Alexandra Basin Redevelopment 2

Bringing Dublin Port To 2040

Environmental Impact Assessment Report

Chapter 21 Cumulative Effects & Environmental Interactions

Volume 2



CALAFORT ÁTHA CLIATH
DUBLIN PORT

TETRA TECH

21 Cumulative Effects and Environmental Interactions

Chapter Contents

21 Cumulative Effects and Environmental Interactions 21-1
21.1 Introduction 21-2
21.2 Methodology 21-2
21.3 Assessment of Cumulative Effects with Other Projects 21-8
21.4 Assessment of Cumulative Effects with Plans 21-54
21.5 Assessment of Environmental Interactions 21-56
21.6 Assessment Summary and Conclusions 21-63

21.1 Introduction

This chapter presents a summary of the assessment of cumulative effects which may arise from different projects in the same area as the ABR2 Project, as well as the ABR2 Project's own environmental interactions which have been examined and analysed under individual technical chapter/environmental headings (**Chapters 7 – 20**).

The assessment in this chapter of the potential cumulative effects and environmental interactions of the ABR2 Project considers changes to the environment that are caused by an action in combination with other actions. These can arise from:

- The interaction between all existing and/or approved projects in the same area as the proposed ABR2 Project; and
- The interaction between the various impacts arising from the ABR2 Project.

The coexistence of impacts may increase or decrease their combined impact. Impacts that are considered to be insignificant, when assessed individually, may become significant when combined with other impacts. Cumulative effects and environmental interactions can occur at different temporal and spatial scales. The spatial scale can be local, regional or global, while the frequency or temporal scale includes past, present and future impacts on a specific environment or region.

The assessment of cumulative effects and environmental interactions is undertaken to ensure that the combined effects of the project and other influences are assessed together, and not as individual aspects of the environmental assessment. The ABR2 Project is required to complete elements of the ABR Project to deliver required elements of the Dublin Port Masterplan 2040. The ABR2 Project has been assessed as a distinct project for the purposes of this assessment. The cumulative effects of all consented aspects of the Masterplan 2040 have been taken into consideration in this assessment. The reviewed Masterplan 2040 was subject to Strategic Environmental Assessment (SEA) in 2018[1].

The EU Guidance on the preparation of Environmental Impact Assessment Reports (EIAR) advises that it is important to consider effects, not in isolation, but cumulatively, as this may show that individually analysed impacts can become significant when they are added together with other effects. The methodology for selecting the relevant projects for assessment of cumulative effects is presented in **Section 21.2**.

21.2 Methodology

The following guidance documents were considered when determining the potential of the ABR2 Project to generate cumulative effects and the ABR2 Project's individual environmental interactions:

- European Commission (EC) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (1999);

[1] https://www.dublinport.ie/masterplan/masterplan-documents/

- European Commission (EC) Guidance on the preparation of the Environmental Impact Assessment Report (2017);
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018); and
- UK Planning Inspectorate (PINS) Advice Note 17: Cumulative effects assessment relevant to national significant infrastructure projects.

Volume Seven of the Institute of Environmental Management and Assessment (IEMA) Impact Assessment Outlook Journal (2020)[2] identifies that the best available guidance on the assessment of cumulative effects is contained within the Planning Inspectorate Advice Note 17 version 2 (2019)[3].

The Advice Note sets out a four-staged process that applicants may wish to adopt in cumulative effects assessment. The staged approach to the cumulative effects assessment is defined below:

- Stage 1: Establishing the long list;
- Stage 2: Establishing the short list;
- Stage 3: Information gathering; and
- Stage 4: Assessment.

21.2.1 Stage 1 – Identification of Existing and/or Approved Projects

The first stage in determining potential cumulative effects of the ABR2 Project entailed the identification of a long list of projects in the vicinity that have been approved, are underway, or are planned for the future but have not yet been approved. This stage involved a desktop study to review all existing and approved projects that are located in proximity to the ABR2 Project. The search methodology was based on topic-specific Zones of Influence (ZoI) defined by the specialist topic chapters and comprised:

- The ABR2 Project application site boundary;
- A 1 km buffer around Pigeon House Road, identified by the Noise and Vibration assessment as the maximum terrestrial zone within which cumulative impacts could occur; and
- A 1.2 km buffer around the ABR2 Project red-line boundary, identified by the Marine Mammals assessment as the zone within which marine projects may have the potential to contribute to cumulative impacts.

The spatial extent of the project search, as defined by the topic-specific chapters, is illustrated in Figure 21-1.

[2] https://www.iema.net/media/nbsdjhlf/ia-outlook-journal-vol-7.pdf
[3] https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seventeen-cumulative-effects-assessment-relevant-to-nationally-significant-infrastructur/nationally-significant-infrastructure-projects-advice-note-seventeen-cumulative-effects-assessment-relevant-to-nationally-significant-infrastructur#staged-approach-and-formats-for-cea

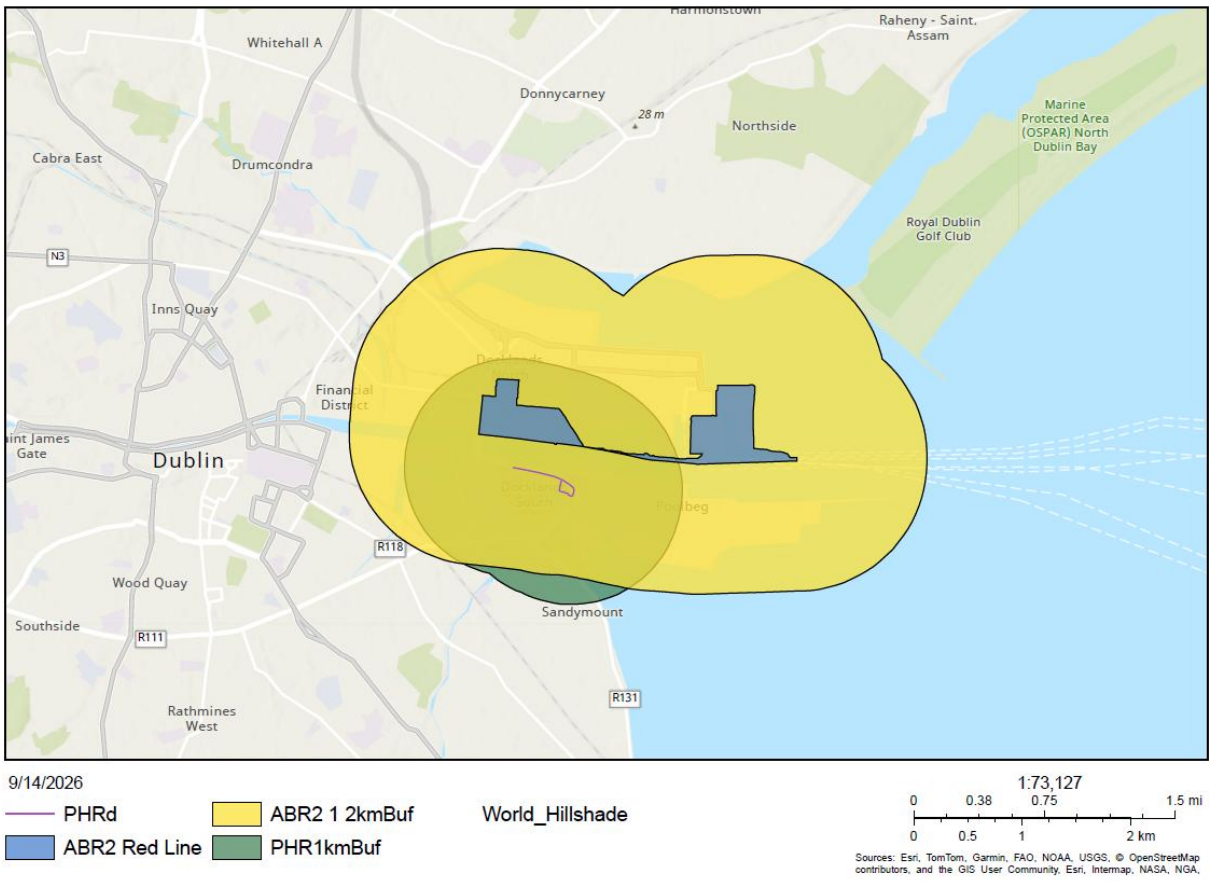


Figure 21-1: Project search boundaries

Applications were subsequently screened against these search areas to identify developments with the potential to contribute to cumulative effects and to inform the cumulative effects assessment.

The planning search was conducted using the following method:

Obtain the Datasets

Dublin City Council (DCC) Planning Applications:

Datasets for planning applications within the Dublin City Council administrative area were obtained from the Department of Housing, Local Government and Heritage (DHLGH) through the MyPlan.ie platform. The DHLGH dataset is updated weekly and is current to 18 September 2026.

An Coimisiún Pleanála (ACP) Applications:

The ACP dataset was sourced directly from An Coimisiún Pleanála. The dataset is updated weekly and is current to 18 September 2026.

Environmental Impact Assessment (EIA) Portal Projects:

Relevant EIA Portal projects were obtained and reviewed. The EIA Portal dataset is current to 3 September 2026.

Maritime Area Regulatory Authority (MARA) – Maritime Use Licences (MUL):

A dataset of determined MUL applications was obtained, current to 23 September 2026. MARA does not maintain a spatial dataset for undetermined MUL applications. Therefore, the MARA online applications portal was reviewed manually to identify undetermined MUL applications.

Maritime Area Regulatory Authority (MARA) – Marine Area Consents (MAC):

A dataset of determined MAC applications was obtained, current to 10 September 2026. Spatial data for undetermined MAC applications was manually digitised using information published on the MARA applications portal, as MARA does not provide a spatial layer for these cases.

Foreshore Licence Applications (DHLGH):

Foreshore licence data was obtained from the DHLGH legacy Foreshore Licence dataset. This dataset has not been updated since July 2023, following the transfer of marine consenting functions to MARA. However, it captures all foreshore licence applications lodged before that transfer.

Data Filtered by Date

The collected data was filtered to include applications within a 10-year review period. This approach ensured that extant permissions, including permissions granted for a 10-year duration, were captured for the purposes of the cumulative effects assessment.

Data Filtered by Location

The ABR2 Project application site boundary, the 1 km buffer around Pigeon House Road and the 1.2 km marine buffer surrounding the ABR2 Project red-line boundary were imported into the GIS.

Applications were spatially screened against these search areas to identify developments with the potential to contribute to cumulative effects.

Once the projects were identified, a tiered rating was assigned to each project to indicate the level of certainty associated with its implementation. **Table 21-1** shows the classification of Tier 1 to Tier 3 projects. There is a decreasing level of detail likely to be available from Tier 1 to Tier 3. This yielded a “long list” of potentially relevant projects for further assessment during Stage 2 of the process.

