Addressing Human Health in Environmental Impact Assessment

As per EU Directive 2011/92/EU amended by 2014/52/EU

CONSULTATION DRAFT

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Contents

List of figures

List of tables

IAIA is the **International Association for Impact Assessment**, the leading global network on best practice in the use of impact assessment for informed decision making regarding policies, programs, plans and projects. For more information see www.iaia.org/index.php

The **European Public Health Association**, or **EUPHA** in short, is an umbrella organisation for public health associations and institutes in Europe. For more information see https://eupha.org/index.php

1 Introduction

1.1 Background

1.1.1 The response to social, environmental and economic determinants of health requires multisectoral approaches. The range of determinants that act on people's health, such as socioeconomic status, gender and other environmental and social determinants, means that multisectoral action is central to the Sustainable Development Goals (SDGs), set by the United Nations General Assembly in 2015 (1), and in achieving the triple billion goal of the World Health Organization (WHO) aiming to ensure that by 2023 one billion more people benefit from universal health coverage (UHC), one billion more people have better protection from health emergencies; and one billion more people enjoy better health and well-being.

1.1.2 One of the disciplines supporting multisectoral action is the enhanced assessment of health impacts in environmental assessments such as environmental impact assessments (EIA) and strategic environmental assessment (SEA). A task WHO supports since the first Ministerial Conference on Environment and Health, Frankfurt 1989 (2) and through diverse Resolutions of the World Health Assembly.

1.1.3 EIA is governed in the European Union by EIA Directive 2011/92/EU (3), as amended by 2014/52/EU (4) (hereafter the 'EIA Directive'). Article 3 of the amended EIA Directive names human health among the topics to be addressed when conducting an EIA. The amended EIA Directive also includes issues that are relevant to human health, for example, climate change and vulnerability (exposure and resilience) to major accidents and/or disasters.

1.1.4 These amendments are relevant not only for European Members States but beyond EU borders through, for example, the policies of the European Investment Bank (5) and the European Bank of Reconstruction and Development (6).

1.1.5 The EIA Directive identifies various actors, including the Developer bringing forward the project application and the Competent Authority responsible for performing the duties arising from the EIA Directive. The societal response to protecting and improving health and moving towards sustainability requires partnerships between multiple sectors and collaborative and integrated approaches for action.

1.2 Aim of this paper

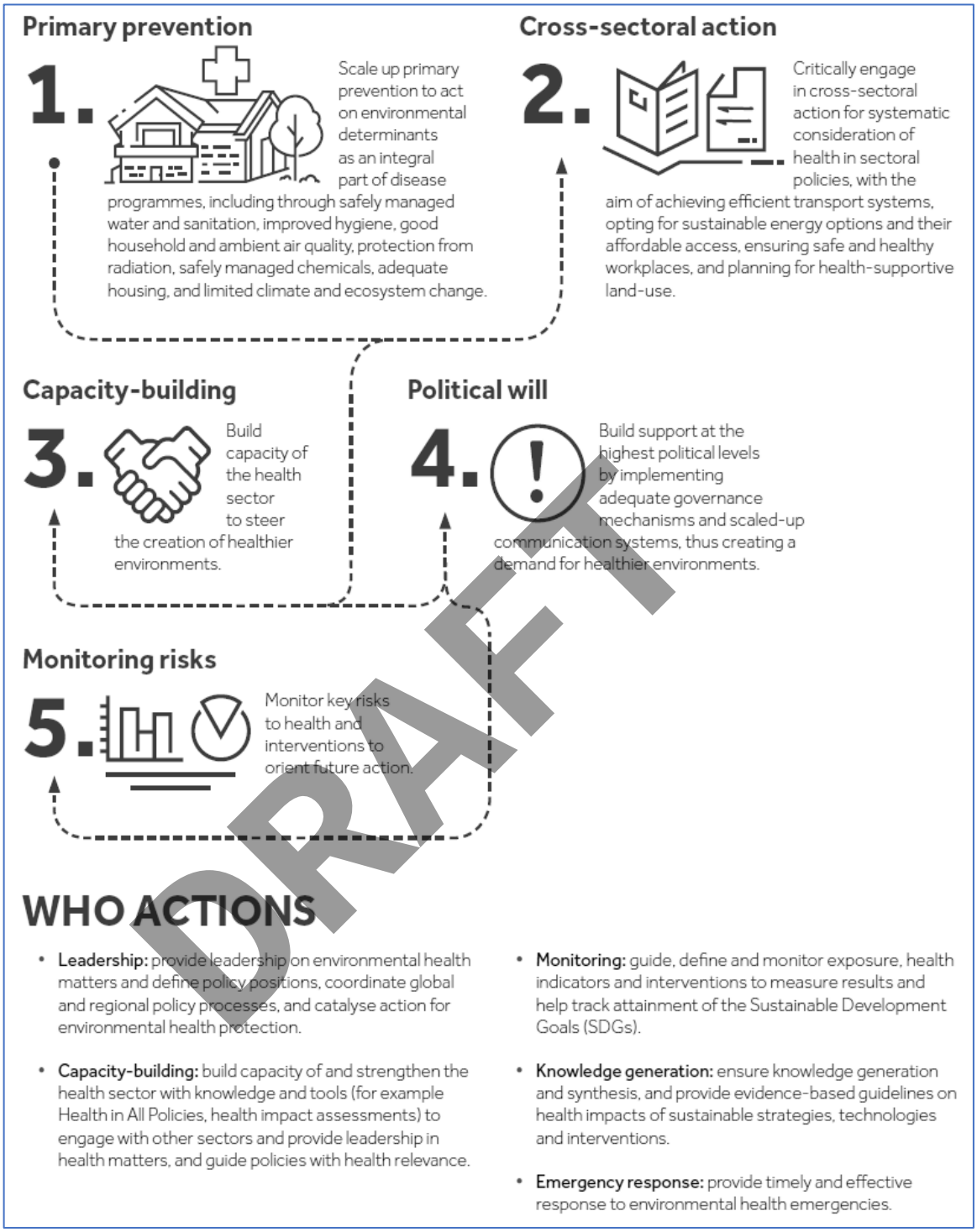
1.2.1 This paper aims to provide principles and good practice for appropriately addressing health in EIA for the health sector and all sectors and actors involved in the EIA process.

1.2.2 This paper seeks to contribute towards consistent coverage of human health within an EIA. This is of interest to practitioners conducting EIA, Developers and to the authorities requested to express their opinion on the information supplied in an EIA report.

1.2.3 It seeks to complement guidance, for example the guides for Andalucía and for Wales (7,8) and it builds on previous joint action between the International Association for Impact Assessment (IAIA), the European Public Health Association (EUPHA), and the WHO Regional Office for Europe (9).

1.2.4 This paper contributes to the strategies to combat environment related disease and to WHO actions as set out by WHO (see Figure 1).

Figure 1: Strategies to combat environment related disease



From the World Health Organization (10)

Preparing this paper

1.2.5 In 2018, the International Association for Impact Assessment (IAIA), the European Public Health Association (EUPHA) and the WHO Regional Office for Europe initiated a joint action for supporting practitioners and other stakeholders through a reference document to better address human health in EIA applying the amended EIA Directive (2014/52/EU).

1.2.6 The WHO Regional Office for Europe held a technical meeting on 26-27th March 2019 to discuss a first draft of this paper reporting on key issues, challenges and good practice principles on this topic.

1.3 Structure of this paper

1.3.1 Section 2 of this paper opens with a glossary to list the main concepts on health and environment.

1.3.2 Section 3 sets out concepts underpinning EIA and health in EIA. This is to address the immediate need for health professionals to become familiar with, and to engage in, the EIA process.

1.3.3 Section 4 sets out principles to be taken into account when considering human health in EIA.

1.3.4 Sections 6 to 9 go through the stages of EIA for addressing human health within EIA.

1.3.5 Section 10 looks at the expertise needed to conduct health assessment within EIA.

1.3.6 [Ed note: case studies will be used throughout the document to show ways in which human health has been, and can be, integrated in EIA.]

2 Key concepts

2.1.1 Concepts, terminology and definitions are important, especially in the context of inter-sectoral dialogue where different professions work together and where each profession has an established 'language' and 'culture'. Achieving a common understanding between the stakeholders on the concepts that underpin 'human health' and EIA is fundamental for an adequate assessment of human health effects within EIA.

2.1.2 Operational definitions for concepts and terminology that underpin 'human health' and EIA are provided in Table 1 below. These will support key stakeholders in the EIA process, namely the health sector stakeholders engaged in EIA, Developers, EIA practitioners and the public. The concepts, in Table 1 below, are also important in determining what is an appropriate and acceptable consideration of human health effects within EIA.

Table 1: Key concepts for health in EIA

Term	Definition	Ref.
The **Competent Authority**	is the authority which the Member States designate as responsible for performing the duties arising from the Directive.	(11)
Competent Expert	is not defined by the EIA Directive. Developers need to ensure that the EIA Report is prepared by Competent Experts. Competent Authorities also need to be able to demonstrate that they have sufficient experts to examine and evaluate EIA Reports. Different systems are used in different Member States to ascertain the competence of EIA experts.	(11)
A **determinant of health**	is a personal, social, economic or environmental factor which determines the health status of individuals or populations.	(12)
The **Developer**	is the applicant for a Development Consent on a private Project or the public authority which initiates a Project.	(11)
Development consent	is the decision of the Competent Authority or Authorities which entitles the Developer to proceed with the Project.	(11)
Environmental health inequalities	refers to descriptive measures of difference in exposure to environmental health risk factors, and to differences in health status that are caused by environmental conditions.	(13)
Epidemiology	is the study of the distribution and determinants of health-related states or events (including disease), and the application of this study to the control of diseases and other health problems.	(14)
The EIA Report	is the document prepared by the Developer that presents the output of the assessment.	(11)
Equity in health	refers to fair, just and unavoidable differences in exposure to health risk factors and status, among groups of people. As an example, significant differences in mortality or environmental risk exposure between low and high-income groups would be considered unfair and avoidable, and therefore considered an equity challenge.	(13)

Term	Definition	Ref.
Health	is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.	(15)
Health in All Policies (HiAP)	is an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies and avoids harmful health impacts in order to improve population health and health equity. It improves accountability of policy-makers for health impacts at all levels of policy-making. It includes an emphasis on the consequences of public policies on health systems, determinants of health and wellbeing.	(16)
A **health indicator**	is a characteristic of an individual, population, or environment which is subject to measurement (directly or indirectly) and can be used to describe one or more aspects of the health of an individual or population (quality, quantity and time).	(12)
Health inequality	refers to descriptive measures of difference in exposure to health risk factors, and to differences in health status between groups of people.	(13)
A **health outcome**	is a change in the health status of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status.	(12)
A health priority	is defined in this document as a health issue that has been identified by public health teams at local, national or international levels.	
The **health sector**	consists of organised public and private health services (including health promotion, disease prevention, diagnostic, treatment and care services), the policies and activities of health departments and ministries, health related nongovernment organisations and community groups, and professional associations.	(12)
The **health sector**	consists of organized public and private health services (including health promotion, disease prevention, diagnostic, treatment and care services), the policies and activities of health departments and ministries, health related nongovernment organisations and community groups, and professional associations.	(12)
Health status	is a description and/or measurement of the health of an individual or population at a particular point in time against identifiable standards, usually by reference to health indicators.	(12)
Mitigation	describes measures that are envisaged to avoid, prevent or reduce any identified significant adverse effects on the environment.	(11)
Pathway	is the route by which changes to a determinant of health lead to changes in health outcomes.	(17)
Population	is defined in this document in this document as any group of people with shared characteristics. This could be the entire population of an area, or a population defined by relevant characteristics that make them more vulnerable to a project change e.g. age or socio-economic status. Heath in EIA considers the effects to such populations rather than to individuals.	

Term	Definition	Ref.
Population health	is the health outcomes of a group of individuals, including the distribution of such outcomes within the group.	(18)
Public health	is the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society.	(19)
A **Project**	is the execution of construction works or of other installations or schemes, and/or other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources.	(11)
A **risk factor**	is social, economic or biological status, behaviours or environments which are associated with or cause increased susceptibility to a specific disease, ill health, or injury.	(12)
The **Reasoned Conclusion**	is the explanatory statement made by the Competent Authority on the significant effects of the Project on the environment, based on the examination of the EIA Report and, where appropriate, on the results of its own supplementary examination.	(11)
Scoping	is the process of identifying the content and extent of the information to be submitted to the Competent Authority under the EIA process.	(11)
The **Scoping Opinion**	is the Competent Authority's decision on the Scoping process.	(11)
Screening	is the process of determining whether a Project listed in Annex II of the EIA Directive is likely to have significant environmental effects.	(11)
Significance	describes whether or not a Project's impact could be determined to be unacceptable in its environmental and social contexts. The assessment of significance relies on informed experts' judgements about what is important, desirable or acceptable with regards to changes triggered by the Project in question. These judgements are relative and must always be understood in their context	(20)
Vulnerable groups	are groups such as ethnic minorities, migrants, disabled people, the homeless, the poor, those struggling with substance abuse, and isolated elderly people.	(21)

3 Environmental impact assessment

Key messages

EIA is a legal requirement for certain types of public and private projects that follows a structured process.

EIA informs and supports an application for consent to proceed with a project.

EIA is required to identify, describe and assess in an appropriate manner the 'likely significant effects' of a project on human health and the environment.

Health in EIA requires cross-sectoral working by both the Developer and by the Competent Authority to ensure that the health sector is involved.

3.1 What is EIA?

3.1.1 EIA is the form of impact assessment that is conducted on projects that are likely to have a significant effect on the environment. Figure 2 shows how EIA is one part of a wider system of environmental assessment which aims to protect the environment and human health.

Figure 2: Environmental assessment of policies, plans, programmes and projects

Environmental Assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made (22). Environmental assessment can be undertaken for plans or programmes or it can be undertaken on individual projects.

Strategic Environmental Assessment (SEA) is conducted on plans and programmes that set the framework for future development consent. SEAs are prepared by a planning authority. SEA derives from Directive 2001/42/EC and requires the consideration of effects on "*human health*" (23). The Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), also known as the Kiev Protocol, (24) links environment and health and includes requirements to consult with health authorities.

Environmental Impact Assessment (EIA) is conducted on individual projects and is prepared by the Developer. EIA originated from Directive 85/337/EEC (25), which was amended and updated three times, before being replaced by EIA Directive 2011/92/EU, as amended by 2014/52/EU (4). Among the changes this brought into force is the requirement for a consideration of effects on "*population and human health*".

Environmental and social assessment: the assessment and management of Environmental and Social Impacts and Issues is a Performance Requirement of all projects directly financed by the European Bank of Reconstruction and Development (6). Operations financed by the European Investment Bank within the EU and within Candidate and potential Candidate countries which are likely to have significant effects on the environment, human health and wellbeing and may interfere with human rights, will be subjected to an assessment according to the EU EIA Directive 2011/92/EU (as set out in source 5).

3.1.2 EIA is applied to a wide range of public and private projects, mainly those referring to:

- certain (typically large) infrastructure projects, such as: power stations, industrial estates, urban development, railways, airfields, roads, ports, inland waterways, flood-relief works, dams, pipelines, coastal and marine works or groundwater abstractions;
- certain (typically large) industry projects in the agricultural, extractive, energy, metals, minerals, chemicals, production and foods sectors; and
- certain other (typically large) projects, such as waste management, treatment or disposal facilities or certain projects related to the leisure and tourism industries.

3.1.3 The complete list of project types that may require an EIA is set out in Annex I and Annex II of the EIA Directive (2011/92/EU (3)).

Who does it and what are the stages?

3.1.4 EIA is conducted by the party that is seeking consent for a project. This party is referred to as the Developer. The EIA is reviewed by the Competent Authority, i.e. the authority which the Member States designate as responsible for performing the duties arising from the Directive (20).

3.1.5 Article 1(2)(g) of the EIA Directive sets out the steps in the EIA process (see Figure 3).

Figure 3: The Environmental Impact Assessment process as set out in the EIA Directive

Article 1(2)(g)

For the purposes of this Directive, the following definitions shall apply:

[…]

(g) 'environmental impact assessment' means a process consisting of:

(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);

(ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;

(iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;

(iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and

(v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a.

From Directive 2011/92/EU as amended by Directive 2014/52/EU (4)

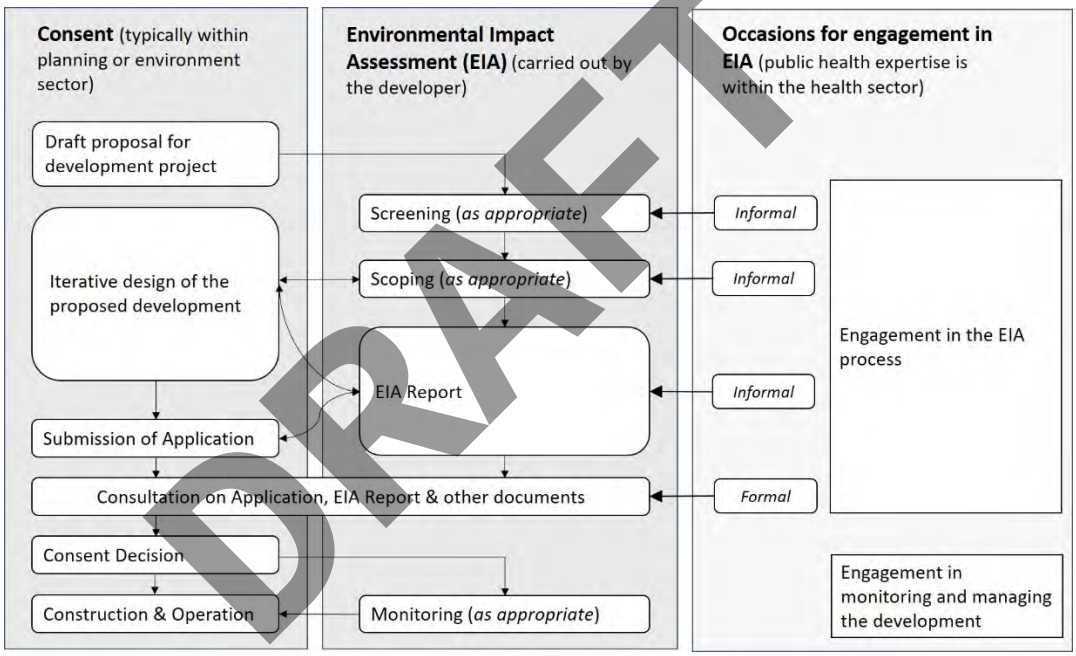
3.1.6 The stages in the EIA process are as follows (after source 26):

- screening stage (not mandatory): determining whether an EIA is, or is not, required;
- scoping stage (not mandatory): the Developer may request the Competent Authority to say what should be covered by the EIA information to be provided by the Developer;
- EIA report: the Developer must provide information on the environmental impact (project description, reasonable alternatives, baseline, likely significant effects, methods, mitigation, vulnerability to major accident, non-technical summary and references);

- consultation: the authorities designated by Member States (due to environmental, local or regional competencies or responsibilities), the public and affected Member States (where applicable) must be informed and consulted;
- decision: the Competent Authority considers the EIA Report and the results of consultations and issues a reasoned conclusion;
- information on Development Consent: the public is informed of the decision;
- monitoring: proportionate to the nature, location and size of the project and the significance of its effects on the environment, monitoring should be described in the EIA Report and required by the Competent Authority (as appropriate).

3.1.7 Figure 4 shows these steps in a diagram and shows also how EIA and the consent process are linked. The left-hand column of Figure 4 shows the consent process. The middle column shows the EIA process and the right-hand column shows informal and formal opportunities for health professionals to engage in the EIA process.

