




JUNE 5, 2018

**INDEPENDENT PEER REVIEW  
OF THE ENVIRONMENTAL  
STATEMENT AND OTHER  
ENVIRONMENTAL  
INFORMATION SUBMITTED BY  
STANSTEAD AIRPORT LIMITED  
(THE APPLICANT) AS A FULL  
APPLICATION RELATING TO  
UTT/18/0460/FUL**

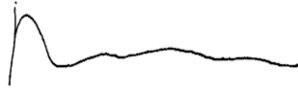
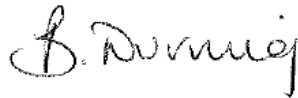
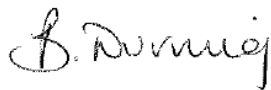
**ESIA-CONSULT LIMITED**

*Sustainability and Regulatory Services*

*Company Reg. No. 8645332*



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Checked by	Dr Bridget Durning			
Signature				
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Signature				
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## 1. Introduction

1.1 ESIA-Consult Ltd have been commissioned by Uttlesford District Council (UDC) to undertake an Independent Peer Review of the Environmental Statement (ES) and other Environmental Information submitted by Stanstead Airport Limited (the applicant) as a Full Planning Application relating to UTT/18/0460/FUL:

- Airfield works comprising two new taxiway links to the existing runway (a Rapid Access Taxiway and a Rapid Exit Taxiway);
- Six additional remote aircraft stands (adjacent Yankee taxiway);
- Three additional aircraft stands (extension of the Echo Apron) to enable combined airfield operations of 274,000 aircraft movements and
- A throughput of 43 million terminal passengers, in a 12-month calendar period.

The ES was submitted under the terms of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. (No. 571) (T&CPEIA)<sup>1</sup>.

1.2 The evaluation was carried out by Martin Broderick (principal reviewer) and Dr Bridget Durning (secondary reviewer). The expertise of the reviewers to undertake the review is provided in Annex A<sup>2</sup>.

## 2. The Review Process

2.1 The following documents, all dated February 2018 (unless otherwise stated), were reviewed as part of the evaluation:

- An Environmental Statement comprising of;
  - Volume 1:
    - Introduction
    - Environmental Impact Assessment Methodology
    - Description of Site, Proposed Development, Policy Context and Alternatives
    - Aviation Forecasts
    - Development Programme and Construction Environmental Management
    - Surface Access and Transport
    - Air Noise
    - Ground Noise
    - Surface Access Noise
    - Air Quality
    - Socio-Economic Impacts
    - Carbon Emissions

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<sup>1</sup> Directive 2014/52/EU amended Directive 2011/92/EU in order to strengthen the quality of the environmental impact assessment procedure and align that procedure with the principles of smart regulation. New EIA Regulations came into force on the 16 May 2017: Town and Country Planning (Environmental Impact Assessment) Regulations 2017. (No. 571).

<sup>2</sup> Under the new EIA Regulations 2017, Reg. 4(5) states: “*The relevant planning authority or the Secretary of State must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement*”

- Climate Change
- Public Health and Wellbeing
- Water Resources and Flood Risk
- Non-Significant Topics
- Cumulative Effects
- Summary of Mitigation and Residual Effects
- Volume 2 ▪ Appendices
- Volume 3 ▪ Transport Assessment
- Volume 4 ▪ Non-Technical Summary of the Environmental Statement (no date)
- Statement of Community Involvement
- Biodiversity Validation Checklist (June 2015)
- Drainage Checklist
- Drawing Pack comprising:
  - Location Plan
  - Overall Site Plan
  - Airfield works plans
- A Design and Access Statement; and
- Planning Statement.

2.2 The evaluation, which comprised a desk top review, has been conducted using the Impact Assessment Unit (IAU) of Oxford Brookes University Impact Statement Review Package<sup>3</sup> review package. This package was originally developed for a research project into the changing quality of ESs which was funded by the DoE, The Scottish and Welsh Offices in 1995/96. The package is a robust mechanism for systematically reviewing ESs and it has been fully updated to combine the requirements of the 2017 EIA Regulations<sup>4</sup>, the DoE checklist, a review package developed by Manchester University, an EU review checklist as well as notions of best practice developed by the IAU.

2.2 The package is divided into 8 sections and within each section are a number of individual review criteria. In all, the package assesses the quality of an ES against 98 criteria, some of which are not necessarily relevant to all projects. Each criterion is graded on the basis of the quality of the material provided and each section is then awarded an overall grade. From the grades given to each section an overall grade for the ES is determined. These grades are:

#### Assessment Grades

**A** = indicates that the work has generally been well performed with no important omissions;

**B** = is generally satisfactory and complete with only minor omissions and inadequacies;

**C** = is regarded as just satisfactory despite some omissions or inadequacies;

**D** = indicates that parts are well attempted but, on the whole, just unsatisfactory because of omissions or inadequacies;

**E** = Not satisfactory, significant omissions or inadequacies.

**F** = Very unsatisfactory, important task(s) poorly done or not attempted.

**NA** = Not applicable in the context of the ES or the project.

- 2.3 These grades can also be used to test an ES's compliance with the relevant Regulations, with the pass/fail mark lying between grades 'C' and 'D'.
- 2.4 The fundamental strength of our approach to reviewing ESs is that we always provide a completely independent review and its findings are not influenced by the particular perspective of the body or organisation commissioning the review. This approach is important to both ESIA-Consult Limited and its clients because in demanding the freedom to apply an independent perspective we maintain the authority to suggest changes to an ES or to advise that an ES is of an acceptable standard. Furthermore this independent review, by experienced practitioners provides a more balanced and comparative assessment of the quality of an ES than would be the case if the review was influenced by any particular perspective on the development proposal itself. Thus our review of an ES can be relied upon as a fair and impartial review of an ES by all parties in the planning application examination process.
- 2.5 In conducting the review, every effort has been made to remain independent, objective and systematic, but it should be recognised that ultimately the attributing of individual grades to individual criterion is inherently a matter of professional judgement.

### 3. Context of ES Review

- 3.1 This review of the ES takes place within the context of the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("the TCP Regulations") which transpose changes made to EU Directive 2011/92/EU<sup>5</sup>("the EIA Directive") by EU Directive 2014/52/EU<sup>6</sup> as well as the National Planning Policy Framework (NPPF 2012)/Planning Practice Guidance (PPG)<sup>7</sup>. It also combines notions of best practice developed by the IAU and indeed, during the update, it was noted that many of the new requirements within the 2017 TCP Regulations were already an established part of ES Review Package i.e. monitoring.
- 3.2 The TCP Regulations revoke and replace the Town and Country Planning (Environmental Impact Assessment) Regulations 2011(S.I.2011/1824). They relate to certain development given planning permission through the town and country planning system. of Directive 85/337/EEC as amended by Directives 97/11/EC, 2003/35/EC, 2009/31/EC and 2011/92/EU (the EIA Directives)<sup>8</sup> and the UK Regulations that transpose those Directives into UK law. While the legislation and the Regulations establish the requirement for the need for an EIA for certain projects and the submission of an ES, they do not explicitly require a formal review of the ES<sup>9</sup>. However, the Regulations establish the minimum

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<sup>5</sup> OJ No. L 26, 28.1.2012, p.1-21

<sup>6</sup> OJ No. L 124, 25.4.2014, p. 1.

<sup>7</sup> NPPF/PPG only apply in England and are currently undergoing a consultation process for a revision.

<sup>8</sup>EIA Directive amendments adopted (2014/52/EU) was transposed into UK Regulations on 16 May 2017

<sup>9</sup> Regulation 4 ( 5) and 5 of TCPEIA 2017 state respectively:

4 (5) The relevant planning authority or the Secretary of State must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement and “

(5) In order to ensure the completeness and quality of the environmental statement—(a) the developer must ensure that the environmental statement is prepared by competent experts; and (b) the environmental

information to be supplied by the developer within an ES, as well as information that the competent authority can request as being reasonably justified given the circumstances of the case. This establishes an implicit need for a review of the ES to ensure that it complies with both the minimum information requirements and any further requirements of the competent authority. Regulation 18 of the T&CPEIA Regulations states:

*“ Environmental statements*

*18.—(1) Subject to regulation 9, an EIA application must be accompanied by an environmental statement for the purposes of these Regulations.*

*(2) A subsequent application is to be taken to be accompanied by an environmental statement for the purpose of paragraph (1) where the application for planning permission to which it relates was accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations, but this is subject to regulation 9.*

*(3) An environmental statement is a statement which includes at least—*

*(a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;*

*(b) a description of the likely significant effects of the proposed development on the environment;*

*(c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

*(d) a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;*

*(e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and*

*(f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.*

*(4) An environmental statement must—*

*(a) where a scoping opinion or direction has been issued in accordance with regulation 15 or 16, be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion or direction);*

*(b) include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment; and*

*(c) be prepared, taking into account the results of any relevant UK environmental assessment, which are reasonably available to the person preparing the environmental statement, with a view to avoiding duplication of assessment.*

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statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts”.

(5) In order to ensure the completeness and quality of the environmental statement— (a) the developer must ensure that the environmental statement is prepared by competent experts; and

(b) the environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.”