Table 21-1: Tiered Classification for Existing and/or Approved Projects (source: Planning Advice Note 17)

Tier	Planning Stage	Decreasing level of detail likely to available
1	Under construction	
	Permitted application(s) not yet implemented	
	Submitted application(s) but not yet determined	
2	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted	
3	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted	
	Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals	
	Identified in other plans and programmes (as appropriate) which set the framework for future develop	

21.2.2 Stage 2 – Shortlisting

Stage 2 of this assessment involved applying inclusion or exclusion criteria to the list of existing, planned and approved projects to determine whether they had any potential to give rise to cumulative effects in combination with the ABR2 Project with respect to the following criteria:

- Temporal scope – is there any temporal overlap and potential for interaction between the ABR2 Project due to the relative construction, operation and decommissioning programmes of other projects?
- Scale and nature of the other existing and/or approved projects – due to the scale and nature of other projects, are these likely to interact with the ABR2 Project to result in a cumulative effect? Statutory definitions of major development and EIA screening thresholds were considered in determining issues of scale.

- Other factors – such as the nature and/or capacity of the receiving environment, that would make significant cumulative effects with 'other developments' more or less likely. A source-pathway-receptor approach was used to inform the assessment of other factors.

The existing, planned and approved projects considered as part of this cumulative assessment were identified through a desktop study that identified projects with the potential to interact with it. The resulting selected developments are listed in **Table 21-2**. The planning history search illustrating the locations of the projects are identified in Appendix 21-1.

The period up to September 2026 was considered for the purposes of identifying existing, planned and approved projects. Professional judgement and consultation with chapter authors was used in applying these thresholds. Where the potential was identified for any existing, planned and approved projects to give rise to significant cumulative effects, these were taken forward to Stage 3 of the process.

21.2.3 Stage 3 – Information Gathering

For the shortlisted projects, all available information was compiled to inform the cumulative effects, and environmental interactions, assessment. The relevant data was sourced from websites of the relevant planning authorities and included information such as:

- Proposed design and location information;
- Proposed programme of construction, operation and decommissioning; and
- Environmental assessment that set out baseline data and effects arising from the 'other existing development(s) and/or approved development(s).

21.2.4 Stage 4 – Assessment

Cumulative effects assessment of the ABR2 Project with the other existing, planned and approved projects identified in Stages 1-3 of the process outlined above was undertaken.

When determining the significance of the cumulative effects of the ABR2 Project and other existing, planned and approved projects, consideration was given to the following factors:

- The duration of effect, i.e. will it be temporary or permanent;
- The extent of effect, e.g. the geographical area of an effect;
- The type of effect, e.g. whether additive (loss of 2 pieces of woodland of 1ha, resulting in 2ha cumulative woodland loss) or synergistic (two discharges combine to have an effect on a species not affected by discharges in isolation) effects;
- The frequency of the effect;
- The 'value' and resilience of the receptor affected; and
- The likely success of mitigation.

21.3 Assessment of Cumulative Effects with Other Projects

This section summarises the potential for cumulative effects arising from the ABR2 Project in association with other projects identified in Section 21.2.

Table 21-2 details the key potential interactions between the short-listed projects and the ABR2 Project describing the cumulative impact of each short-listed project by environmental topic. **Table 21-3** summarises where this potential exists for interaction, where these interactions are likely to result in no cumulative effects, adverse cumulative effects (in the absence of mitigation) or positive cumulative effects. Following detailed assessment of these interactions and the potential cumulative effects, appropriate additional mitigation measures have been included to negate impacts, for example introducing revised licensing processes and ensuring that operations are separated, in terms of timings, across interacting projects. **Table 21-4** illustrates the refined assessment considering mitigation measures, where these interactions are likely to result in no cumulative effects, residual adverse cumulative effects or positive cumulative effects.

All adverse cumulative effects have been mitigated where possible, however residual adverse cumulative effects on climate remain. These adverse effects relate specifically to the ABR2 Project facilitating greater shipping and road traffic movements at the Port with delivery of the Unified Ferry Terminal (UFT) permitted under the MP2 Project. The delivery of the new infilled area at current Berths 52/53 to assist in the development and operation of the UFT is intrinsic to the objectives of the ABR2 Project. Although that development will have positive cumulative impacts for traffic and transportation, it will inherently have adverse residual cumulative impacts with regards to climate. It must be noted however, that the ABR2 Project complies with existing and emerging policy requirements implemented through the CAP25. In addition, DPC has adhered to the requirements regarding Climate Reporting of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended. For impacts under the direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

Given the nature of **Chapter 11 Climate**, all shortlisted projects have a degree of climate interaction, as all projects/developments will generate greenhouse gases (GHGs) from construction (via materials, operations and transport) and therefore there is a cumulative net adverse impact for climate from the construction of all projects on the list. As such, those projects considered to be most relevant have been included hereafter.

The Risk of Major Accidents and Disasters has not been included in this assessment as the risk assessment approach in **Chapter 6** has already included baseline information on external accidents or disasters. Assessment of individual risk contours have been shown to not materially change through the inclusion of new developments.

Table 21-2: Description of each existing and/or approved project and the potential cumulative effects between the ABR2 Project by technical chapter

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
3FM Project Reg. Ref. ABP-PA29N.320250	Potential interactions with the ABR2 Project in combination with the 3FM Project are: • Biodiversity, Flora and Fauna • Water Quality • Air Quality • Climate • Underwater Noise and Vibration • Coastal Processes • Cultural Heritage <u>Cumulative effects on Biodiversity, Flora and Fauna</u> <u>Terrestrial Biodiversity and Ornithology</u> Should the construction of the 3FM Project coincide with the ABR2 Project, there is the potential for cumulative Diminution of Water Quality and Habitat Deterioration impacts to the nearby sensitive receptors, however following mitigation outlined in **Section 7.2.7.1** and associated NIS, these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** <u>Benthic Biodiversity and Fisheries</u> Should the construction of the 3FM Project coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** <u>Marine Mammals</u>

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Should the construction of the 3FM Project coincide with the ABR2 Project, there is the potential to generate underwater noise, such as dredging or piling activities, or increase vessel movements within Dublin Bay through these marine infrastructure works. Within Dublin Port, dredging and marine construction activities are periodically undertaken as part of routine port maintenance and capital development. Marine mammals occurring within the port environment are therefore subject to intermittent, short-term disturbance associated with such activities. The proposed dredging works at Alexandra Basin West are short-term, localised and non-impulsive in nature. While overlapping temporarily with other marine works within the port, cumulative effects would be limited to short-term behavioural disturbance or minor displacement within a highly modified industrial environment and would not extend beyond the local port environment. Furthermore, capital dredging requirements for the 3FM Project lie outside the area of potential cumulative impact. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality Should the construction of the 3FM Project coincide with the ABR2 Project, there is potential for cumulative impacts on water quality in respect of dredging. As the ABR2 Project will not dispose of any dredged material at the licensed spoil grounds in Dublin Bay, no cumulative impacts occur in relation to the dump site and Dublin Bay. Adherence to mitigation measures for capital dredging, loading and dumping activities will ensure that cumulatively they will comply with, and will not result in the contravention of The Water Framework Directive 2000/60/EC. Capital Dredging requirements for the proposed 3FM Project lie outside the area of potential cumulative impact with the ABR2 Project. With comprehensive mitigation measures applied it can be concluded that there will be no significant cumulative effects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the construction of the 3FM Project coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in Chapter 22 of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for construction phase impacts should the construction of the 3FM Project coincide with the ABR2 Project. as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Underwater Noise and Vibration At this stage, it is considered that while there can be temporal overlap and therefore potential cumulative effects arising from adjacent or nearby development, the fact that the risk ranges from the Project are very modest, the impact from the Project will be negligible compared to any project that involves vibratory or impact piling (which are absent from the ABR2 Project). The underwater

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	noise effects from the Project are comparable to the effects from large vessel traffic in the port. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Processes The main component of the ABR2 Project which may give rise to a cumulative effect is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. Capital Dredging requirements for the proposed 3FM Project lie outside the area of potential cumulative impact. In addition, a silt curtain will be deployed during dredge operations for the ABR2 Project to further limit the dispersion of sediment. To underpin the effectiveness of this silt curtain, a dredge management protocol will also be implemented. This will entail agreeing appropriately scheduled dredging paths and windows in conjunction with Port operations through close liaison with the harbour master. This will minimise silt curtain redeployment and movement, improving the efficiency and efficacy of this mitigation measure. Furthermore, the dredged material from the ABR2 Project is also treated rather than dumped at sea. This removes any potential for cumulative effects between the 3FM Project and the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Cultural Heritage The 3FM Project is focused on the south side of the approach channel but has certain engagement with the north side, in particular in relation to the proposed SPAR bridge. The 3FM Project boundary touches on Alexandra Basin West and also Berths 52/53 and Terminal 5. Works are proposed on North Wall Quay Extension (NWQE) associated with the extension of the Port's internal road and the proposed SPAR bridge across the Liffey channel. Such works, however, will take place at the west end of the NWQE and will not overlap with the NWQE works being proposed under ABR2. **Therefore, no significant cumulative impacts are likely.**
MP2 Project ABP-304888-19	Potential interactions with the ABR2 Project in combination with the MP2 Project are: • Biodiversity, Flora and Fauna • Water Quality • Air Quality • Climate • Underwater Noise and Vibration • Coastal Processes • Cultural Heritage Cumulative effects on Biodiversity, Flora and Fauna Terrestrial Biodiversity and Ornithology Should the construction of the MP2 Project coincide with the ABR2 Project, there is the potential for cumulative Diminution of Water Quality and Habitat Deterioration impacts to the nearby sensitive receptors, however following mitigation outlined in **Section 7.2.7.1** and associated NIS, these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** Benthic Biodiversity and Fisheries Should the construction of the MP2 Project coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Marine Mammals Should the construction of the MP2 Project coincide with the ABR2 Project, there is the potential to generate underwater noise, such as dredging or piling activities, or increase vessel movements within Dublin Bay through these marine infrastructure works. Within Dublin Port, dredging and marine construction activities are periodically undertaken as part of routine port maintenance and capital development. Marine mammals occurring within the port environment are therefore subject to intermittent, short-term disturbance associated with such activities. The proposed dredging works at Alexandra Basin West are short-term, localised and non-impulsive in nature. While overlapping temporarily with other marine works within the port, cumulative effects would be limited to short-term behavioural disturbance or minor displacement within a highly modified industrial environment and would not extend beyond the local port environment. Furthermore, capital dredging requirements for the MP2 Project lie outside the area of potential cumulative impact. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality Should the construction of the MP2 Project coincide with the ABR2 Project, there is potential for cumulative impacts on water quality in respect of dredging. As the ABR2 Project will not dispose of any dredged material at the licensed spoil grounds in Dublin Bay, no cumulative impacts occur in relation to the dump site and Dublin Bay. Adherence to mitigation measures for capital dredging, loading and dumping activities will ensure that cumulatively they will comply with, and will not result in the contravention of The Water Framework Directive 2000/60/EC. Capital Dredging requirements for the MP2 Project lie outside the area of potential cumulative impact with the ABR2 Project. With comprehensive mitigation measures applied it can be concluded that there will be no significant cumulative effects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the construction of the MP2 Project coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Chapter 22** of this EIAR should be applied throughout the