Figure 4: The EIA process and entry points for health professionals



Adapted from Cave et al (27)

3.1.8 In summary, EIA informs and supports an application for consent to proceed with a project. It evaluates the likely significant environmental impacts of planning decisions within a project. Figure 4 shows how the design process is closely linked to the assessment. The assessment informs the design and in so doing it identifies measures to avoid or reduce negative effects and enhance the positive ones. These measures may then be the subject of negotiation between the Developer and the Competent Authority and may become commitments that are monitored during the construction, operation and decommissioning phases of a project.

3.1.9 In some cases, health issues may already have been addressed at a strategic level (see the description of SEA in Figure 3) and apart from making appropriate links to those assessments, the EIA need not assess such issues further. In other cases, issues raised at the strategic level may need addressing through project level EIA. The strategic assessments can therefore inform EIA screening and scoping opinions (28).

3.2 What factors does EIA cover?

3.2.1 Article 3 of the amended Directive sets out the factors to be identified, described and assessed in an EIA (see Figure 5). The Directive does not define these factors. This paper considers human health and population below. It also considers the ways in which health is linked to the other topics (see, for example Figure 7 on page 26 below).

Figure 5: Text of Article 3 in the amended EIA Directive 2014/52 EU

> 1. The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:
>
> (a) population and human health;
>
> (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
>
> (c) land, soil, water, air and climate;
>
> (d) material assets, cultural heritage and the landscape;
>
> (e) the interaction between the factors referred to in points (a) to (d).
>
> 2. 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.';

Human health

3.2.2 The public health profession typically uses the definition of health that is written into the WHO constitution (15), whereby health is defined as 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'.

3.2.3 This WHO definition has two parts.

- The first emphasizes how population and human health spans environmental, social and economic aspects (see Figure 6 below) and how it encompasses mental and physical health. This is the role of public health.
- The second part of the WHO definition emphasises the importance of addressing and treating disease and infirmity. This is the role of healthcare.

3.2.4 While health has improved globally, and across Europe, many groups and areas have been left behind. The lowest and highest life expectancies at birth in the WHO European Region differ by 16 years, with differences between the life expectancies of men and women; and maternal mortality rates are up to 43 times higher in some countries in the WHO European Region than in others (29). Addressing health, and other social inequalities is important and central to addressing health.

3.2.5 In 2009 the European Commission (EC) issued a communication on reducing health inequalities in the EU (30) and in 2014, the Member States of WHO European Region agreed shared goals that include reducing health inequalities (29).

Figure 6: The determinants of health and wellbeing in our neighbourhoods

Barton and Grant (31) developed from the model by Dahlgren and Whitehead (32) and accessible in Dahlgren and Whitehead (33)

Population

3.2.6 The *population* topic is typically covered in EIA through the consideration of socioeconomic and/or social effects. This can include (34):

- economic impacts such as local and regional employment and expenditure opportunities; and
- social effects such as the impact of a construction workforce on local services, and impacts on quality of life and wellbeing issues, often reflected in social problems such as crime, poor health, community stress and conflict.

3.2.7 There may also be issues with regards to participation, human rights and environmental justice. These impacts can be significant in terms of whether a new project is considered acceptable by people living in that area (34).

3.2.8 The proximity of population and human health in Article 3 is of note as these topics are closely linked. ***Population health*** is a field of study in its own right (see the definition of this term in Table 1 on page 4 above). In the context of EIA 'human health' and 'population' are two distinct (yet inter-related) factors that each need to be addressed. This is not a distinction between 'individual health' and 'population health', as population based conclusions are the appropriate level at which to consider effects for both the EIA Report human health chapter and the EIA Report socio-economic chapter.

3.2.9 The fields of population and human health are closely related. It is good practice to ensure that the relation between these two fields is taken into account in the assessment. Furthermore, it is a requirement of the EIA directive to identify, describe and assess (as appropriate) the significant effects of a project stemming from the interaction between the various factors, i.e. the interaction between 'human health' and the effects on population,

biodiversity, land, soil, water, air, climate, material assets, cultural heritage and the landscape.

3.3 What is the relationship between EIA and Health Impact Assessment (HIA)?

Defining HIA

3.3.1 HIA is a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects (35).

EIA and HIA

3.3.2 The process for EIA is prescribed by the EIA Directive and by national legal, regulatory and policy frameworks in each Member State. The process for HIA is not set out in regulation in most Member States. This gives HIA a flexibility, which can allow health issues to be pursued in different ways as well as in different sectors. Therefore, whilst an HIA can be conducted to mirror EIA approaches, and thus to fulfil EIA requirements, this is not always necessary.

3.3.3 The Competent Authority will usually be in the planning or environment sector. When reviewing the coverage of health in an assessment it is good practice for the Competent Authority to involve health stakeholders. This requires cross-sectoral collaboration.

3.3.4 Using the right type of assessment at the right time and in the right context is a case-by-case decision. If the identification, characterisation and assessment of effects on health within EIA is done well, then there should not be a need for a parallel stand-alone HIA. Where coverage of health in EIA is limited or inadequate, e.g. defined in terms of only environmental determinants, then a separate HIA would likely be helpful and provide more complete information to inform the decision taken by the Competent Authority.

3.3.5 Governance arrangements are also a distinguishing factor. This applies to the process of completing the assessment and to reviewing the assessment. HIA often uses a steering group of health stakeholders, whilst EIA tends to engage individually with consultee organisations.

3.3.6 When completing an assessment, it is good practice for the assessment team to have close contact with the Developer and with the Developer's advisors, for example, the design, legal and planning teams. This ensures that the findings of the assessment are relevant and that measures for mitigation and enhancement are taken into account as the design progresses. It also ensures that the Developer commits to the measures for mitigation and enhancement. This observation is not specific to the assessment of health. Health in EIA tends to be managed via the EIA project management team which can provide this close contact.

3.3.7 Commissioning an HIA of a project separately to other assessments can mean that the HIA team is removed from where decisions are being taken and is less able to influence the design. As noted above there may be reasons for commissioning a separate HIA but it creates challenges for example, it is harder to share results and insights between teams and to align methods.

3.3.8 EIA Directive Article 5(1) states "The Developer shall, with a view to avoiding duplication of assessments, take into account the available results of other relevant assessments under Union or national legislation, in preparing the environmental impact assessment report."

3.3.9 Addressing health in EIA is part of a regulated process and so it may carry more weight with the Competent Authority than findings from an HIA that is conducted voluntarily.

3.3.10 Other ways in which EIA and HIA may differ:

- EIA is only for projects. HIA may also be undertaken on plans and programmes (setting the strategic context for projects).
- EIA requires a focus on the 'likely significant effects' of the project. HIA is not limited in this requirement, but in practical terms will usually adopt an equivalent focus to remain proportionate.
- Typically, HIA concludes by making recommendations and there is no certainty as to whether these recommendations will be put into practice. EIA concludes with the Developer making specific commitments for mitigation and monitoring so as to manage the effects that have been described in the EIA. Health in EIA may therefore provide greater certainty as to how likely significant health effects are to be managed.
- EIA requires mitigation of the likely significant 'adverse effects' of a project. Whilst it is good practice (and sometimes a requirement of a Member State's planning policy) to also consider the opportunities to enhance beneficial effects, this is not a legal requirement in EIA. HIA focusses equality on mitigating negative and enhancing positive impacts.
- EIA is undertaken for projects prior to their consenting and is therefore ex-ante (based on forecasts rather than results).

4 Principles for human health in environmental impact assessment

Key messages

Good practice in addressing human health within EIA, and the public health perspective, is underpinned by five principles: a comprehensive approach to health, equity, transparency, proportionality and consistency.

4.1.1 These principles are adapted from Cave et al (28) and informed by the amended EIA Directive (2014/52/EU (4)), by principles for HIA (35,36) and for Environmental Risk Assessment (37).

Comprehensive approach to health

4.1.2 Physical, mental and social wellbeing is determined by a broad range of factors from all sectors of society. Consideration of these wider determinants of health and their inter-relationships should inform the assessment of human health. Inter-sectoral collaboration, between public health and other sectors, should be a feature of coherent coverage of health in EIA.

Equity

4.1.3 The distribution of health impacts across the population should be considered, paying specific attention to vulnerable groups. Where impacts that are unfair and avoidable are identified appropriate measures should be included to avoid or reduce adverse health outcomes, or to improve health, and other, outcomes for affected groups.

Transparency

4.1.4 A transparent EIA process facilitates cooperation and communication, external to the organisation conducting the EIA. It enhances the process and improves effectiveness.

4.1.5 The reporting of the EIA should demonstrate a clear and consistent method and reasoned conclusions. Reference should be made to appropriate evidence sources and a clear rationale provided for the professional judgements.

Proportionality

4.1.6 The assessment should be proportionate. The scoping of human health issues into EIA should focus on whether the potential impacts are likely to be significant. Effort should then focus on identifying and gaining commitment to avoiding or reducing adverse effects and to enhancing beneficial effects.

4.1.7 The assessment findings should be presented clearly and aim to be concise and precise and to give appropriate weight to health as a material consideration.

Consistency

4.1.8 The assessment should be based on evidence and on sound judgment. The assessment process should follow an acceptable, explicit logic path and retain common sense in applying relevant guidance. Divergence from accepted practice should be explained.

4.1.9 The assessment, its process and conclusions, should be in accordance with up-to-date policy, guidance and scientific consensus. This acknowledges the potential for conflict between policy and emerging evidence. The assessment should show awareness of good practice in previous impact assessments of human health (including stand-alone HIA). However, consistency does not imply blind adherence to guidance and precedence at the expense of

local context and/or the need for innovation. The reporting of health in EIA should be amenable to auditing and review processes to confirm legislative compliance and appropriate alignment with guidance, including these principles.

5 Screening

Key messages

Screening is not mandatory in EIA. It is the process that is used to determine whether an EIA is, or is not, required.

The term *likely significant effect* is introduced at this stage.

At the screening stage the task is to determine a simple 'yes' or 'no' answer, with brief justification, to the question of whether the project is likely to significantly affect health at a population level. This means reaching a preliminary conclusion as to whether the project is consistent with providing 'a high level of protection to human health'.

At screening the level of detail may be low and the level of uncertainty may be high.

Where population health outcomes are likely to be significantly affected by a project then health should be central to case-by-case screening decisions.

5.1 What is it?

5.1.1 Screening is the process that is used to determine whether an EIA is, or is not, required. This is the first formal step in the EIA process. Screening is not mandatory but if a project's planning application is submitted and it is subsequently considered likely that it will have significant environmental effects, the Competent Authority can delay their decision and require the Developer to prepare and submit an EIA Report. Identifying the need for EIA late is costly for the Developer, so screening is usually undertaken where there is any doubt about the need for EIA. If the Developer is confident that an EIA is needed screening may not be formally undertaken and the Developer proceeds directly with scoping and preparing an EIA Report.

5.1.2 A Developer can make a voluntary request to the Competent Authority for a screening decision before submitting a project planning application. The request must include sufficient information to enable the Competent Authority to determine if the project is likely to have significant effects on the environment, including human health. The Competent Authority undertakes screening, determining either that: an EIA is not required, or an EIA Report must accompany the application.

5.1.3 At the screening stage, there are gaps in information, so the analysis is preliminary. The health sector, which covers both public health and healthcare, can advise in broad terms on whether the project activities and the resulting effects on determinants of health are likely to lead to significant changes in population health outcomes. There can be opportunities as well as greater uncertainty at this stage as the design of the project is likely to be relatively fluid at this stage.

What is a significant effect for human health in EIA? - Screening

5.1.4 The EIA Directive requires "likely significant effects" to be assessed but it does not elaborate how significance should be defined (for any topic area, including health). Significance should therefore be based on professional judgement and best available evidence. The way in which a decision is reached should be transparent.

5.1.5 It is worth noting that in most cases, evidence on health effects and their significance is incomplete. This can lead to differences in public, political and expert opinions.

5.1.6 Significance for health is an overarching concept that is relevant to all stages of EIA. As the EIA progresses (from screening, through scoping to assessment), the granularity with which health significance can be determined increases.

5.1.7 From the health perspective the professional judgment made at the screening stage (usually without reference to supporting studies) is to determine a simple 'yes' or 'no' answer (with brief justification) to the question of whether the project is likely to significantly affect health. At the screening stage this means reaching a preliminary conclusion as to whether the project is consistent with providing 'a high level of protection to human health' (this wording is based on the purpose of EIA as described in Recital 1 of the preamble to Directive 2014/52/EU).

5.1.8 Where screening looks only at pre-defined criteria or thresholds set by national legislation and there is not a specific health criterion, health may not feature explicitly within the screening process or decision. For example, a project may require EIA because it is over a certain scale. This may imply potential to significantly affect population health. The decision will turn on whether the scale criterion is met rather than its implication for health.

5.1.9 However, where screening is on a case-by-case basis it is relevant to understand what a significant health effect means. In such cases detail does not need to be articulated, but the thought process around health significance should take into account:

- physical, mental and social wellbeing of current and future populations (including vulnerable groups and those who would be most affected by the project);
- have regard to health inequalities, healthy lifestyles, safe and cohesive communities, socio-economic conditions (including education and employment), environmental conditions and health and social care services; and
- consider the change's importance, desirability or acceptability (20) for population health.

5.1.10 In line with proportionate screening, only the likelihood of clearly important or unacceptable changes to population health should screen a project in for EIA on health grounds.

5.1.11 The screening decision justification may broadly link the most relevant project features, through the most relevant determinants of health, to the most relevant health outcomes.

5.1.12 E.g. a significant health effect may arise as large scale fossil fuel combustion, through air quality, affects cardiovascular and respiratory health; furthermore given the urban context and that existing baseline air quality already approaches regulatory limits a further large increase in air pollution due to the project is likely to affect population health in an important and unacceptable way.

5.1.13 The screening justification referring to health needs not be exhaustive of all the ways in which health may be affected. Similarly, not being explicit about the role of health during screening does not restrict subsequent consideration of health at the scoping stage. The issue of health significance is discussed in more detail in the scoping and assessment stages of this resource document.

5.2 Process

Step 1: When is screening required?

5.2.1 EIA is mandatory if the development is of a type that is included in EIA Directive Annex I. In this situation health screening is not undertaken.

5.2.2 EIA health screening is only required when a case-by-case examination is undertaken in relation to EIA Directive Annex II developments (usually supported by thresholds set by Member States national legislation on EIA, including special circumstances for sensitive

areas). These decisions on whether an EIA is needed are at the discretion of the Member State. In these cases, the information required is set out in national legislation transposing EIA Directive Annex IIA, informed by selection criteria set out in EIA Directive Annex III.

5.2.3 In order to determine whether the proposed project should undergo screening or not, it is necessary to refer to the applicable national legislation. It should be checked, in particular if the project is included in a list in national legislation that corresponds to the EIA Directive's Annex II.

Step 2: Thresholds and criteria

5.2.4 EIA Directive Annex III requires that "*The characteristics of projects must be considered, with particular regard to: … the risks to human health (for example due to water contamination or air pollution)*."

5.2.5 As noted in the preamble to EIA Directive 2014/52/EU, the screening procedure should ensure that EIA is only required for projects likely to have significant effects. The preamble also notes that the EIA Directive Annex III criteria should be adapted and clarified as appropriate.

5.2.6 Permission cannot be granted for an EIA Directive Annex II project (as transposed into national legislation) unless it has been screened for likely significant effects on the environment. This screening is based on the criteria in Annex III which are presented under the following headings:

- characteristics of projects;
- location of projects; and
- characteristics of the potential impact (including the risk to human health).

5.2.7 Thresholds and/or criteria set by national legislation are intended to ensure that every project that is likely to have significant effects on the environment, including human health, is subject to an EIA, and that those that are not likely to have significant effects on the environment, including human health, are not subject to an EIA. National legislation will determine the relevant thresholds/criteria for a project. There is usually a 'catch-all provision' so that a Competent Authority is able to decide on a case-by-case basis whether EIA is required for an EIA Directive Annex II project.

Step 3: Case-by-case examination

5.2.8 According to EIA Directive Annex II developments, the Developer must provide information on the characteristics of the specific project and its likely significant effects on the environment, including human health (in very broad terms). The Competent Authority uses this information to develop its screening decision, i.e. to reach a conclusion about whether the project should be subject to an EIA. For this decision to be taken. The information to be provided by the Developer is specified in national legislation transposing EIA Directive Annex IIA.

5.2.9 Relevant information on health should inform the screening decision e.g. in very broad terms the key health priorities set for the affected population, for example, tackle obesity. Consequently, input from health specialists is advisable for this step. The level of health information should be proportionate to the preliminary nature of assessment at screening. A broad-brush approach is needed.

5.2.10 Pursuant to the last sentence of EIA Directive Article 4(4), both the Developer and the Competent Authority should consider how to tailor the project to avoid or prevent what might otherwise have been significant adverse effects on the environment, including human health.

Good practice action by Developer: Seek input from those with public health knowledge in an EIA context when determining the information to submit on the characteristics of the project and its likely significant effects (including measures to avoid or prevent significant adverse health effects).

Good practice action by Competent Authority: Where a decision is on a case-by-case basis, seek relevant public health advice before making the screening decision (including measures to avoid or prevent significant adverse health effects).

Step 4: The screening decision and its justification

5.2.11 The Consenting Authority issues a **screening decision** to the Developer indicating whether EIA is or is not required. The Screening Decision must state the reasons for either requiring or not requiring EIA. Figure 7 sets out the rights of the public to see the screening decision and its justification (this is also required by EIA Directive Article 4(5)).

5.2.12 The screening decision should make appropriate reference to human health. This may involve two scenarios:

- The EIA is screened in due to other issues, which are linked to human health, e.g. criteria or thresholds for project scale, air quality, noise, water, land quality, socio-economics, transport etc.
- Health is the issue on which the screening decision turns. In this case the screening exercise finds that a project will have likely significant effects on health. This occurs when the project does not meet other criteria/thresholds and when the screening finds no likely significant effects for other EIA topic areas such as air quality, noise, water, land quality, socio-economics, transport etc. This may be very unusual but such projects should not slip through the EIA screening net.

5.2.13 The first scenario is the most likely. The screening decision should make the links to human health in broad terms i.e. linking the most relevant determinants of health to the most relevant health outcomes as well as environmental outcomes or limit values, as appropriate.

5.2.14 For the second scenario the screening decision should have regard to human health issues that are not usually included within purely environmental considerations of project effects, e.g. understanding of risk or lifestyle and behaviour changes.

Good practice action by Competent Authority: Where population health outcomes are likely to be significantly affected by a project (e.g. by changes in air quality, noise, water, land quality, socio-economics, transport etc…) health should be central (not peripheral or secondary) to the screening decision justification.

Figure 7: Participatory rights

Screening procedures under the EIA Directive are influenced by the participatory rights established by the Aarhus Convention (38). In the sense that the affected public and the public now have a legal right to know the reasoning behind the decision on whether a Project will be subject to an EIA procedure or not.

This requirement can become the basis of a legal initiative, in case the decision is challenged by the affected public and/or the public at large. This will most likely be relevant in cases where the Competent Authority has decided to screen the Project out of the detailed requirements in Articles 5- 10 of the EIA Directive.

From European Commission (11)

5.3 Guidance questions

5.3.1 The European Commission provides a two-part screening checklist tool to support case-by-case screening decisions. The first part of the tool is a series of questions to determine the likely significant impacts of projects and, in so doing, to decide whether an EIA is required (11, pages 54-58). The second part of the tool is a checklist of criteria for evaluating the significance of the environmental impacts (11, pages 59-60). These are provided in Appendix C: Table C-1 and in Table C-2.