- 3.4 Under the T&CPEIA 2017 Regulations, where an ES is deemed by the competent authority not to be complete, Regulations 9(3) and 25 make provision for a request to the developer for further information to be submitted and for that further information to be subject to the same publicity and public notification procedures as the original ES. This provision provides added strength to the requirements for minimum information as required by the EIA Directive on which the Regulations are based<sup>10</sup>.
- 3.5 If competent authorities do not have before them a complete ES, and further information is not supplied by the developer to complete the ES, then by virtue of Regulation 3 the appropriate authority may not grant consent for the project. Should they do so, the decision could be open to a judicial review challenge. It is this requirement that the ES is complete in terms of the minimum environmental information and any other information required by the competent authority, that gives force to the need for a systematic review of an ES. A clear systematic review of the ES provides an early indication of whether the ES is complete and/or identifies those areas where further information is required to make the ES complete.
- 3.6 The documentation evaluated is **overall** graded as **C** i.e. as just satisfactory despite some omissions and inadequacies. The detailed findings of the ES review, along with some brief comments are presented in the remainder of this report. Recommendation on additional actions are also provided at the end of the review.

## 4. ES Review

### 4.1 Description of the development

Criterion	Review Grade	Comments	
Principal features of the project			
<b>1.1</b>	<b>Explains the purpose(s) and objectives of the development.</b>	B	Enough detail for this planning permission application in paragraphs 1.13-1.16.
<b>1.2</b>	<b>Indicates the nature and status of the decision(s) for which the environmental information has been prepared.</b>	A/B	Need for EIA explained in paragraphs 1.17-1.22. Links to scoping opinion provided in Appendix 2.4 dated 21 December 2017. Useful Table 1.1.
<b>1.3</b>	<b>Gives the estimated duration of the construction, operational and where appropriate, decommissioning</b>	B/C	2020-2022 documented in Figure 5.2.

<sup>10</sup> 2017 TCPEIA Regulation 25



	<b>phase, and the programme within these phases.</b>		Decommissioning not relevant
<b>1.4</b>	<b>Provides a description of the development comprising information on the site, design and size of the development.</b>	B	Chapter 5
<b>1.5</b>	<b>Provides diagrams, plans or maps and photographs to aid the description of the development.</b>	C	Diagrams, plans and maps provided, maps especially of variable quality scales, legibility and sourcing.
<b>1.6</b>	<b>Indicates the physical presence or appearance of the completed development within the receiving environment.</b>	B/C	Provided in Figure 3.6, location plan, site plan and works plan
<b>1.7</b>	<b>Describes the methods of construction.</b>	B/C	Reasonable level of detail at 5.8-5.17
<b>1.8</b>	<b>Describes the nature and methods of production or other types of activity involved in the operation of the project.</b>	N/A	
<b>1.9</b>	<b>Describes any additional services (water, electricity etc.) and developments required as a consequence of the project.</b>	B/C	Includes access road with detailed drawings provided in Chapter 2. Water usage discussed in Chapter 15 and electricity usage in Chapter 12.
<b>1.10</b>	<b>Describes the project's potential for accidents, hazards and emergencies.</b>	C	Hazards discussed in Chapter 14
<b>1.11</b>	<i>Describes the effects on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters<sup>11</sup></i>	B/C	Discussed in Chapter 16
Land requirements			
<b>1.11</b>	<b>Defines the land area taken up by the development and/or construction site and any associated arrangements, auxiliary facilities and landscaping areas, and shows their location clearly on a map.</b>	B	Land area described in Chapter 2 and in plans.
<b>1.12</b>	<b>Describes the uses to which this land will be put, and demarcates the different land use areas.</b>	B/C	Supported by plans and drawings
<b>1.13</b>	<b>Describes the reinstatement and after-use of landtake during construction.</b>	B	Chapter 2 and in plans
Project Inputs			
<b>1.14</b>	<b>Describes the nature and quantities of materials needed during the construction and operational phases.</b>	D	Raw materials nature detailed in Chapter 5 but no quantities provided
<b>1.15</b>	<b>Estimates the number of workers and visitors entering the</b>	B	Visitors clearly and quantitatively estimated in

<sup>11</sup> Italicised texts indicate changes as a result the new 2017 TCP EIA Regulations

	<b>project site during both construction and operation.</b>		Chapters 4 and 6 for operation and construction workers at 5.8.
<b>1.16</b>	<b>Describes their access to the site and likely means of transport.</b>	B	Provided in Chapter 6 and DAS
<b>1.17</b>	<b>Indicates the means of transporting materials and products to and from the site during construction and operation, and the number of movements involved.</b>	B	CTMP described at 5.21-5.23 and Table 6.4
Residues and emissions			
<b>1.18</b>	<b>Estimates the types and quantities of waste matter, energy (noise, vibration, light, heat, radiation etc.) and residual materials generated during construction and operation of the project, and rate at which these will be produced.</b>	C	Waste arisings partially quantified in construction at 5.24-5.27, lighting is addressed also at 5.8-5.30
<b>1.19.</b>	<b>Indicates how these wastes and residual materials are expected to be handled/treated prior to release/disposal, and the routes by which they will eventually be disposed of to the environment</b>	C	Qualitative detail provided for solid waste arisings at para. 5.24-5.33
<b>1.20</b>	<b>Identifies any special or hazardous wastes which will be produced, and describes the methods for their disposal as regards their likely main environmental impacts.</b>	N/A	
<b>1.21</b>	<b>Indicates the methods by which the quantities of residuals and wastes were estimated. Acknowledges any uncertainty, and gives ranges or confidence limits where appropriate.</b>	C/D	Limitations are not explicitly addressed discussed at Table 18.1

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Overall Grade for Section 1 "Description of the Development" = B/C

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## 4.2 Description of the environment

Criterion		Review Grade	Comments
Description of the area occupied by and surrounding the project			
2.1	<b>Indicates the area expected to be significantly affected by the various aspects of the project with the aid of suitable maps. Explains the time over which these impacts are likely to occur.</b>	C	Adequate quality throughout. Chapter 3 is adequate.
2.2	<b>Describes the land uses on the site(s) and in surrounding areas.</b>	B	Local. Regional descriptions in chapter 3 useful.
2.3	<b>Defines the affected environment broadly enough to include any potentially significant effects occurring away from the immediate areas of construction and operation. These may be caused by, for example, the dispersion of pollutants, infrastructural requirements of the project, traffic etc.</b>	B	Spatial scope is determined for individual impact topics.
Baseline conditions			
2.4	<b>Identifies and describes the components of the affected environment potentially affected by the project.</b>	B	Chapters 6 -17 of ES
2.5	<b>The methods used to investigate the affected environment are appropriate to the size and complexity of the assessment task. Uncertainty and limitations indicated.</b>	D	Treatment of uncertainty is not consistent across all impacts, is only explicitly addressed in chapters 6,7,8,10, 11, 12,13,14, 15, 16, and 17
2.6	<b>Predicts the likely future environmental conditions in the absence of the project. Identifies variability in natural systems and human use.</b>	D	Chapter 3 on Alternatives does not explicitly address “do nothing” alternative.
2.7	<b>Uses existing technical data sources, including records and studies carried out for environmental agencies and for special interest groups.</b>	B	Good Desk Based Assessments
2.8	<b>Reviews local, regional and national plans and policies, and other data collected as necessary to predict future environmental conditions. Where the proposal does not conform to these plans and policies, the departure is justified.</b>	B/C	Chapter 3 3.67-3.109 provides a summary policy review. The Planning Statement support documentation was separate supporting document. A Compliance Schedule should be drawn up showing where and how these policies are addressed in the ES.
2.9	<b>Local, regional and national agencies holding information on baseline environmental conditions have been approached.</b>	B/C	Yes in Chapters 6-16

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Overall Grade for Section 2 “Description of the Environment” = B/C

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#### 4.3 Scoping, consultation and impact identification

Criterion		Review Grade	Comments
Scoping and consultation			
3.1	<b>There has been a genuine attempt to contact the general public, relevant public agencies, relevant experts and special interest groups to appraise them of the project and its implication. Lists the groups approached.</b>	A/B	A Statement of Community Involvement (SCI) provided. A separate public consultation exercise was undertaken by STAL between 6th and 24th July 2017, and revealed the extent of community concern over the originally proposed increase in aircraft movements. Following consideration of these concerns, a decision was taken by STAL not to pursue increased movement limits and the nature of the proposal in the Scoping Report was amended on 18th October 2017 accordingly. Thereafter, a formal Scoping Opinion was issued by the Council, dated 21st December 2017.
3.2	<b>Statutory consultees have been contacted. Lists the consultees approached.</b>	B/C	Consultees contacted, and referred to in at Chapter 2 and also Chapters 6-16 of ES
3.3	<b>Identifies valued environmental attributes on the basis of this consultation.</b>	B	Yes done in SCI very well
3.4	<b>Identifies all project activities with significant impacts on valued environmental attributes. Identifies and selects key impacts for more intense investigation. Describes and justifies the scoping methods used.</b>	B	Done very well in chapter 2
3.5	<b>Includes a copy or summary of the main comments from consultees and the public, and measures taken to respond to these comments.</b>	D	Measures taken to respond to comments not tabulated in ES .
3.6	<i>Is the assessment based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion or direction) ”.</i>	B	Yes November 2017
3.7	<b>Provides the data required to identify the main effects which the development is likely to have on the environment.</b>	B	Baseline data compiled well in Volumes 1 and 2
3.8	<b>Considers direct and indirect/secondary effects of constructing, operating and, where relevant, after-use or decommissioning of the project (including positive and</b>	C/D	Individual chapters outline aspects of the project likely to lead to potential impacts. No