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate The MP2 project is a key feature of the DPC Masterplan and in combination with the ABR2 project, will facilitate greater shipping and road traffic movements at the Port. As such, there is potential for cumulative adverse climate impacts from the transport elements associated with these projects. It is noted that the MP2 Project was subject to EIA processes. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. In terms of the operation phase, the MP2 Project, in combination with the ABR2 project, will facilitate greater shipping and road traffic movements at the Port. As such, there is potential for indirect cumulative adverse climate impacts from the transport elements associated with these projects. Mitigation of both road and marine transport emissions is mandated at EU and national level through climate policy and the residual cumulative climate impact from shipping and road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Underwater Noise and Vibration At this stage, it is considered that while there can be temporal overlap and therefore potential cumulative effects arising from he MP2 Project, the fact that the risk ranges from the Project are very modest, the impact from the Project will be negligible compared to any project that involves vibratory or impact piling (which are absent from ABR2). The underwater noise effects from the Project are comparable to the effects from large vessel traffic in the port. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Processes The main component of the ABR2 Project which may give rise to a cumulative effect in combination with the MP2 Project is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. Capital Dredging requirements for the MP2 Project, however, lie outside the area of potential cumulative impact. In addition, a silt curtain will be deployed during dredge operations for the ABR2 Project to further limit the dispersion of sediment. To underpin the effectiveness of this silt curtain, a dredge management protocol will also be implemented. This will entail agreeing appropriately scheduled dredging paths and windows in conjunction with Port operations through close liaison with the harbour master. This will minimise silt curtain redeployment and movement, improving the efficiency and efficacy of this mitigating measure. Furthermore, the dredged material from the ABR2 Project will be treated on shore rather than dumped at sea. This removes any potential for cumulative effects between the MP2 Project and ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Cultural Heritage The MP2 Project will intersect with the ABR2 Project in relation to the infilling of Berths 52/53 and the raising of the ground level of Terminal 5. The interaction will be that of the ABR2 Project facilitating completion of the MP2 Project, which during demolition of existing buildings and structures provides the opportunity to salvage masonry elements for heritage gain projects, as well as

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	providing the opportunity to record and recover exemplars Bindon Blood Stoney's work, and to understand more fully the construction process developed to create the deepwater basin. **Therefore, positive cumulative impacts are anticipated.**
Dublin Harbour Capital Dredging Project Foreshore Application FS007164/DAS Application S0033-01	Potential interactions associated with the ABR2 Project in combination with the Dublin Harbour Capital Dredging Project are: • Biodiversity, Flora and Fauna • Water Quality • Air Quality • Climate • Coastal Processes • Cultural Heritage • Resource and Waste <u>Cumulative effects on Biodiversity, Flora and Fauna</u> <u>Terrestrial Biodiversity and Ornithology</u> Should the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, there is the potential for cumulative Diminution of Water Quality and Habitat Deterioration and may impact local otter populations impacts to the nearby sensitive receptors, however following mitigation outlined in **Section 7.2.7.1** and associated NIS, these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** <u>Benthic Biodiversity and Fisheries</u> Should the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are confined to Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Marine Mammals Should the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, there is the potential to generate underwater noise, such as dredging or piling activities, or increase vessel movements within Dublin Bay through these marine infrastructure works. Within Dublin Port, dredging and marine construction activities are periodically undertaken as part of routine port maintenance and capital development. Marine mammals occurring within the Port environment are therefore subject to intermittent, short-term disturbance associated with such activities. The proposed dredging works at Alexandra Basin West are short-term, localised and non-impulsive in nature. While overlapping temporarily with other marine works within the Port, cumulative effects would be limited to short-term behavioural disturbance or minor displacement within a highly modified industrial environment and would not extend beyond the local port environment. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality Should the construction of the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, there is potential for cumulative impacts on water quality in respect of dredging. As the ABR2 Project will not dispose of any dredged material at the licensed spoil grounds in Dublin Bay, no cumulative impacts occur in relation to the dump site and Dublin Bay. Adherence to mitigation measures for capital dredging, loading and dumping activities will ensure that cumulatively they will comply with, and will not result in the contravention of The Water Framework Directive 2000/60/EC. Dredging at Alexandra Basin West within Area 3 (closest sector to the entrance of the basin) will be avoided during periods when maintenance dredging is taking place along the northern portion of the Liffey, upstream of the western Oil Jetty (Oil Berth 1). This minor restriction will avoid any potential cumulative impact of elevated suspended solids within the Liffey. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in Chapter 22 of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate Should the Dublin Harbour Capital Dredging Project coincide with the ABR2 Project, there is the potential for cumulative climate impacts from cumulative impact on traffic and shipping that has been addressed through current consents under the Masterplan volumes. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Coastal Processes The main component of the ABR2 Project which may give rise to a cumulative effect is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. Capital dredging of the navigation channel between the entrance to Alexandra Basin West and the Western Oil Jetty has already been completed under the Dublin Harbour Capital Dredging Project. Furthermore, as the dredged material from the ABR2 Project will be treated onshore rather than dumped at sea the potential for cumulative impacts on Coastal Processes is greatly diminished. This effectively removes any potential for

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	cumulative effects between the Dublin Harbour Capital Dredging Project and ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Cultural Heritage The Dublin Harbour Capital Dredging Project concerns the deepening of existing berths and will continue seasonally until 2029. Where the dredging takes place in proximity to Alexandra Basin West, the interaction will be to facilitate the dredging associated with the ABR2 Project. The dredging work will be archaeologically monitored with the capacity to recover objects that may be observed during dredging and consequently, the effect will be positive. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Resource and Waste The Dublin Harbour Capital Dredging Project will generate large quantities of dredge sediment. This project has demonstrated that there is no contamination in the sediments to be dredged and has approval for offshore disposal of large quantities of the material at the entrance to Dublin Bay to the west of the Burford Bank. No material will require processing onshore. While the dredged materials under the ABR2 Project will be processed onshore, the lack of onshore processing in this Project rules out cumulative impact in that regard. **Therefore, no significant cumulative impacts are likely.**
Dublin Port Maintenance Dredging Programme 2022-2029 – Reg. Ref. FS007132 / DAS Permit S0004-03	Potential interactions associated with the ABR2 Project in combination with the Dublin Harbour Capital Dredging Project are: • Biodiversity, Flora and Fauna • Water Quality • Air Quality • Climate • Coastal Processes • Cultural Heritage • Resource and Waste Cumulative effects on Biodiversity, Flora and Fauna Terrestrial Biodiversity and Ornithology Should the Dublin Port Maintenance Dredging Programme coincide with the ABR2 Project, there is the potential for cumulative Diminution of Water Quality and Habitat Deterioration and may impact local otter populations impacts to the nearby sensitive receptors, however following mitigation outlined in **Section 7.2.7.1** and associated NIS, these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** Benthic Biodiversity and Fisheries

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Should the Dublin Port Maintenance Dredging Programme coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Marine Mammals Should the Dublin Port Maintenance Dredging Programme coincide with the ABR2 Project, there is the potential to generate underwater noise, such as dredging or piling activities, or increase vessel movements within Dublin Bay through these marine infrastructure works. Within Dublin Port, dredging and marine construction activities are periodically undertaken as part of routine port maintenance and capital development. Marine mammals within the Port environment are therefore subject to intermittent, short-term disturbance associated with such activities. The proposed dredging works at Alexandra Basin West are short-term, localised and non-impulsive in nature. While overlapping temporarily with other marine works within the port, cumulative effects would be limited to short-term behavioural disturbance or minor displacement within a highly modified industrial environment and would not extend beyond the local port environment. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality Should the construction of the Dublin Port Maintenance Dredging Programme coincide with the ABR2 Project, there is potential for cumulative impacts on water quality in respect of dredging. As the ABR2 Project will not dispose of any dredged material at the licensed spoil grounds in Dublin Bay, no cumulative impacts occur in relation to the dump site and Dublin Bay. Adherence to mitigation measures for maintenance dredging, loading and dumping activities will ensure that cumulatively they will comply with, and will not result in the contravention of The Water Framework Directive 2000/60/EC. No restrictions are required with respect to the Dublin Harbour Capital Dredging Project and the ABR2 Project because capital dredging of the navigation channel between the entrance to Alexandra Basin West and the Western Oil Jetty has already been completed. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the Dublin Port Maintenance Dredging coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Climate Should the Dublin Port Maintenance Dredging Programme coincide with the ABR2 Project, there is the potential for cumulative climate impacts from cumulative impact on traffic and shipping that has been addressed through current consents under the Masterplan volumes. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Coastal Processes The main component of the ABR2 Project which may give rise to a cumulative effect is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. Dredging at Alexandra Basin West within Area 3 (closest sector to the entrance of the basin) will be avoided during periods when maintenance dredging is taking place along the northern portion of the Liffey, upstream of the western Oil Jetty (Oil Berth 1). This minor restriction will avoid any potential cumulative impact of elevated suspended solids within the Liffey. Furthermore, as the dredged material from the ABR2 Project is also treated rather than dumped at sea. This removes any potential for cumulative effects between the Dublin Port Maintenance Dredging Programme and ABR2 Project with the adherence to the above restriction at Area 3. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Cultural Heritage The Dublin Port Maintenance Dredging Programme concerns the deepening of existing berths and will continue seasonally until 2029. Where the dredging takes place in proximity to Alexandra Basin West, the interaction will be to facilitate the dredging associated with the ABR2 Project. The dredging work will be archaeologically monitored with the capacity to recover objects that may be observed during dredging and consequently, the effect will be positive. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Resource and Waste The Dublin Port Maintenance Dredging Programme will generate large quantities of dredge sediment. This project has demonstrated that there is no contamination in the sediments to be dredged and has approval for offshore disposal of large quantities of the material at the entrance to Dublin Bay to the west of the Burford Bank. No material will require processing onshore. While the dredged materials under the ABR2 Project will be processed onshore, the lack of onshore processing in this Project rules out cumulative impact in that regard. **Therefore, no significant cumulative impacts are likely.**
Demolition of quayside infrastructure and construction of bulk product intake/outtake ABP-319742-24	Potential interactions associated with the ABR2 Project in combination with the Demolition of quayside infrastructure and construction of bulk product intake/outtake are: • Biodiversity, Flora and Fauna Cumulative effects on Biodiversity, Flora and Fauna The proposed works are currently ongoing and are located adjacent to the ABR2 Project site. There is a risk of localised diminution of water quality arising from construction sediment or hydrocarbon pollution due to PL29N.319742 in the absence of mitigation measures. Following the implementation of mitigation measures outlined in **Section 7.2.7.1** and the associated NIS, no pathways

