codling wind park

Environmental Impact Assessment Report

Volume 4

Appendix 16.1 Cumulative Effects Assessment


codling
wind park

Table of contents

List of tables

Abbreviations

Abbreviation	Term in Full
ALARP	As Low As Reasonably Practicable
AtoN	Aid to navigation
CEA	Cumulative Effects Assessment
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea
CWP	Codling Wind Park
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
EU	European Union
FSA	Formal Safety Assessment
IMO	International Maritime Organization
IRCG	Irish Coastguard
km	Kilometre
LMP	Lighting and Marking Plan
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note
MW	Megawatt
nm	Nautical Mile
NRA	Navigational Risk Assessment
NSP	Navigational Safety Plan
OSS	Offshore Substation
OWF	Offshore Wind Farm
PINS	Planning Inspectorate
SAR	Search and Rescue
SID	Strategic Infrastructure Development
SOLAS	International Convention for the Safety of Life at Sea
UK	United Kingdom
WTG	Wind Turbine Generator

Definitions

Glossary	Meaning
Allision	The act of striking or collision of a moving vessel against a stationary object.
Collision	The act or process of colliding (contact) between two moving objects.
Formal Safety Assessment (FSA)	A structured and systematic process for assessing the risks and costs (if applicable) associated with shipping activity.
Marine Guidance Note (MGN)	A system of guidance notes issued by the Maritime and Coastguard Agency (MCA) which provide significant advice relating to the improvement of the safety of shipping at sea, and to prevent or minimise pollution from shipping.
Navigational Risk Assessment (NRA)	A document which assesses the hazards to shipping and navigation of a proposed Offshore Renewable Energy Installation (OREI) based upon the FSA.
Regular Operator	Commercial operator whose vessel(s) are observed to transit through a particular region on a regular basis.

APPENDIX 16.1 CUMULATIVE EFFECTS ASSESSMENT

1 Introduction

1. Codling Wind Park Limited (hereafter 'the Applicant') is proposing to develop the Codling Wind Park (CWP) Project, which is located in the Irish sea approximately 13–22 kilometres (km) off the east coast of Ireland, at County Wicklow.

2. The Environmental Impact Assessment Report (EIAR) for the CWP Project provides the decision-maker, stakeholders and all interested parties with the environmental information required to develop an informed view of any likely significant effects resulting from the CWP Project, as required by the European Union (EU) Directive 2011/92/EU (as amended by Directive 2014/52/EU) (the Environmental Impact Assessment (EIA) Directive). These provisions are transposed into Irish legislation in Part X of the Planning and Development Act 2000, as amended, and in Part 10 of the Planning and Development Regulations 2001, as amended.

3. A fundamental component of the EIA is to consider and assess the potential for cumulative effects of the project with other projects, plans and activities (hereafter referred to as 'other development').

4. The Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) defines cumulative effects as:

> *'The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.*
>
> *While a single activity may itself result in a minor impact, it may, when combined with other impacts (minor or insignificant), result in a cumulative impact that is collectively significant. For example, effects on traffic due to an individual industrial project may be acceptable; however, it may be necessary to assess the cumulative effects taking account of traffic generated by other permitted or planned projects.'*

5. This appendix presents the findings of the Cumulative Effects Assessment (CEA) for shipping and navigation, which considers the residual effects presented in **Volume 3, Chapter 16 Shipping and Navigation** alongside the potential effects of other proposed and reasonably foreseeable development. Cumulative effects are considered in this document across the construction and operation and maintenance phases of the CWP Project.

6. The detail and scope of the decommissioning works for the CWP Project will be determined by the relevant legislation and guidance at the time of decommissioning. Project alone impacts during the decommissioning phase of the CWP Project are assessed in **Volume 3, Chapter 16 Shipping and Navigation**. It is anticipated that the impacts will be no greater than those identified for the construction phase, and therefore no separate assessment of cumulative impacts during the decommissioning phase is presented within this CEA.

2 CEA methodology

2.1 Guidance

7. This section summarises the approach to the assessment of cumulative effects for the CWP Project. Further details on the approach to the CEA is provided in **Appendix 5.1 Cumulative Effects Assessment Methodology**.

