that there will be no impact on the surrounding road network or the operation of the existing access points and therefore no additional mitigation measures are required.

#### 4.6.3.8 Conclusion

In relation to traffic, it is considered that the assessment completed for the application is suitably comprehensive and complies with best practice.

### 4.6.4 Waste Management

#### 4.6.4.1 Identification of Impacts

Waste Management is addressed in Section 13 of Volume 2 of the EIS and identifies the following potential impacts:

- Waste generated in the construction phase, including demolition and excavation waste; and
- Waste treated and generated in the operational phase.

Waste management is presented against the background of national and regional waste management policy and statistics which are presented within this chapter.

#### **4.6.4.2 Description of Impacts**

The effect of waste generated in the construction phase following the adoption of mitigation measures is determined to be moderate, negative and short-term.

The use of the requested 90,000 tonnes per annum of alternative fuels combusted at the site to replace imported fuels during the operational phase of the proposed development is determined to be significant, positive and long term.

Both of the above description of the predicted impacts are considered valid based on the analysis presented within this Section of the EIS.

#### **4.6.4.3 Impact Assessment**

A desk study has been carried out that considers the legislative context including EU, national and local policy and legislation and guidance that is relevant to the proposed development.

#### **4.6.4.4 Interaction of Effects**

The direct and indirect effects of waste-related transport are considered in Chapter 12, Traffic and Transportation and the geotechnical characterisation of the site is considered in Chapter 6, Soils, Geology and Hydrogeology.

#### **4.6.4.5 Cumulative Effects**

The EIS states that there are no significant cumulative effects in relation to waste management anticipated and that the assessment includes the cumulative impact of replacing imported fossil fuels with the increased use of alternative fuels and raw materials.

#### **4.6.4.6 Planning Authority Assessment**

ABP note that the consideration of the planning application had due regard to the following waste policy documents:

- Waste Framework Directive 2008/98/EC;
- A Resource Opportunity – Waste Management Policy in Ireland, July 2012 (DECLG);
- National Hazardous Waste Management Plan 2014-2020; and
- Southern Region Waste Management Plan 2015-2021 (SRWMP),

Furthermore, the ABP direction states that Condition 3 of the planning consent (in relation to capacity restrictions at the site) is imposed in order to comply with the policies of the Southern Region Waste Management Plan 2015 – 2021 and Condition 4 on the prohibition of combustion of hazardous waste at the site based on national capacity for self-sufficiency in terms of hazardous waste.

#### 4.6.4.7 Mitigation and Monitoring

The proposed mitigation for the demolition, excavation and construction phases includes the preparation of a Construction Waste Management Plan which meets the requirements of the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (DoEHLG, 2006a).

In addition, the EIS states that source separation, material management and waste auditing during the construction phase are to be implemented. Monitoring by the contractor shall include the include measuring the quantity of waste generated throughout the construction process categorised by List of Waste Codes (LoW).

The EIS states that *“operational phase impact of the proposed development will be significant, positive and long term, therefore no mitigation is required”*.

#### 4.6.4.8 Conclusion

In relation to waste management, the assessment completed for the EIS is suitably comprehensive. It is agreed that that no significant negative waste effects are likely to arise during operation and the proposed development will likely derive a positive impact.

#### 4.6.5 Material Assets Conclusions

In terms of landscape and visual impact, it is considered that a detailed assessment has been undertaken and the proposed development will have no significant landscape and visual impact.

Cultural heritage will not be predicted directly or indirectly via visual impact as noted in the EIS and the analysis presented is fit for purpose.

Similarly, traffic predictions presented in the EIS indicate that the proposed development will have minimal impact on the existing traffic volumes on the road network during both the construction and operation phases.

For wide material assets and waste management, the predicted impacts are positive through the recovery of waste materials and the replacement of fossil fuels. The analysis presented is considered robust and no further details are sought on this topic.

The key findings of the review of material assets are presented in **Table 4.6** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.6: Summary of review on Material Assets**

Clarification Required
No clarifications sought from the applicant in relation to material assets.
Further Information Needed

No further information required in relation to material assets.

#### **Key Significant Effects**

Landscape and Visual impacts on the surrounding area.  
 Potential impact on cultural heritage, archaeology or buildings of heritage interest in the application area or the vicinity of the site.  
 Potential for traffic impacts during both construction and operation phases of the development.  
 Significant positive material asset impact replacing imported non-renewable fossil fuel with alternative fuels.

## **4.7 INTERACTION BETWEEN THE FACTORS**

### **4.7.1 Identification of Impacts**

Interactions are addressed in Chapter 14 of Volume 2 of the EIS and the following interactions are identified as relevant:

- Human Beings and Noise and Vibration
- Human Beings and Landscape & Visual Impact
- Human Beings and Air Quality
- Flora & Fauna and Hydrology
- Air Quality and Flora & Fauna

Interactions have been described for both the construction and operation phases of the proposed development.