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	for adverse effects on water quality or local otter populations remain. As the ABR2 Project, will be following mitigation and is expected to have a negligible impact on water quality, no significant in-combination effects are expected, either alone or in-combination with PL29N.319742 or any other plan/project. **Therefore, no significant cumulative impacts are likely.**
Demolition of 10 no. Buildings and use of site as a multi-functional storage yard ABP-4483/19	Potential interactions with the ABR2 Project in combination with the Demolition of 10 no. Buildings and use of site as a multi-functional storage yard are: • Biodiversity, Flora and Fauna <u>Cumulative effects on Biodiversity, Flora and Fauna</u> Should the Demolition of 10 no. Buildings and use of site as a multi-functional storage yard under Application Number 4483/19 coincide with the ABR2 Project, there is potential for cumulative Diminution of Water Quality and Habitat Deterioration. Appropriate Assessment Screening concluded that there was risk of diminution of water quality and habitat deterioration arising from sediment and hydrocarbon release during the construction & demolition works associated with application 4483/19. Following the application of best practice construction methodology and mitigation measures, the potential adverse effects were reduced to a negligible level. Construction of Application 4483/19 has completed and no further pathways for significant adverse impacts on nearby habitats are present. Following the implementation of mitigation measures outlined in **Section 7.2.7.1** and the associated NIS, no pathways for adverse effects on water quality remain. As the ABR2 Project, following mitigation is expected to have a negligible impact on water quality, no significant in-combination effects are expected, either alone or in-combination with Application 4483/19. **Therefore, no significant cumulative impacts are likely.**
The Liffey-Tolka Project-1.4km pedestrian walkway and a 2-way cycle lane 3220/21	Potential interactions with the ABR2 Project in combination with the Liffey-Tolka Project are: • Air Quality • Climate <u>Cumulative effects on Air Quality</u> Should the Liffey Tolka Project coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
T10 Link Road Reg. Ref. 4894/22	Potential interactions with the ABR2 Project in combination with the T10 Link Road project are: • Air Quality • Climate <u>Cumulative effects on Air Quality</u> Should the T10 Link Road project coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
North Lotts & Grand Canal Dock Planning Scheme 2014 ABP Ref. PL29N.ZD2011	Potential interactions with the ABR2 Project in combination with the North Lotts and Grand Canal Dock Planning Scheme are: • Air Quality • Climate <u>Cumulative effects on Air Quality</u> Should the North Lotts and Grand Canal Dock Planning Scheme construction coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
Point Bridge and Dodder Bridge ZE29N.ZE0006	Potential interactions with the ABR2 Project in combination with the Point Bridge and Dodder Bridge are: • Biodiversity, Flora and Fauna • Water Quality • Climate <u>Cumulative effects on Biodiversity, Flora and Fauna</u> <u>Benthic Biodiversity and Fisheries</u> Should the construction of the Point Bridge and Dodder Bridge Project coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality</u> The Point Bridge is within the Liffey Estuary Lower transitional water body. The changes to the hydromorphology of the Liffey Estuary Lower, which is a HMWB, through the operation of the Point Pedestrian and Cycling Bridge will not be significant given the modified nature of this water body for Port and Navigation use. The design and alignment with the Tom Clake bridge will ensure that flows are not negatively impacted and the longitudinal connectivity of the Liffey Estuary Lower is not compromised, and therefore the movement of fish upstream or downstream will not be negatively affected. The ABR2 Project may overlap temporally with the Point Bridge Project however, the impacts of the ABR2 Project are imperceptible and given the implementation of standard best practice and mitigation during the construction phase of both projects, there is no risk of significant cumulative effects. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
The Howth Yacht Club Marina Extension DAS Permit Reg. No. S0010-01	Potential interactions with the ABR2 Project in combination with the Howth Yacht Club Marina extension are: • Biodiversity, Flora and Fauna • Climate <u>Cumulative effects on Biodiversity, Flora and Fauna</u> <u>Marine Mammals</u> Should the construction of the Howth Yacht Club Marina Extension coincide with the ABR2 Project, there is the potential to generate underwater noise, such as dredging or piling activities, or increase vessel movements within Dublin Bay through these marine infrastructure works. Within Dublin Port, dredging and marine construction activities are periodically undertaken as part of routine port maintenance and capital development. Marine mammals occurring within the port environment are therefore subject to intermittent, short-term disturbance associated with such activities. The proposed dredging works at Alexandra Basin West are short-term, localised and non-impulsive in nature. While overlapping temporarily with other marine works within the port, cumulative effects would be limited to short-term behavioural disturbance or minor displacement within a highly modified industrial environment and would not extend beyond the local port environment. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
Open Cycle Gas Turbine (OCGT) and a generating plant. PWSDZ3074/23 ABP-313918	Potential interactions with the ABR2 Project in combination with the OCGT are: • Climate <u>Cumulative effects on Climate</u> There will be direct GHG combustion emissions from the OCGT (periodically), which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
Underground Cable Programme is set to replace and upgrade five 220kV circuits as part of the *Powering Up Dublin Programme:* EirGrid Capital Projects ref: CP114 6 CP121 6 CP 110 0 and MAC application for the North Wall to Poolbeg Substation Route (MAC240013) part-granted by MARA with conditions 23/04/26;and Site investigation works granted under MUL240010	Potential interactions with the ABR2 Project in combination with the *Powering up Dublin Programme* are: • Biodiversity, Flora and Fauna • Climate • Underwater Noise and Vibration • Coastal Processes • Material Assets – Services <u>Cumulative effects on Biodiversity, Flora and Fauna</u> <u>Benthic Biodiversity and Fisheries</u> Should the construction of the underground cable programme coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate</u> There is potential for direct construction GHG emissions associated with materials and construction activity with the cable programme, however these are classed as minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Underwater Noise and Vibration</u> At this stage, it is considered that while there can be temporal overlap and therefore potential cumulative effects arising from adjacent or nearby development, the fact that the risk ranges from the Project are very modest, the impact from the Project will be negligible compared to any project that involves vibratory or impact piling. The underwater noise effects from the Project are comparable to the effects from large vessel traffic in the port. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Coastal Processes The main component of the ABR2 Project which may give rise to a cumulative effect is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. The proposed installation method for the North Wall to Poolbeg underground cable to cross the River Liffey is underground tunnelling. As such, there is no potential for cumulative effects in regard to suspended solids. In addition, a silt curtain will be deployed during dredge operations for the ABR2 Project to limit the dispersion of sediment. To underpin the effectiveness of this silt curtain, a dredge management protocol will also be implemented. This will entail agreeing appropriately scheduled dredging paths and windows in conjunction with Port operations through close liaison with the harbour master. This will minimise silt curtain redeployment and movement, improving the efficiency and efficacy of this mitigation measure **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Material Assets – Services There is potential for cumulative effects with the EirGrid Underground Cable Programme which aims to replace and upgrade five 220kV cables circuits on Material Assets – Services as there is potential for the upgrade works being undertaken to replace the Poolbeg to North Wall 220kV cable to coincide with the construction works occurring within the vicinity of the area proposed to be infilled under the ABR2 Project, this may lead to delays or issues regarding users accessing services and utilities infrastructure. However, the use of mitigation and communication during the construction phases remains low to moderate if proper coordination is implemented. **Therefore, no significant cumulative impacts are likely.**
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building 4057/23	Potential interactions associated with the ABR2 Project in combination with the construction of a new 220kV gas-insulated switchgear at Poolbeg are: • Water Quality • Climate Cumulative effects on Water Quality The development will consist of the construction of a new 220kV gas-insulated switchgear (GIS) Switchboard building and all associated ancillary works, located adjacent to the Port Estate. Site drainage is proposed to permeate at a permissible rate through an oil interceptor and an attenuation pond. An NIS was submitted with this application, detailing all construction and operational mitigation measures and concluded that there will be no adverse impacts to European Sites. No cumulative effects on water quality will arise is expected with this development in combination with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There will be direct GHG combustion emissions from the GIS switchboard building, which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
Continuation of use of existing concrete batching plant and associated facilities. PWSDZ3469/22	Potential interactions associated with the ABR2 Project in combination with the continued use of the existing concrete batching plant are: • Climate Cumulative effects on climate There will be direct GHG combustion emissions from the concrete batching plant which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.**
Development at the Ringsend Wastewater Treatment Plant 5319/22	Potential interactions associated with the ABR2 Project in combination with the Development at the Ringsend Wastewater Treatment Plant are: • Biodiversity, Flora and Fauna • Water Quality • Climate Cumulative effects on Biodiversity, Flora and Fauna Terrestrial Biodiversity and Ornithology The ABR2 Project has potential for Diminution of Water Quality and Habitat Deterioration impacts to the nearby sensitive receptors. Construction of the Ringsend Road Wastewater Treatment Plan & Upgrade has concluded and any Diminution of Water Quality and Habitat Deterioration arising from construction will have ceased. The ABR2 Project's operation and maintenance will be in line with existing port activities and does not offer any new or significant pathways for operational water pollution to occur. The ABR2 Project does not share any terrestrial habitat features of ecological importance, invasive species or Protected Flora & Fauna impact pathways with the operational phase of the Ringsend Water Treatment Plant. No pathways for in-combination effects to occur over are present. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality The need for additional wastewater treatment capacity has previously been identified to meet increased commercial, domestic and industrial demand, together with a requirement to meet higher environmental standards in the Lower Liffey Estuary, which is designated as a "sensitive" water body requiring higher treatment standards. As a result, Uisce Éireann proposed to expand the existing wastewater treatment plant to 2.4 million population equivalent (PE) capacity and to upgrade the Ringsend WwTP using enhanced Nereda© treatment technology to allow for improved environmental outcomes. Construction began in 2018 and was delivered across multiple phases to maintain full treatment operations throughout, despite the plant operating over capacity. The completed upgrade now provides treatment capacity for 2.4 million PE, enabling Dublin's wastewater to be treated to the required environmental standards. It includes advanced nutrient removal for nitrogen and phosphorus, protecting the Liffey Estuary Lower. Therefore, given that the Ringsend upgrade is now complete with a positive impact on receiving water quality, there can be no