8. The principal guidance document that has informed the approach to the CEA is the Planning Inspectorate (PINS) for England 'Advice Note 17: Cumulative Effects Assessment' (PINS, 2019), which provides a four stage process for the assessment of cumulative effects which has been applied here.

9. This guidance has been applied for a number of both Offshore Wind Farm (OWF) and non-OWF projects in the United Kingdom (UK), and is considered to provide developers with a structured approach to assessing cumulative effects. The guidance is also regularly applied in Ireland for large scale projects, noting that there is no single, industry standard approach to CEA in Ireland which often varies between projects.

10. In developing the CEA methodology, EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) and Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission, 1999) has also been considered.

11. For shipping and navigation, in line with stakeholder feedback to date, the principles of cumulative assessment included in the Maritime and Coastguard Agency (MCA) Marine Guidance Note (MGN) 654 (MCA, 2021) have also been considered. MGN 654 (MCA, 2021) requires the use of the International Maritime Organization (IMO) Formal Safety Assessment (FSA) (IMO, 2018). Therefore, the FSA has been used to assess impacts to shipping and navigation users.

2.2 Consultation

12. **Table 1** provides a summary of stakeholder and regulator feedback received during the consultation process that is relevant to the CEA for shipping and navigation.

Table 1 Consultation responses relevant to the CEA for shipping and navigation

Consultee	Comment	How issues have been addressed
Scoping responses		
Irish Lights 1 July 2021	'Cumulative impacts – altered routeing cumulatively and potential impact on safety of navigation if all Dublin traffic either diverts north of Kish with a dog-leg into / from Irish Sea, or else goes inshore of banks and between Wicklow Head and OWP in / out of Irish Sea.'	The referenced scenarios have been considered in Section 5.
Topic specific meetings		
Irish Lights 25 March 2021	Irish Lights would expect consideration within the Navigational Risk Assessment (NRA) around cumulative effects on routeing, including the effect on vessels associated with Dublin Port, noting planned projects in the area may affect whether such vessels pass inshore or offshore of the banks. In particular,	The referenced scenarios have been considered in Section 5.

Consultee	Comment	How issues have been addressed
	scenarios whereby Dublin traffic either diverts north of Kish and dog-legging into / from Irish Sea, or else goes inshore of the banks.	
Dublin Port 16 June 2021	The assessment should consider cumulative developments including those off Wicklow coast.	Screening of cumulative developments has been undertaken in Section 4.
RNLI 28 February 2023	Project vessels including on a cumulative basis should be considered.	Impacts from project vessels have been assessed in Section 5.
Irish Lights 23 October 2023	There will likely be a need to move certain existing Aids to Navigation (AtoNs), noting this process will consider other local cumulative developments.	Cumulative impacts to vessel routeing are considered in Section 5.
Other		
Hazard Workshop 17 January 2023	Potential for cumulative developments leading to reduction of sea room inshore of the local banks should be considered.	Associated impacts have been assessed in Section 5.

2.3 Identification of 'other development'

13. Stage 1 of the process involved establishing the long list of other development with the potential to result in cumulative effects with the CWP Project. This included all projects that result in a comparative effect that is not intrinsically considered as part of the existing environment and is not limited to other OWF projects.

14. The long list of other development (presented in **Chapter 5**, **Appendix 5.1 Cumulative Effects Assessment Methodology**) was then subject to additional screening criteria to establish a short list of other development for each topic. It should be noted that the approach to the CEA attempts to incorporate an appropriate level of pragmatism. Only projects which are well described and sufficiently advanced, with sufficient detail available with which to undertake a meaningful and robust assessment, have been screened into the CEA.

15. In accordance with PINS Advice Note 17, each development considered alongside the CWP Project as part of the CEA has been assigned to a tier, reflecting their current status in the planning and development process.

16. The purpose of the tiered approach is to give consideration to the level of certainty that a cumulative project will be built and therefore contribute to cumulative effects. For example, there can be greater certainty that other development approved and under construction are likely to contribute to cumulative effects, whereas other development at early phases of development (i.e., pre-planning) are less likely to proceed to construction and contribute to cumulative effects. Furthermore, sufficient detail about these projects is unlikely to be available with which to undertake a detailed cumulative assessment.