5.3.2 The first part of the screening checklist tool (11, pages 54-58) asks questions about factors in the physical environment, all of which are determinants of health (see Table C-1). These questions help to identify where there is potential for interactions between a project and its environment. This helps to frame decisions about whether those interactions – the impacts of the project - are likely to be significant. The following additional health related questions have been added to Table C-1 to be considered in addition to the European Commission's checklist. These require an answer of 'yes' or 'no' and a brief description:

- Would the Project result in a significant widening of inequalities in society through differential or disproportionate environmental, social or economic changes to people who are more vulnerable?
- Does the project have the potential for likely significant effects on health (through changes in determinants of health)?

5.3.3 The European Commission provides a checklist of criteria for evaluating the significance of environmental impacts (11, pages 59-60) (and see Table C-2). These questions should be asked for each 'yes' answer in the Screening Checklist and the conclusion and the reasons for it noted. An answer of 'yes' or 'do not know' points towards the need for an EIA process. An answer of 'no' suggests that an EIA process is not required. The following additional health related questions have been added to Table C-2 to be considered in addition to the European Commission's checklist.

- Will the health of the population, and of sections of the population (particularly vulnerable groups), be affected?
- Will the effect be influential to the achievement of key health priorities set for the affected population (e.g. in relation to obesity)?

5.3.4 If the answer is 'yes' (i.e. 'significant' population health effects are 'likely') and appropriate justification for this view can be provided, then an EIA is likely to be required if a screening opinion is sought by the Developer from the Competent Authority.

6 Scoping

Key messages

Scoping is not mandatory in EIA.

Scoping is good practice and most EIAs will undertake this step because it enables better planning and costing of the assessment stage and it reduces the risk of delays.

Scoping should determine the potential for population health effects to be 'likely' and 'significant'. If this is the case, then these issues should be 'scoped-in' for further assessment.

Scoping health should be proportionate. Health effects that are unlikely to significantly affect population health should be 'scoped-out'. Good practice is to consult health stakeholders.

6.1 What is it?

6.1.1 EIA Directive Article 5(2) requires that, where requested by the Developer, the Competent Authority shall provide an opinion on the scope and level of detailed information to be included by the Developer in the EIA Report. The Developer is required to provide the Competent Authority with appropriate information on the project to support this process.

6.2 Process

6.2.1 Typically, the Developer prepares a Scoping Report to set out its views. The Competent Authority then issues a Scoping Opinion in which it sets out its views. EIA Directive Article 5(1) requires that where a Scoping Opinion has been issued the EIA Report shall be based on that opinion. It requires that the EIA Report includes the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project on the environment, including human health.

Step 1: Initiating scoping

6.2.2 EIA scoping is a voluntary step under the EIA Directive. EIA scoping may be prescribed by national legislation (as allowed by the last sentence of EIA Directive Article 5(2)). Scoping is good practice and most EIAs will undertake this step because it enables better planning and costing of the assessment stage and it reduces the risk of delays by seeking early input from key stakeholders (including health stakeholders).

6.2.3 A range of actors may be involved in leading the scoping exercise, either on behalf of the Developer or on behalf of the Competent Authority, including using independent third parties. The specific procedures to be followed when carrying out scoping vary between Member States and between different EIA regimes within Member States.

Good practice action by Developer: In preparing an EIA Scoping Report (or equivalent) seek input from those with public health knowledge in an EIA context. This particularly applies when scoping the likely significant effects of a project. This includes advice on measures to avoid or prevent significant adverse health effects, as well as measures to realise health opportunities.

Good practice action by Competent Authority: In preparing an EIA Scoping Opinion seek input from the national body responsible for public health and the relevant regional or local public health teams. This includes advice on measures to avoid or prevent significant adverse health effects, as well as measures to realise health opportunities.

Step 2: Information needed to undertake scoping

6.2.4 Article 5(2) of the EIA Directive requires the Scoping Opinion to take into account the information provided by the Developer on the specific characteristics of the project.

6.2.5 Scoping sits between the screening and the assessment stages. It is more detailed than screening but less detailed than assessment. The view that is taken is still quite high-level as to the likely significant effects of the Project.

6.2.6 The broad principles and practices of scoping are set out in generic EIA guidance (39) and they are not reiterated here. This document focuses on supporting health stakeholders in advising the Developer and Competent Authority on a proportionate approach to scoping human health in EIA.

6.2.7 Consistent with the principles set out above (see page 14), the wider determinants of health should inform EIA Scoping. Table 2 provides an indicative list of determinants of health and other factors influencing health and wellbeing. The expectation should be that the scoping process establishes a proportionate number of health issues to be considered for further assessment.

Table 2: Categories and examples of the broader environmental and social determinants of health and wellbeing

Main category	Examples of determinants and factors influencing health and wellbeing
General social, economic and political factors (macro level)	1. discrimination/racism 2. economic, social, environmental and health trends 3. freedoms of speech and press 4. general inequalities 5. local and national priorities, policies, programmes and projects 6. political participation 7. poverty 8. social exclusion
Global ecosystem	1. biodiversity; natural spaces and habitats 2. climate change (including extreme weather events) 3. natural hazards (including earthquake, volcanos, wildfire, landslide hazards, etc.)
Natural environmental factors (biological, chemical and physical)	1. air quality 2. biological and chemical agents 3. disease vectors 4. food resources and safety 5. open and green space, landscape 6. radiation 7. soil (contamination) 8. water resources and safety
Built environment	1. housing safety 2. housing size and level of crowding 3. housing supply, affordability, and accessibility 4. indoor air quality 5. industrial areas – industrial contaminated sites 6. light pollution (e.g., reflections) 7. neighbourhood infrastructure and liveability 8. noise pollution 9. places 10. residential segregation 11. sites of cultural significance (sacred or historic) 12. smell/odours 13. streets and routes 14. urban green space, parks/landscape 15. vibrations
Services (location, access, for example,	Health services 1. emergency response

Main category	Examples of determinants and factors influencing health and wellbeing
for disabled people or elderly, and cost)	2. hospitals – access and quality 3. primary community and secondary health care – access and quality Public services 1. child care services – access and quality 2. educational – access and quality 3. police/security and emergency response 4. public transportation – access and quality 5. social services – access and quality 6. waste systems – waste disposal 7. water and sanitation systems 8. Private services and local economy 9. financial institutions 10. retail food resources 11. shopping – access and quality
Employment and livelihood	1. income and employment benefits 2. un-/employment and job security 3. workplace occupational hazards 4. workplace rewards and control
Family and community structure	1. community centres 2. crime and violence 3. cultural and spiritual participation 4. family structure and relationships 5. health inequalities (e.g., in different neighbourhoods) 6. health of minorities and vulnerable groups/impacts on different social groups 7. social support (neighbourliness, social networks and isolation) 8. voluntary group participation
Behavioural risk factors and lifestyle	1. alcohol consumption 2. diet 3. hygiene 4. leisure and recreational activity 5. physical activity/inactivity 6. smoking 7. substance abuse
Biological and genetic factors	1. age 2. existing health conditions and disabilities 3. gender

From Nowacki (40)

Good practice action by health stakeholders: Support the Developer or Competent Authority during EIA Scoping by introducing the breadth of the wider determinants of health, and then help to focus the EIA to only the likely significant health effects of the project.

6.2.8 The EIA Directive does not set out the methods that should be used to scope health, or indeed other topics. There are complex causal relationships between changes that are expected to arise as a result of a project, i.e. changes in determinants of health, and changes in health outcomes. This means that, in theory at least, every project can affect health in one or many ways. This emphasises the importance of proportionality when scoping for health in EIA.

6.2.9 It is, therefore, good practice when scoping health within impact assessments to establish how any given effect might occur (41). This route between changes in a determinant of health and changes in one or more health outcomes can be known as a health pathway.

6.2.10 The first step is to consider whether potential health effects are 'likely'. The second step, which arises from the EIA Directive, is to consider in broad terms the potential for the effect to be 'significant'.

Is a potential health effect 'likely'?

6.2.11 The assessor can do this by first considering whether a health pathway can be established. This has been referred to as establishing the plausibility of a causal relationship: the plausibility of a project generating a potential health effect can be established using a simple source-pathway-receptor model (28). Is there a theoretical link between source–pathway–receptor that can lead to a health effect? This is informed by:

- the project description which is used to describe the source;
- the pathway which is established through reference to the scientific literature; and
- the receptors which are identified in the baseline data, including baseline data on population that may have been collected for the other EIA chapters.

6.2.12 The assessor can then state how 'likely' it is that this effect would occur. An effect is not likely when it would require implausibly rare events or conditions to arise. This will be a qualitative professional judgement. At the scoping stage most decisions to scope out a potential health effect will be because it is not deemed to be likely.

6.2.13 It is important also to take account of the EIA Directive Article 3(2) requirement to consider the vulnerability of the project to risks of major accidents and/or disasters where relevant to health. Such emergency preparedness considerations may sit in a separate EIA chapter to human health and link to specific regulatory requirements for emergency planning set by legislation.

Is a potential health effect 'likely' and 'significant'?

6.2.14 For those effects considered likely, the assessor needs to consider, in broad terms, whether they will be significant. This requires 'significance' to be defined for human health. Consensus (20) points to EIA significance being a judgement made by a competent expert for a specific context. The objectivity of the judgement depends on the quality of the evidence sources and on the transparency of the criteria used to guide the judgement.

6.2.15 A more detailed discussion of health significance is included in the EIA Report section of this document (see page 30). At the scoping stage the broad question is whether the likely effect is "important, desirable or acceptable" (20) in population health terms.

6.2.16 A commentary should be provided to explain the 'reasoned conclusion'. Typically, a very small change in health risk factors for only a very few people would not be considered a significant population health effect. It may be helpful to recall that Recital 1 of the EIA Directive preamble uses the phrase "*… contributes to a high level of protection of the environment and human health …*". A rule of thumb may therefore be to consider whether the effect should be brought to the attention of the Competent Authority.

- An effect might be brought to the attention of the Competent Authority because the professional judgement states that the effect **does** provide a high level of protection to human health including as appropriate health prevention, treatment, care and promotion considerations.
- It might also be brought to the attention of the Competent Authority because the professional judgement states that the effect **does not** provide a high level of protection to human health including as appropriate health prevention, treatment, care and promotion considerations.

6.2.17 At scoping, a rapid evidence review that indicates the key drivers for importance and acceptability can help determine what is meant by a high level of protection to human health. A review of health priorities will identify what the relevant public health teams in a jurisdiction deem to be the main challenges for health. A review of health related policies

will identify what is acceptable for the jurisdiction. These include legal thresholds or defined government positions on issues. Such considerations will differ between Member States.

6.2.18 Based on reviews of guides to health in impact assessment (7,8) and the EC guidance document (20), as well as experience pooled from professionals working in Health Impact Assessment and Health in EIA, there are common considerations during the scoping of health effects in impact assessment, which are often iterative. See Appendix A on page 49 for an example of a process that could be worked through for each health issue considered at scoping.

6.2.19 As part of reaching a scoping judgement and providing a reasoned conclusion on the potential 'likelihood' and 'significance' of an effect it may also be appropriate to include reference to other descriptive terms listed in EIA Directive Annex IV i.e. a preliminary view on terms to be covered within the EIA Report such as whether an effect is:

- direct or indirect,
- secondary,
- cumulative,
- transboundary,
- short-, medium- or long-term,
- permanent or temporary,
- positive or negative.

6.2.20 Appendix A: on page 49 provides an example of a health pathway. Other health pathway models can be used to illustrate the mapping and the logic behind a scoping analysis. For example, the DPSEEA framework was developed by the WHO (42,43) and refers to Driving forces, Pressures, State, Exposures, health Effects and Actions The modified and enriched DPSEEA model (44) (which incorporates social, economic and behaviour aspects alongside environmental exposures) is an alternative that can support this process.. It displays the way in which various forces generate pressures that affect the state of the environment and ultimately human health. Action can be taken on all levels to minimise adverse health effects.

Good practice action by health stakeholders: In supporting the Developer or Competent Authority during EIA Scoping establish a proportionate health scope with reference to a transparent and consistent process for determining the potential likelihood and significance of health effects.

Step 3: Scoping consultations

6.2.21 In cases where Scoping is required by national legislation, or where the Developer has requested a Scoping Opinion, the EIA Directive Article 5(2) further establishes specific consultation requirements.

6.2.22 Further points in relation to EIA consultation are discussed in Section 8 of this resource.

Step 4: The scoping outputs: the Scoping Opinion/Report

6.2.23 There are no formal requirements regarding the content of the Scoping Opinion or Scoping Report in the EIA Directive. However, in principle, it should define the EIA Report's Terms of Reference and the level of detail of the information necessary for the assessment as well as giving an indication, as well as providing an estimate of the time needed to prepare the EIA Report, and its possible length.

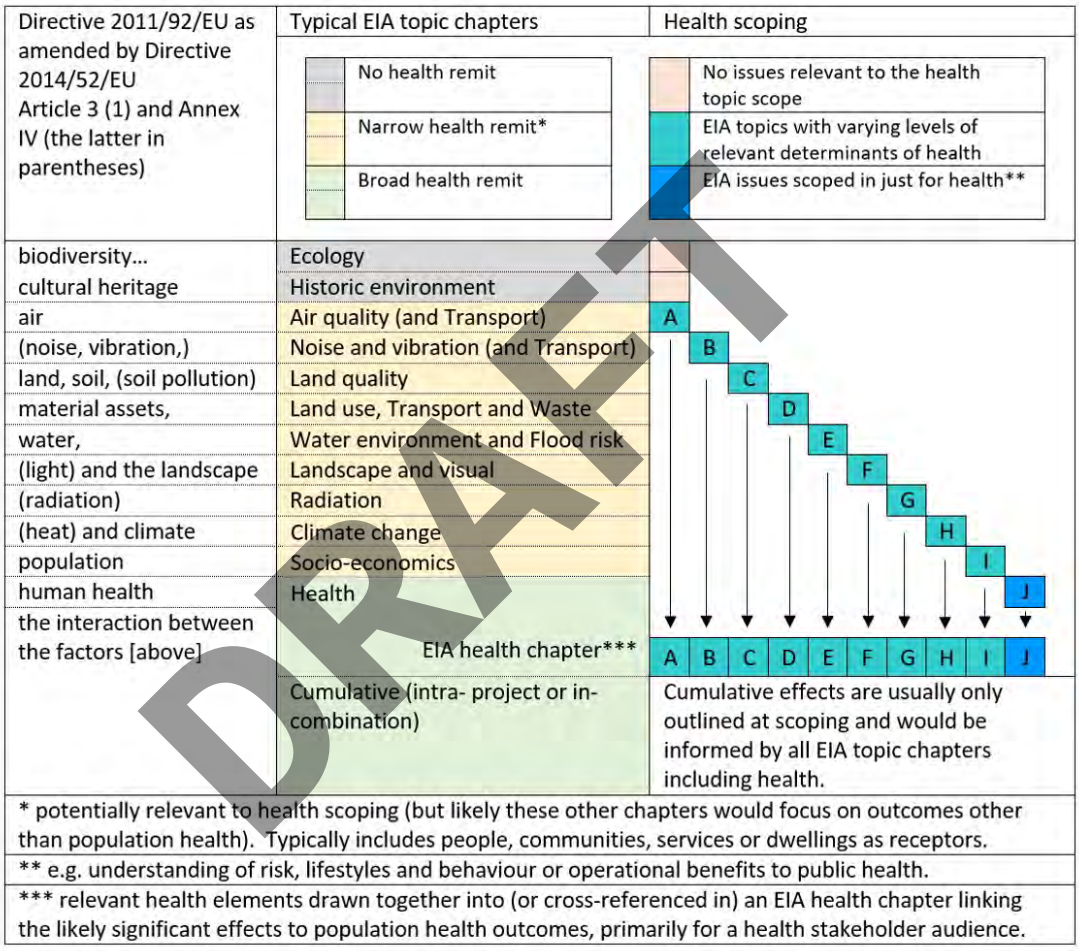
6.2.24 Scoping is primarily focused on identifying the impacts to be assessed (setting a proportionate topic scope), but it may also address other additional matters in a preliminary way; these include: the types of alternatives that ought to be considered; the methods used

to predict the significance of effects; and the types of mitigation and monitoring measures to be considered.

6.2.25 Having established that proportionately scoping health benefits from looking at the 'likelihood' and then 'significance' of potential health effects, the reporting of health within the Scoping Report and Scoping Opinion needs clarifying.

6.2.26 Figure 8 summarises how the EIA Directive Article 3(1) and Annex IV requirements are typically reflected within EIA topic chapters and how these should inform a health chapter, as well as relevant health issues not covered by other EIA topic chapters.

Figure 8: Scoping health as an EIA topic chapter



Good practice action by the Developer and the Competent Authority: Use a 'health chapter' so that health stakeholders (notably national, regional or local public health teams) can clearly navigate to the relevant information and advise on all the health issues across the EIA scope.

Good practice action by health stakeholders: As part of consultation responses request a health chapter within the Scoping Report and EIA Report that brings together or cross-references the likely significant health effects.

6.3 Guidance questions

6.3.1 Overarching questions for determining, in broad terms, the significance of likely health effects (most relevant to scoping stage) include:

- is the expected change in population health important given the scientific literature, baseline conditions and local health priorities; and
- is the expected change in population health acceptable for the setting, or desirable, given consultation responses, regulatory standards and the policy context?

6.3.2 The European Commission provides a two-part scoping tool. The first part of the tool is a checklist with a series of questions to be considered in scoping and, in so doing, to decide whether the effect is likely to be significant (39, pages 53-58). The second is a series of questions to support completion of the preceding checklist (39, pages 59-60). These are provided in Appendix D, Table D-1 and in Table D-2.

6.3.3 The scoping checklist reiterates the overarching questions from the screening stage and for each includes a series of more detailed exploratory questions. The majority of these questions can be related to determinants of health and health outcomes (see Appendix D: Table D-1). To support completion of this scoping checklist two additional columns have been added to Appendix D, Table D-1. These set out examples of potentially relevant determinants of health and health outcomes. These prompts relate the broad EIA wide scoping questions specifically to health considerations. Appendix D, Table D-1 also includes additional colour coding (green, yellow and grey) to indicate the degree of likely relevance of scoping questions to health. Both the prompts (additional columns) and the colour coding are indicative and should not be treated as exhaustive. The scoping checklist casts a wide net and may capture one health issue under multiple questions. Proportionate scoping of any given EIA should result in only a subset of the determinants of health being included as potentially likely significant effects warranting further assessment.

6.3.4 The European Commission provides supplementary questions to support completion of the scoping checklist (20, pages 59-60) (and see Appendix D, Table D-2). These questions have also been colour coded to support an emphasis on those that are most relevant to health. A question has been added to the European Commission's list to ensure that the issue of health inequalities is considered explicitly: 'Would the Project result in a widening of inequalities in society through differential or disproportionate environmental, social or economic changes to people who are more vulnerable?'

6.3.5 During the process of reviewing other EIA topic chapters, the key health question to ask and then answer is 'what do the findings of other EIA topic chapters mean for population health outcomes?' Another question to ask is 'does the study area of the other EIA topic chapter reflect the likely extent of population health effects?'

7 EIA report – assessment

Key messages

An EIA Report should present the likely significant effects of the project, including for health.

Multi-criteria analysis considers how a range of factors and evidence sources may contribute to a conclusion on the significance of health effects (this includes, but is not limited to, sensitivity and magnitude).