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	cumulative adverse effects when considered in combination with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Upgrade of the Ringsend Wastewater Treatment Plant PL29S.301798	Potential interactions associated with the ABR2 Project in combination with the Upgrade of the Ringsend Wastewater Treatment Plant are: • Biodiversity, Flora and Fauna • Water Quality • Climate Cumulative effects on Biodiversity, Flora and Fauna The ABR2 Project has potential for Diminution of Water Quality and Habitat Deterioration impacts to the nearby sensitive receptors. Construction of the Ringsend Road Wastewater Treatment Plan & Upgrade has concluded and any Diminution of Water Quality and Habitat Deterioration arising from construction will have ceased. The ABR2 Project's operation and maintenance will be in line with existing port activities and does not offer any new or significant pathways for operational water pollution to occur. The ABR2 Project does not share any terrestrial habitat features of ecological importance, invasive species or Protected Flora & Fauna impact pathways with the operational phase of the Ringsend Water Treatment Plant. No pathways for in-combination effects to occur over are present. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality The need for additional wastewater treatment capacity has previously been identified to meet increased commercial, domestic and industrial demand, together with a requirement to meet higher environmental standards in the Lower Liffey Estuary, which is designated as a "sensitive" water body requiring higher treatment standards. As a result, Uisce Éireann proposed to expand the existing wastewater treatment plant to 2.4 million population equivalent (PE) capacity and to upgrade the Ringsend WwTP using enhanced Nereda© treatment technology to allow for improved environmental outcomes. Construction began in 2018 and was delivered across multiple phases to maintain full treatment operations throughout, despite the plant operating over capacity. The completed upgrade now provides treatment capacity for 2.4 million PE, enabling Dublin's wastewater to be treated to the required environmental standards. It includes advanced nutrient removal for nitrogen and phosphorus, protecting the Liffey Estuary Lower. Therefore, given that the Ringsend upgrade is now complete with a positive impact on receiving water quality, there can be no cumulative adverse effects when considered in combination with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Poolbeg Generating Complex 3137/23 3624/20 3625/20	Potential interactions associated with the ABR2 Project in combination with the Poolbeg Power Station Site are: • Water Quality Cumulative effects on Water Quality Emissions to water include the discharge of condenser cooling waters to the Liffey Estuary Lower. The maximum permitted volume to be discharged in any one day is 1,036,800m^3 and the maximum permitted rate per hour is 43,200m^3. The cooling water stream also receives emissions from the water treatment neutralisation tank emission point (maximum 200m^3/day), and boiler blowdown emission points (combined maximum 200m^3/day). Screen wash water at the upstream abstraction point is returned locally to the Liffey Estuary Lower (combined maximum 480m^3/day). The IE licence sets emission limit values (ELVs) for a range of parameters, including temperature, thermal load and chlorine in the cooling water discharge. These and the other parameters specified are of little relevance to ABR2 Project activities. No limits have been specified in relation to suspended solids at the point of discharge. Therefore, given the nature and composition of the Poolbeg Generating Station discharge, there will be no additive contribution to pollutant loads, and no cumulative effects are likely. **Therefore, no significant cumulative impacts are likely.**
Existing Dublin Bay Power Station Site 3646/20 3647/20	Potential interactions associated with the ABR2 Project in combination with the Dublin Bay Power Station Site are: • Water Quality Cumulative effects on Water Quality The most significant discharge from the plant is the condenser cooling water discharge. The cooling water is abstracted from the Liffey Estuary Lower and returned via a channel downstream. The maximum volume of cooling water discharge permitted in any one day is 726,000m^3, and the maximum permitted rate per hour is 30,250m^3. The cooling water stream also receives emissions from the boiler blowdown emission point (maximum 100m^3/day) and the plant's water treatment neutralisation tank emission point (maximum 200m^3/day). The IE licence sets emission limit values (ELVs) for a range of parameters, including suspended solids, and thermal limits for the cooling water discharge. The most relevant parameters in terms of potential cumulative effects with the ABR2 Project are suspended solids and temperature. For suspended solids, an ELV of 30mg/l applies to the Synergen water neutralisation treatment tank emission point. The 2017 AER reports a value of 5.25mg/l. This compares with an average turbidity measured at Poolbeg of 6.3NTU, which is equivalent to a total suspended solids of 15.75mg/l. Compliance with the ELV for suspended solids means it is highly unlikely that any significant cumulative effect would occur from the Synergen discharge and the ABR2 Project. With respect to the power station intakes, any increase in the suspended sediment concentrations was generally very small by comparison with background levels in the Liffey Estuary. The ABR2 dredging operations are therefore unlikely to have

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	any effect on the quality of intake waters in terms of suspended solids content. The ABR2 Project will have no impact on the dispersion of thermal plume envelopes within Dublin Port. However, as customary, DPC will continue to notify the power station operators in advance of each dredging campaign. This will allow operators to temporarily stop abstracting water from the Liffey for a short duration, should this be necessary. Therefore, given the nature and composition of the Dublin Bay Power Plant discharge, there will be no additive contribution to pollutant loads, and no cumulative effects are likely. **Therefore, no significant cumulative impacts are likely.**
Alexandra Quay East and Ocean Pier 4919/23	Potential interactions associated with the ABR2 Project in combination with the Alexandra Quay East and Ocean Pier are: • Climate <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Dublin Port Centre 4144/24	Potential interactions associated with the ABR2 Project in combination with the Dublin Port Centre are: • Climate <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Berths 29, 30 and 31, Alexandra Quay West WEB1054/26	Potential interactions associated with the ABR2 Project in combination with the Berths 29, 30 and 31 at Alexandra Quay West are: • Climate <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
Demolition at Alexandra Road 4585/23	Potential interactions associated with the ABR2 Project in combination with the Demolition at Alexandra Road are: • Biodiversity, Flora and Fauna • Climate Cumulative effects on Biodiversity, Flora and Fauna The ABR2 Project has potential for Diminution of Water Quality and Habitat Deterioration impacts to the nearby sensitive receptors. A Stage 1 Appropriate Assessment Appraisal and Stage 2 NIS on Application Number 4585/23 concluded that there will be no adverse effects upon the integrity of any European site with the application of mitigation measures. For the ABR2 Project following mitigation outlined in **Section 7.2.7.1** and associated NIS, these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Former Alexandra Road Electricity Substation 2681/20	Potential interactions associated with the ABR2 Project in combination with the Former Alexandra Road Electricity Substation are: • Climate Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Poolbeg Peninsula Existing Ringsend Substation Site PWSDZ3791/24	Potential interactions associated with the ABR2 Project in combination with the Poolbeg Power Station Site are: • Water Quality Cumulative effects on Water Quality Emissions to water include the discharge of condenser cooling waters to the Liffey Estuary Lower. The maximum permitted volume to be discharged in any one day is 1,036,800m^3 and the maximum permitted rate per hour is 43,200m^3. The cooling water stream also receives emissions from the water treatment neutralisation tank emission point (maximum 200m^3/day), and boiler blowdown

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	emission points (combined maximum 200m^3/day). Screen wash water at the upstream abstraction point is returned locally to the Liffey Estuary Lower (combined maximum 480m^3/day). The IE licence sets emission limit values (ELVs) for a range of parameters, including temperature, thermal load and chlorine in the cooling water discharge. These and the other parameters specified are of little relevance to ABR2 Project activities. No limits have been specified in relation to suspended solids at the point of discharge. Therefore, given the nature and composition of the Poolbeg Generating Station discharge, there will be no additive contribution to pollutant loads, and no cumulative effects are likely. **Therefore, no significant cumulative impacts are likely.**
Dublin Port Operations Centre and Dublin Ferryport Terminal 3314/18	Potential interactions associated with the ABR2 Project in combination with the Dublin Port Operations Centre and Dublin Ferryport Terminal are: • Climate • Traffic and Transportation <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Traffic and Transportation</u> There is potential for cumulative traffic and transportation impacts associated with the construction phase of this project in conjunction with the ABR2 Project, however as these projects are located within Dublin Port and are subject to Construction Traffic Management Plans and the associated management of resources within the Port, there are no potential cumulative effects arising either alone or in-combination. **Therefore, no significant cumulative impacts are likely.**
Electrical Substation north of Berth 50 3174/24	Potential interactions associated with the ABR2 Project in combination with the Electrical Substation north of Berth 50 are: • Climate <u>Cumulative effects on Climate</u> There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
Former Calor Yard and Ferry Terminals 1 and 2 3638/18	Potential interactions associated with the ABR2 Project in combination with the Former Calor Yard and Ferry Terminals 1 and 2 are: • Climate Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Tolka Quay Road 4353/22	Potential interactions associated with the ABR2 Project in combination with the Tolka Quay Road are: • Climate • Traffic and Transportation Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic and Transportation There is potential for cumulative traffic and transportation impacts associated with the construction phase of this project in conjunction with the ABR2 Project, however as these projects are located within Dublin Port and are subject to Construction Traffic Management Plans and the associated management of resources within the Port, there are no potential cumulative effects arising either alone or in-combination. **Therefore, no significant cumulative impacts are likely.**
Ferryport Terminal 1 3176/19	Potential interactions associated with the ABR2 Project in combination with the Ferryport Terminal 1 are: • Biodiversity, Flora and Fauna • Climate • Traffic and Transportation Cumulative effects on Biodiversity, Flora and Fauna

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	The ABR2 Project has potential for Diminution of Water Quality and Habitat Deterioration to the nearby sensitive receptors and potential impacts on local otter populations, however following mitigation outlined in **Chapter 7** and the NIS these impact pathways will be reduced to a negligible level. This will avoid significant cumulative impacts on biodiversity, flora and fauna. With appropriate mitigation measures in place, there are no predicted impact pathways with no significant adverse effects either alone or in combination. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic and Transportation There is potential for cumulative traffic and transportation impacts associated with the construction phase of this project in conjunction with the ABR2 Project, however as these projects are located within Dublin Port and are subject to Construction Traffic Management Plans and the associated management of resources within the Port, there are no potential cumulative effects arising either alone or in-combination. **Therefore, no significant cumulative impacts are likely.**
Ocean Pier and Alexandra Quay East 3859/19	Potential interactions associated with the ABR2 Project in combination with the Ocean Pier and Alexandra Quay East are: • Climate • Traffic and Transportation Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic and Transportation There is potential for cumulative traffic and transportation impacts associated with the construction phase of this project in conjunction with the ABR2 Project, however as these projects are located within Dublin Port and are subject to Construction Traffic Management Plans and the associated management of resources within the Port, there are no potential cumulative effects arising either alone or in-combination. **Therefore, no significant cumulative impacts are likely.**
Tolka Quay Road Existing ESB Substation	Potential interactions associated with the ABR2 Project in combination with the Tolka Quay Road Existing ESB Substation are:

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
4250/18	• Climate Cumulative effects on Climate There is potential for direct GHG emissions associated with the materials involved in the construction phase of this project and during the operational phase. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. **Therefore, no significant cumulative impacts are likely.**
Poolbeg AGI, Poolbeg Power Station WEB2574/25	Potential interactions associated with the ABR2 Project in combination with the Poolbeg Power Station Site are: • Water Quality Cumulative effects on Water Quality Emissions to water include the discharge of condenser cooling waters to the Liffey Estuary Lower. The maximum permitted volume to be discharged in any one day is 1,036,800m^3 and the maximum permitted rate per hour is 43,200m^3. The cooling water stream also receives emissions from the water treatment neutralisation tank emission point (maximum 200m^3/day), and boiler blowdown emission points (combined maximum 200m^3/day). Screen wash water at the upstream abstraction point is returned locally to the Liffey Estuary Lower (combined maximum 480m^3/day). The IE licence sets emission limit values (ELVs) for a range of parameters, including temperature, thermal load and chlorine in the cooling water discharge. These and the other parameters specified are of little relevance to ABR2 Project activities. No limits have been specified in relation to suspended solids at the point of discharge. Therefore, given the nature and composition of the Poolbeg Generating Station discharge, there will be no additive contribution to pollutant loads, and no cumulative effects are likely. **Therefore, no significant cumulative impacts are likely.**
Aviation Fuel Pipeline ACP- PL29N.245738	Potential interactions with the ABR2 Project in combination with the Aviation Fuel Pipeline are: • Biodiversity, Flora and Fauna Cumulative effects on Biodiversity, Flora and Fauna Construction of Application PL29N.245738 has been completed, therefore there are no pathways for in-combination construction related effects to occur either alone or in combination with any other plan/project. The pipeline possesses a robust operational phase leak detection and shutoff system, capable of preventing significant hydrocarbon release in the event of damage/leaks/other failure. Following the implementation of mitigation measures outlined in **Chapter 7** and the NIS, no pathways for adverse effects on water quality or local otter populations due to the ABR2 Project remain. As the ABR2 Project, following mitigation is expected to have a negligible impact on water quality, no significant in-combination effects are expected, either alone or in-combination with PL29N.245738 or any other plan/project. **Therefore, no significant cumulative impacts are likely.**
Proposed subsea fibre optic cable	Potential interactions with the ABR2 Project in combination with the proposed subsea fibre optic cable are:

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
LIC230016	• Biodiversity, Flora and Fauna • Water Quality • Coastal Processes Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction of the underground cable programme coincide with the ABR2 Project, with the involvement of in-water works within Dublin Port and the lower River Liffey Estuary there is potential for cumulative impacts. The principal cumulative pathways relate to additive seabed disturbance, sediment resuspension, temporary smothering of benthic habitats, and short-term increases in turbidity and underwater noise. In the context of benthic habitats, all identified works occur within a highly modified port environment dominated by soft-sediment communities characterised by opportunistic and disturbance-tolerant species. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions. For fisheries and diadromous species, cumulative effects may arise through overlapping turbidity plumes, vessel disturbance and underwater noise, particularly where works coincide spatially or temporally. However, the majority of works are spatially discrete within Alexandra Basin West and the basin of Berths 52 and 53. As such, cumulative effects are expected to be limited to short-term behavioural disturbance and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality Microsoft applied to MARA for a Marine Usage Licence, which was approved in 2024 for geophysical surveys and site investigations for a proposed subsea fibre optic cable having a landfall in Dublin Port and to evaluate options for the route traversing Dublin Bay, across the Irish Sea to Anglesey, Wales. The surveys include non-invasive geophysical surveys and invasive tests, including cone penetration tests and vibrocores. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil and has been determined not to have any significant impacts on Dublin Bay, there is no risk of significant cumulative effects, particularly given the nature of the surveys proposed under the MUL, which will have a limited extent in terms of seabed disturbance. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Processes Area of site investigation enters into Dublin Port. As minimal sediment enters the main navigation channel during ABR2 Dredging works, there is minimal potential for cumulative effects with suspended solids as demonstrated by the plume extent of this EIAR. It is also likely the site investigation will be completed by the time (as per current LIC230016 license conditions) ABR2 commences construction. As such, there is no potential for cumulative effects in regard to suspended solids. **Therefore, no significant cumulative impacts are likely.**
Ground investigation works	Environmental survey and ground investigation works in order to inform the design of proposed Point Bridge and Tom Clarke Widening Project.

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
LIC230007 superseded by LIC230007MA	Potential interactions with the ABR2 Project in combination with the investigative works are in relation to: Cumulative effects on Coastal Processes The site investigation was due to be completed by December 2025 but it is unclear whether this is the case. In the case that the works are still to be completed, the Application's NIS determined that the impact to water quality from the result of sediment during in-stream works was 'minimal'. No mitigation for sediment release was proposed within the application's NIS. Combined with the slight adverse impact arising from the ABR2 Project, no significant cumulative impact is expected.
Codling Wind Park Ground investigation works MUL230034	Environmental survey and ground investigation works in order to inform the design of proposed Codling Wind Park Project. Potential interactions with the ABR2 Project in combination with the investigative works are in relation to: Cumulative effects on Coastal Processes Area B of the proposed site investigation by Codling Wind Park Limited is located beside the main navigation channel in Dublin Port. This application's NIS determined: The coarse nature of the sediments across much of the Licence Area mean that any potential increase in SSC will remain within close proximity to the Proposed Activities. Given the conclusions of the NIS for MUL230034 and the results of this Coastal Processes chapter, there is no potential for significant cumulative effects.
Poolbeg West Strategic Development Zone (SDZ) PWSDZ4341/23	Potential interactions with the ABR2 Project in combination with the Poolbeg West Strategic Development Zone (SDZ) Reg. Ref. PWSDZ4341/23 are: • Water Quality • Air Quality • Climate Cumulative effects on Water Quality Should the construction at Poolbeg West Strategic Development Zone coincide with the ABR2 Project, there is potential for cumulative water quality impacts from wastewater discharges from the SDZ which will be treated at the Ringsend WWTP. No discharges of untreated wastewater will arise from the ABR2 Project avoiding significant cumulative impacts. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the construction at Poolbeg West Strategic Development Zone coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Climate There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
Dublin Array Wind Farm FS007188	Potential interactions with the ABR2 Project in combination with the Dublin Array Wind Farm are: • Biodiversity, Flora and Fauna • Water Quality • Climate • Coastal Processes Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction at Dublin Array Wind Farm coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Marine Mammals Should the construction at Dublin Array Wind Farm coincide with the ABR2 Project, there is potential for cumulative far-field effects from temporary underwater noise or increased vessel activity. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on marine mammals are likely due to the spatial separation, the temporary and localised nature of dredging within Alexandra Basin West and the absence of impulsive piling associated with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality The Dublin Array Wind Farm may have cable corridors which traverse south Dublin Bay from the southeast. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil, there is no risk of cumulative effects with proposed wind energy projects, including site investigation applications or other proposed dredging projects. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Climate There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP25 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the ABR2 port operations. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Coastal Processes Landfall of this Project is between Bray and Dalkey. There is minimal potential for cumulative effects with suspended solids as demonstrated by the plume extent in this EIAR. As such, there is no potential for cumulative effects in regard to suspended solids. **Therefore, no significant cumulative impacts are likely.**
Codling Wind Park FS007045 FS007546 2022-MAC-006	Potential interactions with the ABR2 Project in combination with the Codling Wind Park are: • Biodiversity, Flora and Fauna • Water Quality • Climate • Coastal Processes Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction at Codling Wind Park coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Marine Mammals Should the construction at Codling Wind Park coincide with the ABR2 Project, there is potential for cumulative far-field effects from temporary underwater noise or increased vessel activity. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on marine mammals are likely due to the spatial separation, the temporary and localised nature of dredging within Alexandra Basin West and the absence of impulsive piling associated with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality The Codling Wind Park may have cable corridors which traverse south Dublin Bay from the southeast. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil, there is no risk of cumulative effects with proposed wind