17. The proposed tiering structure is presented in **Table 2** and described in more detail in **Appendix 5.1 Cumulative Effects Assessment Methodology**. The tiers are listed in descending order of level of detail likely to be available (and, correspondingly, certainty of effects arising).

Table 2 Tiered structure for other development considered for CEA (modified from PINS advice note 17 (PINS, 2019))

Tier	Description
Tier 1	• Under construction. • Permitted applications, but not yet implemented. • Offshore applications submitted six months or more in advance of the CWP Project planning application, but not yet determined. • Onshore applications submitted six months or more in advance of the CWP Project planning application, but not yet determined.
Tier 2a	• Offshore projects in receipt of a Maritime Area Consent (MAC) and an ORESS contract.
Tier 2b	• Other offshore projects in receipt of a Maritime Area Consent (MAC); • Offshore Projects in the public domain where an EIA scoping report has been issued; and • Onshore Projects in the public domain where an EIA scoping report has been issued
Tier 3	• Projects in the public domain where an EIA scoping report has not been issued. • Projects that have been identified in the relevant development plans and programmes, which set the framework for future development consents / approvals, where such development is reasonably likely to come forward.

3 CEA impact screening

18. The first step in the CEA for shipping and navigation is the identification of which residual impacts assessed for the CWP Project alone have the potential for a cumulative impact with other development (described as 'impact screening'). This screening exercise is set out in **Table 3** below.

19. All impacts assessed in **Chapter 16 Shipping and Navigation** have been considered for the potential for cumulative effect.

20. In summary, **Table 3** shows that there is the potential for cumulative effects on shipping and navigation.

Table 3 Cumulative impact screening

Impact	Potential for cumulative effect	Rationale
Construction		
Impact 1: Vessel displacement leading to increased encounters and collision risk	Yes	Key stakeholder concern was cumulative impact of displacement.
Impact 2: Increased collision risk (third party with project vessel)	Yes	Potential for increased collision risk from project vessels associated with cumulative developments.

Impact 3: Vessel to structure allision risk (vessel to structure)	Yes	Potential for increased allision risk on a cumulative basis.
Impact 4: Reduction in emergency response capability	Yes	Potential for cumulative impacts on baseline incident rates.
Impact 5: Port Access Restrictions	Yes	Potential for cumulative impacts on port access.
Operation		
Impact 1: Vessel displacement leading to increased encounters and collision risk	Yes	Key stakeholder concern was cumulative impact of displacement.
Impact 2: Increased collision risk (third party with project vessel)	Yes	Potential for increased collision risk from project vessels associated with cumulative developments.
Impact 3: Vessel to structure allision risk (vessel to structure)	Yes	Potential for increased allision risk on a cumulative basis.
Impact 4: Reduction in emergency response capability	Yes	Potential for cumulative impacts on baseline incident rates.
Impact 5: Port access restrictions	Yes	Potential for cumulative impacts on port access.
Impact 6: Reduction in under keel clearance	No	Risk localised to specific cables, and no pathway for cumulative effect.
Impact 7: Anchor interaction with subsea cables	No	Risk localised to specific cables, and no pathway for cumulative effect.

4 CEA 'other development' screening

21. The second step in the CEA for shipping and navigation is the identification of the other development that may result in cumulative effects for inclusion in the CEA (described as 'project screening'). This information is set out in **Table 4** below, together with a consideration of the relevant details of each development, including the tier (see **Table 2**), proximity to the CWP Project development area and a rationale for including or excluding from the assessment. For shipping and navigation, relevant developments within 50 nautical miles (nm) have been considered within the NRA for potential impacts on vessel routeing. Existing developments including oil and gas are already implicitly impacting vessel routeing and therefore captured within the baseline.

22. The other development included in the table below are taken from the long list of other development (presented in **Volume 4**, **Appendix 5.3 CEA Methodology**). Information gathering for the other development screened in at Stage 2 of the CEA, along with a greater understanding of the potential effects of the CWP Project, has enabled further refinement of the short list.

23. In summary, the following other development will be assessed for potential cumulative effects with the CWP Project in relation to shipping and navigation.