	<b>negative effects). Considers whether effects will arise as a result of "consequential" development.</b>		discussion of consequential development
<b>3.9</b>	<b>Investigates the above types of impacts in so far as they affect:</b>  <i>population, human health, biodiversity (for example fauna and flora), human beings, flora, fauna, soil, water, air, climate, landscape, interactions between the above, material assets, cultural heritage. Also noise, land use, historic heritage, communities.</i>	B/C	Interactions are explicitly addressed in Chapter 17.
<b>3.10</b>	<i>Where in relation to EIA development there is, in addition to the requirement for an EIA to be carried out in accordance with these Regulations, also a requirement to carry out a Habitats Regulation Assessment, has the Habitats Regulation Assessment and the EIA been co-ordinated.</i>	B/C	Yes. Table 2.1 of Essex Biodiversity Validation Checklist screened out European sites.
<b>3.11</b>	<b>If any of the above are not of concern in relation to the specific project and its location, this is clearly stated.</b>	C/D	Chapter 18 of ES provides a summary tabulation.
<b>3.12</b>	<b>Identifies impacts using a systematic methodology such as project specific checklists, matrices, panels of experts, extensive consultations, etc. Describes the methods/approaches used and the rationale for using them.</b>	B/C	An explicit methodology is clearly articulated in Scoping Report 2017 and in the ES
<b>3.13</b>	<b>The investigation of each type of impact is appropriate to its importance for the decision, avoiding unnecessary information and concentrating on the key issues.</b>	B	Good match of effort to key issues.
<b>3.14</b>	<b>Identifies cumulative effects – the requirement for considering cumulative schemes i.e. ‘cumulation with other existing development and/or approved development’, which may not themselves be significant but which may contribute incrementally to a significant effect.</b>	C/D	<b>Cumulative or in-combination</b> effects are given consideration in Chapter 17 of ES. Definition provided at 17.2 but is confusing. I assume Type 1 are synergistic and type 2 are additive?. Long list at Table 17.1 and 17.2 . No spatial limits but a good map at Figure 17.1.  17.13 is not correct. Very opaque assessment. See Annex B for a detailed assessment of CIA.
<b>3.15</b>	<b>Considers impacts which might arise from non-standard operating conditions, accidents and emergencies.</b>	D	Not discussed
<b>3.16</b>	<b>If the nature of the project is such that accidents are possible which might cause severe damage within the surrounding environment, an assessment of the probability and likely consequences of such events is carried out and the main findings reported.</b>	D	Not discussed

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Overall Grade for Section 3 “Scoping, Consultation & Impact Identification = C

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## 4.4 Prediction and evaluation of impacts

Criterion		Review Grade	Comments
Prediction of magnitude of impacts			
4.1	<b>Describes impacts in terms of the nature and magnitude of the change occurring and the nature, location, number, value, sensitivity of the affected receptors.</b>	B	Generally well performed. Described in Tables 2.5, 2.6.
4.2	<b>Predicts the timescale over which the effects will occur, so that it is clear whether impacts are short, medium or long term, temporary or permanent, reversible or irreversible.</b>	B	Described well in Table 2.4 and paragraphs 2.42-2.55.
4.3	<b>Where possible, expresses impact predictions in quantitative terms. Qualitative descriptions, where necessary, are as fully defined as possible.</b>	C	Consistent throughout Chapters 6 -16.
4.4	<b>Describes the likelihood of impacts occurring, and the level of uncertainty attached to the results.</b>	C	Consistent approach across Chapters 6-17. However Treatment of uncertainty is not consistent across all impacts, is only explicitly addressed in chapters 6,7,8,10, 11, 12,13,14, 15, 16, and 17
4.5	<b>Provides the data required to assess the main effects which the development is likely to have on the environment<sup>12</sup>.</b>	B/C	Good Desk Based Assessment . <sup>13</sup>
4.6	<b>The methods used to predict the nature, size and scale of impacts are described, and are appropriate to the size and importance of the projected disturbance.</b>	C/D	Recognised approaches are employed but Noise should use more recent guidance e.g. Martin Broderick, and Graham Parry, Guideline for Environmental Noise Impact Assessment, Institute of Environmental Management and Assessment, October 2014.
4.7	<b>The data used to estimate the size and scale of the main impacts are sufficient for the task, clearly described, and their sources clearly identified. Any gaps in the data are indicated and accounted for.</b>	B/C	Referencing is thorough. Gaps in data are accounted for.

<sup>12</sup> Schedule 4 Criterion

<sup>13</sup> In the 2017 Regulations, Regulation 26(2) requires that there should be an up-to-date reasoned conclusion – the changes state that a competent authority’s reasoned conclusion on the significant impacts of a proposal needs to be “up-to-date” (i.e. based on current information) at the time a final decision is taken.



Evaluation of impact significance			
4.8	<b>Discusses the significance of effects in terms of the impact on the local community (including distribution of impacts) and on the protection of environmental resources.</b>	B/C	Frameworks for significance evaluation are developed in Chapter 3 and applied in Chapters 6-16.
4.9	<b>Discusses the available standards, assumptions and value systems which can be used to assess significance.</b>	C	See 4.6 above
4.10	<b>Where there are no generally accepted standards or criteria for the evaluation of significance, alternative approaches are discussed and if so, a clear distinction is made between fact, assumption and professional judgement.</b>	B/C	Generally good acknowledgement of professional/expert judgement see 6.68, 11.45, 14.26
4.11	<b>Discusses the significance of effects taking into account the appropriate national and international standards or norms, where these are available. Otherwise the magnitude, location and duration of the effects are discussed in conjunction with the value, sensitivity and rarity of the resource.</b>	B/C	Broad standardised approach for ES Assessment Framework (Chapter 2) is refined within individual impact chapters.
4.12	<b>Differentiates project-generated impacts from other changes resulting from non-project activities and variables.</b>	C/D	There is no discussion of consequential impacts
4.13	<b>Includes a clear indication of which impacts may be significant and which may not and provides justification for this distinction.</b>	A/B	The focus throughout is upon significance of residual impacts after design mitigation is detailed in Chapter 18

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Overall Grade for Section 4 “Prediction and Evaluation of Impacts” = B/C

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## 4.5 Alternatives

Criterion		Review Grade	Comments
5.1	<b>Provides a <i>description</i> of the <i>reasonable</i><sup>14</sup> alternatives studied e.g.design, technology, location size, scale, studied and gives an indication of the main reasons for their choice, taking into account the environmental effects<sup>15</sup>.</b>	D	Described in Chapter 3. At 3.110—3.115, but design, technology, location size, and scale, layout of site, management arrangements not considered.
5.2	<b>Considers the "no action do-nothing" alternative, alternative processes, scales, layouts, designs and operating conditions where available at an early stage of project planning, and investigates their main environmental advantages and disadvantages.</b>	C/D	No action alternative addressed at Section 2.39 “do Minimum”  No tabulation of advantages/disadvantages provided. There is a comparison with the development case in Chapter 4.
5.3	<b>If unexpectedly severe adverse impacts are identified during the course of the investigation, which are difficult to mitigate, alternatives rejected in the earlier planning phases are re-appraised.</b>	D	Not explicitly addressed here
5.4	<b>The alternatives are realistic and genuine<sup>16</sup>.</b>	D	The Do Minimum Scenario: Stansted’s permitted limits remain unchanged at 35mppa; and Development Case: Stansted’s permitted limit is uplifted to 43mppa, but with no increase in the total aircraft movement limit of 274,000 are assessed in Chapter 4
5.5	<b>Compares the alternatives' main environmental impacts clearly and objectively with those of the proposed project and with the likely future environmental conditions without the project.</b>	D	No explicit comparison provided. Figures 4.13, 4.14 and 4.15 does compare the “do minimum” and the “Development case”.

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Overall Grade for Section 5 “Alternatives” =

D

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<sup>14</sup> TCP EIA 2017 Regulation 18(3)(d) and IP EIA 2017 Regulation 14 (2)d

<sup>15</sup> Schedule 4 and Regulation 18(3) of TCP Regulations 2017 and Regulation 14(2) of IP Regulations 2017)

<sup>16</sup> TCPEIA 2017 requires at Regulation 18(3)d: a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;

## 4.6 Mitigation and monitoring

Criterion	Review Grade	Comments	
Description of mitigation measure			
<b>6.1</b>	<b>Provides a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects<sup>17</sup>.</b>	B	Summarised in Chapter 18
<b>6.2</b>	<b>Mitigation measures considered include modification of project design, construction and operation, the replacement of facilities/ resources, and the creation of new resources, as well as 'end-of-pipe' technologies for pollution control.</b>	C/D	Table 18.1 useful. Design is barely mentioned <sup>18</sup>
<b>6.3</b>	<b>Describes the reasons for choosing the particular type of mitigation, and the other options available.</b>	C/D	Done explicitly in Table 18.1 for choice but no discussion of other options.
<b>6.4</b>	<b>Explains the extent to which the mitigation methods will be effective. Where the effectiveness is uncertain, or where mitigation may not work, this is made clear and data are introduced to justify the acceptance of these assumptions.</b>	D	Limitations are discussed within chapters 6-17 but not specifically in relation to mitigation
<b>6.5</b>	<b>Indicates the significance of any residual or unmitigated impacts remaining after mitigation, and justifies why these impacts should not be mitigated.</b>	B/C	Residual impacts are identified in Table 18.1 but there is no explicit justification provided because all negative impacts are judged to be negligible to minor adverse.
Commitment to mitigation and monitoring			
<b>6.6</b>	<i>Gives details of how the mitigation measures will be implemented and function over the time span for which they are necessary.</i>	C/D	Time spans not provided
<b>6.7</b>	<i>Proposes monitoring arrangements for all significant impacts, especially where uncertainty exists, to check the environmental impact resulting from the implementation of the project and its conformity with the predictions made.</i>	C	No additional monitoring proposed except at 18.13 <i>“planning conditions and legal agreements (i.e. Section 106) may be used to secure the implementation and subsequent monitoring of the mitigation</i>

<sup>17</sup> Schedule 4

<sup>18</sup> IEMA EIA Guide to Shaping Quality Development. November 2015  
IEMA EIA Guide to Delivering Quality Development. July 2016