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	energy projects, including site investigation applications or other proposed dredging projects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP25 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the ABR2 port operations. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Coastal Processes Landfall of the Codling Wind Park cable is proposed for the southern side of the Port's South Estate. As Codling Wind Park and the ABR2 Project are separated by land - there is minimal potential for cumulative effects with suspended solids as demonstrated by the plume extent in this EIAR. As such, there is no potential for cumulative effects in regard to suspended solids. **Therefore, no significant cumulative impacts are likely.**
North Irish Sea Array FS007031	Potential interactions with the ABR2 Project in combination with the North Irish Sea Array are: • Biodiversity, Flora and Fauna • Water Quality • Climate Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction at Norh Irish Sea Array coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.** Marine Mammals Should the construction at North Irish Sea Array coincide with the ABR2 Project, there is potential for cumulative far-field effects from temporary underwater noise or increased vessel activity. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on marine mammals are likely due to the spatial separation, the temporary and localised nature of dredging within Alexandra Basin West and the absence of impulsive piling associated with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Water Quality The North Irish Wind Farm may have cable corridors which traverse south Dublin Bay from the southeast. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil, there is no risk of cumulative effects with proposed wind energy projects, including site investigation applications or other proposed dredging projects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP25 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the ABR2 port operations. **Therefore, positive cumulative impacts are anticipated.**
Seastacks Wind Farm FS007134	Potential interactions with the ABR2 Project in combination with the Seastacks Wind Farm are: • Biodiversity, Flora and Fauna • Water Quality • Air Quality • Climate Cumulative effects on Biodiversity, Flora and Fauna Marine Mammals Should the construction at Seastacks wind farm coincide with the ABR2 Project, there is potential for cumulative far-field effects from temporary underwater noise or increased vessel activity. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on marine mammals are likely due to the spatial separation, the temporary and localised nature of dredging within Alexandra Basin West and the absence of impulsive piling associated with the ABR2 Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality Should the construction phase of the Seastacks Wind Farm coincide with the ABR2 Project, there is the potential for cumulative dust impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 10.6.1** of this EIAR should be applied throughout the construction phase of the Project. In accordance with IAQM 2024, these mitigations are also applied for the other proposed or permitted developments. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Project are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	The North Irish Wind Farm may have cable corridors which traverse south Dublin Bay from the southeast. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil, there is no risk of cumulative effects with proposed wind energy projects, including site investigation applications or other proposed dredging projects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP25 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the ABR2 port operations. **Therefore, positive cumulative impacts are anticipated.**
Mac Lir Offshore Wind Limited Site Investigations for proposed Offshore Wind Farm, off Counties Wexford, Wicklow and Dublin FS007472	Potential interactions with the ABR2 Project in combination with the Mac Lir Offshore Wind Project are: • Biodiversity, Flora and Fauna Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction/site investigations at Banba Wind Offshore Wind Project coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.**
Kish and Bray Banks Offshore Wind Farm ACP-OA06D.321992 FS007029	Potential interactions with the ABR2 Project in combination with the Kish and Bray Banks Offshore Wind Farm are: • Biodiversity, Flora and Fauna • Water Quality Cumulative effects on Biodiversity, Flora and Fauna Terrestrial Biodiversity and Ornithology Should the construction phase of the Kish and Bray Banks Offshore Wind Farm coincide with the ABR2 Project, there is the potential for cumulative impacts to the nearby sensitive receptors. The mitigation measures outlined in **Section 7.2.7.1** of this EIAR and associated NIS should be applied throughout the construction phase of the Project therefore no pathways for adverse effects on water quality remain. As the ABR2 Project, following mitigation is expected to have a negligible impact on water quality, no significant in-combination effects are expected, either alone or in-combination with PL29N.245738 or any other plan/project. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the ABR2 Project and Potential for Cumulative Effects
	Cumulative effects on Water Quality The North Irish Wind Farm may have cable corridors which traverse south Dublin Bay from the southeast. Since the ABR2 Project will not be using the offshore licenced dump site to dispose of dredge spoil, there is no risk of cumulative effects with proposed wind energy projects, including site investigation applications or other proposed dredging projects. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Processes Landfall of these Projects are proposed for the southern side of the Port's South Estate. As the Offshore Windfarms at Bray and Kish and the ABR2 Project are separated by land - there is minimal potential for cumulative effects with suspended solids as demonstrated by the plume extent in this EIAR.As such, there is no potential for cumulative effects in regard to suspended solids. **Therefore, no significant cumulative impacts are likely.**
Banba Wind Ltd Site Investigations for proposed Offshore Wind Farm off Counties Wicklow and Dublin FS007283	Potential interactions with the ABR2 Project in combination with the Banba Wind Offshore Wind Project are: • Biodiversity, Flora and Fauna Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction/site investigations at Banba Wind Offshore Wind Project coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.**
Réalt na Mara Offshore Wind Farm Ltd, site investigations off the coasts of Wicklow and Dublin FS007330	Potential interactions with the ABR2 Project in combination with the Réalt na Mara Offshore Wind Project are: • Biodiversity, Flora and Fauna Cumulative effects on Biodiversity, Flora and Fauna Benthic Biodiversity and Fisheries Should the construction/site investigations at Banba Wind Offshore Wind Project coincide with the ABR2 Project, there is potential cumulative far-field effects, including regional increases in underwater noise, vessel traffic and temporary disturbance to mobile fish species. Given the distance from the ABR2 Project area and the localised nature of construction and operational activities within Dublin Port, no direct cumulative effects on benthic habitats within Alexandra Basin West or the Berth 52/53 basin are anticipated. For fisheries receptors, any cumulative effects would be limited to transient behavioural responses at a regional scale and are not considered significant. **Therefore, no significant cumulative impacts are likely.**

Table 21-3: Summary matrix showing potential cumulative effects, in the absence of mitigation, by environmental topic between the ABR2 Project and other existing and/or approved projects

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
3FM Project ABP-PA29N.320250			✓				✓		✓		✓	✓			✓		✓						✓							
MP2 Project ABP-304888-19			✓				✓		✓		✓	✓			✓		✓						✓							
Dublin Harbour Capital Dredging Project – Foreshore Application FS007164/DAS Application S0033-01			✓				✓		✓		✓	✓					✓						✓						✓	
Dublin Port Maintenance Dredging Programme 2022-2029 –. FS007132 / DAS Permit S0004-03			✓				✓		✓		✓	✓					✓						✓						✓	
Demolition of quayside infrastructure and construction of bulk product intake/outtake ABP-319742-24			✓																											
Demolition of 10 no. Buildings and use of site as a multi-functional storage yard ABP-4483/19			✓																											
The Liffey-Tolka Project-1.4km pedestrian walkway									✓		✓																			

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
and a 2-way cycle lane Reg. Reg. 3220/21																														
T10 Link Road Reg. Ref. 4894/22									✓		✓																			
North Lotts & Grand Canal Dock Planning Scheme 2014 PL29N.ZD2011									✓		✓	✓																		
Point Bridge and Dodder Bridge ZE29N.ZE0006			✓				✓				✓	✓																		
The Howth Yacht Club Marina Extension DAS Permit Reg. No. S0010-01			✓								✓	✓																		
Open Cycle Gas Turbine (OCGT) and a generating plant. PWSDZ3074/23												✓																		
Powering Up Dublin Programme: EirGrid Capital Projects ref: CP114 6 CP121 6 CP 110 0			✓								✓				✓		✓				✓									
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building Reg. Ref. 4057/23							✓					✓																		
Continuation of use of existing concrete												✓																		

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
batching plant and associated facilities. PWSDZ3469/22																														
Development at the Ringsend WWTP 5319/22			✓	✓			✓				✓	✓																		
Upgrade of the Ringsend WWTP Reg. Ref. PL29S.301798			✓	✓			✓				✓	✓																		
Poolbeg Generating Complex 3137/23 3624/20 3625/20							✓																							
Existing Dublin Bay Power Station Site 3646/20							✓																							
Alexandra Quay East and Ocean Pier 4919/23											✓	✓																		
Dublin Port Centre 4144/24											✓	✓																		
Berths 29, 30 and 31, Alexandra Quay West WEB1054/26											✓	✓																		
Demolition at Alexandra Road Reg. Reg. 4585/23		✓									✓	✓																		
Former Alexandra Road Electricity Substation 2681/20											✓	✓																		

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Poolbeg Peninsula Existing Ringsend Substation Site PWSDZ3791/24							✓																							
Dublin Port Operations Centre and Dublin Ferryport Terminal 3314/18											✓	✓							✓											
Electrical Substation north of Berth 50 3174/24											✓	✓																		
Former Calor Yard and Ferry Terminals 1 and 2 3638/18											✓	✓																		
Tolka Quay Road 4353/22											✓	✓							✓											
Ferryport Terminal 1 3176/19			✓								✓	✓							✓											
Ocean Pier and Alexandra Quay East 3859/19											✓	✓							✓											
Tolka Quay Road Existing ESB Substation 4250/18											✓	✓																		
Poolbeg AGI, Poolbeg Power Station WEB2574/25							✓																							
Aviation Fuel Pipeline PL29N.245738			✓																											
Proposed subsea fibre optic cable			✓				✓										✓													

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
LIC230016																														
Ground Investigation Works LIC230007 LIC230007MA																	✓													
Codling Wind Park Investigation Works MUL230034																	✓													
Poolbeg West SDZ PWSDZ4341/23							✓		✓		✓	✓																		
Dublin Array Wind Farm FS007188			✓				✓				✓	✓					✓													
Codling Wind Park FS007045			✓				✓				✓	✓					✓													
North Irish Sea Array FS007031			✓				✓				✓	✓																		
Seastacks Wind Farm FS007134			✓				✓		✓		✓	✓																		
Mac Lir Offshore Wind Limited Site Investigations FS007472			✓																											
Kish and Bray Banks Offshore Wind Farm ACP-OA06D.321992 FS007029			✓				✓																							
Banba Wind Ltd Site Investigations FS007283			✓																											
Réalt na Mara Offshore Wind Farm Ltd, site investigations FS007330			✓																											

Key:

	No potential for interaction with the ABR2 Project environmental topic
✓	Likely to result in adverse cumulative effects (in the absence of mitigation)
✓	No adverse cumulative effects anticipated with proposed mitigation measures implemented
✓	Positive cumulative effects anticipated

Table 21-4: Summary matrix showing potential cumulative effects, with mitigation measures included, by environmental topic between the ABR2 Project and other existing and/or approved projects

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
3FM Project ABP-PA29N.320250			✓				✓		✓		✓	✓			✓		✓						✓							
MP2 Project ABP-304888-19			✓				✓		✓		✓	✓			✓		✓						✓							
Dublin Harbour Capital Dredging Project – Foreshore Application FS007164/DAS Application S0033-01			✓				✓		✓		✓	✓					✓						✓						✓	
Dublin Port Maintenance Dredging Programme 2022-2029 –. FS007132 / DAS Permit S0004-03			✓				✓		✓		✓	✓					✓						✓						✓	
Demolition of quayside infrastructure and construction of bulk product intake/outtake ABP-319742-24			✓																											
Demolition of 10 no. Buildings and use of site as a multi-functional storage yard ABP-4483/19			✓																											
The Liffey-Tolka Project-1.4km pedestrian walkway									✓		✓																			

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
and a 2-way cycle lane Reg. Reg. 3220/21																														
T10 Link Road Reg. Ref. 4894/22									✓		✓																			
North Lotts & Grand Canal Dock Planning Scheme 2014 PL29N.ZD2011									✓		✓	✓																		
Point Bridge and Dodder Bridge ZE29N.ZE0006			✓				✓				✓	✓																		
The Howth Yacht Club Marina Extension DAS Permit Reg. No. S0010-01			✓								✓	✓																		
Open Cycle Gas Turbine (OCGT) and a generating plant. PWSDZ3074/23												✓																		
Powering Up Dublin Programme: EirGrid Capital Projects ref: CP114 6 CP121 6 CP 110 0			✓								✓				✓		✓				✓									
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building 4057/23							✓					✓																		
Continuation of use of existing concrete												✓																		

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
batching plant and associated facilities. PWSDZ3469/22																														
Development at the Ringsend WWTP 5319/22			✓	✓			✓				✓	✓																		
Upgrade of the Ringsend WWTP Reg. Ref. PL29S.301798			✓	✓			✓				✓	✓																		
Poolbeg Generating Complex 3137/23 3624/20 3625/20							✓																							
Existing Dublin Bay Power Station Site 3646/20							✓																							
Alexandra Quay East and Ocean Pier 4919/23											✓	✓																		
Dublin Port Centre 4144/24											✓	✓																		
Berths 29, 30 and 31, Alexandra Quay West WEB1054/26											✓	✓																		
Demolition at Alexandra Road Reg. Reg. 4585/23		✓									✓	✓																		
Former Alexandra Road Electricity Substation 2681/20											✓	✓																		