EIA takes a population health approach. Inequalities are a key feature of population health assessment, so consider differences between the general population and vulnerable groups.

7.1 What is it?

7.1.1 As required by EIA Directive Article 5(1) where a project meets the requirements for EIA the Developer shall prepare and submit an EIA Report. The EIA Report includes at least:

- a project description;
- the current and future baseline;
- the Article 3(1) environmental factors affected (such as human health);
- the likely significant effects (including risks to human health);
- the reasonable alternatives considered;
- mitigation measures;
- monitoring measures; and
- a non-technical summary.

7.1.2 EIA Directive Article 5(3) requires that 'competent experts' should prepare the EIA Report, and the Competent Authority reviewing the EIA Report should have access to sufficient expertise to examine it. As the steps in preparing the EIA Report are well covered in generic EIA guidance (20,39) they are not reiterated in detail here.

7.1.3 In brief, EIA Directive Article 1(a) requires:

- the preparation of an EIA Report;
- the carrying out of consultation in a prescribed fashion;
- the examination of the information by the Competent Authority;
- the determination of significant effects by the Competent Authority; and
- the use of those reasoned conclusions in the determination.

7.1.4 To support the Competent Authority, the EIA Report prepared by the Developer (and their consultants) should include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the project.

7.1.5 The key issue for health is what it means to "*identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on … population and human health*" (as required by Article 3 (1)) i.e. how to establish whether a likely health effect is significant or not significant.

7.1.6 As was discussed in the Scoping section of this report, Recital 1 of the Preamble to Directive 2014/52/EU indicates the purpose of EIA is to provide a high level of protection to the environment and human health. Whilst the term 'protection' is specifically used by Directive 2014/52/EU, the public health community would take this to include appropriate

consideration of the overlapping activities of health prevention, health promotion and healthcare in addition to health protection specific activity.

7.1.7 The preamble to Directive 2014/52/EU also notes that "when determining whether significant effects on the environment are likely to be caused by a project, the competent authorities should identify the most relevant criteria to be considered…" i.e. it is appropriate to define health specific criteria for health significance.

7.2 Process

Project Description

7.2.1 EIA Directive Article 5 and Annex IV set out the requirements for describing the project. Typically, unless the project is a health service development for example a new hospital, there may be limited direct reference to health in the project description. Where there is development to provide temporary or permanent healthcare for the project workforces (including where this is ancillary or associated development) this should be set out to a level of detail consistent with the Scoping Opinion issued by the Competent Authority. If there has not been a formal Scoping Opinion (and in any case) the information on required health services should be sufficient for the local and regional health service providers to undertake their own strategic service planning.

Good practice action by health stakeholders: In supporting the Developer and Competent Authority in understanding the health service implications of a project, provide clear guidance from an early stage on healthcare service planning. Including the design parameters, unit costs of key services, service specifications and financial calculations as appropriate to the consenting stage of a planning application. If appropriate, set clear expectations for how the description of health services within the EIA Report would be further developed once service providers are appointed which may be after determination of the planning application.

Health Baseline scenario

7.2.2 EIA Directive Annex IV requires the EIA Report to include a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

7.2.3 A health baseline may use routinely collected indicator data spanning demographic, socio-economic, environmental, public health and health service sources. The baseline is the benchmark from which change due to the project is predicted by the assessment (part of determining significance) and then monitored. The health baseline should therefore be specific (and proportionate in length), using indicators relevant to the determinants of health or health outcomes that are expected to change due to the project. The resolution of indicators will be relevant (e.g. national indicators are unlikely to be sufficiently sensitive to detect project change at local level). The regularity with which indictor data is refreshed is also relevant.

7.2.4 In some cases, it may be appropriate to supplement routine health baseline sources with additional information gathering, such as a survey of community attitudes. If undertaken robustly such studies can fill information gaps in knowledge about community cohesion and community identity from a non-self-selecting sample of the public. Bespoke surveys can also collect data from groups who would typically not engage with formal public consultations.

7.2.5 The collection of relevant data is critical to a robust assessment of the baseline. Data should be identified and assessed by qualified experts.

Good practice action by health stakeholders: In supporting the Developer to describe a health baseline, it is necessary to provide advice on appropriate health related indicators (e.g. public health indicator sets) that the project should include to facilitate assessment and future monitoring. Where feasible also provide advice on how the area's future health baseline may evolve with and without the project (i.e. data sources identifying relevant population health trends).

Environmental factors

7.2.6 EIA Directive Article 3(1) sets out the environmental factors that EIAs have to consider. Human health is specifically mentioned, as is its interaction with population, biodiversity, land, soil, water, air, climate material assets, cultural heritage, the landscape and the vulnerability of the project to risks of major accident and/or disasters.

7.2.7 EC Guidance (13) notes that "*human health is a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the project, effects caused by changes in disease vectors caused by the project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a project in relation to workers on the project and surrounding population*".

Assessing effects on the environment including human health

7.2.8 EIA Directive Article 3(1) requires that the EIA shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on … human health. Article 5(1) also specifies that the EIA Report should include a description of the likely significant effects of the project. Likelihood was discussed in section 6, this section considers significance in detail appropriate to the assessment stage.

7.2.9 EC Guidance states: *"The assessment of significance relies on informed, expert judgement about what is important, desirable or acceptable with regards to changes triggered by the Project in question"* (39). Multi-criteria analysis is an established approach to determining significance in EIA (39). Two established and commonly used criteria across EIA topics are sensitivity and magnitude. Whilst these are part of determining health significance they tend not to capture other information, on importance, desirability and acceptability, that is relevant to presenting a robust 'reasoned conclusion'. For this reason, a simple sensitivity v. magnitude matrix approach is not recommended (45).

7.2.10 An alternative approach is to use a structured narrative that draws from a wider range of relevant information to support the professional judgment. The sources of information include:

- scientific literature;
- baseline conditions for the population;
- consultation for the project;
- health priorities in the jurisdiction;
- regulatory standards in the jurisdiction; and
- policy context in the jurisdiction.

7.2.11 These are discussed further in Table 3. They are adapted from Pyper and Cave (45) and are based on reviews of relevant health guides (7,8) and the EC guidance document (39). These sources typically already feature within EIA Reports. A robust reasoned conclusion on health significance identifies and relates the relevant evidence to the specific context of each health issue within the scope.

7.2.12 Table 3 provides further details on considerations in determining significance other than sensitivity and magnitude. Figure 10 (see Appendix B on page 52) illustrates a three step multi-criteria analysis for determining significance for health.

7.2.13 Health in EIA takes a population health approach. Inequalities are a key feature of population health assessment. A balanced conclusion requires a consideration of two or more populations. E.g.:

- the general population in a defined area; and
- groups within that population which are more sensitive to changes in determinants of health, for example, due to young or old age, poor health status, poverty and other low social status.

7.2.14 The narrative may be supported by quantitative health methods for those occasions where:

- robust dose-response functions obtained from high quality epidemiological studies are established;
- effect size and population size make this appropriate; and
- it is proportionate to undertake such analysis.

7.2.15 The coexistence of impacts may increase or decrease their combined impact. Effects that are not considered to be significant, when assessed individually, may become significant when combined with other effects. When considering significance, the cumulative effects of all relevant projects in the area, both spatial and temporal, should be considered.

Good practice action by National Policy Makers: Consider setting an EIA policy context (at local, regional and national level) that sets specific project level expectations for the protection and improvement of population health, including being explicit about links to relevant determinants of health where appropriate. This would support reaching robust professional judgements on EIA health significance, particularly around the acceptability or desirability of particular project changes. The role of regulatory thresholds should be clear.

Good practice action by health stakeholders: Consider being specific in policy documents or other publications setting out local, regional or national health priorities about the role development projects (particularly EIA projects) can play in addressing these priorities, including specifying the links to relevant determinants of health where appropriate. This would support reaching robust professional judgements on EIA health significance, particularly around the importance of particular project changes. Such documents may also include appropriate summaries of the local health baseline, including vulnerable groups and of scientific literature on health effects.

Good practice action by health stakeholders: In supporting the Developer or Competent Authority to identify the likely significant health effects of a project, use a transparent and consistent process that encompasses a proportionate but sufficiently broad range of evidence sources to establish not only the sensitivity of the affected population and the magnitude of the project change, but also the important, desirable or acceptable of the change in population health (pursuant to providing a high level of protection to human health, including as appropriate health prevention, treatment, care and promotion considerations).

Mandatory assessment of Alternatives

7.2.16 EIA Directive Article 5(1) requires the Developer to include a description of the reasonable alternatives relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen taking into account the effects of the project on the environment. The reasonable alternatives may be in terms of project design, technology, location, size and scale.

7.2.17 This can provide important opportunity to modify the design of the project but involvement of health experts in this stage is often limited.

Good practice action by health stakeholders: Be explicit in consultation responses to the EIA project that the Developer should clearly set out how health has been taken into account in the consideration of the reasonable project alternatives.

Mitigation and Compensation Measures

7.2.18 EIA Directive Article 5(1) requires the Developer to include a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment. This include during construction and operation of the project.

7.2.19 As noted by EC Guidance (13): in accordance with the precautionary and preventive action principle, a long-term approach should be promoted and priority should be given to avoiding impacts (prevention measures). Remediation and compensatory measures should only be considered as a last resort.

7.2.20 All health-related mitigation measures should be clearly secured within the legal agreements that accompany the EIA Report or the decision of the Competent Authority. Where appropriate mitigation measures should link to secured monitoring provisions. Securing documents vary between projects and between Member States, but may include a Code of Construction Practice, a Code of Operational Practice, a Workforce Management Plan, a Workforce Accommodation Plan, a Transport Plan, a Health and Wellbeing Strategy and/or a legal agreement for financial payments to the relevant municipality, including contributions to support community service improvements (including health services).

7.2.21 Despite potentially being secured across a wide range of documents and despite having links to several other EIA topic chapters, the health related mitigation measures should be clearly cross-referenced within the EIA Report health chapter so that its influence on the significance of health effects is clearly described (consistent with EIA Directive Annex IV point 7).

Good practice action by the Developer: In addition to mitigation in relation to the likely significant negative effects of the project on health, also include enhancement measures in relation to optimising the likely significant positive effects of the project for health.

Good practice action by health stakeholders: In supporting the Developer and Competent Authority in relation to producing or reviewing the EIA Report set a clear expectation for the proportionate enhancement of the likely significant positive effects of the project for health. This may include advising on the opportunities for health protection, health prevention, health promotion and healthcare. Enhancements should relate to the project (not be unconnected inducements).

Monitoring

7.2.22 Recital 35 of the preamble to the EIA Directive explains that the intended purpose of EIA monitoring is to determine appropriate procedures to monitor the significant adverse effects of a project's construction and operation, including to identify unforeseen significant adverse effects, in order to be able to undertake appropriate remedial action.

7.2.23 Further points in relation to EIA monitoring are discussed in *Monitoring* (see page 40 below).

7.3 Guidance questions

7.3.1 Table 3 sets out some questions to consider about any evidence sources that are used to inform the professional judgment on significance.

Table 3: Scrutinising the judgement on health significance in EIA

Evidence sources	**Questions** *to be expanded as appropriate*
Scientific literature	Does scientific literature support an association between changes that are likely to occur due to the project and changes to health outcomes? Are these scientific studies of good quality? Does scientific literature provide thresholds at which effects occur or describe conditions that are necessary for effects to occur? Does scientific literature identify any population groups as being particularly susceptible to the potential changes?
Baseline conditions for the population	How does the baseline for the population that is likely to be affected by the project compare with the local, regional or national baseline? Are population groups that are identified in the scientific literature as being particularly susceptible to the potential changes due to the project, present in the population of interest?
Consultation for the project	Has the relevant determinant of health or health outcome that is likely to be affected by the project been a theme in consultation for the project?
Health priorities in the jurisdiction	What health priorities have been set by public health authorities for the determinant of health or health outcome that is likely to be affected by the project?
Regulatory standards in the jurisdiction	Would the change in determinant of health be formally monitored by regulators? Are there regulatory, or statutory, limit values set for the determinant of health in the relevant jurisdiction? Is there other, e.g. international, guidance on the determinant of health in question? Has EIA modelling predicted a change that exceed thresholds identified in the scientific literature, set by regulators or in other guidance?
Policy context in the jurisdiction	Does policy, at local, regional, national or international level, set particular expectations for the change in determinant of health or health outcome?

Adapted from Pyper and Cave (45)

7.3.2 The European Commission provides a review checklist to support the preparation of the EIA Report (20, pages 99-102). The part of the checklist relating to assessment (section 3 of the checklist) is reproduced in Appendix E: Table E-1. These questions have been colour-coded to emphasise those that are most relevant to health.

7.3.3 A question has been added to the European Commission's list to ensure that the issue of health inequalities is considered explicitly: '*Has the potential for health inequalities been appropriately articulated within the assessment so it is clear to the Competent Authority if there are likely to be significant effects (positive or negative) for a vulnerable sub-population*

that differ from the finding for the general population?'. This reflects the challenge for health assessment that the same project change may have different health outcomes for different populations over different time frames.

How should changes in health be reported in EIA?

7.3.4 Reporting of changes should depend on the methods used to assess the change. It should be based on best available scientific evidence. To facilitate the decision-making process, data should be as precise as possible having regard to the need for a proportionate assessment.

7.3.5 EIA is a prescriptive process defined by the EIA Directive and national EIA legalisation. The reporting of EIA therefore has established national norms to which the inclusion of health in EIA will typically align closely.

7.3.6 A difference between reporting the results in HIA and in EIA is that HIA often does not elicit formal commitments from a Developer. The mitigation and enhancement measures are expressed as recommendations and may not be formally binding.

7.3.7 An EIA report will include commitments towards mitigation and maybe enhancement. EIA reporting is of the residual 'likely significant' effects i.e. after mitigation or enhancement is applied. This means that all those involved in EIA, including health teams, work hard to ensure that measures receive formal commitment. This includes identifying the financial implications of the mitigation or enhancement. Similarly, where HIA may note the need for further investigation, collaboration or consultation, health in EIA is rarely able to leave issues unresolved unless they relate to committed monitoring plans.

7.3.8 Another consideration is whether a common metric (like Disability Adjusted Life Years, or DALYs) is appropriate for EIA. This links with what health outcomes are selected and whether a quantitative or qualitative assessment is undertaken for a particular health issue. Typically, on the basis of practical as well as proportionality considerations a quantification of health effects is not appropriate for most health issues within the scope of health in EIA. Those issues most amenable to such quantification are environmental exposures, such as air quality and noise. In these cases, quantification can add value, but it can also be predicated on a high degree of uncertainty (particularly for relatively small exposure changes to a relatively small particularly for relatively small exposure changes to a relatively small population).

What outcome measures constitute a consideration of human health?

7.3.9 Capturing inequalities in health outcomes due to a project should be a key feature of the approach to assessing the likely significant health effects in EIA (particularly where groups with lower social status or poorer socio-economic outcomes may experience greater effects).

7.3.10 Tracing a project change through to an 'effect' on human health (as required by EIA Directive Article 3(1)) is a process of identifying

- first the relevant determinant of health e.g. air quality; and
- then changes in population health outcomes e.g. cardiovascular and respiratory diseases.

7.3.11 Where health services are affected it may be appropriate to focus the discussion on health service metrics (e.g. ambulance response times) rather than the consequent population health outcomes though these should still be noted in broad terms, i.e. recovery rates of illness progression.

7.3.12 Given that multiple health outcomes are usually affected, only the most relevant should be specifically stated (e.g. asthma in relation to housing quality) or a class of health outcomes can be used (e.g. respiratory health). A lengthy list of specific illnesses should only be used

where this provides necessary clarity to the assessment, mitigation or monitoring that would be helpful to the Competent Authority in determining the application. Where monitoring is appropriate, indicators relevant to the affected health outcomes should be selected (e.g. a pollutant concentration over a set time period or respiratory related hospital admissions over a set time period), as often it will not be practical to monitor the health outcomes themselves.

7.3.13 The regulation of outcome measures differs across Member States.

7.3.14 Public Health England provides an overview of the evidence linking development design with health outcomes, through considering the strength of evidence for different health outcomes and source-pathway-receptor relationships (46). The figures within that publication may be a helpful resource in supporting the identification of appropriate determinants of health and health outcomes. This in-depth analysis can show where actions can be taken to mitigate or prevent adverse health effects.

How should relevant scientific literature be identified, interpreted and used when considering human health in EIA?

7.3.15 The identification of scientific literature varies for each case. The context of the EIA can emphasise different focal points and data to be considered in the health assessment. The identification of relevant research can be facilitated by engagement with health professionals. Public health experts can ensure the integration of evidence-based public health approaches, which in turn can provide further health information on procedures. The engagement of the public can further provide valuable insight and reveal relevant health implications to consider.

What counts as evidence for changes in health?

7.3.16 The assessment of changes in health is ex ante (i.e. they are predictions rather than studies of actual changes). The changes themselves are rarely evidenced prior to the decision to consent the project. Evidence of past studies and experience therefore needs to be related to the context of the current project and the population that would be affected. This involves taking account of a range of evidence sources. Typically, it would be appropriate to provide a narrative for each health issue (the length of which depends of the EIA stage).

7.3.17 An illustrative range of evidence sources are introduced in Appendix A, Figure 10 on page 53 and its supporting explanatory text. The use of these evidence sources within a multi-criteria analysis describes the health change and also considers the importance and acceptability of that change for the context. The quality and impartiality of the evidence sources from which the data itself is drawn is relevant to increasing the objectivity of the professional judgement reached.

7.3.18 Where time and other resource constraints apply (as they often do) a prioritisation can facilitate the selection and use of evidence, starting with scientific and peer reviewed literature, followed by thresholds and standards of local authorities. Depending on the context, different methods can be applied to assess and examine impacts.

7.3.19 Public participation is a fundamental part of health impact assessment generally. Public engagement in the early stages of EIA, especially in the screening and scoping stages, can raise formerly unconsidered impacts. Possible impacts detected through public engagement must be tested and verified in a proportionate way to focus the EIA on only those that have the potential to be likely significant effects of the project. Consultation is discussed in more detail in Section 8 of this document.

7.3.20 In most cases, a professional judgement is the only solution. It is therefore crucial to consider available data sources and to use them within the project's context. Additional sources for

evidence of health changes can be exposure scenario analysis, health risk assessments and project conditions based on the project proposal.

8 Consultation – stakeholder engagement

Key messages

Consultation is a fundamental aspect of EIA, both for the Developer in informing their scope and assessment and for the Competent Authority in reaching their planning determination.

Health stakeholders (e.g. national, regional and local public health teams) should be consulted as a matter of good practice, ideally as a requirement of national EIA legislation.

Scoping stage consultation with health stakeholders is the key opportunity for public health resources to be used efficiently in steering the project towards positive health outcomes.

8.1 What is it?

8.1.1 The EIA Directive requires consultations with three different groups on the content of the EIA Report:

- the public concerned must always be consulted;
- public authorities must be consulted when they are likely to be concerned; and
- other Member States for Projects with transboundary impacts.

8.1.2 Consultation is both a stage of the EIA process but also a way to generate information and evidence for the assessment of the likely significant health effects. See Appendix B: on page 52 for the way in which consultation responses from both the public and from health stakeholders may inform the professional judgments of the assessment.

8.1.3 Consultation procedures are detailed in national legislation, and also fall under international legislation (Aarhus Convention (38) and the Espoo Convention (47)). European Directive 2003/4/EC sets out the need for public access to environmental information (48).

8.1.4 EIA Directive Article 4(5) discusses consultation for the Screening stage (making the screening decision available to the public).