			<i>measures, together with other 'reasonable and related' planning controls which may be considered necessary."</i>
<b>6.8</b>	<i>The scale of any proposed monitoring arrangements corresponds to the potential scale and significance of deviations from expected impacts.</i>	C	<p>An overall EMP is needed to address construction and operation for:</p> <ol style="list-style-type: none"> <li>1. Construction Traffic Management Plan (CTMP)</li> <li>2. Construction Environmental Management Plan (CEMP)</li> <li>3. Incorporation of "Good Design"<sup>19</sup></li> </ol> <p>In order to be linked to STAL's Environmental Management System (EMS), which is certified under the international standard ISO14001:2015 (see 5.33)</p>
Environmental effects of mitigation			
<b>6.9</b>	<b>Investigates and describes any adverse environmental effects of mitigation measures.</b>	C/D	No evidence provided
<b>6.10</b>	<b>Considers the potential for conflict between the benefits of mitigation measures and their adverse impacts.</b>	C/D	No evidence provided

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Overall Grade for Section 6 "Mitigation and Monitoring" = C/D

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<sup>19</sup> IEMA EIA Guide to Shaping Quality Development. November 2015  
IEMA EIA Guide to Delivering Quality Development. July 2016

## 4.7 Non-technical summary

Criterion		Review Grade	Comments
Description of mitigation measure			
7.1	<b>There is a non-technical summary of the information provided under Regulation 18 (3)(e) and paragraph 9 of Schedule 4<sup>20</sup>.</b>	B	Stand alone NTS provided with no date.
7.2	<b>The non-technical summary contains at least a brief description of the project and the environment, an account of the main mitigation measures to be undertaken by the developer, and a description of any remaining or residual impacts</b>	B/C	Project description provided in pages 2-4. Environment description is variable. Mitigation mentioned copiously. Residuals also covered in page 19 .
7.3	<b>The summary avoids technical terms, lists of data and detailed explanations of scientific reasoning.</b>	B/C	Reasonably clear and accessible to the lay reader.
7.4	<b>The summary presents the main findings of the assessment and covers all the main issues raised in the information.</b>	A/B	Yes
7.5	<b>The summary includes a brief explanation of the overall approach to the assessment.</b>	A/B	Overall approach described in pages 6-10
7.6	<b>The summary indicates the confidence which can be placed in the results.</b>	E	Confidence in findings is not explicitly stated

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Overall Grade for Section 7 “Non-Technical Summary” =

B/C

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<sup>20</sup> 2017 EIA Regulations

## 4.8 Organisation and presentation of information

Criterion		Review Grade	Comments
Organisation of the information			
8.1	Logically arranges the information in sections.	B/C	Yes
8.2	Identifies the location of information in a table or list of contents.	E	Table of Contents needs 3 <sup>rd</sup> level headings and to be provided after title page. Current ToC does not suffice.
8.3	There are chapter or section summaries outlining the main findings of each phase of the investigation.	C	Done for impact chapters but not for earlier parts of the ES.
8.4	When information from external sources has been introduced, a full <i>reference list</i> <sup>21</sup> to the source is included.	B/C	Reference lists provided and sources are generally acknowledged.
Presentation of information			
8.5	Mentions the relevant EIA legislation, name of the developer, name of competent authority(ies), name of organisation preparing the ES, and name, address and contact number of a contact person.	D	No contact details provided in either NTS or ES.
8.6	Includes an introduction briefly describing the project, the aims of the assessment, and the methods used.	A/B	Yes Chapters 2 and 3
8.7	The statement is presented as an integrated whole. Data presented in appendices are fully discussed in the main body of the text.	C	Chapters 1 to16 all reference the appendices in Volume 2.
8.8	Offers information and analysis to support all conclusions drawn.	B	Generally well referenced
8.9	Presents information so as to be comprehensible to the non specialist. Uses maps, tables, graphical material and other devices as appropriate. Avoids unnecessarily technical or obscure language.	C/D	Figures and maps in main ES are very variable i.e. scale, legibility and sourcing.
8.10	Discusses all the important data and results in an integrated fashion.	B	Summary provided in Chapter 18.
8.11	Avoids superfluous information (i.e. information not needed for the decision).	B/C	Does this well in parts however there is some repetition in assessment chapters
8.12	Presents the information in a concise form with a consistent terminology and logical links between different sections.	C	Satisfactory despite some omissions or inadequacies
8.13	Gives prominence and emphasis to severe adverse impacts, substantial environmental benefits, and	C	Chapter 18 does not identify any major adverse effects.

<sup>21</sup> Schedule 4 Paragraph 10

	<b>controversial issues.</b>		
<b>8.14</b>	<b>Defines technical terms, acronyms and initials.</b>	C	Provided at beginning but not all technical terms defined e.g. cumulative, in-combination, residual.
<b>8.15</b>	<b>The information is objective, and does not lobby for any particular point of view. Adverse impacts are not disguised by euphemisms or platitudes.</b>	C	Generally objective
<b>8.16</b>	<i>Has the ES been prepared by a Competent expert/s i.e. a number of years of experience, professional memberships, training.</i>	A/B	Yes. Appendix 1.1 clearly details this for the whole project team.
Difficulties compiling the information			
<b>8.17</b>	<b>Indicates any gaps in the required data and explains the means used to deal with them in the assessment.</b>	C	This is not consistent across all impacts, is only explicitly addressed in chapters 6,7,8,10, 11, 12,13,14, 15, 16, and 17
<b>8.18</b>	<b>Acknowledges and explains any difficulties in assembling or analysing the data needed to predict impacts, and any basis for questioning assumptions, data or information.</b>	C	Treatment of limitations is not consistent across all impacts, is only explicitly addressed in chapters 6,7,8,10, 11, 12,13,14, 15, 16, and 17

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Overall Grade for Section 8 “Organisation & Presentation of Information” = C

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## 4.9 Collation sheets

Section in pro forma	Overall Grade for that section	Areas where more information required
1. Description of the development	<b>B/C</b>	The description of the development is generally satisfactory and complete. However, there are some omissions or inadequacies relating to raw materials usage, waste arisings and discussions of limitations.
2. Description of the environment	<b>B/C</b>	The description of the environment is generally satisfactory and complete. However, there are some omissions or inadequacies relating to addressing uncertainty, assessment of alternatives and need to provide a policy compliance schedule.
3. Scoping, consultation, and effect identification	<b>C</b>	There are omissions and inadequacies relating to showing where responses to consultation comments have been addressed in ES. Also no discussion of hazards and potential for accidents.
4. Prediction and evaluation of effects	<b>B/C</b>	The prediction and evaluation of effects is generally satisfactory and complete. However, there are some omissions or inadequacies relating to using more up to date guidance i.e. noise and discussions of consequential impacts.
5. Alternatives	<b>D</b>	This section is unsatisfactory because design and size not considered and there is no tabulated comparison of these alternatives.
6. Mitigation and Monitoring	<b>C/D</b>	Limitations of mitigation measures not explicitly discussed. An overarching EMP needs to be produced that links the CEMP,CoCP and CTMP to STALs ISO14001 EMS.
7. Non-Technical Summary	<b>B/C</b>	The NTS is generally satisfactory and complete. However, there is one omission relating to discussion of the confidence which can be placed in the assessment.
8. Organisation and Presentation of Information	<b>C</b>	The Table of Contents is not adequate and there are no contact details provided in ES.
<b>Overall Grade (A-F):</b>	<b>C</b>	The documentation evaluated is <b>overall</b> graded as <b>C</b> i.e. as just satisfactory despite some omissions and inadequacies.



## 5. Recommendations and additional actions

### 5.1 Environmental Management Plan (EMP) and Good Design

5.1.1 This is an emerging area of good practice. There are references to management plans<sup>22</sup> within the ES, including:

- Construction Traffic Management Plan (CTMP) – Chapters 7 and 17;
- Construction Environmental Management Plan (CEMP) – Chapters 9, 10, 11, 16 and 17 and
- Code of Construction Practice.

but none on “good design”<sup>23</sup>.

5.1.2 It is recommended that a comprehensive Environmental Management Plan be linked to STAL’s Environmental Management System (EMS), which is certified under the international standard ISO14001:2015 (see paragraph 5.33). This should incorporate IEMAs Good Design, CoCP, CEMP and CTMP, for all relevant phases of the development, and an annual monitoring report. This should be conditioned as follows:

- *No development shall take place until an Environmental Management Plan, covering the construction and operation phases of development, has been submitted to and approved in writing by the relevant planning authority. The Environmental Management Plan shall be in accordance with the measures outlined in Chapters 5-17 of the February 2018 Environmental Statement and shall include [relevant details listed]. The Environmental Management Plan shall be carried out as approved. A monitoring report setting out progress on the measures set out in the Environmental Management Plan shall be submitted annually to the relevant planning authority until the condition is fully discharged.*

### 5.2 Alternatives

5.2.1 There is no explicit comparison of the environmental effects of the different alternatives provided. To enhance transparency in Chapters 3 and 4 a simple matrix could be used to summarise and compare alternatives.

### 5.3 Cumulative (Additive and Synergistic/In-combination effects)

5.3.1 The Applicant is incorrect when they state at paragraph 17.13:  
“There is no established EIA methodology to assess and quantify Type 1 or Type 2 cumulative effects on sensitive receptors.”

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<sup>22</sup> Durning, B, Broderick, M., 2018. Chapter 20: Environmental and Social Management Plans. In Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 678-703.

<sup>23</sup> IEMA EIA Guide to Shaping Quality Development. November 2015  
IEMA EIA Guide to Delivering Quality Development. July 2016

- 5.3.2 The Applicant should be aware that there is an established methodology for CIA best practice which is documented in:

Broderick, M., Durning, B., and Sanchez, L., 2018. Chapter 19: Cumulative Effects. In Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 649-677.