- RWE Renewables – Dublin Array (CEA-0037 Off);
- Sure Partners Limited / SSE Renewables – Arklow Bank Phase 1 (CEA-0003 Off);
- Sure Partners Limited / SSE Renewables – Arklow Bank Phase 2 (CEA-0004 Off);
- Statkraft Ireland – North Irish Sea Array (CEA-0094Off);

- Morlais Demonstrator (CEA-0231 Off);
- Minesto – Holyhead Deep 0.5MW Demonstrator Site (CEA-0234 Off); and
- Parkwind NV/ESB – Oriel (CEA-0096Off).

Table 4 Summary of other development screened into the CEA for shipping and navigation

Development	Distance from the array site (nm)	Distance from the export cable corridor (nm)	Tier	Included in the CEA (Yes/No)	Rationale
Arklow Bank OWF Phase 1 (CEA-0003 Off) Offshore renewable energy developments	11.5	16.7	1	No	Part of baseline
Dublin Array (CEA-0037 Off) Offshore renewable energy developments	1.5	1.1	2a	Yes	Relevant project which may impact routeing
Arklow Bank Phase 2 OWF (CEA-0004 Off) Offshore renewable energy developments	5.3	5.3	2b	Yes	Relevant project which may impact routeing
North Irish Sea Array OWF (CEA-0094 Off) Offshore renewable energy developments	22.0	12.4	2a	Yes	Relevant project which may impact routeing
Morlais Demonstrator Offshore renewable energy developments (CEA-0231 Off)	34.6	40.5	1	No	Low data confidence
Holyhead Deep Offshore renewable energy developments (CEA-0234 Off)	34.6	40.5	1	No	Does not cumulatively impact routes
Oriel OWF Offshore renewable energy developments (CEA-0096 Off)	45.5	33.5	2b	Yes	Relevant project which may impact routeing

5 Assessment of cumulative effects

5.1 Construction phase

5.1.1 Cumulative impact 1: Vessel displacement leading to increased encounters and collision risk

24. The residual impact for the CWP Project in isolation was assessed as being **tolerable and As Low As Reasonably Practicable (ALARP)** during the construction phase.

25. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

26. For Tier 2a and Tier 2b projects, as per the cumulative routeing assessment undertaken in the NRA, there were only minor changes in terms of deviation magnitudes between the in isolation and cumulative routeing assessments. This is reflective of the majority of vessels in the area already avoiding the shallow banks, meaning that in addition to there being limited impact from the CWP Project, there is limited additional cumulative impact from the proposed Dublin Array project to the north (located on the Kish and Bray Banks) and from the proposed Arklow Bank project to the south (situated on the Arklow Bank). The majority of vessels in the area are already avoiding these banks.

27. As per the cumulative routeing assessment undertaken in the NRA, vessels on routes to or from Drogheda will likely pass in proximity to NISA. The CWP project will have low impact on this routeing and will have no impact on access to Drogheda (located in excess of 30 nm north of the array site). On this basis, deviations within the localised area around the array site are likely to be no different to the in isolation case. No main routes were identified as directly interacting with Oriel.

28. It was noted at the Hazard Workshop that promulgation of information will be a key mitigation to manage this impact, in particular in relation to installation of export cables for the CWP project and Tier 2a projects. The CWP Project approach to promulgation of information is set out in the **Navigational Safety Plan** (NSP), and it is likely that other cumulative projects will take a similar approach. This will ensure mariners are aware of the ongoing construction works associated with the CWP Project and also the statuses of other cumulative developments. Any displacement impact associated with the OECC and any other Tier 2 export cable installation will be temporary in nature and spatially limited to the area around the operation.

29. Irish Lights raised during consultation (see Section 2) that in addition to a scenario where vessels pass inshore of the local shallow banks, the possibility that vessels going to or from Dublin Port may pass offshore of the banks in the cumulative scenario should also be considered. It is not considered likely that many vessels currently passing inshore would choose this passage assuming the presence of Tier 1 and Tier 2 developments given that Dublin Port could still be accessed via the inshore routeing, and it was not suggested either at the Hazard Workshop or during the regular operators outreach that vessels may choose such passage. It is noted that there is sea room available to accommodate such a deviation should vessels so choose.

30. Irish Lights also indicated during consultation that there may be a need to consider the existing buoyage with regards to how risks to vessel routeing were managed, including cumulatively with other developments. The CWP Project will work with Irish Lights as part of the Lighting and Marking Plan (LMP) process to ensure that buoyage and AtoNs associated with the CWP Project are suitable to manage any risk. This will consider the need for temporary buoyage during construction.