8.1.5 EIA Directive Article 5(2) requires that during the scoping stage the Competent Authority shall consult relevant authorities (defined by national legislation pursuant to Article 6(1)) before giving a Scoping Opinion.

8.1.6 EIA Directive Article 6(1) sets out requirements for consulting with relevant stakeholders on the information supplied by the Developer and on the request for development consent. Stakeholders are identified by legislation by reason of their specific environmental responsibilities or local and regional competences.

8.1.7 EIA Directive Article 6(2) sets out requirements for consulting with the public, with the detailed arrangements for consultation set by each Member State. EIA Directive Article 7(5) clarifies that the consultation arrangements should enable the public to participate effectively in the decision-making procedures.

8.1.8 Recital 23 of the EIA Directive notes that to reach a complete assessment of the direct and indirect effects of a project, the Competent Authority should examine the information provided by the Developer and the information received through consultations. This is captured formally in EIA Directive Article 8, which requires the results of consultations to be duly taken into account in the development consent procedure.

8.2 Process

Screening

8.2.1 Dialogue between the Developer and the Competent Authority is helpful for the Competent Authority when they are making a Screening Decision (20). Competent authorities may also find it useful to consult with, and to take advice from the health sector.

Scoping

8.2.2 In cases where Scoping is required by national legislation, or where the Developer has requested a Scoping Opinion, the EIA Directive Article 5(2) further establishes specific consultation requirements.

8.2.3 The Directive sets minimum requirements for consultation, requesting that environmental authorities and local and regional authorities are given an opportunity to comment on the scope of the EIA Report. In some Member States, EIA legislation extends consultation to all interested parties including the general public, while in others this is not required by law, but it remains a good practice.

8.2.4 EIA Directive Article 6(1) requires Member States through national legislation to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities or local and regional competences are given an opportunity to express their opinion.

8.2.5 Despite this provision there is a lack of clarity in many Member States as to whether health organisations should be consulted at EIA scoping (and subsequently). This ambiguity seems to arise from the consultation requirement specifying authorities with 'environmental responsibilities'. This has been interpreted narrowly rather than in the context of the EIA Directive where health is one of several prescribed Article 3 considerations within environmental assessment.

8.2.6 Dedicated and consistent public health input at the scoping stage is often the greatest opportunity for ensuring good coverage of health within EIA and consequently health gain from the EIA process. This is an efficient use of limited public health resources.

Good practice action by National Policy Makers: Specifically include relevant national, regional and local public health teams as consultees for all EIAs ('authorities to be consulted in general terms' pursuant to EIA Directive Article 6(1)).

Good practice action by health stakeholders: Be proactive in setting a clear expectation to be consulted at the scoping stage of all EIAs even if this is not clearly prescribed in national EIA legislation. Resources to support personnel time, inter-sectoral/administration working and training relating to EIA should be ringfenced.

Good practice action by the Developer and the Competent Authority: Include relevant national, regional and local public health teams as EIA consultees as a matter of course.

EIA Report

8.2.7 The EIA Report is ultimately an informative decision-making tool: once it has been prepared by the Developer, it has to be examined by the public and various concerned authorities.

How should the health sector participate in the EIA process?

8.2.8 The Aarhus Convention, established in 1998 and entered into force in 2001, was initiated by the United Nations Economic Commission for Europe (47). At the Fourth Ministerial Conference, rights were established regarding access to environmental information as well as justice in environmental matters and public participation in environmental decision-

making (49). The Aarhus Convention established that information should be available, transparent and participatory. To improve the assessment of health impacts, public health professionals should be involved in training and providing or signposting necessary health data.

8.2.9 Figure 4 shows engagement possibilities for health professionals in the EIA process in England. Although this is the optimal idea of the health sector engaging at all stages in the EIA process, in practice it is often not feasible. Often health professionals engage in late stages of EIA.

8.2.10 To engage the health sector efficiently and at an early stage, national EIA legislation should identify health stakeholders (e.g. public health teams) as authorities to be consulted. This would increase the involvement of health professionals and justify necessary resource allocations. This is already the case for SEA under the Espoo Convention.

8.2.11 The health sector has a duty to develop and/or acquire the required competences and skills to meaningfully contribute to the EIA process. This is established in EIA Directive Article 5(3)(b) which requires the Competent Authority to ensure that it has, or has access as necessary to, sufficient expertise to examine the EIA Report, including in relation to health.

8.2.12 For meaningful consultation and review in EIA, the health sector needs additional resources such as staff and competencies. The EIA Directive Article 5(3)(b) requirement is a lever within Member States for health sector teams involved (or who should be involved) in EIA to request appropriate additional government funding to allow them to fulfil the EIA Directive's requirements. It is recommended that requests for such additional funding be led and/or coordinated by public health professionals and ringfenced for personnel time (inputting to EIA consultation), intersectoral/administration working (to coordinate EIA response) and training relating to EIA.

8.2.13 Involving an interdisciplinary team can improve practice, and expertise can be exchanged across all disciplines of the team. The context of the project will inform the team composition. The health sector can provide EIA consultation input on health outcomes, pathways, effects, mitigation and monitoring. National and regional health authorities should play a significant role in reviewing EIAs.

8.2.14 For any approach, the coherence of the country's legislation and political background must be considered. For some countries, soft governance might not be possible. An approach could be to give the Ministry of Health (or equivalent) an active role in the EIA consultation process.

8.2.15 The risk in neglecting to engage the health sector within the EIA process is forgoing the benefits that public health professionals from various disciplines can bring to discharging the EIA Directive requirements in relation to health. There is a risk of a non-compliant EIA Report or a non-compliant Competent Authority decision.

Good practice action by National Policy Makers: Training conducted regularly and under supervision of health professionals can further facilitate good practice coverage of health in EIA. Training can clarify the process and, through greater knowledge, can enhance the understanding of health effects and the identification of solutions.

8.3 Guidance questions

8.3.1 The European Commission provides a review checklist to support the preparation of the EIA Report (39, pages 90-109). This poses two questions about consultation. Two further questions have been added to this checklist to ensure consistent health sector involvement. See Table F-1 on page 91.

9 Monitoring

Key messages

EIA monitoring of health should be included where appropriate and in a proportionate way.

EIA health monitoring should avoid duplicating other legally required monitoring systems.

Establish clear governance arrangements for monitoring and follow-up action (if required).

9.1 What is it?

9.1.1 EIA Directive Annex IV (7) requires that the EIA Report includes a description of mitigation measures relating to significant adverse effects and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis).

9.1.2 EIA Directive Article 8(a)(1)(b) requires that the Competent Authority's decision to grant development consent should include, where appropriate, monitoring measures. EIA Directive Article 8(a)(4) notes that this should include procedures for monitoring and that the types of parameters to be monitored and the duration of the monitoring should be proportionate to the nature, location and size of the project and the significance of its effects.

9.1.3 The EIA requirement is therefore to undertake monitoring where appropriate i.e. not in every case and not for every health effect. Monitoring should be proportionate including the duration for which it is carried out.

9.1.4 Generally, monitoring measures can help to ensure that projects meet their legal requirements and that impacts are in line with EIA Report projections. Monitoring can also ensure that any mitigation or compensation measures for expected significant effects are carried out as planned.

9.2 Process

9.2.1 Where monitoring is proposed, monitoring measures should be specific and detailed enough to ensure their implementation, including defining roles, responsibilities, and resources. Monitoring should not duplicate other monitoring regimes, e.g. required by law in relation to permitting or regulation.

9.2.2 EIA projects should have an appropriate and proportionate monitoring framework agreed between the Developer and Competent Authority through the consenting process. Monitoring typically focuses on local environmental protection administration responsibilities (e.g. for air quality and noise nuisance). However, it can be appropriate to include wider social, economic and service-related health indicators within the agreed monitoring framework. The governance, responsibilities and triggers for not only health monitoring but also any subsequent action should be explicit within the EIA consent process and its associated legal agreements.

9.2.3 Wherever feasible existing routine public health indicator sets (and their associated analysts) should be used in preference to developing bespoke monitoring regimes. On occasion where bespoke analysis is required (e.g. analysis of health service records with patient identifiable data) health monitoring may involve an appropriate financial contribution, from the Developer, to public health teams to support a finite period of monitoring specific indicators relevant to likely significant effects of the project.

Good practice action by health stakeholders: In supporting the Developer and Competent Authority in relation to health monitoring help to define an appropriate and proportionate set of health indicators. Furthermore, establish clarity on:

- governance arrangements (including where anonymised or sensitive data is involved);
- resource requirements and responsibilities (including any payments);
- sharing of information between parties, departments and authorities;
- duration of monitoring;
- analysis methods;
- trigger levels; and
- actions in response to monitoring.

9.3 Guidance questions

9.3.1 The European Commission provides a review checklist to support the preparation of the EIA Report (39, pages 90-109). The part of the checklist relating to monitoring (section 6 of the checklist) is reproduced in Table G-1 on page 92. These questions are all relevant to health. A question has been added to the European Commission's list to ensure integration with existing public health monitoring systems and the appropriate use of health related data: 'Have existing public health indictors been considered and is it clear how any sensitive health data would be managed?'.

10 Expertise for conducting a health assessment within EIA

Key messages

EIA Report health content must be prepared and reviewed by 'competent experts'.

Competence for health in EIA has yet to be formally defined.

Good practice is for those involved in health in EIA (on behalf of the Developer or Competent Authority) to be experienced in both public health and environmental sectors.

10.1.1 Recital 33 of the preamble to the EIA Directive explains that experts involved in the preparation of EIA Reports should be qualified and competent. Furthermore, Competent Authorities should also have sufficient expertise in order to ensure that the information provided by the Developer is complete and of a high level of quality.

10.1.2 The EIA Directive Article 5(3)(a) requires the Developer to ensure that the EIA Report is prepared by competent experts. This includes in relation to health assessment.

10.1.3 The EIA Directive Article 5(3)(b) requires the Competent Authority to ensure that it has, or has access as necessary to, sufficient expertise to examine the EIA Report. This includes in relation to health assessment.

10.1.4 Those leading the 'human health' assessment component within the EIA should demonstrate that they meet the necessary requirements. These technical competencies, and the means of assuring them, have not yet been widely specified.

10.1.5 Guidance exists for reviewing completed HIA reports (50,51) and this advice can aid the review of a health section within EIA Reports.

Who can conduct an assessment?

10.1.6 It would be desirable to see a new generation of Public Health experts that have a deep understanding of both the health and the environmental sector. An approach to this could be the promotion of a more extended specialisation on environmental health in the training curricula of the university studies of Public Health, or dual degree studies with the combination of environmental and public health studies. This can be a key factor that gives future health experts a more comprehensive understanding of a variety of topics.

10.1.7 For professionals with completed degrees, training should be necessary to qualify as a consultant on health in EIA. Some Member States have requirements for licensing or training programmes.

10.1.8 Health professionals should be responsible and engaged in the health assessment of the EIA. That includes public health professionals, officers, officials and health authorities.

What competencies are required to conduct an assessment of human health?

10.1.9 The EIA Directive requires competent expertise to assess human health in EIA. These comprise of soft and hard skills.

10.1.10 A public health background is desirable, and requirements should include a strong knowledge of human health, which can be based on a wider educational background. However, each background must prove flexibility and acknowledge all health determinants. There is a risk that experts with a high degree of specialisation might only focus on the determinants of

health relevant to their field. As assessments of human health are inter-disciplinary and inter-connected, there is a need for a flexible attitude to engage in various topics.

10.1.11 Technical competencies must reflect an expertise within the topic of both environment and health. A team should have mixed skills and the ability to translate and adapt to different professions. This ensures a comprehensive coverage of all important and relevant areas. There must be a strong understanding of the EIA process and an awareness of legal and ethical requirements. Competencies must be applicable to projects of different nature. Capacity building should be performed regularly to maintain the ability to conduct an assessment of human health. Regular trainings and courses should be held to ensure an up-to-date knowledge and a high quality of the assessments. Other competencies that should naturally occur are strong will power, advanced communication skills that enable favourable negotiations and a passion for the topic.

10.1.12 National and local health sectors must be proactive to ensure that requirements are met, and the health sector is engaging within the EIA process.

Good practice action by health stakeholders: In supporting the Developer and Competent Authority in understanding health competence requirements articulate expectations about soft and hard skills required for a valid assessment of health effects.

Good practice action by Developers: In establishing the competence of those producing the EIA Report ensure a competent health expert is included in the team of consultants, as appropriate.

Good practice action by Competent Authorities: In establishing the competence of those reviewing/examining the EIA Report, clarify requirements for experts competent on assessing 'human health' effects and enforce such requirements when appraising EIA reports.

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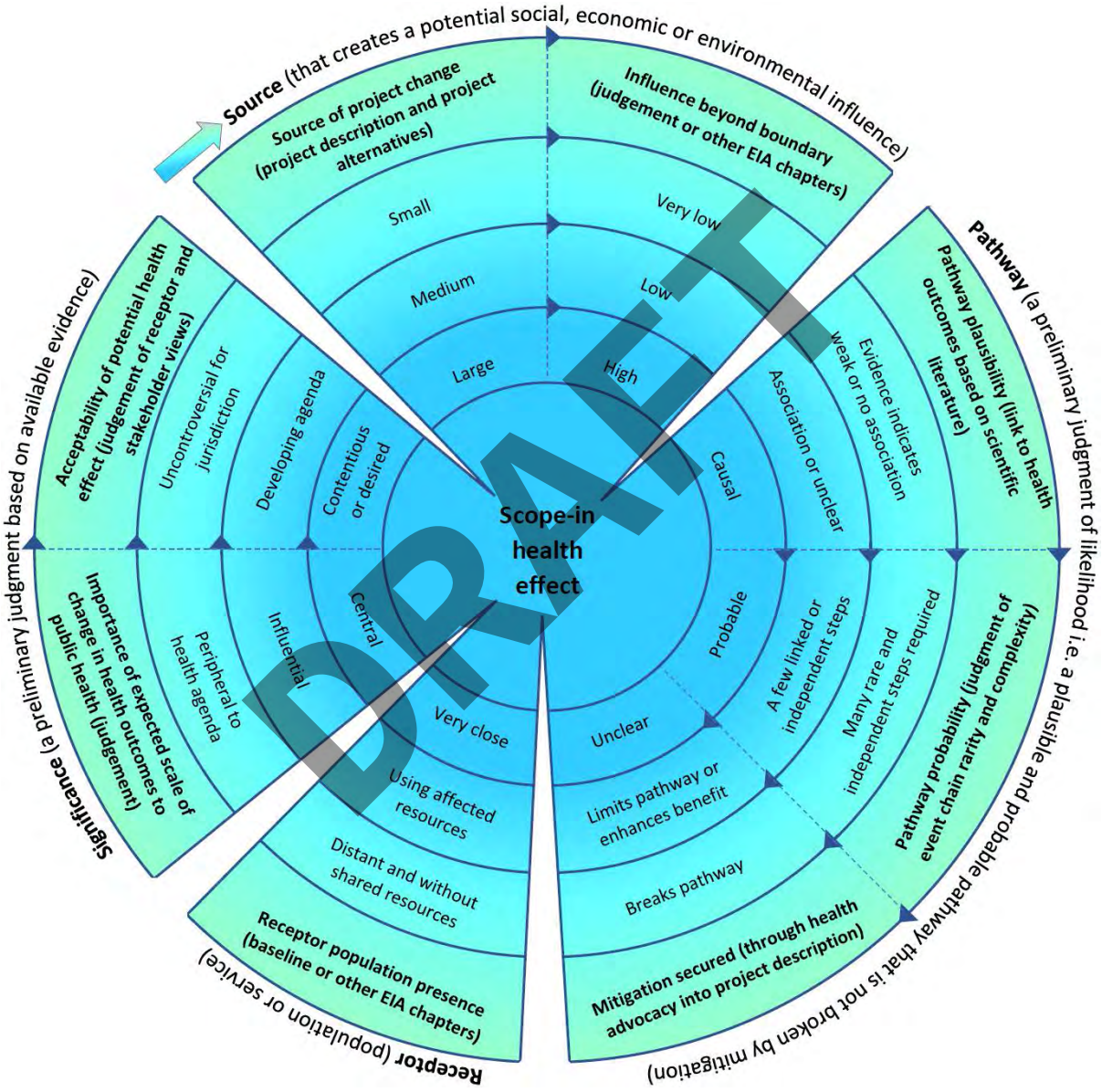
12 Appendices

Appendix A: Scoping health as an EIA topic

A.1 Figure 8 should be read clockwise (starting on the outside with the 'Source').

A.2 Each segment of the figure is a step in the proportionate scoping of health in EIA, i.e. Source – Pathway – Receptor – Significance.

Figure 9 Example of considerations during the scoping of health effects in EIA



A.3 Some steps (segments in Figure 8) have more than one consideration (e.g. Source considers both the source itself and its effect beyond the project boundary, which often differ). The circular format shows how the process can be iterative. For example, if a likely significant health effect is identified, further action should be considered at each step (typically inclusion of mitigation to break the pathway) before the final conclusion is reported.

A.4 The layers within each segment (working from the outside towards the centre) illustrate differentiating conclusions for each element of the preliminary assessment (e.g. whether a 'source' is small, medium or large).

A.5 Layers closer to the centre indicate a conclusion supporting scoping the issue 'in' for further assessment, layers towards the outside indicate a conclusion supporting scoping the issue 'out'. All the segment conclusions need to be considered together before a scoping decision is made.

A.6 For example, an effect that should clearly be scoped 'in' would be a 'large source' with a 'high influence beyond the boundary' whose 'pathway is causal and probable without being broken by mitigation' and that affects 'receptors very close by'; establishes an effect the importance of which is judged to be 'central to the public health agenda' and in terms of its acceptability is 'contentious for the jurisdiction'. This could be a large temporary influx of construction workers to a community that would place a high demand on already stretched local healthcare services without commitments for mitigating financial contributions or alternative healthcare arrangements.

A.7 Often it would not be so clear-cut and there would be a range of conclusions at different levels across the segments. The overall decision on scoping is a professional judgement. Figure 8 is transparent about the underlying reasoning for making a scoping decision. Following this process should allow most conceivable health effects of a project to be scoped out with confidence and with a shared understanding between the Developer, the Competent Authority and health stakeholders. A successful health scoping exercise is proportionate, transparent and reasoned.

A.8 Source: The project feature from which the change originates. This may be a facility, structure, process, activity, vehicle fleet or workforce.

A.9 Influence beyond boundary: A source in the centre of a large development boundary (or within an enclosed structure) that would not be publicly accessible (even when operational) may have limited effect on population health even unmitigated (though occupational health considerations may be relevant).

A.10 Pathway plausibility: The aetiology reported in scientific literature (i.e. whether there is established causation between the source and health outcomes, or the level of known association (including emerging or inconclusive evidence). Only a brief literature review is proportionate at scoping.

A.11 Pathway probability: Whether the source directly leads to a change in health outcomes, or whether it would depend on a chain of events (some steps of which could be rare) for the effect to occur. This is a qualitative professional judgment based on available information.

A.12 Mitigation secured: Whether the project has committed formally to measures that break the source-pathway-receptor linkage. Typically, mitigation acts on the pathway, introducing some environmental, social or economic mediating measure between the source and receptor. This is because the source is usually fundamental to the project (i.e. removing it would negate the project – though alternative technology or timing changes may be relevant). Project alternatives may be a more relevant influence on the source than mitigation. Similarly, the receptor population is usually not removed (though they may be compensated as a last resort). As well as mitigation, secured enhancements may also be relevant to scoping positive health effects, confirming positive effect optimisation without requiring detailed assessment.