Martin Broderick, and Durning, B. Cumulative Effects Assessment and Environmental Impact Assessment. *Environmentalist* (IEMA March 2016).

Durning, B and Martin Broderick, Review of current practice in the assessment of cumulative environmental effects of UK Offshore Renewable Energy Developments. Report to NERC Marine Renewable Energy Knowledge Exchange Programme (MREKEP) (September 2015).

Martin Broderick, Nick Medic and Alan Pearson. Cumulative Effects – All at Sea *Environmentalist* (IEMA April 2013).

#### 5.4 Use of more recent standards and guidance for the assessment

- 5.4.1 Chapter 7 Transport uses IEMA 1993 Guidelines for Environmental Assessment of Road Traffic. This is dated and more current guidance should be used. The applicant needs to use up to date standard/guidance in Chapter 7 Traffic and in Chapter 9 Noise:

- DMRB Vol 11 August 2009<sup>24</sup>.
- **Noise in Environmental Impact Assessment (EIA) Guidance** - IEMA/Institute of Acoustics (IOA) October 2014

#### 5.5 Policy Relevance

- 5.5.1 A Planning Policy Framework is provided from 3.67-3.109. A Compliance Schedule needs to be provided, showing project compliance and should include links to where this is addressed in the ES.

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<sup>24</sup> Referred to once at 6.70

## Annex A - Reviewers CVs

Mr Martin Broderick



**Professor Martin A. Broderick,**

**BSc MPhil FIEMA**

Home: 01865 452707 • Mobile: 07799313747 • E mail:  
[mbroderick@brookes.ac.uk](mailto:mbroderick@brookes.ac.uk)

*An Environment and Sustainability Specialist*

***KEY EXPERIENCE:***

I have extensive (> 25 years) professional expertise in infrastructure and its delivery. I am a highly experienced and respected sustainability specialist in a career dedicated to delivering authoritative sustainability advice and thought-leadership to board level. I am skilled in Environmental and Social Impact Assessment (ESIA) and Environmental & Social Due Diligence (ESDD), across multiple sectors: residential/commercial property, major energy infrastructure, transport and linear infrastructure working on complex projects. I am a recognised expert in sustainability (FIEMA), with a deep understanding of how to sustainably deliver complex projects to those impacted by major infrastructure, in order to create a better place for people for present and future generations. I have a strong, active understanding of local authority networks at a senior level e.g. via PINS, and through engineering industry experience which, includes major energy infrastructure, water and linear infrastructure.

***CURRENT POSITIONS:***

***March 2010 – present:* Examining Inspector at the National Infrastructure Directorate of the Planning Inspectorate <http://infrastructure.independent.gov.uk/>**

I am currently an Examining Inspector at the National Infrastructure Directorate of the Planning Inspectorate (PINS) (<http://infrastructure.independent.gov.uk/>). The role requires the carrying out of PINS's most complex level of professional casework and also encompass responsibility for leading and managing other Inspectors and liaison with case team members. examination I need to quickly understand new and complex issues. My role as an Examining Inspector at PINS, requires avoiding the confrontational win-lose decision making approach of the past, by seeking to build consensus on, what can be, contentious proposals for nationally significant infrastructure. My role is to question and challenge evidence provided by all the interested parties in an inquisitorial manner, as opposed to an adversarial manner. The role requires me to review and critique evidence at key stages in the infrastructure application and examination process.

This was originally a public appointment made by the Secretary of State at the Department of Communities & Local Government in March 2010. This is a Fixed Term Contract role.

[http://localgovernmentlawyer.co.uk/index.php?option=com\\_content&view=article&id=3620:angus-walkers-planning-blog&catid=47:home-page-articles](http://localgovernmentlawyer.co.uk/index.php?option=com_content&view=article&id=3620:angus-walkers-planning-blog&catid=47:home-page-articles)

I have recently examined the following NSIP applications:

- Brechfa Forest Connection – 28km Grid Connection. Appointed as Examining Authority for Application 23 June 2015. The Secretary of State for Business Energy and Industrial Strategy endorsed my recommendation on the 6 October 2016. <https://infrastructure.planninginspectorate.gov.uk/projects/wales/brechfa-forest-connection/>
- Palm Paper Ltd – 160 MW CCGT/CHP The Secretary of State for Energy and Climate Change endorsed my recommendation on the 11 February 2016 <http://infrastructure.planningportal.gov.uk/projects/Eastern/Palm-Paper-3-CCGT-Power-station-Kings-Lynn/>
- Hirwaun Power Ltd – 299MWe OCGT. The Secretary of State for Energy and Climate Change endorsed my recommendation on the 23 July 2015. <http://infrastructure.planningportal.gov.uk/projects/wales/hirwaun-power-station/>
- North Killingholme Power Project - 470MWe CCGT/IGCC Power Station. The Secretary of State for Energy and Climate Change endorsed our recommendation on the 11 September 2014. <http://infrastructure.planningportal.gov.uk/projects/yorkshire-and-the-humber/north-killingholme-power-project/>
- North Killingholme Power Project - 470MWe CCGT/IGCC Power Station. Application for the award of costs 2014. <http://infrastructure.planningportal.gov.uk/projects/yorkshire-and-the-humber/north-killingholme-power-project/>
- Internal Power Generation Enhancement for Port Talbot Steelworks - installation of two new boilers (nominally 164 Mega Watt Thermal (MWth)) and two turbines 2015. PINS Internal Peer Reviewer of Recommendation Report to Secretary of State. <https://infrastructure.planninginspectorate.gov.uk/projects/wales/internal-power-generation-enhancement-for-port-talbot-steelworks/>
- Progress Power Ltd – 299MWe OCGT Acceptance of Application
- Palm Paper Ltd – 160 MWe CCGT/CHP Acceptance of Application
- Ferrybridge Multifuel 2- 99MW Renewables Plant Acceptance of Application

*March 2018 – present:* **Visiting Professor in the Faculty of Technology, Design & Environment. Oxford Brookes University.**

<https://www.brookes.ac.uk/be/research/research-groups/impact-assessment/>

Professor Broderick has provided service and leadership, in an executive role, on advisory boards national and international agencies. He has made contributions to leadership in government and corporate agencies at national/international level, professional institutes, research committees, and community service. He participates in teaching and knowledge exchange activities.

- External Peer Reviewer for Transport for Londons (TfL) Silvertown Tunnel NSIP, ES. September 2015 to April 2017
- Principal Author on Noise Guidelines in EIA. IEMA, September 2013- October 2014
- External Peer Reviewer for Transport for Londons (TfL) Bank Station Upgrade, EIA. May 2014-July 2014

- Transferring Building Information Modelling (BIM) technology to the Offshore Wind Farm Energy Sector for the Offshore Renewable Energy (ORE) Catapult November 2017 – present.
- Sustainability Adviser Savills Strategic Projects <http://savills.co.uk>/Leading the development of Savills energy networks portfolio by enhancing overall visibility in sector. Provided strategic direction and leadership on all pertinent sustainability issues through development and presentation of conference papers, and articles in professional journals and seminars. July 2016- present.
- NERC <http://www.nerc.ac.uk/innovation/activities/energy/offshore/cea-mini/> 2015
- NERC/RUK <http://www.nerc.ac.uk/innovation/activities/energy/offshore/cumulative-impact-assessment-guidelines/> 2012-2013

***KEY RESPONSIBILITIES and ACHIEVEMENTS:***

- Member of the panel for the Institute of Environmental Management & Assessments (IEMA's) response to the National Planning Policy Framework (NPPF) consultation. March 2018 - present
- Member of Review Panel for NERC Green Infrastructure Innovation Programme October 2017 – present
- Appointed Visiting Professor in the Faculty of Technology, Design & Environment. March 2018-present
- Appointed Fellow Member of IEMA August 2017 in recognition of my long term leadership commitment to environmental impact assessment
- Pipeline Industry Guild Board Member 2001-2002  
<https://www.pipeguild.com/thepipelineindustriessguild>
- Keynote Speaker at the IEMA EIA Quality Mark Forum 2014 – Delivering Effective EIA 12 June 2014
- Keynote Speaker at Coastal Futures 2013 - Review and Future Trends - Cumulative effects and Offshore Wind – Guiding Principles. January 23-24 2013
- Keynote Speaker at Renewable UK Annual Conference session on Streamlining Consents Glasgow 31 October 2012
- Keynote Speaker on EIA to the Planning Inspectorate (PINS) Annual Conference 27 March 2012
- Chairing the IEMA November 2010 Annual Conference Plenary session “EIA – The Key to Delivering Major Infrastructure”
- Treasurer on BIOMASS (International Biospheric (including climate change) Modelling Study Involving over 20 Countries including IAEA). 1996- 1997
- Registered Commissioner at the Infrastructure Planning Commission (IPC) 2010 – March 2012
- Member of National Grid Group Environment Steering Committee, 2000 –2002
- Member of HSE Euratom Basic Safety Standards Topic Group: Provided informal advice to HSE in developing proposals to implement the revised BSS Directive and amend the Ionising Radiation's Regulations 1985 (IRR85).1995-1997
- I was instrumental in setting up the International Programme on Biosphere Modelling and Assessment Methods (BIOMASS), including climate change) 1996-1997. It involved over 20 Countries. I led the nuclear industry in the UK ( NDA) inputs to BIOMASS, Theme 1: Radioactive Waste Disposal and. Theme 3: Biosphere Processes.
- Member of DCLG/Industry Terrestrial Environment Committee. The committee looked at priorities for terrestrial pollution research. 1994-1997

### ***TERTIARY EDUCATION:***

- 1984 - 1986: University of Exeter **M.Phil. Geochemistry & Geophysics**
- 1980 - 1984: University College Galway. EIRE **BSc (Honours) Geology.**

### ***CAREER HISTORY:***

#### ***March 2011 – July 2013 Senior Technical Director WSP Environment & Energy***

This was a senior directorial role within the UK Environmental Planning team that was a key component in achieving diversification in both WSP's client base & service offering.