### **4.7.2 Description of Impacts**

For each of the relevant interactions identified in the EIS these are summarised in Chapter 14. Chapters 4 to 13 have described the relevant interactions and provided greater detail on the resultant effects on each of the individual environmental topics. The EIS states that no potential significant effects have been identified arising from interactions.

### **4.7.3 Impact Assessment**

Impact assessment has been addressed through the individual technical Chapters 4 to 13. The approaches to impact assessment have been in line with industry best practice as detailed in the reviews presented in **Sections 4.1 to 4.6** of this report. The approach adopted to impact assessment of interactions within the EIS is considered robust.

### **4.7.4 Interaction of Effects**

Not relevant for this chapter.

### **4.7.5 Cumulative Effects**

As above, the interactions are clearly indicated and the impact assessment of such cumulative impacts is addressed in the relevant technical Chapters 4 to 13.

#### 4.7.6 Planning Authority Assessment

Not explicitly stated in the ABP Order and the Inspector's Report records the interactions noted in the EIS but offers no firm conclusion on the adequacy of same.

#### 4.7.7 Mitigation and Monitoring

Chapters 4 to 13 of the EIS have identified with any potential effects arising from the proposed development or interactions of the disciplines and where potential negative effects have been identified appropriate mitigation measures have been proposed to reduce or avoid these impacts. No further mitigation is presented in Chapter 13.

#### 4.7.8 Conclusion

The key findings of the review of the identified interactions are presented in **Table 4.7** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.7: Summary of review on Interactions between the Factors**

<b>Clarification Required</b>
No further clarifications required in relation to interactions.
<b>Further Information Needed</b>
No further information required in relation to interactions.
<b>Key Significant Effects</b>
Key significant effects are as per those documented in Chapters 4 to 13 of the EIS and identified in this report.

## 4.8 VULNERABILITY OF THE PROJECT TO RISKS OF MAJOR ACCIDENTS AND/OR DISASTERS

### 4.8.1 Identification of Impacts

Article 3(2) of the revised EIA Directive (Directive 2014/52/EU) states that the environmental impact assessment shall identify the following:

*The effects referred to in paragraph 1 on the factors set out therein shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.*

As noted earlier, this EIA review has been undertaken relative to the requirements of Directive 2011/92/EU which does not specifically require the above analysis required under

the revised EIA Directive. As such, there is no section of the EIS presented that directly relates to vulnerability of the project to risks of major accidents and/or disasters.

As part of the Regulation 9 review, it was recommended that an assessment of vulnerability of the project to risks of major accidents and/or disasters was sought from the applicant. To this end, the EPA sought this detail from the applicant in the Regulation 10 request in November 2018 and on the 12<sup>th</sup> December 2018 the applicant submitted an analysis of vulnerability to accidents/disasters that identified the following:

Fire hazard from storage or handling of flammable and combustible materials;

- Liquids handling - loss of containment, leaks, etc.;
- Dust events - explosion from the free-flowing silos, kiln 6 preheater, etc.;
- Flooding – fluvial and pluvial.

The analysis concludes that the risk of such events at the site is low.

#### **4.8.2 Description of Impacts**

The EIS states that as there is no record of flood events in the vicinity of the Irish Cement site contained on the OPW database of events, flood risk is not considered further as no measures are proposed that may increase the risk of flooding in the area. A review of the OPW flood mapping tool (<http://www.floodinfo.ie/map/floodmaps/>) illustrates that the cement plant site does not lie within the flood probability range of river or coastal flooding. However, the eastern section of Bunlicky Pond is listed as within the low probability area of coastal flooding from the estuary. No details have been presented in the EIS of the potential implications for operations and the subsequent impacts to the environment in the event that the pond is flooded and the subsequent fate of the discharge listed above.

Other risks at the site have been presented using a standard risk assessment methodology along the principles of the EPA “Guidance on assessing and costing environmental liabilities” (2014). A series of 21 hazards are systematically listed and assessed for likelihood and consequence and assigned a risk score. The worst case risk (catastrophic failure of diesel tanks) is described in greater detail.

#### **4.8.3 Impact Assessment**

Flood risk is assessed based on the findings presented in the OPW database of events ([www.floodmaps.ie](http://www.floodmaps.ie)) but the applicant does not address the potential implications of the partial flooding of the Bunlicky Pond.

Hazard assessment is carried out in line with the principles of the EPA “Guidance on assessing and costing environmental liabilities” (2014).

#### **4.8.4 Interaction of Effects**

Not relevant for this topic other than flood risk which is addressed in hydrology and drainage.

#### **4.8.5 Cumulative Effects**

Not relevant for this topic.

#### 4.8.6 Planning Authority Assessment

The ABP Inspector's Report states that "*flooding would not be likely to occur at this site. The proposed development in itself will not have any impact on flooding in the area*".

#### 4.8.7 Mitigation and Monitoring

Not relevant for this topic.