A.13 Receptor population: For health, receptors usually equate to population groups. Typically, this means community populations, but occupational, service users and service providers may also be relevant. Scoping typically establishes the presence of relevant receptors. It can

be relevant to note the potential for a vulnerable receptor population to be present (as a sub-group of the general population receptor). Consideration should be given, not only to those populations closes to the project (typically the most affected) but also to the population that shares project resources (e.g. who use affected services).

A.14 Importance of expected scale of change in health outcomes: as part of determining health significance, it can be relevant to consider if the expected change in population health is important given the scientific literature, baseline conditions and local health priorities. More detail on this is discussed in the assessment section of this resource, at scoping only a high-level data review and answer is needed.

A.15 Acceptability of potential health effect (or desirability for a positive effect): as part of determining health significance, it can be relevant to consider if the expected change in population health is acceptable for the setting given consultation responses, regulatory standards and the policy context? More detail on this is discussed in the assessment section of this resource, at scoping only a high-level data review and answer is needed.

Appendix B: Multi-criteria analysis example of considerations for health sensitivity, magnitude and significance in EIA

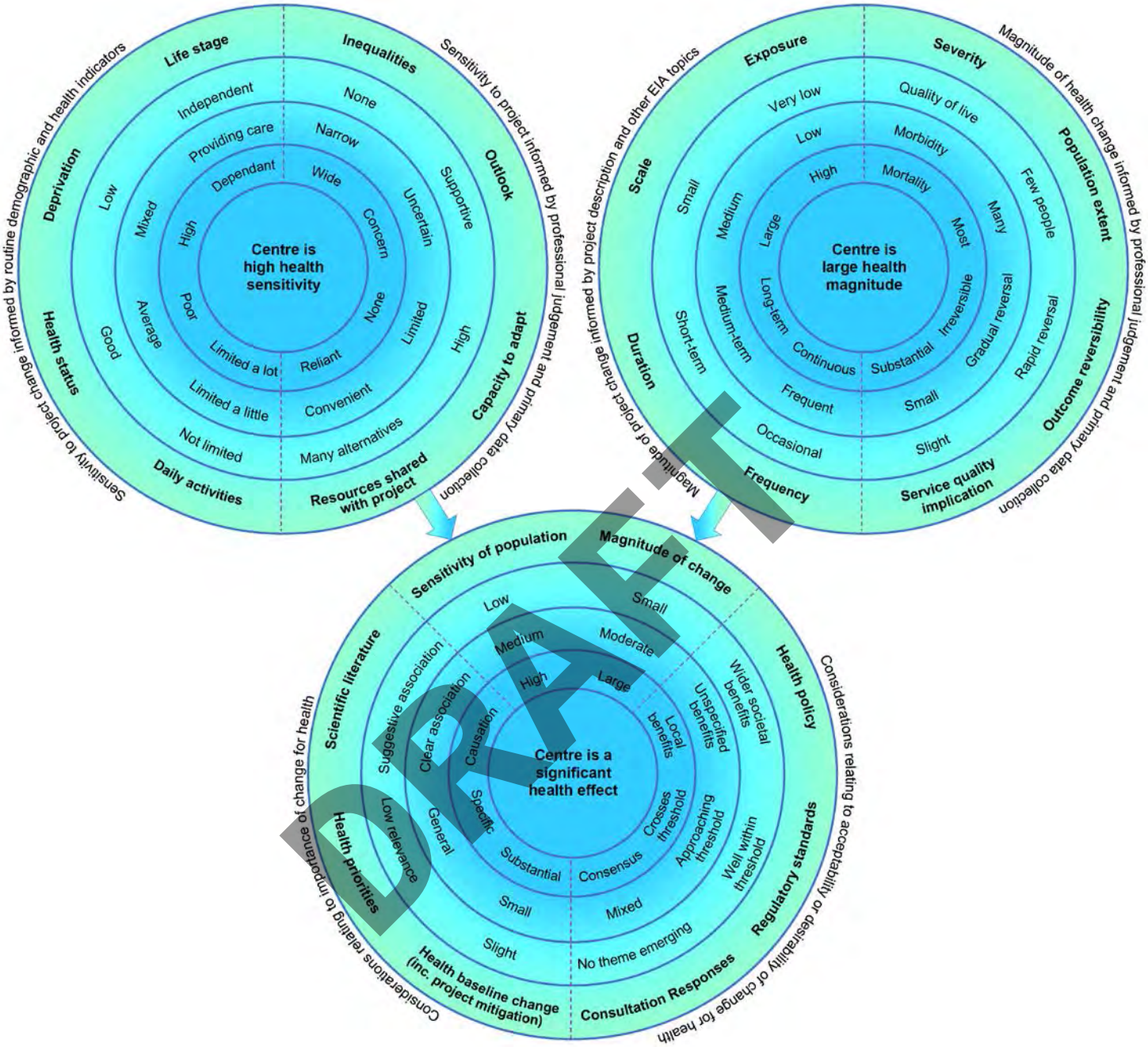
B.1 Figure 10 illustrates a three step multi-criteria analysis. Steps 1 and 2 of the three step multi-criterial analysis (the top two circles) involve common health considerations in relation to sensitivity and magnitude, step 3 (the bottom circle) relates these to other contextual considerations in the determination of health significance. The summary terms to illustrate 'levels' within each consideration segment are not exhaustive and should be adapted to the specific context of the project as appropriate. There is no clear cut-off between significant and not-significant effects, the determination is a matter of professional judgement taking into account evidence from an appropriate range of relevant criteria.

B.2 Figure 10 shows that there are many opportunities to act on potentially significant health effect of a project, not only through mitigation and enhancement by the Developer, but also by how health related policy and health priorities are formulated by national governments and local administrations. Significance may also be influence by baseline changes (other than the project) and by the scientific literature that is published.

B.3 Figure 10 is an illustrative multi-criteria analysis showing how different evidence sources can inform a professional judgment on EIA significance. The figure has three sets of concentric circles, one for each of 'selectivity', 'magnitude' and 'significance'. These represent three steps in the process. Each set of concentric circles is itself a multi-criteria analysis of eight illustrative evidence sources (e.g. 'life stage' or 'inequalities'). The multi-criteria analyses of 'sensitivity' (step 1) and 'magnitude' (step 2) input to the multi-criteria analysis of 'significance (step 3). Each set of concentric circles should be read from the outside towards the inside down the layers of each segment. The layers within each segment (working from the outside towards the centre) illustrate differentiating conclusions for each element of the analysis, e.g. whether in relation to 'life stage' the population is best characterised as 'independent', 'providing care' or 'dependant'. Layers closer to the centre indicate a conclusion supporting a 'high sensitivity', 'large magnitude' or a 'significant health effect' depending on the step. Layers towards the outside indicate a conclusion supporting a 'low sensitivity', 'small magnitude' or a 'not significant health effect'.

B.4 When using Figure 10, all the relevant segment conclusions need to be considered together before a decision is made. For example, a clear case of high health sensitivity would exist where there is a 'population with many dependants' with a 'high degree of deprivation' whose 'health is poor' and whose 'daily activities are limited a lot', where 'inequalities are wide', 'most people are highly concerned about the project', the population has 'no capacity to adapt to the project change', including where people are 'reliant of resources affected by the project'. Often it would not be so clear-cut with a range of conclusions at different levels across the segments. The overall decision is a professional judgement, which may be informed by contextual factors set out in step three.

Figure 10: Multi-criteria analysis example of considerations for health sensitivity, magnitude and significance in EIA



B.5 Figure 10 is transparent about the underlying reasoning for making a significance decision. Whilst this is not intended to be used formulaically, broadly following such an analysis should support a consistent approach to presenting a written narrative of the reasoned conclusions describing whether a likely health effect is significant. This approach offers a more nuanced discussion of relevant considerations, particularly given that sensitivity and magnitude alone can at times offer limited differentiation between project alternatives or mitigation options. This reflects that there is usually resistance or caution to the case for population health sensitivity being characterised as 'low' and for the magnitude of project change that affects health being characterised as 'small'. This tends to push the assessment towards concluding that most health effects are significant, even with mitigation, which limits the ability of the Competent Authority to identify the health issues that are material to the planning decision

(i.e. which should play a key part in the overall planning decision). Figure 10 aims to provide a shared understanding between the Developer, the Competent Authority and health stakeholders of the range of project specific and contextual issues that may be relevant to concluding on health significance. A successful health scoping exercise is proportionate, transparent and reasoned.

Illustrative sensitivity considerations

B.6 Life stage: Life-course analysis is often used in public health and reflects differing health sensitives and needs at different ages. Typically, children and frail elderly are particularly sensitive to change, including due to being dependants. Those providing care may also be more affected by project changes or less able to take advantage of project opportunities. Consider if particular age groups are likely to experience effects more strongly, e.g. pregnant women and their unborn children; the very young; the very old; or working age people (benefiting from jobs). Also consider if some groups are more likely to be at home during the day, (for example, due to low economic activity or shift work); or whether people with higher levels of dependence on carers or public transport can access alternatives to, or respite from, project effects.

B.7 Deprivation: Deprivation is a term with different indicators in different Member States. Common distinctions are between material and social deprivation or between absolute and relative deprivation. Regardless of the appropriate measure for the context deprivation reflects an increased sensitivity due to lack of ownership of or access to assets, including those that support good health. Deprivation difference between areas are indicative of social gradients, which are central to the consideration of health inequalities. The potential for localised high deprivation within wider areas showing average or low deprivation should always be considered. Consider if the population is already stressed by limited resources or high burdens as well as if groups are affected that have reduced access to financial, social and political resources.

B.8 Health status: An overall measure of population health, either self-reported within routine statistical surveys/censuses or using an empirical public health measure such as life expectancy at birth. Areas with a poor health status are typically of higher sensitivity. Consider the degree to which the population includes those with pre-existing conditions and/or disability that would make them more susceptible to the change (particularly multiple or complex long-term health conditions).

B.9 Daily activities: Similar to health status the ability of people to perform day-to-day activities is relevant to their sensitivity, particularly where there are changes in access to services or community amenities. If not part of routine statistics this can be a professional judgement. Consider the extent to which people affected are particularly reliant on access to the healthcare facilities, staff or resources.

B.10 Inequalities: Differences in health, which are not only unnecessary and avoidable but, in addition, are considered unfair and unjust. This definition encompasses principles of equality and equity. Where inequalities between areas or populations are wide (or at risk of widening) this indicates greater sensitivity. Consider if the population experiences a high degree of inequalities (disproportionate effects between groups, not only those defined in relation to discrimination such as age and gender, but also in relation to other factors that may affect health outcomes, such as socio-economic status).

B.11 Outlook: People's understanding of the project or views about it can be highly influential to their psychological and even physiological response to project changes. Such views may change through the project and depend in trust in the Developer and regulators. Where there are strong and persistent concerns sensitivity, particularly to mental health effects, is higher.

Consider if there are people with strong views (or high degrees of uncertainty) about the project who may anticipate risks to their health and wellbeing and thus be affected by not only actual changes, but also by the possibility of change.

B.12 Capacity to adapt: Also known as resilience, the ability of the population or service to absorb the change or voluntarily (consciously or unconsciously) make small changes to their behaviour that lessen its effects. For example, a minor increase in use of health services while a small non-home-based project workforce is present may be within the usual resource capacity of the services so have no adverse effect on service quality for the resident population (or service providers). It should be noted that in line with the mitigation hierarchy expecting behavioural change as a formal way to avoid or reduce an adverse effect is not recommended.

B.13 Resource sharing with the project: Where a project affects a resource (service, power supply, water supply, highway capacity, school places etc) the effects may extend a great distance from the development boundary, e.g. regional hospital capacity being affected by a large migratory workforce. Where there is high resource sharing and a lack of easily accessible alternatives the population sharing the resource may be more sensitive.

Illustrative magnitude considerations

B.14 Exposure: Exposure tends to vary with proximity of the population to the source, but also has an important time dimension relevant to health (for example, low concentrations over a long period, or high concentrations over a short period).

B.15 Scale: The scale of change is a useful characterisation, particularly when 'exposure' is not a relevant descriptive for the type of effect. For example, the scale of change in available open space available for physical activity.

B.16 Duration: The length of time an effect occurs for is a key consideration for health. Typically, effects that continue for a long duration are of greater magnitude (including inter-generational effects). Where effects are best characterised as short-term, other factors such as scale or exposure may still indicate that the change is of high magnitude (i.e. short-term effects are not automatically low magnitude). Appropriate reference periods for duration should be selected as some projects' activities can span weeks whilst others span decades.

B.17 Frequency: How often the population or service would be affected should be characterised. Effects that are frequent or continuous are likely to indicate greater magnitude. However even where the effect would be occasional other factors such as scale or exposure may still indicate that the change is of high magnitude (i.e. occasional effects are not automatically low magnitude).

B.18 Severity: Health severity relates to the type of health outcome effected (for example, affecting mortality, disease, nuisance or wellbeing). It may also relate to the type of change relative to the baseline conditions (for example, onset of new conditions, affecting existing conditions or change to day-to-day functioning). Whilst there is not a rigid hierarchy of health severity, changes in mortality (i.e. death) are generally considered to indicate a higher magnitude than changes in only wellbeing or quality of life. However, this should not exclude a large change in quality of life from being a high magnitude effect. This underlines the importance of using this multi-criteria analysis as a guide for writing a fuller narrative that contextualises each decision and the interrelationship between factors.

B.19 Population extent: How much of the population (defined by the assessment) is affected is influential to the magnitude decision. Where most of the study area's population is affected this would indicate a higher magnitude. This is not to downplay cases where only a few people are affected to a high degree. However, given that a population health conclusion is being reached it is helpful to understand how widespread the change may be. E.g. where

only a few people are affected this may indicate greater potential for targeted mitigation. Where feasible the size of the affected population should be estimated quantitatively. It is noted that this measure is influenced by how the 'population' is defined. Also consider if there is likely to be substantial population displacement or influx. Where the effect is best characterised as only affecting a few individuals this may indicate that a population health effect would not occur. Such individuals should still be the subject of mitigation and discussion, but in EIA and public health terms the effect may not be a significant population health change.

B.20 Outcome reversibility: Some changes in health outcomes rapidly reverse once the source is removed (e.g. many short-term nuisance related effects on wellbeing). In other cases health effects may reverse at a slower rate (e.g. gradual returns to physical activity levels once access is resorted to amenities). However, in some cases health effects should be considered permeant indicating a higher magnitude.

B.21 Service quality implication: As well as direct changes to population health there may be an associated or independent change in the quality of services that support or facilitate good health (including health services, schools, social care etc...). For example, where direct population health reductions (or population influx) increase demand on services that consequently reduce in quality, the magnitude of the effect on health is amplified. Appropriately supporting services to avoid this can be an important aspect of mitigation.

Illustrative significance considerations

B.22 Sensitivity: The sensitivity of the population affected (as informed by the multi-criteria analysis considerations discussed above). Including consideration of both the general population for an area and for vulnerable groups as a sub-population relevant to sensitivities for the health issue being assessed. Conclusions on sensitivity may be influenced by contextual factors discussed below.

B.23 Magnitude: the magnitude of the project change and/or the magnitude of the health change (as informed by the multi-criteria analysis considerations discussed above). Conclusions on magnitude may be influenced by contextual factors discussed below.

B.24 Scientific literature: Scientific literature can indicate if there is evidence from sufficiently high-quality studies to support an association between the project change, a relevant determinant of health and a relevant health outcome. It may be relevant to note well evidenced thresholds, prerequisite conditions or population groups identified as being particularly susceptible. PubMed can be searched for systematic reviews and meta-analyses. Scientific literature can indicate the aetiology and potentially degree of change, but careful consideration should be given to the internal validity (quality of the study), the external validity (the generalisability of those findings to the particular context) and to the strength of evidence (including emerging evidence since the last systematic reviews or meta-analyses). Recognised hierarchies of study quality should be followed (i.e. searches for and use of systematic reviews, meta-analyses in the first instance and only resorting to grey literature where no better-quality studies are available).

B.25 Health priorities: Health priorities can identify if relevant determinants of health or health outcomes have been identified as particularly important locally, regionally or nationally. Health and wellbeing strategies, health needs assessments or similar can be reviewed.

B.26 Health baseline change (including project mitigation and enhancement): Baseline conditions can establish if relevant sensitivities or inequalities identified in the scientific literature are present. It may be relevant to note if conditions differ from local, regional or national comparators, or if geographic or population features may amplify effects. Public health profiles and indicator sets can be used. The change in the population health baseline will be

informed by not only the magnitude of project change and the sensitivity of the population, but also by external factors affecting the future baseline (including cumulative effects of other projects) and project specific committed mitigation and enhancement.

B.27 Health policy: Policy context can identify published local or national government position statements that raise particular expectations for the relevant project change, determinant of health or health outcome. This may include adopted local area development plans or references (implicit or explicit) to health in published planning policies. Wider international health policies or treaties may also be relevant. Where government policy has specific reference to delivering local health benefit in the project's study area (in contrast to a policy agenda of geographically unspecified or wider societal benefits) this can be partially relevant at the project level (i.e. the acceptability of certain effects may depend on whether the project supports delivery of those policy expectations or not).

B.28 Regulatory standards: Regulatory standards (if applicable) can identify where there would be formal monitoring by regulators. Discussion may include EIA modelling results on the extent to which regulatory or statutory limit values would be met. It may also be relevant to discuss advisory guidelines. Occupational limit values tend to differ from non-occupations limit values. Where thresholds have been set these do not mean that there would be no health effect below these levels. For example, in the case of fine particulate matter and nitrogen dioxide there are non-threshold health effects (i.e. no known limit below which health effects may not occur). In such cases an informed discussion about what is acceptable for the jurisdiction is appropriate. For example, giving the public confidence in thresholds set by government for the purpose of health protection having taken into account other social, economic and environmental considerations.

B.29 Consultation responses: Consultation response themes can indicate the extent to which stakeholders and the public support, or have concerns, uncertainty or ambivalence on relevant determinants of health or health outcomes. Where there is consensus on a health issue (particularly between the affected community and health stakeholders) this may be influential to the reasoned conclusion as to whether that effect is significant for the context.

Appendix C: Screening checklist

Table C-1: Screening checklist

Key:
green highlight: highly relevant to health screening;
yellow highlight: potentially relevant to health screening (but likely screening would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health screening.

Questions to be Considered For further guidance on factors to be considered see the more detailed questions listed in the Scoping Guidance	Yes / No /Don't know Briefly describe	**Is this likely to result in a significant impact?** Yes/No/? – Why?
1. Will construction, operation, decommissioning or demolition works of the Project involve actions that will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?		
2. Will construction or the operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?		
3. Will the Project involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health, to the environment or raise concerns about actual or perceived risks to human health?		
4. Will the Project produce solid wastes during construction or operation or decommissioning?		
5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC)?		
6. Will the Project cause noise and vibration or the releasing of light, heat energy or electromagnetic radiation?		
7. Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal wasters or the sea?		

Questions to be Considered For further guidance on factors to be considered see the more detailed questions listed in the Scoping Guidance	Yes / No /Don't know Briefly describe	**Is this likely to result in a significant impact?** Yes/No/? – Why?
8. Will there be any risk of accidents during construction or operation of the Project that could affect human health or the environment?		
9. Will the Project result in environmentally related social changes, for example, in demography, traditional lifestyles, employment?		
10. Are there any other factors that should be considered such as consequential development which could lead to environmental impacts or the potential for cumulative impacts with other existing or planned activities in the locality?		
11. Is the project located within or close to any areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the Project?		
12. Are there any other areas on or around the location that are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, that could be affected by the Project?		
13. Are there any areas on or around the location that are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the Project?		
14. Are there any inland, coastal, marine or underground waters (or features of the marine environment) on or around the location that could be affected by the Project?		
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the Project?		
16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the Project?		