31. Noting the promulgation of information approach as set out in the NSP, and agreement of lighting and marking via the LMP process, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

32. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.1.2 Cumulative impact 2: Increased collision risk (third party with project vessel)

33. The residual impact for the CWP project in isolation was assessed as being **tolerable and ALARP** during the construction phase.

34. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

35. All vessels associated with the construction of the CWP project will comply with the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (IMO, 1972/77) and International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974); regulations and movements will be managed via marine coordination. The CWP Project may also utilise advisory safe passing distances around works, structures and / or construction vessels to alert passing third-party traffic to areas which should be avoided to minimise collision risk. Moreover, the buoyed construction area will serve to protect project vessels from passing third-party vessels, noting that third-party vessels are not expected to regularly navigate within the buoyed construction area. These measures are set out in the NSP.

36. It is noted that the approaches taken by other projects with regards to vessel procedures, and also the ports to be used, cannot be confirmed at this stage. However. all vessels associated with other cumulative developments will be required to comply with the COLREGs (IMO, 1972/77) and SOLAS (IMO, 1974), and it is considered likely that similar measures in terms of use of advisory safe passing distances and use of construction buoyage may also be implemented.

37. It was raised at the Hazard Workshop that the cable installation process would require careful planning and management to ensure interaction with third-party traffic was limited, noting general concern about the cumulative impact on vessels passing inshore of the local shallow banks. As above, details of the associated works will be promulgated, advisory safe passing distances may be used and any interactions will be managed via COLREGs, noting that they will likely be localised in nature and short term in duration. Therefore, should an encounter incident occur, the vessels involved are likely to able to resume their respective passages with no long-term consequences.

38. Noting the promulgation of information approach as set out in the NSP, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

39. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.1.3 Cumulative impact 3: Vessel to structure allision risk (vessel to structure)

40. The residual impact for the CWP Project in isolation was assessed as being **tolerable and ALARP** during the construction phase.

41. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

42. Given limited anticipated change to cumulative routeing patterns over the in isolation case, there is unlikely to be any notable increase in localised allision risk to vessels passing the array site. Lighting and marking during construction, in agreement with Irish Lights, will ensure that localised risk is managed, noting this may include use of temporary construction buoyage.

43. Other developments will also be required to agree lighting and marking with Irish Lights, noting that Irish Lights also indicated during consultation (see Section 2) that existing buoyage would need to be considered cumulatively to ensure that cumulative risks to vessels including allision were managed. The CWP Project will work with Irish Lights as part of the LMP process to ensure that buoyage and AtoNs associated with the CWP Project are suitable to manage any risk during the construction phase.

44. The CWP Project approach to promulgation of information is set out in the NSP, and this will ensure that mariners are aware of the presence of partially completed and pre-commissioned structures, which will minimise allision risk. It is likely that other cumulative projects will take a similar approach. This will ensure mariners are aware of the ongoing construction works associated with the CWP Project, including the status of structures, and also the statuses of other cumulative developments.

45. Noting the promulgation of information approach as set out in the NSP, and agreement of lighting and marking via the LMP process, the cumulative risk for Tier 2a and Tier 2b project is considered as remaining **tolerable and ALARP** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

46. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.1.4 Cumulative impact 4: Reduction in emergency response capability

47. The residual impact for the CWP Project in isolation was assessed as being **tolerable and ALARP** during the construction phase.

48. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

49. Given low baseline incident rates, and noting the additional self help resources associated with the CWP Project and other cumulative developments, there is not considered likely to be a notable effect on emergency response resources at a cumulative level.

50. Both Layout Options A and B include multiple lines of orientation through the Wind Turbine Generators (WTGs), with a minimum single line of orientation also provided when the Offshore Substation (OSS) is included, meaning the layouts are compliant with Search and Rescue (SAR) access requirements in current UK guidance in the form of MGN 654 (MCA, 2021). This means the localised spatial area covered by the array site will allow access for SAR responders, with other cumulative developers also being required to consider SAR access within their own layout designs in liaison with the Irish Coastguard (IRCG).

51. On this basis, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

52. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.1.5 Cumulative impact 5: Port access restrictions

53. The residual impact for the CWP Project in isolation was assessed as being **Broadly Acceptable** during the construction phase.

54. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

55. As per Section 5.1.1, there is limited impact on vessel routeing from the CWP Project, and as such vessel routes on approach to local ports will not be impeded by the construction works within the Marine Safety Demarcation Area (MSDA). There may be some impact on approach to Dublin Bay from the cable installation within the OECC and other Tier 2 export cable installations, however any such impact will be temporary and spatially limited. The CWP Project approach to promulgation of information is set out in the NSP, and it is likely that other cumulative projects will take a similar approach. This will ensure mariners are aware of the ongoing construction works associated with the CWP Project and also the statuses of other cumulative developments.

56. During the construction phase, there may be elevated levels of project vessels using local ports, noting that which ports used is yet to be defined. Vessel management procedures are provided in the NSP and it is likely that other cumulative projects will take a similar approach. This includes marine coordination.

57. On this basis, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **Broadly Acceptable** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

58. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.2 Operation and maintenance

5.2.1 Cumulative impact 1: Vessel displacement leading to increased encounters and collision risk

59. The residual impact for the CWP Project in isolation was assessed as being **broadly acceptable** during the operation and maintenance phase.

60. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

61. As per the cumulative routeing assessment undertaken in the NRA, there were only minor changes in terms of deviation magnitudes between the in isolation and cumulative routeing assessments. This is

reflective of the majority of vessels in the area already avoiding the shallow banks, meaning that in addition to there being limited impact from the CWP Project, there is limited additional cumulative impact from the proposed Dublin Array project to the north (located on the Kish and Bray Banks) and from the proposed Arklow Bank project to the south (situated on the Arklow Bank). The majority of vessels in the area are already avoiding these banks.

62. As per the cumulative routeing assessment undertaken in the NRA, vessels on routes to or from Drogheda will likely pass in proximity to NISA. The CWP project will have low impact on this routeing and will have no impact on access to Drogheda (located in excess of 30 nm north of the array site). On this basis, deviations within the localised area around the array site are likely to be no different to the in isolation case. No main routes were identified as directly interacting with Oriel.

63. It was noted at the Hazard Workshop that promulgation of information will be a key mitigation to manage this impact. The CWP Project approach to promulgation of information is set out in the NSP, and it is likely that other cumulative projects will take a similar approach. This will ensure mariners are aware of the CWP Project, including any major maintenance works (including cable maintenance in the OECC) and also the statuses of other cumulative developments.

64. Irish Lights raised during consultation (see Section 2) that in addition to a scenario where vessels pass inshore of the local shallow banks, the possibility that vessels going to or from Dublin Port may pass offshore of the banks in the cumulative scenario should also be considered. It is not considered likely that many vessels currently passing inshore would choose this passage, assuming the presence of Tier 1 and Tier 2 developments, given that Dublin Port could still be accessed via the inshore routeing, and it was not suggested either at the Hazard Workshop or during the regular operators outreach that vessels may choose such passage. It is noted that there is sea room available to accommodate such a deviation should vessels so choose.

65. Irish Lights also indicated during consultation that there may be a need to consider the existing buoyage with regards to how risks to vessel routeing were managed, including cumulatively with other developments. The CWP Project will work with Irish Lights as part of the LMP process to ensure that buoyage and AtoN associated with the CWP Project are suitable to manage any risk.

66. Noting the promulgation of information approach as set out in the NSP, and agreement of lighting and marking via the LMP process, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **broadly acceptable** during the operation and maintenance phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

67. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.2.2 Cumulative impact 2: Increased collision risk (third party with project vessel)

68. The residual impact for the CWP Project in isolation was assessed as being **tolerable and ALARP** during the operation and maintenance phase.

69. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

70. All vessels associated with the operation and maintenance of the CWP Project will comply with the COLREGs (IMO, 1972/77) and SOLAS (IMO, 1974) regulations, and movements will be managed via marine coordination. The CWP Project may also utilise advisory safe passing distances around major maintenance works, structures and / or project vessels to alert passing third-party traffic to areas which should be avoided to minimise collision risk. These measures are set out in the NSP.