Project work included:

- Argyll Array Offshore Wind Farm EIA<sup>25</sup>
- Other Nationally Significant Infrastructure Projects.
- Developing Guiding Principles for Cumulative Effects Assessments in Offshore Wind Farms for Renewables UK/NERC. This required me to lead a diverse group of stakeholders around a common challenge
- Advice too TfL on Thames Tideway Tunnel NSIP

#### ***January 2007 to March 2011: Principal ESIA Practitioner Golder Associates UK Ltd***

I was responsible for leading and developing all ESIA work for the energy group in Golder UK, and also contributing to developing ESIA work in other sectors worldwide. Project work included:

- **Environmental & Social Due Diligence for:**
  - 850MW CCGT project in UK. Client Confidential 2010
  - Environmental Due Diligence for Coal Bed Methane facilities in UK. Confidential Client, 2009
  - Environmental Due Diligence for Underground Gas Storage facility in Hungary. EBRD, 2009
  - Best Value Proposition for 140 Underground salt caverns for SABIC in UK, 2009
  - Environmental Due Diligence for 3 Underground Gas Storage projects for confidential clients in UK, 2008
  - Sustainability Statement for Underground Gas Storage project in Cheshire: NPL, 2008
  - Environmental Due Diligence on Coal and Iron Ore Mines in Kazakhstan for EBRD, 2007
  - Developing a Carbon Neutral Strategy for a major energy company with upstream/midstream and downstream assets globally, 2009
- **ESIA for:**
  - Design and construction of a 107 km motorway in Kosovo, 2010. Client Bechtel.
  - Panama canal widening , 2009. Client Bechtel
  - Onshore wind farm in Scotland for RWE, 2009
  - Onshore Wind Farm in Scotland for RWE, 2008

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<sup>25</sup> Abandoned due to ecological issues and wave conditions

January 2003 to January 2007: Principal Environment & Planning Consultant  
Halcrow

Responsible for business development in UK and overseas. Project work included:

- **ESIA/SEA for:**
  - Khalifa port & Industrial Zone (\$10bn) in Abu Dhabi. Client: Abu Dhabi Port Company
  - Senior reviewer of EIAs for onshore wind farms, Clients AMEC, EON, EA, SEEDA, private developers
  
- **Due diligence for:**
  - Confidential Client Advice to British Nuclear Group on EIADR99 (amended 2006)
  - IPPC and planning application for CHP plant at Shell Stanlow. Client: Shell
  - UKRSA93 application for NORMs disposal in oil & gas sector
  - Lead the review team providing environmental advice on Energy Sector Reform in Madhya Pradesh, India. Client: Government of India/DFID,

August 2000 to December 2002: Environmental & Planning Advisor to 186k/National Grid

- 186k was the telecoms subsidiary of the Lattice Group, a FTSE 100 company demerged from BG group. £0.5bn was invested in establishing a state of the art optical fibre network and data centres throughout the UK. I managed the consenting and permitting process with 100% success with Prior Approvals under Telecommunications Act 1984. I effectively managed a large and diverse team of specialist environmental sub-contractors on behalf of National Grid with responsibility for a budget of £4m;
- Developed, implemented and certified to ISO14001, OHSAS18001 an Integrated Health, Safety & Environmental Management System
- Led the environmental auditing and oversight of all due diligence/pre acquisition auditing for company;
- Advised the Board of regulatory, planning and other environmental consenting and permitting requirements and alerting them in a timely manner regarding problems that would have delayed project completion;
- Acted as the focal point for consultations and negotiations with regulatory and non-regulatory bodies and the public.

July 1997 to August 2000: ERM Principal Consultant Oxford

I established a high performance matrix team in Oxford, London and Edinburgh which I grew from a turnover of £100k to >£1M working mainly in the energy industry on a large range of Environmental Impact Assessments (requiring excellent planning and delivery across concurrent projects), Risk Assessments environmental auditing for:

- **Telecommunications:** BG Group, National Grid produced Strategic Environmental Assessment
- **Gas Pipelines EIAs: National Grid, BP and Intergen**
  - 26 km Aylesbury-Chalgrove;
  - 11 km Brisley-Bushy Common;
  - 38 km Mickle Trafford Feeder 21;
  - 25 km Chalgrove-East Ilsley;



- 470 km In Salah Gas Project gas pipeline Algeria;
- 42 km Peterstow to Gwilwern South Wales;
- Wooler to Moffatt 120 km Scotland;
- 4 pipelines 120 km in south west England,
- 17 km in Kent, 23 km in Surrey;
- Numerous feasibility studies;
- St. Fergus to Aberdeen 70 km,
- Gas pipeline in Turkey for InterGen;
- EIA for Aldborough gas storage proposal for BG;
- Benchmarking of Environmental Reporting for National Grid,
- **CCGT Power Plant EIAs:**
  - Kemira Fertilisers Cheshire-PowerGen CHP and Overhead line,
  - Rugby Cement-Scottish Hydro Electric,
  - Britannia Zinc Limited-Scottish Hydro Electric,
  - BP Grangemouth CHP
- **IPC/IPPC Authorisations:** Britannia Zinc Limited CCGT Power Plant; Grangemouth CHP involving consultations with EA and SEPA.

Sept. 1994 to April 1997: **Biosphere Research & Assessment Manager, NDA, Oxford.**

I was instrumental in setting up the International Programme on Biosphere Modelling and Assessment Methods (BIOMASS), including climate change) 1996-1997. It involved over 20 Countries including:

- International Atomic Energy Agency (IAEA) (intergovernmental);
- Statens Stralskyddinstitut (SSI), Sweden;
- Agence Nationale pour la Gestion des Déchets Radioactifs (ANDRA), France;
- British Nuclear Fuels plc (BNFL), United Kingdom;
- Centro de Investigaciones Energéticas Medioambientales y Tecnológicas (CIEMAT)
- Empresa Nacional de Residuos Radiactivos SA (ENRESA), Spain;
- Institut de Protection et de Sûreté Nucléaire (IPSN), France;
- Nationale Genossenschaft für die Lagerung radioaktiver Abfälle (NAGRA), Switzerland;
- Japan Nuclear Cycle Development Institute (JNC), Japan and
- United Kingdom Nirex Limited (Nirex), United Kingdom..

I was responsible for the specification, procurement and effective management of a significant multi-million budget including cost control and forecasting, of research and assessment into the long-term environmental impact (including climate change) of a deep geological radioactive waste management facility. Responsible for the management of quantitative risk assessment programme, near surface hydrogeological and contaminant transport field experiments.

March 1992 to August 1994: **Senior Environmental Consultant, Ove Arup Manchester (Promoted 1993 to Senior)**

Responsible for the management of 2 major EIAs for thermal nuclear plants (PWRs) in UK, with particular responsibility for all environmental and planning aspects of a

reservoir (supporting infrastructure supplying make up water to power plant through flow augmentation) This project had an overall budget of £15M.

Study into ILW storage options at a UK nuclear site- Confidential Client.

Feb. 1990 to Mar. 1992: **Environmental Consultant, WS Atkins Epsom**

18 months on secondment to the Environment Agency (formerly HMIP Radioactive Substances Division) working as the secretariat for the management of research into radioactive waste.

Dec. 1988 - Feb.1990: **Research Scientist, Southampton University.**

Established a radiochemical assay facility for a local authority environmental monitoring programme following Chernobyl.

Nov. 1987 - Dec.1988: **Research Assistant, Bristol University**

Established an  $\alpha$ -particle spectrometry facility for the uranium series dating of speleothems.

### LIST OF PUBLICATIONS

**Broderick, M.,** Durning, B., and Sanchez, L., 2018. Chapter 19: Cumulative Effects. *In* Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 649-677.

**Durning, B, Broderick, M.,** 2018. Chapter 20: Environmental and Social Management Plans. *In* Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 678-703.

**M Broderick,** T Waterfield Overhead lines and underground cables: acceptability issues and strategies, methodologies and techniques for stakeholder engagement – Two UK case studies. CIGRE Symposium 17 Dublin May 2017

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**Martin Broderick**, Nick Medic and Alan Pearson. Cumulative Effects – All at Sea Environmentalist (IEMA April 2013)

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Mike Rankin, Brian Griffin and **Martin Broderick**. IFC raises the bar on environmental health and safety. International Mining, April 2008

**Martin Broderick** & S H Blackford. All Change: Adapting to Consequences of Climate Change. Mining Environmental Management, October 2007.

**Martin Broderick** , Dr Bridget Durning Oxford Institute of Sustainable Development (OISD) & Professor John Glasson (OISD). Environmental Impact Assessment, for Decommissioning Regulations 1999 (EIADR99): A review of the implementation of the Regulations at licensed sites in Great Britain. UK DECOMMISSIONING AND WASTE MANAGEMENT CONFERENCE, Penrith 16-17 October 2007

P Cole and **Martin Broderick**. Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA): An exploration of synergies overseas. 3<sup>rd</sup> International Conference on Sustainable Development and Planning, April 2007.

**Martin Broderick** and B. Durning. Environmental Impact Assessment (EIA) and Environmental Management Plans (EMPs) – an example of an integrated process from the UK. Geo-Environmental Conference. Rhodes, June 2006.