Questions to be Considered For further guidance on factors to be considered see the more detailed questions listed in the Scoping Guidance	Yes / No /Don't know Briefly describe	**Is this likely to result in a significant impact?** Yes/No/? – Why?
17. Are there any transport routes on or around the location that are susceptible to congestion or which cause environmental problems, which could be affected by the Project?		
18. Is the Project in a location in which it is likely to be highly visible to many people?		
19. Are there any areas or features of historic or cultural importance on or around the location that could be affected by the Project?		
20. Is the Project located in a previously undeveloped area where there will be loss of greenfield land?		
21. Are there existing land uses within or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying that could be affected by the Project?		
22. Are there any plans for future land uses within or around the location that could be affected by the Project?		
23. Are there areas within or around the location which are densely populated or built-up, that could be affected by the Project?		
24. Are there any areas within or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, that could be affected by the Project?		
25. Are there any areas within or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, that could be affected by the Project?		
26. Are there any areas within or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, that could be affected by the Project?		

Questions to be Considered For further guidance on factors to be considered see the more detailed questions listed in the Scoping Guidance	Yes / No /Don't know Briefly describe	**Is this likely to result in a significant impact?** Yes/No/? – Why?
27. Is the Project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the Project to present environmental problems?		
28. [New] Would the Project result in a significant widening of inequalities in society through differential or disproportionate environmental, social or economic changes to people who are more vulnerable?		
29. [New] Does the project have the potential for likely significant effects on health (through changes in determinants of health)?		

From European Commission (11, pages 56-58) with additional questions (#28-29) explicitly covering human health.

Table C-2: Screening questions

Key:
green highlight: highly relevant to health screening;
yellow highlight: potentially relevant to health screening (but likely screening would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health screening.

Questions	Yes – No – Don't know	Briefly describe
1. Will there be a large change in environmental conditions?		
2. Will new features be out-of-scale with the existing environment?		
3. Will the impact be unusual in the area or particularly complex?		
4. Will the impact extend over a large area?		
5. Will there be any potential for transboundary impact?		
6. Will many people be affected?		
7. [NEW] Will the health of the population, and of sections of the population (particularly vulnerable groups), be affected?		
8. Will many receptors of other types (fauna and flora, businesses, facilities) be affected?		
9. Will valuable or scarce features or resources be affected?		
10. Is there a risk that environmental standards will be breached?		
11. Is there a risk that protected sites, areas, features will be affected?		
12. Is there a high probability of the effect occurring?		
13. Will the impact continue for a long time?		
14. Will the effect be permanent rather than temporary?		
15. Will the impact be continuous rather than intermittent?		
16. If it is intermittent will it be frequent rather than rare?		
17. Will the impact be irreversible?		
18. Will it be difficult to avoid, or reduce or repair or compensate for the effect?		

Questions	Yes – No – Don't know	Briefly describe
19. [NEW] Will the effect be influential to the achievement of key health priorities set for the affected population (e.g. in relation to obesity)?		

From European Commission (11, page 60) with additional questions (#7, #19 and #20) explicitly covering human health and inequalities in health.

Appendix D: Scoping checklist

Table D-1: Scoping checklist

Key:
green highlight: highly relevant to health scoping;
yellow highlight: potentially relevant to health scoping (but likely scoping would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health scoping.
Text in italics is additional commentary to inform health scoping

	EC Guidance Scoping Checklist (20,39)				***Additional commentary to inform health scoping***	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
1.	Will construction, operation or decommissioning of the Project involve actions that will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?					
1.1	Permanent or temporary change in land use, landscape, landcover or topography including increases in intensity of land use? Visual effects?				*Community identity* *Physical activity opportunity* *Food production*	*Mental health* *Cardiovascular health* *Obesity* *Life expectancy (including due to socio-economic status and nutrition)*
1.2	Clearance of existing land, vegetation and buildings?				*Housing quality / availability* *Community amenities* *Active travel routes*	*Mental health* *Cardiovascular health* *Obesity* *Life expectancy (including due to socio-economic status and nutrition)*
1.3	Creation of new land uses?				*As for 1.2*	*As for 1.2*
1.4	Pre-construction investigations e.g. boreholes, soil testing?				*Understanding of risk (anticipation of main Project activities)*	*Mental health*
1.5	Construction works?				*Community identity* *Community cohesion* *Air quality* *Dust nuisance* *Noise nuisance* *Sleep disturbance*	*Mortality* *Life expectancy (including inequalities due to environmental exposure as well as socio-economic*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					Educational disruption *Visual disturbance* *Light pollution.* *Access disruption.*	*status factors such as educational attainment)* *Quality-of-life* *Respiratory health* *Cardiovascular health* *Mental health* *Cognitive outcomes*
1.6	Demolition works?				*As for 1.5*	*As for 1.5*
1.7	Temporary sites used for construction works or the housing of construction workers?				*Community cohesion.* *Crime and fear of crime.* *Risk taking behaviour.* *Safeguarding and modern slavery.* *Health service capacity (including primary care, hospital and emergency services).*	*Mental health* *Communicable illness incidence (including STIs).* *Non-communicable disease prevalence (e.g. linked to smoking or alcohol use).* *Mortality and communicable and non-communicable disease prevalence linked to healthcare service capacity.* *Injury incidence.*
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations?				*As for 1.5*	*As for 1.5*
1.9	Underground works including mining or tunnelling?				*Understanding of risk.* *Subsidence.* *Air quality (for workers and from ventilation shafts).* *Vibration nuisance.*	*Mental health* *Quality-of-life* *Respiratory health* *Injury risk.*
1.10	Reclamation works?				*As for 1.5*	*As for 1.5*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
1.11	Dredging?				*Water quality (drinking and bathing).* *Physical activity opportunity.* *Visual disturbance.* *Odour nuisance.* *Noise nuisance*	*Toxicology* *Cardiovascular health* *Obesity* *Quality-of-life*
1.12	Coastal structures e.g. seawalls, piers?				*Community identity.* *Physical activity opportunity.* *Visual disturbance.*	*Mental health* *Cardiovascular health* *Obesity* *Quality-of-life*
1.13	Offshore structures?				*Visual disturbance.* *Port activities (workers, see 1.7).* *Port Health.*	*Mental health* *Communicable illness incidence (including epidemic or pandemic).*
1.14	Production and manufacturing processes?				*Air quality.* *Dust nuisance.* *Noise nuisance.* *Employment.* *Upskilling.* *Goods with health benefit.* *Goods detrimental to health.*	*Mortality* *Life expectancy (including inequalities due to environmental exposure as well as socio-economic status)* *Quality-of-life* *Respiratory health* *Cardiovascular health* *Mental health*
1.15	Facilities for the storage of goods or materials?				*Community identity* *Visual disturbance* *Air quality (transport related)* *Noise nuisance (transport related)*	*Mental health* *Quality-of-life* *Respiratory health* *Cardiovascular health*
1.16	Facilities for treatment or disposal of solid wastes or liquid effluents?				*Community identity* *Visual disturbance* *Air quality* *Noise nuisance* *Odour nuisance* *Pest nuisance* *Vector born illness* *Water quality*	*Mental health* *Quality-of-life* *Mortality* *Life expectancy (including inequalities)* *Respiratory health* *Cardiovascular health*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					Land contamination (including dusts, vapours and aerosols).	*Communicable illness incidence. Toxicology.*
1.17	Facilities for the long-term housing of operational workers?				*Community cohesion. Housing quality / availability. Community amenity capacity (including in relation to social isolation and physical activity opportunity). Active travel routes. Employment (local). Health service capacity (including public health, primary care, hospital and emergency services). Educational service capacity (dependants). Social care service capacity (dependants).*	*Mental health Quality-of-life Cardiovascular health. Obesity. Mortality and communicable and non-communicable disease prevalence linked to healthcare service capacity. Life expectancy (including inequalities due to socio-economic status factors such as employment and educational attainment).*
1.18	New road, rail or sea traffic during construction or operation?				*Community identity Social isolation (severance) Visual disturbance. Air quality (transport related). Noise nuisance (transport related). Road safety (actual and perceived). Physical activity opportunity. Health service access. Port or truck stops (see 1.7)*	*Mental health. Quality-of-life. Respiratory health. Cardiovascular health. Obesity. Mortality risk. Injury risk. Mortality and communicable and non-communicable disease prevalence linked to healthcare service accessibility (including emergency response times as*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
						well as delayed non-emergency diagnosis or treatment).
1.19	New road, rail, air, waterborne or other transport infrastructure including new or altered routes and stations, ports, airports, etc.?				*Construction of infrastructure (see 1.5).* *Operation of infrastructure (see 1.18).* *Port activities (see 1.7).* *Physical activity opportunity (including new pedestrian, cycle and public transport infrastructure).* *Port Health.*	*As for 1.5, 1.7 and 1.18. Also:* *Mental health.* *Respiratory health.* *Cardiovascular health.* *Obesity.* *Communicable illness incidence (including epidemic or pandemic).*
1.20	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?				*As for 1.18*	*As for 1.18*
1.21	New or diverted transmission lines or pipelines?				*As for 1.5* *Vibration nuisance (pipeline).* *Public understanding of risk.* *Non-ionising radiation (EMF).* *Essential public service (e.g. power supply) capacity or reliability improvement.*	*As for 1.5* *Mental health.* *Quality-of-life.* *Cardiovascular health.* *Cancer risk.* *Life expectancy (including inequalities).*
1.22	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or				*As for 1.11* *Flood risk.* *Water safety.*	*As for 1.11* *Mental health.* *Injury risk (including drowning).*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	aquifers?					
1.23	Stream crossings?				*As for 1.22.*	*As for 1.22.*
1.24	Abstraction or transfer of water from ground or surface waters?				*As for 1.22.*	*As for 1.22.*
1.25	Changes in waterbodies or the land surface affecting drainage or run-off?				*As for 1.22.*	*As for 1.22.*
1.26	Transport of personnel or materials for construction, operation or decommissioning?				*Transport, see 1.18. Workforce, see 1.7.*	*Transport, see 1.18. Workforce, see 1.7.*
1.27	Long term dismantling, decommissioning or restoration works?				*As for 1.5.*	*As for 1.5.*
1.28	Ongoing activity during decommissioning which could have an impact on the environment?				*As for 1.5.*	*As for 1.5.*
1.29	Influx of people to an area, either temporarily or permanently?				*As for 1.7 and 1.17.*	*As for 1.7 and 1.17.*
1.30	Introduction of alien species?				*Vector born illness. Port Health.*	*Communicable illness incidence (including epidemic or pandemic).*
1.31	Loss of native species or genetic diversity?				*Community identity. Physical activity opportunity (less use of outdoor spaces due to their reduced quality).*	*Quality-of-life. Mental health. Cardiovascular health. Obesity.*
1.32	Loss of biodiversity-rich / protected areas?				*As for 1.31*	*As for 1.31*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
1.33	Any other actions?				*NA*	*NA*
2.	Will construction or operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?					
2.1	Land, especially undeveloped or agricultural land?				*As for 1.1*	*As for 1.1*
2.2	Water?				*As for 1.22* *Capacity of potable water supply.*	*As for 1.22* *Infection/hygiene.* *Hydration.*
2.3	Minerals?				*Community identity* *Visual disturbance* *Air quality* *Dust nuisance* *Noise nuisance* *Water quality* *Land contamination (including dusts, vapours and aerosols).* *Physical activity opportunity (loss of active travel routes).* *Essential socio-economic or public service resource (e.g. power supply or building materials).* *Climate change (including global health effects of climate change, as well as local co-benefits between improved air quality and reducing climate change).*	*Mental health* *Quality-of-life* *Mortality* *Life expectancy (including inequalities)* *Respiratory health* *Cardiovascular health* *Communicable illness incidence.* *Toxicology.* *Climate change outcomes: e.g. injury, disease and death from heatwaves and fires; undernutrition from reduced food production; and increased risks of food-, water- and vector-borne diseases.*
2.4	Aggregates?				*As for 2.3*	*As for 2.3*
2.5	Forests and timber?				*As for 2.3*	*As for 2.3*
2.6	Energy including electricity and fuels?				*As for 2.3*	*As for 2.3*
2.7	Any other resources?				*NA*	*NA*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
3.	Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?					
3.1	Will the Project involve the use of substances or materials that are hazardous or toxic to human health or the environment (flora, fauna, water supplies)?				*Air quality.* *Water quality.* *Land contamination (including dusts, vapours and aerosols).* *Public understanding of risk.* *Accident.* *Ionising and non-ionising radiation.*	*Toxicology.* *Respiratory health.* *Cancer risk.* *Mental health.* *Injury risk.* *Mortality risk.*
3.2	Will the Project result in changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)?				*Health service access.* *Workforce presence (see 1.7 and 1.17)* *Port Health.* *Physical activity opportunity.* *Air quality.* *Noise nuisance.* *Water quality.* *Land contamination (including dusts, vapours and aerosols).*	*Communicable and non-communicable disease prevalence linked to healthcare service accessibility / capacity (time to diagnosis and treatment).* *Communicable illness incidence linked to STIs (population influx and behavioural changes).* *Communicable illness incidence linked to, epidemic or pandemic (population migration and Port Health).* *Non-communicable disease prevalence linked to lifestyle factors including smoking, physical activity and diet.* *Non-communicable*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
						disease prevalence linked to socio-economic status, including inequalities in employment and educational attainment. *Non-communicable disease prevalence linked to environmental exposure, including inequalities in air quality and noise.*
3.3	Will the Project affect the welfare of people e.g. by changing living conditions?				*As for 1.5, 1.7 and 1.17.*	*As for 1.5, 1.7 and 1.17.*
3.4	Are there especially vulnerable groups of people who could be affected by the Project, e.g. hospital patients, the elderly?				*1. People in close proximity to the location of changes occurring as a result of project activities. These groups may be vulnerable (e.g. hospital patients) or they may be just more sensitive to the changes without being 'vulnerable' (e.g. residents).* *2. Children and young people (including pregnant women and unborn children)* *3. Older people (particularly frail elderly)* *4. People who are: unemployed, on*	*Mortality.* *Life expectancy (including inequalities due to lifestyle factors, environmental exposure and socio-economic status factors).* *Morbidity (communicable and non-communicable disease, including linked to healthcare service access / capacity).* *Quality-of-life.* *Respiratory health.* *Cardiovascular health.* *Mental health.* *Injury risk.* *Toxicology.*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					low incomes, have regular shift work, have low job stability, or have few progression prospects (including those unable to work due to ill health) *5. People (and their carers) with existing poor health (physical and mental health), including where this is due to disabilities* *6. People living in areas known to exhibit high deprivation or poor economic and/or health indicators* *7. People who may experiencing social isolation, discrimination or social disadvantage (including people from Black and Minority Ethnic Groups (BAME) and people who identify as being part of faith and belief groups)* *8. People experiencing barriers in access to services, amenities and facilities (including barriers experienced by service providers).* *9. Local, regional or national healthcare, educational, or social care services that lack capacity (including buildings,*	