#### 4.8.8 Conclusion

In short, while not strictly required for compliance with the requirements of Directive 2011/92/EU, some analysis of these risks should be presented in line with best practice, in particular in relation to flood risk and impacts to human health from abnormal operations.

While flood risk has been presented, the potential implications for discharges to the Bunlicky Pond when the pond is flooded (risk is indicated by the CFRAM mapping) have not been addressed and further information is sought in this regard in **Section 4.4.8** so this information is not sought as further information in this section of the report.

The risk to human health from the discharge of emissions to atmosphere during abnormal or unscheduled events is not presented within the EIS but has been addressed in the December 2018 air dispersion model report.

Other hazards at the site have been identified and assessed based in current mitigation to determine the potential environment consequences in supplemental information supplied by the applicant to the EPA in December 2018.

The key findings of the review of the assessment of vulnerability of the project to accidents and/or disasters are presented in **Table 4.8** which includes the reasoned conclusion on the significant effects of the application on the environment and the need, if any, for further information on this topic.

**Table 4.8: Summary of review on Risks/Vulnerabilities to Accidents and/or Disasters**

<b>Clarification Required</b>
No clarifications required in relation to risks/vulnerabilities.
<b>Further Information Needed</b>
No further information required in relation to risks/vulnerabilities.
<b>Key Significant Effects</b>
Flood risk of the site is known to be low but further information on operational constraints is required. Impact to human health as a consequence of abnormal operations resulting in increased discharge of pollutants.



Vulnerability to other effects of climate change have not been addressed.

## 5 RECOMMENDATIONS

### 5.1 GENERAL RECOMMENDATION

In summary, RPS concludes that the EIS presented is a well-structured and informed document that systematically addresses the key environmental topics and requirements listed in EIA Directive 2011/92/EU. This is largely in line with the findings of ABP who concluded that subject to the implementation of the mitigation measures and subject to compliance with the conditions set out in the grant of permission, the effects on the environment of the proposed development by itself and in combination with other development in the vicinity would be acceptable.

RPS considers that there are a number of minor omissions in the EIS submitted and further clarifications and further information is sought in this regard. It is noted that some topics such as air quality, drainage, groundwater risk, risks/vulnerabilities, etc. were the subject of a Regulation 10 request for further information issued by the EPA to the applicant on the 1<sup>st</sup> November 2018. This information has been supplied by the applicant in December 2018 and has been factored into this assessment.

It is recommended that the EPA seek the additional information listed in **Section 5.2** from the applicant to allow for a reasoned conclusion on the significant effects of the project on the environment. Once this information is submitted, an assessment of the completeness and level compliance with the Directive 2011/92/EU can be undertaken.

### 5.2 REQUEST FOR FURTHER INFORMATION

It is recommended that the EPA seek the following further information from the applicant to resolve the queries raised in this EIA review:

#### **Environmental Mitigation Commitments**

1. It is noted that the further information relating to environmental mitigation measures submitted by the applicant to Limerick City and County Council and ABP (both in writing at any the oral hearing) have not been included in the application documentation. Given that Condition 6 of the ABP consent bounds the applicant to operate within this mitigation regime, it is recommended that the EPA request the applicant to provide complete details of all further mitigation committed over that presented with the EIS.

#### **Construction and Phased Development**

1. It is recommended that the EPA request the applicant to provide further details on the proposed construction and demolition phase of the proposed development in line with the requirements of Paragraph 2(a)(i) of Schedule 6 of the Regulations.
2. It is noted that the phasing of new infrastructure presented in Section 3.4.4 of Volume 2 of the EIS is based on a 10 year timeframe and includes phased development over the short-term (0 to 4 years), medium-term (3 to 7 years) and longer-term (6 to 10 years). Given that ABP Condition 2 has provided a 7 year planning consent only, it is

recommended that the EPA request the applicant to clarify the implications for the planning timeframe on the proposed infrastructural developments.

### **EIS Compilation**

1. It is recommended that the EPA request the applicant to provide an indication of any difficulties (technical deficiencies or lack of know-how) encountered in compiling the required information.

### **Water**

1. It is recommended that the EPA request the applicant to provide an analysis on the operational implications and significant environmental impacts in the event that the Bunlicky Pond is flooded impacting upon the discharges from the facility.

### **Climate and Noise**

1. It is recommended that the EPA request the applicant to provide the details of the activity data and emission factors employed to determine the relative greenhouse gas emissions presented in Section 8.4.6 of Volume 2 of the EIS.
2. It is recommended that the EPA request the applicant to furnish the tonal analysis of the baseline noise surveys undertaken at the site.
3. It is recommended that the EPA request the applicant to provide details of the noise footprint of the proposed kiln bypass cooling tower proposed at the site including details of the sound power level and the associated tonal output.

### **Non-Technical Summary**

1. Based on the amendments listed above, it is recommended that the EPA request the applicant to provide an updated Non-Technical Summary.