Contributing Author to "Reference Biospheres" for solid radioactive waste disposal. Report of BIOMASS Theme 1 of the BIOSphere Modelling and ASSESSment (BIOMASS) Programme. Part of the IAEA Co-ordinated Research Project on Biosphere Modelling and Assessment (BIOMASS). July 2003.

**Martin Broderick** and J. R Mitchell. EIA of Natural Gas Pipelines in the UK under the New Public Gas Transporter Regulations–Case Studies in Scotland, England and Wales. Onshore Pipelines Conference Paris. October 2000.

**Martin Broderick**, M J Egan, J A Williams and M C Thorne. Post Closure Performance Assessment – Treatment of the Biosphere. Winnipeg. International Conference on Deep Geological Disposal of Radioactive Waste. September 1996

**Martin Broderick**, M J Egan and M C Thorne. UK Nirex approach to the Protection of the Natural Environment. Stockholm. International Symposium on Ionising Radiation. May 1996

Contributing Author to BIOMOVs II Technical Report No.6. Development of a Reference Biospheres Methodology for Radioactive Waste Disposal. ISBN 91-972134-5-4. September 1996.

Dr Bridget Durning:



### **Key Relevant Experience**

Bridget Durning is Senior Lecturer in Environmental Assessment and Management in the School of the Built Environment, Oxford Brookes University and co-ordinates the OISD:IAU research group. She is also Faculty Research Ethics Officer and a member of the University Research Ethics Committee. Dr Durning has a PhD in Geology, is a Chartered Geologist and has over twenty five years of experience of working in the private sector, local government and academia in the fields of environmental assessment and management. Dr Durning is highly efficient in the management of teams and the delivery of projects, and in the development and implementation of effective systems and processes to deliver desired outputs.

### **Tertiary Education**

- 1983-1986: University of Liverpool - BSc (Honours) Geology
- 1986-1989: University of Exeter - PhD Geology
- 2010-2011: Oxford Brookes University – Certificate in Teaching in Higher Education
- 2011-2012: Institute for Leadership and Management – Diploma in Management

### **Career to date:**

**2000 to date: Oxford Brookes University.** Currently Senior Research Fellow OISD:IAU and Faculty Research Manager. Examples of recent projects that involve evaluation/assessment of practice and exploration of efficiency of processes:

- June 2017- October 2019: The Effect of Offshore Wind on the Human Environment (funded by Vattenfall via EOWDC Research Programme)
- 2014-2015: Cumulative Effects Assessment mini review (funded by Natural Environment Research Council (NERC))
- 2010-date: International comparative study of EIA practice focussing on 'Accounting for Carbon in EIA' (funded by a Santander Scholarship Grant and Oxford Brookes University)
- 2008-2010: 'Reinvention Centre' (Warwick University/Oxford Brookes University Centre of Excellence in Teaching and Learning) Fellowship to evaluate ways to enhance undergraduate research based activities in the School of the Built Environment at Oxford Brookes.
- 2006-2007: Exploration of 'Professional Knowledge Development for Sustainable Communities' for Royal Town Planning Institute

**1995 to 2000: Senior Environmental Scientist with ENSR International Limited (formerly part of Fugro Environmental Limited until 1997).** Responsible for project management and execution of a range of projects relating to land and property development including: environmental and geological site assessments; phase I, phase II, pre-acquisition and pre divestment due diligence and compliance audits (including HS&E); development of EMS and land assessment guides; land reclamation projects; environmental baseline studies and applied geology projects

**1993 to 1995: Environmental Scientist with the Environmental Advisory Service (formerly the Joint Countryside Advisory Service), an organisation funded by Sefton, St.Helens and Knowsley Metropolitan Borough Councils.** Part of a specialist unit funded by the planning departments of three local authorities to provide advice to local government officers on all aspects of natural resources. Primarily responsible for providing specific advice and guidance on natural resources in relation to proposals and issues dealing with sustainable development issues including contaminated land, land reclamation and restoration, minerals, waste disposal, and impact of developments on hydrogeology. Involved in the scoping and assessment of the quality of environmental statements submitted with planning applications and providing advice on the development of strategic planning policies for natural resources Gave evidence at public inquiry on behalf of Knowsley MBC.

**1989 to 1993: Geologist with Wimpey Environmental Limited.** Undertook a broad range of projects ranging through mineral resource evaluations of greenfield sites and existing quarries; aggregate testing to British and American standards; engineering geological projects on opencast sites and potentially undermined sites; assessment of heavy metal and gas contaminated sites; and geotechnical investigations for foundation design.

### **Examples of Relevant Publications**

Durning B and Broderick M (in submission) Development of Cumulative Impact Assessment Guidelines for offshore wind farms and evaluation of use in project making. Impact Assessment and Project Appraisal.

Broderick, M Durning, B and Sanchez L (2018) Cumulative effects assessment. In Therivel R and Wood G, Methods of Environmental Impact Assessment (4th ed) Routledge.

Durning B and Broderick M (2018) Environmental and social management plans. In Therivel R and Wood G, Methods of Environmental Impact Assessment (4th ed) Routledge.

Durning B (2014) Benefits of coupling environmental assessment and environmental management to aid disaster risk reduction and management. Journal of Environmental Assessment Policy and Management 16 (3) 1450029.

Durning B (2013) 'Climate Change and EIA'. Conference of Ireland/UK Branch of International Association for Impact Assessment (IAIA): 'Celebrating 25years of EIA in the UK', University of Liverpool, 10th June (invited speaker).

Durning B (2012) 'Carbon counting and EIA process'. Paper presented to 32nd Annual Conference of the International Association for Impact Assessment (IAIA), Oporto, Portugal, May.

Durning B (2012) 'Environmental Management Plans – origins, usage and development' In Perdicoulis, A. Durning, B and Palframan L (eds) 'Furthering Environmental Impact Assessment: towards a seamless connection between EIA and EMS'. Edward Elgar: Cheltenham.

Durning B (2012) 'Furthering environmental assessment through continuing assessment into management as an aid to integrating disaster risk reduction measures into development'. Japan-UK Joint Workshop: 'Policy Integration between Environmental Assessment and Disaster Management' Chiba University of Commerce, Ichikawa, Japan, 30th November – 3rd December (invited speaker).

Durning B and Broderick M (2012) 'Reflection on Appreciative Inquiry as a Possible Tool for Effective Public Participation in Environmental and Social Impact Assessment (ESIA)'. Development Studies Association Annual Conference, 3rd November 2012, London.

Watkins J and Durning B (2012) 'Carbon definitions and typologies in environmental impact assessment: greenhouse gas confusion?' *Impact Assessment and Project Appraisal* 30 (4) 296-301.

Durning B and Broderick M (2010) 'Follow-up in ESIA as an aid to greening economies'. Paper presented at 30th Annual Conference of the International Association for Impact Assessment (IAIA) 'The role of impact assessment in transitioning to the green economy', Geneva, Switzerland, 6-11th April.

Perdicoulis, T. and Durning, B (2007) 'Framework for EIA and EMS integration'. *Journal of Environmental Assessment Policy and Management* 9(4) 385-397.

Durning, B, Broderick M, Ferguson, D and Evans, S (2008) 'Impact of the Equator Principles on EIA practice – implications for improving practice in UK and Ireland'. IAIA Ireland/UK Branch Event, 4th December, Oxford.

Broderick, M., Durning, B. and Glasson, J. (2007) 'Environmental Impact Assessment for Decommissioning Regulations 1999 (EIADR99): A review of the implementation of the Regulations in Great Britain' UK Decommissioning and Waste Management.

Broderick, M. and Durning, B. (2006) 'Environmental impact assessment and environmental management plans – an example of an integrated process from the UK'. In J.F. Martin-Duque, et al (eds) *Geo-Environment and Landscape Evolution II* WIT Transactions Ecology and the Environment Volume 89. WITPress,

## Annex B – Cumulative Impact Assessment (CIA) Analytical Framework



<b>CIA details:</b>	<b>Location: Stansted Airport</b> <b>Status: Operational – application for a variation on passenger numbers</b> <b>Proponent: Stansted Airport Ltd</b> <b>Lead author of ES/CIA: RPS see Appendix 1.1</b>
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The IAU review grades are based upon the grading system developed by Manchester University for their review package<sup>26</sup>. These grades are given in Table 1:

A = indicates that the work has generally been well performed with no important omissions;
B = work is generally satisfactory and complete with only minor omissions and inadequacies;
C = work is regarded as just satisfactory despite some omissions or inadequacies;
D = indicates that parts are well attempted but, on the whole, just unsatisfactory because of omissions or inadequacies;
E = work is not satisfactory, revealing significant omissions or inadequacies;
F = work is very unsatisfactory with important task(s) poorly done or not attempted.

Table 1: Review Grades

These grades can be used to test the CIA’s compliance with the relevant Regulations<sup>27</sup>, with the pass/fail mark lying between grades ‘C’ and ‘D’. By using this grading system, the reviewer can more readily identify the aspects of the ES/CIA that need completing and because the grading system is well established, the competent authority can confidently justify any requests for further information.

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<sup>26</sup> These are:

- Lee N & Colley R (1990), *Reviewing the Quality of Environmental Statements, Occasional Paper No. 24*, EIA Centre, University of Manchester; and as updated by Lee N, Colley R, Bonde R & Simpson J (1999),
- *Reviewing the Quality of Environmental Statements and Environmental Appraisals, Occasional Paper No55*, EIA Centre, University of Manchester.