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					equipment, staff, resources and out-of-hours cover), or were access is poor.	
3.5	Any other causes?				*NA*	*NA*
4.	Will the Project produce solid wastes during construction or operation or decommissioning?					
4.1	Spoil, overburden or mine wastes?				*As for 1.16*	*As for 1.16*
4.2	Municipal waste (household and/or commercial wastes)?				*As for 1.16*	*As for 1.16*
4.3	Hazardous or toxic wastes (including radioactive wastes)?				*As for 3.1*	*As for 3.1*
4.4	Other industrial process wastes?				*As for 1.16*	*As for 1.16*
4.5	Surplus product?				*As for 1.15*	*As for 1.15*
4.6	Sewage sludge or other sludges from effluent treatment?				*As for 1.16*	*As for 1.16*
4.7	Construction or demolition wastes?				*As for 1.16*	*As for 1.16*
4.8	Redundant machinery or equipment?				*As for 1.15*	*As for 1.15*
4.9	Contaminated soils or other material?				*As for 1.16 and 3.1*	*As for 1.16 and 3.1*
4.10	Agricultural wastes?				*As for 1.16*	*As for 1.16*
4.11	Any other solid wastes?				*As for 1.16*	*As for 1.16*
5.	Will the Project release pollutants or any hazardous, toxic or noxious substances into the air?					
5.1	Emissions from the combustion of fossil fuels from stationary or mobile sources?				*Community identity (including stacks/chimneys) Visual disturbance (environmental amenity of plumes).*	*Mental health Quality-of-life Mortality Life expectancy (including inequalities) Respiratory health*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					Air quality (including non-threshold health effects of NO2 and PM). *Odour nuisance.* *Land contamination (including dusts, vapours and aerosols).* *Physical activity opportunity (reduced quality of active travel routes disincentivising use).* *Climate change (including global health effects of climate change, as well as local co-benefits between improved air quality and reducing climate change).*	*Cardiovascular health.* *Obesity.* *Toxicology.* *Climate change outcomes: e.g. injury, disease and death from heatwaves and fires; undernutrition from reduced food production; and increased risks of food-, water- and vector-borne diseases.*
5.2	Emissions from production processes?				*As for 5.1*	*As for 5.1*
5.3	Emissions from materials handling including storage or transport?				*As for 5.1 and 1.18*	*As for 5.1 and 1.18*
5.4	Emissions from construction activities including plant and equipment?				*As for 5.1* *Dust nuisance (non-respiratory particulates affecting amenity).*	*As for 5.1* *Quality-of-life*
5.5	Dust or odours from the handling of materials including construction materials, sewage, and waste?				*As for 5.4 and 1.16*	*As for 5.4 and 1.16*
5.6	Emissions from the incineration of waste?				*As for 5.1*	*As for 5.1*
5.7	Emissions from burning of waste in				*As for 5.1*	*As for 5.1*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	open air (e.g. slash material, construction debris)?					
5.8	Emissions from any other sources?				*NA*	*NA*
6.	Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation?					
6.1	From operation of equipment, e.g. engines, ventilation plant, crushers?				*Community identity Community cohesion (including how conducive the environment is to conversation and social gatherings). Noise nuisance. Vibration nuisance (and disruption of medically sensitive equipment). Sleep disturbance. Educational disruption. Visual disturbance. Light pollution. Physical activity opportunity (reduced quality of active travel routes or recreational areas, disincentivising use).*	*Mortality. Life expectancy (including inequalities due to environmental exposure as well as socio-economic status factors such as educational attainment). Quality-of-life. Respiratory health Cardiovascular health. Obesity. Mental health.*
6.2	From industrial or similar processes?				*As for 6.2*	*As for 6.2*
6.3	From construction or demolition?				*As for 6.2*	*As for 6.2*
6.4	From blasting or piling?				*As for 6.2*	*As for 6.2*
6.5	From construction or operational traffic?				*As for 6.2 and 1.18*	*As for 6.2 and 1.18*
6.6	From lighting or cooling systems?				*As for 6.2 (including where cooling systems are a noise source).*	*As for 6.2*
6.7	From sources of electromagnetic radiation (consider				*Community identity Vibration nuisance. Visual disturbance.*	*Mortality. Life expectancy (including*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	effects on nearby sensitive equipment as well as people)?				*Non-ionising radiation (EMF), (including occupational, residential and to sensitive medical equipment).* *Public understanding of risk.* *Physical activity opportunity (reduced quality of active travel routes or recreational areas, disincentivising use).*	*inequalities due to environmental exposure).* *Quality-of-life.* *Cardiovascular health.* *Obesity.* *Cancer risk.* *Mental health.*
6.8	From any other sources?				*NA*	*NA*
7.	Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into sewers, surface waters, groundwater, coastal waters or the sea?					
7.1	From handling, storage, use or spillage of hazardous or toxic materials?				*Water quality (drinking and bathing)* *Land contamination (including dusts, vapours and aerosols).* *Human food chain (including bioaccumulation).* *Physical activity opportunity (reduced quality of active travel routes or recreational areas, disincentivising use).* *Visual disturbance (including silos, outfalls and settlement ponds).* *Odour nuisance.* *Public understanding of risk.* *Accident (including occupational risks).*	*Toxicology (dermal and ingestion)* *Respiratory health.* *Cardiovascular health* *Obesity* *Quality-of-life* *Cancer risk.* *Mental health.* *Injury risk.* *Mortality risk.*
7.2	From discharge of sewage or other				*As for 7.1*	*As for 7.1*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	effluents (whether treated or untreated) to water or the land?					
7.3	By deposition of pollutants emitted to air, onto the land or into water?				*As for 7.1*	*As for 7.1*
7.4	From any other sources?				*NA*	*NA*
7.5	Is there a risk of the long-term build- up of pollutants in the environment from these sources?				*As for 7.1*	*As for 7.1*
8.	Will there be any risk of accidents during construction or operation of the Project that could affect human health or the environment?					
8.1	From explosions, spillages, fires, etc. from storage, handling, use or production of hazardous or toxic substances?				*Community identity. Public understanding of risk (including emergency preparedness). Accident (including occupational risks). Health service capacity (including hospital and emergency services).*	*Quality-of-life. Mental health. Injury risk. Mortality risk (including linked to healthcare service capacity).*
8.2	From events beyond the limits of normal environmental protection e.g. failure of pollution control systems?				*As for 5.1, 6.1, 7.1 and 8.1*	*As for 5.1, 6.1, 7.1 and 8.1*
8.3	From any other causes?				*NA*	*NA*
8.4	Could the Project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes,				*As for 8.1*	*As for 8.1*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	landslip, etc.)?					
	9. Will the Project result in social changes/impacts on the population, for example, in demography, traditional lifestyles, employment?					
9.1	Changes in population size, age, structure, social groups etc.?				*For workers (see 1.7 and 1.17).* *Community identity.* *Community cohesion (including social isolation, social networks and culture).* *Community amenity capacity, suitability and accessibility (including leisure and physical activity opportunities).* *Labour market (including employment and unemployment).* *Housing market (including housing affordability, suitability and availability).* *Population displacement (including gentrification masking changing health status trends).* *Age related health and social care needs (including immunisations and developmental checks for the young, screening checks for working age people and multi-morbidity and supported living for the elderly).*	*For workers (see 1.7 and 1.17).* *Mental health* *Quality-of-life* *Life expectancy (including inequalities due to socio-economic status factors).* *Cardiovascular health.* *Obesity.* *Mortality and communicable and non-communicable disease prevalence linked to healthcare service capacity.*
9.2	By resettlement of people or				*As for 9.1*	*As for 9.1* *Mental health.*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	demolition of homes or communities or community facilities, e.g. schools, hospitals, social facilities?				*Future housing instability (frequently moving home).* *Future housing quality, affordability, suitability and availability (including relation to family size, travel times, disability or long-term conditions, such as dementia).* *Health service capacity, quality and accessibility (including public health, primary care, hospital and emergency services).* *Educational service capacity, quality and accessibility.* *Social care service capacity, quality and accessibility.*	*Quality-of-life.* *Respiratory health (housing quality).* *Injury risk (housing quality).* *Mortality and communicable and non-communicable disease prevalence linked to health and social care service capacity.* *Life expectancy (including inequalities due to socio-economic status factors such as access to good quality employment and education).*
9.3	Through in-migration of new residents or creation of new communities?				*As for 9.1*	*As for 9.1*
9.4	By placing increased demands on local facilities or services, e.g. housing, education, health?				*As for 9.2* *Community amenity capacity, suitability and accessibility (including leisure and physical activity opportunities).*	*As for 9.2* *Cardiovascular health.* *Obesity.*
9.5	By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy?				*Employment (including scale, quality and stability of employment).* *Upskilling (including local educational investment,*	*Mental health.* *Quality-of-life.* *Life expectancy (including inequalities due to socio-economic status factors for*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
					apprenticeships and on-the-job training). Unemployment (particularly long-term). Labour churn (the movement of workers between roles, including how this affects other sectors, such as health and social care). Occupational health and safety (including health and emergency service implications).	*employees and their dependants). Injury risk. Mortality linked to health and emergency service capacity. Communicable and non-communicable disease prevalence linked to health service screening and health promotion capacity.*
9.6	Any other causes?				*NA*	*NA*
10.	Are there any other factors that should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?					
10.1	Will the Project lead to pressure on consequential development and that could have significant impact on the environment e.g. more housing, new roads, new supporting industries or utilities, etc.?				*As for 1.19, 1.21, 9.1 and 9.2*	*As for 1.19, 1.21, 9.1 and 9.2*
10.2	Will the Project lead to development of supporting facilities, ancillary development or development stimulated by the Project which could have an impact on the environment? e.g.:				*All previous determinants of health as relevant, being proportionate in terms of scale of change associated with the supporting/ancillary development.*	*All previous health outcomes as relevant.*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	• supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other?					
10.3	Will the Project lead to the after-use of the site which could, in turn, have an impact on the environment?				*All previous determinants of health as relevant, being proportionate in terms of scale of change associated with the after-use. Health, educational and social care service access. Road safety (actual and perceived). Physical activity opportunity. Employment. Housing.*	*All previous health outcomes as relevant. Life expectancy (including inequalities due to socio-economic status factors such as access to good quality employment and education). Cardiovascular health. Obesity. Mortality risk (traffic). Injury risk (traffic). Mortality and communicable and non-communicable disease prevalence linked to healthcare service accessibility (including emergency response times as well as delayed non-emergency diagnosis or treatment).*
10.4	Will the Project set a precedent for later				*NA*	*NA*

	EC Guidance Scoping Checklist (20,39)				*Additional commentary to inform health scoping*	
No.	**Questions to be considered in Scoping**	**Yes/No/?**	**Which characteristics of the Project Environment could be affected and how?**	**Is the effect likely to be significant? Why?**	***Examples of health determinants potentially affected***	***Examples of health outcomes potentially affected***
	developments?					
10.5	Will the Project have cumulative effects, due to its proximity to other existing or planned Projects with similar effects?				*All previous determinants of health as relevant, being proportionate in terms of scale, timing and proximity of other existing or planned Projects. Health, educational and social care service access. Road safety (actual and perceived). Physical activity opportunity. Employment. Housing.*	*All previous health outcomes as relevant. Life expectancy (including inequalities due to socio-economic status factors such as access to good quality employment and education). Cardiovascular health. Obesity. Mortality risk (traffic). Injury risk (traffic). Mortality and communicable and non-communicable disease prevalence linked to healthcare service accessibility (including emergency response times as well as delayed non-emergency diagnosis or treatment).*

From European Commission (20,39) page 52) with an additional commentary and emphasis (colour coding) to support the scoping of human health and inequalities in health.

Additional health questions were posed at the screening stage; however, those gaps are addressed through the existing more detailed scoping sub-questions and the final question added to **REF**.

Table D-2: Scoping questions

Key:

green highlight: highly relevant to health scoping;
yellow highlight: potentially relevant to health scoping (but likely scoping would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health scoping.

Question - Are there features of the local environment on or around the Project location which could be affected by the Project?

• Areas which are protected under international or EU, national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the Project?
• Other areas which are important or sensitive for reasons of their ecology e.g.
  • Wetlands,
  • Watercourses or other waterbodies,
  • the coastal zone,
  • mountains,
  • forests or woodlands
• Areas used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the Project?
• Inland, coastal, marine or underground waters?

• Areas or features of high landscape or scenic value?
• Routes or facilities used by the public for access to recreation or other facilities?
• Transport routes which are susceptible to congestion or which cause environmental problems?
• Areas or features of historic or cultural importance?
Question - Is the Project in a location where it is likely to be highly visible to many people?
Question - Is the Project located in a previously undeveloped area where there will be loss of greenfield land?
Question - Are there existing land uses on or around the Project location which could be affected by the Project? For example: • Homes, gardens, other private property, • Industry, • Commerce, • Recreation, • public open space, • community facilities, • agriculture, • forestry, • tourism, • mining or quarrying
Question - Are there any plans for future land uses on or around the location which could be affected by the Project?
Question - Are there any areas on or around the location which are densely populated or built-up, which could be affected by the Project?
Question - Are there any areas on or around the location which are occupied by sensitive land uses which could be affected by the Project? • hospitals, • schools, • places of worship, • community facilities
Question - Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the Project? For example: • groundwater resources, • surface waters, • forestry, • agriculture, • fisheries, • tourism, • minerals.

Question - Are there any areas on or around the location of the Project which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the Project?
Question - Is the Project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the Project to present environmental problems?
Question - Is the Project likely to affect the physical condition of any environmental media? • The atmospheric environment including microclimate and local and larger scale climatic conditions? • Water – e.g. quantities, flows or levels of rivers, lakes, groundwater. Estuaries, coastal waters or the sea? • Soils – e.g. quantities, depths, humidity, stability or erodibility ofsoils? • Geological and ground conditions?
Question - Are releases from the Project likely to have effects on the quality of any environmental media? • Air quality? • Climate change and ozone depletion? • Water quality – rivers, lakes, groundwater. Estuaries, coastal waters orthe sea? • Nutrient status and eutrophication of waters? • Acidification of soils or waters? • Soils? • Landscape? • Noise? • Temperature, light or electromagnetic radiation including electrical interference? • Productivity of natural or agricultural systems?
Question - Is the Project likely to affect the availability or scarcity of any resources either locally or globally? • Fossil fuels? • Water? • Minerals and aggregates? • Timber? • Other non-renewable resources? • Infrastructure capacity in the locality - water, sewerage, power generation and transmission, telecommunications, waste disposal roads, rail?
Question - Is the Project likely to affect human or community health or welfare? • The quality or toxicity of air, water, foodstuffs and other products consumed byhumans? • Morbidity or mortality of individuals, communities or populations by exposure to pollution? • Occurrence or distribution of disease vectors includinginsects? • Vulnerability of individuals, communities or populations todisease? • Individuals' sense of personal security? • Community cohesion and identity? • Cultural identity and associations? • Minority rights? • Housing conditions? • Employment and quality of employment? • Economic conditions? • Social institutions?
Question - [NEW] Would the Project result in a widening of inequalities in society through differential or disproportionate environmental, social or economic changes to people who are more vulnerable?

From European Commission (20,39) page 59) with and additional final question and emphasis (colour coding) relevant to scoping human health and inequalities in health.

Appendix E: Assessment checklist

Table E-1: Assessment checklist: description of the likely significant effects of the project

Key:
green highlight: highly relevant to assessment;
yellow highlight: potentially relevant to assessment (but likely assessment would focus on another EIA discipline);
grey highlight: unlikely to directly relate to assessment.

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
Scoping of Effects				
3.1	Has the process by which the scope of the information for the EIA Report defined been described? (for assistance, see the Scoping Guidance Document in this series)			
3.2	Is it evident that a systematic approach to Scoping has been adopted?			
3.3	Was consultation carried out during Scoping?			
3.4	Have the comments and views of consultees been presented?			
Prediction of Direct Effects				
3.5	Have the direct, primary effects on land uses, people, and property been described and, where appropriate, quantified?			
3.6	Have the direct, primary effects on geological features and characteristics of soils been described and, where appropriate, quantified?			
3.7	Have the direct, primary effects on biodiversity been described and, where appropriate, quantified? (if relevant, are references made to Natura 2000 sites? (Directive 2009/147/EC and Directive 92/43/EEC))			
3.8	Have the direct, primary effects on the hydrology and water quality of water features been described and, where appropriate, quantified?			
3.9	Have the direct, primary effects on uses of the water environment been described and, where appropriate, quantified? (if relevant, are references made for River Basin Management Plans/Programmes of Measures under the WFD (2000/60/EC))			
3.10	Have the direct, primary effects on air quality			

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
	been described and, where appropriate, quantified? (if relevant, are references made to Air Quality Plans under Directives 2008/50/EC and 2004/107/EC))			
3.11	Have the direct, primary effects on climate change been described and, where appropriate, quantified?			
3.12	Have the direct, primary effects on the acoustic environment (noise or vibration) been described and, where appropriate, quantified? (if relevant, are references made to Action Plans/Programme under the Environmental Noise Directive (2002/49/EU))			
3.13	Have the direct, primary effects on heat, light or electromagnetic radiation been described and, where appropriate, quantified?			
3.14	Have the direct, primary effects on material assets and depletion of natural resources (e.g. fossil fuels, minerals) been described?			
3.15	Have the direct, primary effects on locations or features of cultural importance been described?			
3.16	Have the direct, primary effects on the quality of the landscape and on views and viewpoints been described and, where appropriate, illustrated?			
3.17	Have the direct, primary effects on environmentally relevant demography, social, and socio-economic condition in the area been described and, where appropriate, quantified?			
3.18	Have the secondary effects on any of the environment's aspects, above, caused by primary effects on other aspects been described and, where appropriate, quantified? (e.g. effects on biodiversity, including species and habitats protected under Directives 92/43/EEC and 2009/147/EC caused by soil, air or water pollution or noise; effects on uses of water caused by changes in hydrology or water quality; effects on archaeological remains caused by desiccation of soils)			
3.19	Have the temporary, short term effects caused only during construction or during time limited phases of Project operation or			

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
	decommissioning been described? (e.g. emissions produced during the construction)			
3.20	Have the permanent effects on the environment caused by construction, operation or decommissioning of the Project been described?			
3.21	Have the long-term effects on the environment, caused over the lifetime of Project operations or caused by build-up of pollutants, in the environment been described?			
3.22	Have the effects that could result from accidents, abnormal events or exposure of the Project to natural or man-made disasters been described and, where appropriate, quantified?			
3.23	Have the effects on the environment, caused by activities ancillary to the main Project, been described? (ancillary activities are part of the Project but usually take place at a distance from the main Project location e.g. construction of access routes and infrastructure, traffic movements, sourcing of aggregates or other raw materials, generation and supply of power, disposal of effluents or wastes). For further guidance and explanation concerning ancillary works assessment see http://ec.europa.eu/environment/eia/pdf/Note%20-%20Interpretation%20of%20Directive%2085-337-EEC.pdf			
3.24	Have the indirect effects on the environment caused by consequential development been described? (consequential development is other Projects, not part of the main Project, stimulated to take place by implementation of the Project e.g. to provide new goods or services needed for the Project, to house new populations or businesses stimulated by the Project)			
3.25	Have the cumulative effects on the environment of the Project, together with other existing or planned developments in the locality, been described? (different future scenarios including a worst-case scenario should be described, as well as the effects on both climate change and biodiversity). For			

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
	further guidance on the assessment of cumulative impacts see *http://europa.eu.environment/eia/eia-support* http://ec.europa.eu/environment/archives/eia/eia-studies- and-reports/pdf/guidel.pdf).			
3.26	Have the transboundary effects on the environment of the Project, either during construction or operation, been described?			
3.27	Have the geographic extent, duration, frequency, reversibility, and probability of occurrence of each effect been identified as being appropriate?			
Prediction of Effects on Human Health and Sustainable Development Issues				
3.28	Have the primary and secondary effects on human health and welfare described and, where appropriate, been quantified? (e.g. health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups).			
3.29	Have the impacts on issues such as biodiversity, marine environment, global climate change, use of natural resources and disaster risk been discussed, where appropriate?			
Evaluation of the Significance of Effects				
3.30	Is the significance or importance of each predicted effect clearly explained with reference to legal or policy requirements, other standards, and the number, importance, and sensitivity of people, resources or other receptors affected?			
3.31	Where effects are evaluated against legal standards or requirements, have the appropriate local, national or international standards been used and has relevant guidance followed?			
3.32	Have the positive effects on the environment been described, as well as the negative effects?			
Impact Assessment Methods				
3.33	Have the methods used to predict the effects described, and the reasons for their choice,			

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
	any difficulties encountered, and uncertainties in the results been discussed?			
3.34	Where there is uncertainty about the precise details of the Project, and its impact on the environment/climate change, have worst-case predictions been described?			
3.35	Where there have been difficulties in compiling the data needed to predict or evaluate effects, have these difficulties been acknowledged and their implications for the results been discussed?			
3.36	Has the basis for evaluating the significance or importance of impacts been described clearly?			
3.37	Have the impacts been described on the basis that all Mitigation Measures proposed have been implemented i.e. have the residual impacts been described?			
3.38	Is the level of treatment of each effect appropriate to its importance for the Development Consent decision? Does the discussion focus on the key issues and avoid irrelevant or unnecessary information?			
3.39	Is appropriate emphasis given to the most severe, adverse effects of the Project with lesser emphasis given to less significant effects?			
Other Questions relevant to Description of Effects				
	Have, with a view to avoiding duplication of assessments, the available results of other relevant assessments under Union or national legislation, in preparing the environmental impact assessment report been taken into account? If so, how was this done?			
	[NEW] Has the potential for health inequalities been appropriately articulated within the assessment so it is clear to the Competent Authority if there are likely to be significant effects (positive or negative) for a vulnerable sub-population that differ from the finding for the general population?			

Appendix F: Consultation checklist

Table F-1: Assessment checklist: refernces to consultation

Key:
green highlight: highly relevant to health consultation;
yellow highlight: potentially relevant to health consultation (but likely consultation would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health consultation.

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
Scoping of Effects				
3.3	Was consultation carried out during Scoping?			
3.4	Have the comments and views of consultees been presented?			
	[NEW] Have health stakeholders (including but not limited to national, regional and local public health teams) been consulted at the scoping stage?			
	[NEW] Have health stakeholders (including but not limited to national, regional and local public health teams) been consulted on the EIA Report?			

Appendix G: Monitoring checklist

Table G-1: Assessment checklist: description of monitoring measures

Key:
green highlight: highly relevant to health monitoring;
yellow highlight: potentially relevant to health monitoring (but likely monitoring would focus on another EIA discipline);
grey highlight: unlikely to directly relate to health monitoring.

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
Scoping of Effects				
6.1	Where adverse effects on any aspect of the environment are expected, has the potential for the monitoring of these effects been discussed?			
6.2	Are the measures, which the Developer proposes implementing to monitor effects, clearly described and has their objective been clearly explained?			
6.3	Is it clear whether the Developer has made a binding commitment to implement the proposed monitoring programme or that the Monitoring Measures are just suggestions or recommendations?			
6.4	Have the Developer's reasons for choosing the monitoring programme proposed been explained?			
6.5	Have the responsibilities for the implementation of monitoring, including roles, responsibilities, and resources been clearly defined?			
6.6	Where monitoring of adverse effects is not practicable, or the Developer has chosen not to propose any Monitoring Measures, have the reasons for this been clearly explained?			
6.7	Is it evident that the practitioners developing the EIA Report and the Developer have considered the full range of possible approaches to monitoring, including Monitoring Measures covering all existing environmental legal requirements, Monitoring Measures stemming from other legislation to avoid duplication, monitoring of Mitigation Measures (ensuring expected significant effects are mitigated as planned),			

No.	Review Question	Relevant?	Adequately Addressed?	What further information is needed?
	Monitoring Measures capable of identifying important unforeseen effects?			
6.8	Have arrangements been proposed to monitor and manage residual impacts?			
	[NEW] Have existing public health indicators been considered and is it clear how any sensitive health data would be managed?			