71. It is noted that the approaches taken by other projects with regards to vessel procedures, and also the ports to be used, cannot be confirmed at this stage. However, all vessels associated with other cumulative developments will be required to comply with the COLREGs (IMO, 1972/77) and SOLAS (IMO, 1974), and it is considered likely that similar measures as detailed above may also be implemented.

72. Noting the promulgation of information approach as set out in the NSP, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the construction phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

73. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.2.3 Cumulative impact 3: Vessel to structure allision risk (vessel to structure)

74. The residual impact for the CWP Project in isolation was assessed as being **tolerable and ALARP** during the operation and maintenance phase.

75. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

76. Given limited anticipated change to cumulative routeing patterns over the in isolation case, there is unlikely to be any notable increase in localised allision risk to vessels passing the array site. Lighting and marking in agreement with Irish Lights will ensure that localised risk is managed.

77. Other developments will also be required to agree lighting and marking with Irish Lights, noting that Irish Lights also indicated during consultation (see Section 2) that existing buoyage would need to be considered cumulatively to ensure that cumulative risks to vessels including allision were managed. The CWP Project will work with Irish Lights as part of the LMP process to ensure that buoyage and AtoNs associated with the CWP Project are suitable to manage any risk during the operation and maintenance phase.

78. The CWP Project approach to promulgation of information is set out in the NSP, and this will ensure that mariners are aware of the presence of structures within the array site, which will minimise allision risk. It is likely that other cumulative projects will take a similar approach.

79. Noting the promulgation of information approach as set out in the NSP, and agreement of lighting and marking via the LMP process, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the operation and maintenance phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

80. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.2.4 Cumulative impact 4: Reduction in emergency response capability

81. The residual impact for the CWP Project in isolation was assessed as being **tolerable and ALARP** during the operation and maintenance phase.

82. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

83. Given low baseline incident rates, and noting the additional self help resources associated with the CWP Project and other cumulative developments, there is not considered likely to be a notable effect on emergency response resources at a cumulative level.

84. Both Layout Options A and B include multiple lines of orientation through the WTGs, with a minimum single line of orientation also provided when the OSS are included, meaning the layouts are compliant with SAR access requirements in current UK guidance in the form of MGN 654 (MCA, 2021). This means the localised spatial area covered by the array site will allow access for SAR responders, with other cumulative developers also being required to consider SAR access within their own layout designs in liaison with IRCG.

85. On this basis, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **tolerable and ALARP** during the operation and maintenance phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

86. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined.

5.2.5 Cumulative impact 5: Port access restrictions

87. The residual impact for the CWP Project in isolation was assessed as being **Broadly Acceptable** during the operation and maintenance phase.

88. There are no Tier 1 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 1 projects.

89. As per Section 5.1.1, there is limited impact on vessel routeing from the CWP Project, and as such, vessel routes on approach to local ports will not be impeded by the structures within the array site. There may be some impact on approach to Dublin Bay from any cable maintenance within the OECC and other Tier 2 export cable maintenance, however any such impact will be temporary and spatially limited. Cable maintenance is also likely to be an infrequent occurrence. The CWP Project approach to promulgation of information is set out in the NSP, and it is likely that other cumulative projects will take a similar approach. This will ensure mariners are aware of the CWP Project and also the statuses of other cumulative developments.

90. During the operation and maintenance phase, there are likely to be lower levels of project vessels using local ports than during the construction phase, noting which ports used is yet to be defined. Vessel management procedures are provided in the NSP and it is likely that other cumulative projects will take a similar approach. This includes marine coordination.

91. On this basis, the cumulative risk for Tier 2a and Tier 2b projects is considered as remaining **Broadly Acceptable** during the operation and maintenance phase; the same conclusion being drawn for Tier 1, Tier 2a and Tier 2b combined.

92. There are no Tier 3 projects of relevance, or for which there is adequate information to undertake a meaningful assessment. As such, there are anticipated to be no significant cumulative effects of CWP with Tier 3 projects; the same conclusion being drawn for Tier 1, Tier 2a, Tier 2b and Tier 3 combined..

6 CEA summary

93. This CEA, which supports **Chapter 16 Shipping and Navigation** has assessed the potential cumulative effects on shipping and navigation from the construction and operation and maintenance phases of the CWP Project alongside other developments.

94. In summary, the CEA for shipping and navigation does not identify any significant cumulative effects resulting from the CWP Project alongside other development.