<b>CIA assessment criteria<sup>28, 29</sup></b>	<b>Observations</b>	<b>Grade<sup>30</sup></b>
1) How and where is pertinent CIA information included in the ES?	Chapter 17 collation and in chapters 6-15	B
2) What is the definition of CIA stated in the ES?	Two types of cumulative effects have been considered within this ES: 1. Type 1 – The interactive effects resulting from the associated effects of individual components or activities of the proposed development on a sensitive receptor, for example noise, airborne dust or traffic effects on a single receptor / group of receptors; and 2. Type 2 – The combined effects of several schemes which may on an individual basis be insignificant (negligible or minor), but additively, have a significant (moderate or major) effect..	B
3) How are cumulative impacts i.e. additive, incremental, distinguished from synergistic <sup>31</sup> impacts?	Type 1- Synergistic Type 2 - Additive.	B

<sup>27</sup> The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/572); The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/571);

<sup>28</sup> Modified from Kotze, I (2001). Integrating the Assessment of Cumulative Impact into Environmental Impact Assessment and Strategic Environmental Assessment in South Africa. Environmental Assessment Yearbook 2001. Institute of Environmental Management and Assessment and the EIA Centre (University of Manchester).

<sup>29</sup> Renewable UK - Guiding Principles for Cumulative Impact Assessment in Offshore Wind Farms. July 2013

<sup>30</sup> The IAU Oxford Brookes University Environmental Statement Review Package framework master is contained in Appendix 5 of Glasson et al (2018) Introduction to Environmental Impact Assessment (5<sup>th</sup> Edition), Routledge

<sup>31</sup> Sometimes referred to as “in combination” impacts in EIA. However, the Habitats Directive uses “in combination” to mean cumulative impacts (both additive and synergistic).

4) What methods are used to undertake scoping?	Described in 17.9 and 17.35 of ES. Also in Scoping Report(Appendix 2.1) 4.16-4.19 and Scoping Opinion (21/12/17) states: " 27. The proposed list of Cumulative Schemes must be agreed with UDC, and other relevant local authorities as appropriate. The long list of Cumulative Schemes should be given in an Appendix to the ES and justification given as to why schemes are not included in the shorter iteration of that list. It should be acknowledged that, in some topic areas, the list of Cumulative Schemes will vary and explanations should be given for any such differences."	C
5) Has the scoping been iterative ie reviewed and revisited?	No explicit evidence provided. However, there have been amendments to passenger numbers.	C/D
6) How were stakeholders engaged?	Through SCI but CIA not explicitly addressed.	C/D
7) How are relevant stakeholder CIA responses recorded in the ES?	UDC consulted on cumulative schemes to be included but it is not clearly evidenced that the proposed list of Cumulative Schemes (Tables 17.1, 17.2) has been agreed with UDC, and other relevant local authorities as appropriate.	C/D
8) Are spatial/ geographical boundaries for the project clearly established overall?	Set at 2km at paragraph 17.9 and within defined study areas in chapters 6-15.	C
9) How are the temporal boundaries established?	Not explicitly defined in chapter 17 but in Chapter 6 up to 2028	C/D
10) Is the temporal scope for analysis clearly established?	Not explicitly in Chapter 17	C/D
11) What range of other projects are considered <sup>32</sup> ?	i, ii and iii. This meets the requirements of the 2017 TCP EIA Regulations i.e.Schedule 3 1(b) and 3(g) and Schedule 4 5(e). However this does not accord with current best practice <sup>35</sup>	C

<sup>32</sup> 2017 IP and TCP EIA Regulations has narrowed this to "existing and/or approved" projects.

<sup>35</sup> **Broderick, M.,** Durning, B., and Sanchez, L., 2018. Chapter 19: Cumulative Effects. In Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 649-677.

<p>a) In scoping cumulative impacts, reasonably foreseeable other major developments, plans and activities should be identified through consultation with the local planning authorities and other relevant authorities on the basis of those that are:</p> <ul style="list-style-type: none"> <li>(i) under construction;</li> <li>(ii) permitted application(s), but not yet under construction;</li> <li>(iii) submitted application(s) not yet determined;</li> <li>(iv) those registered with PINS</li> <li>(v) identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited, and</li> <li>(vi) Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is</li> </ul>		
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reasonably likely to come forward. <sup>33 34</sup>		
12) Is there a tabulated long list of Reasonably Forseeable Future Projects (RFFPs)?	Yes Tables 17.1 and 17.2	C
13) Is there a map of RFFPs?	Yes Figure 17.1 but only for committed developments	C
14) Is the long list of RFFPs reduced to a short list of CIA Projects to be cumulatively assessed?	No explicit process described on how they arrived at Tables 17.1-17.3.	C/D
15) Are reasons for ruling RFFPs out given i.e. source – pathway –receptor?	No	C/D
16) Is there a tabulated short list of CIA Projects?	No	C/D

<sup>33</sup> PINS [Advice note nine: Rochdale Envelope](#) (PDF 450 KB) Republished April 2012 (version 2); PINS Advice Note 17 CEA April 2015

<sup>34</sup> DCLG Planning Act 2008. Guidance on the pre-application process. January 2013. Para 87 states:

*It may not always be easy for applicants to assess potential impacts fully due to lack of available information. In such circumstances, applicants should take a pragmatic approach when determining what is feasible and reasonable. They should satisfy themselves that they have made all reasonable efforts to identify the main impacts and to include mitigation measures in their draft Order. There may be occasions when projects assessed for cumulative impacts will not ultimately be built - so only those identified through scoping opinion, or for which development consent has been granted or applied for, should reasonably be considered. As with the parameters for the Rochdale Envelope, applicants should fully explain their options to the Secretary of State as part of their application. National Policy Statements provide a useful overview of common impacts and ways of mitigating them.*

17) Is there a map of the short list CIA Projects'?	No but the Applicant could argue Figure 17.1 is the map.	C
18) How have the receptors been defined? e.g. VEC is often used to refer to 'Valued Ecosystem Component' but is also used to refer to 'Valued environmental and social component' (IFC, 2013)	At paragraph receptors are mentioned in 17.2 and in chapters 6-15. The Applicant states at paragraph 17.13: " <i>There is no established EIA methodology to assess and quantify Type 1 or Type 2 cumulative effects on sensitive receptors.</i> " This is not correct <sup>36</sup>	C
19) Has it been determined what past, present and future human activities (sources) have affected or will affect these receptors,	Not in Chapter 17 but it is done in Chapters 6-15.	C
20) Is it clearly defined what the 'source-pathway-receptor' links are?  Are the: - Source - Pathway - Receptors	Not in Chapter 17 but it is done in Chapters 6-15.	C

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- <sup>36</sup> **Broderick, M.**, Durning, B., and Sanchez, L., 2018. Chapter 19: Cumulative Effects. *In* Therivel R, Wood G, editors. *Methods of Environmental and Social Impact Assessment*. 4th ed. New York: Routledge; p. 649-677.)
  - Natural England Commissioned Report NECR147 Development of a generic framework for informing Cumulative Impact Assessments (CIA) related to Marine Protected Areas through evaluation of best practice April 2014

identified?		
21) Were the environmental threshold, pollution, climate or baseline conditions fully understood or established – where there any uncertainties or limitations?	Yes in Chapters 6-15 but limitations not consistently discussed.	C
22) Have any thresholds or indicators of significant impact been defined or established?	Yes Chapters 6, 7, 8 and 9.	C
23) Were tools used to evaluate the cumulative (sensu lato) impact e.g. network analysis, carrying capacity, ecosystems analysis etc)?  Are the quantitative tools supported by qualitative discussion based on professional judgement?	Yes quantitative tools are used e.g. Essex Biodiversity Checklist, June 2015 and use of expert judgement in qualitative assessment is explicitly discussed in 6.68, 11.45 and 14.26.	B/C
24) Are mitigation measures proposed and mitigation measures assessed?	Yes in Chapter 18	C
25) In mitigation recommendations, were alternatives recommended to mitigate cumulative impact specifically?	No significant cumulative impacts identified in assessment.	C

26) Are residual impact after mitigation considered? Are they clearly stated and defended?	Yes in Chapter 18	C
27) Is monitoring proposed?	No but anticipated as part of conditions and via the CEMP. The Applicant states at 18.13: <i>" 18.13 If permission for 35+ is granted by UDC, planning conditions and legal agreements (i.e. Section 106) may be used to secure the implementation and subsequent monitoring of the mitigation measures, together with other 'reasonable and related' planning controls which may be considered necessary. Moreover, STAL will continue to implement its existing environmental and community investment programmes and initiatives, which are included in the 2015 SDP, and to extend and enhance these to cater for the additional growth which would be allowed if planning permission is granted."</i>	C
28) Is there an Environmental Management Plan (EMP), Construction EMP or any other MP?	Yes CEMP, CTMP but no EMP	C
29) Were possible cumulative impacts included in the monitoring or management plan?	No	C/D
30) How are cumulative impact summarised in the non-technical summary	Cumulative Schemes Figure 6:	B/C



	<p>As required by the EIA Regulations, consideration has been given to the potential for the 'cumulation' of environmental effects of the proposed development when combined with other proposed, committed or reasonably foreseeable developments within the immediate locality.</p> <p>A total of 15 committed developments were assessed within the ES, with a further five planning applications that are still awaiting determination by UDC also considered. Figure 6 shows the committed developments considered within the ES, and their location.</p> <p>Many of these developments are likely to be built and fully operational before 2023. They therefore form part of the projected baseline for the EIA, against which the environmental effects of the proposed development have been assessed (e.g. new houses enclosed by the air noise contours).</p>	
31) What is your overall impression?	The CIA is regarded as adequate for the purposes 2017 TCP EIA Regulations with parts which are well attempted e.g. definition at 17.2 Figure 17.1 map, but on the whole, just unsatisfactory because of omissions e.g. scoping, not up to date with best practice and inadequacies e.g. consultations	C/D