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Poolbeg Peninsula Existing Ringsend Substation Site PWSDZ3791/24							✓																							
Dublin Port Operations Centre and Dublin Ferryport Terminal 3314/18											✓	✓							✓											
Electrical Substation north of Berth 50 3174/24											✓	✓																		
Former Calor Yard and Ferry Terminals 1 and 2 3638/18											✓	✓																		
Tolka Quay Road 4353/22											✓	✓							✓											
Ferryport Terminal 1 3176/19			✓								✓	✓							✓											
Ocean Pier and Alexandra Quay East 3859/19											✓	✓							✓											
Tolka Quay Road Existing ESB Substation 4250/18											✓	✓																		
Poolbeg AGI, Poolbeg Power Station WEB2574/25							✓																							
Aviation Fuel Pipeline PL29N.245738			✓																											
Proposed subsea fibre optic cable			✓				✓										✓													

Existing and/or approved Project	Risk of Major Accidents and Disasters		Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
LIC230016																														
Ground Investigation Works LIC230007 LIC230007MA																	✓													
Codling Wind Park Investigation Works MUL230034																	✓													
Poolbeg West SDZ PWSDZ4341/23							✓		✓		✓	✓																		
Dublin Array Wind Farm FS007188			✓				✓				✓	✓					✓													
Codling Wind Park FS007045			✓				✓				✓	✓					✓													
North Irish Sea Array FS007031			✓				✓				✓	✓																		
Seastacks Wind Farm FS007134			✓				✓		✓		✓	✓																		
Mac Lir Offshore Wind Limited Site Investigations FS007472			✓																											
Kish and Bray Banks Offshore Wind Farm ACP-OA06D.321992 FS007029			✓				✓																							
Banba Wind Ltd Site Investigations FS007283			✓																											
Réalt na Mara Offshore Wind Farm Ltd, site investigations FS007330			✓																											

Key:

	No potential for interaction with the ABR2 Project environmental topic
✓	Likely to result in adverse cumulative effects (in the absence of mitigation)
✓	No adverse cumulative effects anticipated with proposed mitigation measures implemented
✓	Positive cumulative effects anticipated

21.4 Assessment of Cumulative Effects with Plans

21.4.1 Regional Plans

Regional, Spatial and Economic Strategy for the Eastern and Midland Region

The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region including the Metropolitan Area Spatial Plan (MASP) for Dublin was adopted in January 2020 by the Eastern and Midland Region Assembly (EMRA). The RSES is a strategic plan and investment framework to shape the future development of the region to 2031 and beyond.

To minimise potential impacts on EU protected habitats, the RSES advocates that brownfield port developments which maximise the capacity of existing port sites should be prioritised over greenfield developments. It continues that the approach to port development in the Region shall adhere to the European Commission guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones.

The ABR2 Project seeks to redevelop land which have an existing port use. The completion of the ABR2 Project is critical for facilitating the throughput of passengers and freight in the most efficient manner allowable on the Port's current footprint. Planned increases in port capacity up to 2040 must be implemented to ensure that the Port has the necessary infrastructure to meet developments in shipping internationally where larger ships are becoming the industry norm.

The ABR2 Project is consistent with the principles of sustainable development as set out in the RSES in that it optimises otherwise underutilised land and is further consistent with regional infrastructure policy and objectives.

21.4.2 Local Plans

Dublin Port Masterplan 2040

The proposed development forms part of the wider Dublin Port Masterplan 2040, and will complete the previously-permitted ABR Project, the permitted MP2 Project, and the proposed 3FM Project. These projects have been conceived as components of a coordinated and integrated programme of development, which has had regard to potential cumulative environmental effects. As part of this approach, mitigation measures have been embedded within the programme, including the careful scheduling of construction activities to avoid overlap during environmentally sensitive periods, particularly in relation to designated sites in proximity to the Port. This integrated approach ensures that cumulative impacts are appropriately managed and minimised.

Dublin City Development Plan 2022-2028

The Dublin City Development Plan 2022-2028 (the Development Plan) is the primary statutory land-use planning policy document guiding development within Dublin City. Dublin Port is wholly situated within the boundaries of Dublin City. The Development Plan is emphatically supportive of the role that Dublin Port plays in the city and the country.

The Development Plan states that biodiversity is essential not only for its intrinsic value but also for the ecosystem services and social benefits it provides, including improvements to health, wellbeing, and the city's economic and social fabric. It forms the foundation of Dublin's green infrastructure, with healthy natural habitats (such as water and soil systems) being crucial for climate resilience. However, biodiversity in the city faces ongoing threats from urban development, habitat loss, climate change, pollution, invasive species

The policies and objectives of the Development Plan relating to biodiversity, ecological protection, and green infrastructure have been fully considered in the preparation of the ABR2 Project. The proposed development has been designed and assessed with regard to the protection of designated sites, habitats, and species in accordance with Policies GI9–GI13, ensuring compliance with relevant EU and national legislation. Measures to avoid, minimise, and mitigate potential impacts on ecological features, including Natura 2000 sites and ecological corridors, have been incorporated, consistent with Policies GI14 and GI15. Opportunities to support biodiversity, including habitat protection and enhancement, have also been considered in line with Policies GI16 and GI17. The project has further taken account of potential impacts from noise and lighting, in accordance with Policy GI18. In addition, the objectives of supporting national and local biodiversity plans and addressing invasive species have been integrated into the assessment process. Overall, the application demonstrates a robust and policy-aligned approach to safeguarding biodiversity.

Powering Up Dublin Programme

Powering Up Dublin is a critical €1 billion infrastructure initiative by EirGrid designed to modernise Dublin's electricity transmission network. The project involves replacing 50 kilometres of aging high-voltage underground cables, upgrading active substations, and constructing new ones. This overhaul ensures a reliable power supply for growing city demands, supports the electrification of heat and transport, and makes the grid "renewable ready" to meet Ireland's goal of up to 80% renewable energy by 2030.

Dublin Port serves as a vital geographic and operational hub for this programme. Key high-voltage cable routes directly intersect the port area, specifically linking the Finglas, North Wall, and Poolbeg substations. A major 220 kV cable route runs directly through Dublin Port Company lands, and the area hosts community info events at the Dublin Port Substation. Furthermore, the port area acts as a gateway for the submarine cables traveling across Dublin Bay toward Poolbeg. This strategic placement allows the port to anchor infrastructure required to bring future offshore wind energy directly into the capital's electricity grid.

The proposed installation method for the North Wall to Poolbeg underground cable to cross the River Liffey is underground tunnelling. As such, there is no potential for cumulative effects in regard to suspended solids. While concurrent or sequential works may increase the spatial or temporal extent of disturbance within the port, these effects are expected to remain localised and temporary, with no cumulative loss of sensitive or Annex I habitats. Recovery processes are likely to be rapid and consistent with baseline conditions.

21.5 Assessment of Environmental Interactions

The potential interaction between environmental effects, arising from within the ABR2 Project were also considered. Each technical chapter/environmental topic of the EIAR details individual environmental baseline information and identifies the potential effects of the project. In addition, the potential for other environmental interactions is identified and the relevant impact either on, or from these other aspects is analysed via data exchange between, and assessment review by the relevant experts.

This section summarises the significance of the interactions within the ABR2 Project. **Table 21-5** shows a matrix of potential interactions between each technical chapter/environmental topic of this EIAR. Although potential interactions have been identified, it is anticipated that the detailed environmental mitigation measures included in the ABR2 Project (and outlined in the relevant sections of the EIAR) will also minimise or off-set potential for significant effects.

Where potential interactions exist between environmental topics, additional and/or amendments to mitigation measures have been identified to negate potential adverse impacts. **Table 21-6** summarises the ABR2 Project's environmental interactions which have been assessed in a matrix format across the environmental topics. **Table 21-7** describes these interactions and the additional mitigation measures identified, where required, to address these potential interactions.

Table 21-5: Matrix of interactions between EIAR technical chapters 7-20 (KEY ✓ Potential interaction between technical chapters)

	Biodiversity Flora and Fauna		Land, Soils, Geology and Hydrogeology		Water Quality and Flooding		Air Quality		Climate		Terrestrial Noise and Vibration		Underwater Noise and Vibration		Coastal Processes		Traffic and Transport		Services		Cultural Heritage		Landscape and Visual		Population and Human Health		Resource and Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Biodiversity, Flora and Fauna			×	×	✓	×	✓	×	✓	×	✓	×	✓	×	✓	✓	×	×	×	×	×	×	×	×	×	×	×	×
Land, Soils, Geology and Hydrogeology					✓	×	✓	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	✓	×
Water Quality and Flooding							×	×	×	×	×	×	×	×	✓	✓	×	×	×	×	×	×	×	×	×	×	✓	×
Air Quality									✓	×	×	×	×	×	×	×	✓	×	×	×	×	×	×	×	×	×	✓	×	×	×
Climate											×	×	×	×	×	×	✓	✓	×	×	×	×	×	×	×	×	×	×	×	×
Terrestrial Noise and Vibration													×	×	×	×	✓	×	×	×	×	×	×	×	×	×	✓	×	✓	×
Underwater Noise and Vibration															×	×	×	×	×	×	×	×	×	×	×	×	✓	×	×	×
Coastal Processes																	×	×	✓	×	✓	×	×	×	×	×	×	×	×	×
Traffic and Transport																			×	×	×	×	×	×	×	×	✓	×	✓	×
Services																					×	×	×	×	×	×	✓	×	×	×
Cultural Heritage																							✓	×	×	×	×	×	×
Landscape and Visual																											✓	×	×	×
Population and Human Health																													×	×
Resource and Waste																														

Table 21-6: Description of interactions between EIAR technical chapters 7-20

Chapter	Summary of Interactions
Chapter 7 Biodiversity, Flora and Fauna	The most significant interactions in relation to Biodiversity, Flora and Fauna are considered to be: • Terrestrial Biodiversity and Ornithology: Release of sedimentary and hydrocarbon pollutants into the water column, leading in an increase in water turbidity and degradation of water quality impacting on benthic biodiversity and fisheries. Release of sedimentary and hydrocarbon pollutants into the water column, degradation of water quality and a reduction in the ability of marine mammals to forage and hunt, and aerial noise, dust and piling works may disrupt marine mammals. • Marine Mammals: Temporary disturbance to marine fauna. Potential habitat alteration associated with dredging and/or infill activities. • Water Quality: Effect of temporary habitat losses and disturbances to aquatic animals. Effect of temporary food chain disturbances to avian species. • Air Quality: Interaction between air quality and emission impacts upon designated sites. Ecological assessments are presented in Chapter 7. • Climate: A specific assessment of the benefits on ecological receptors is not provided in biodiversity chapter, however, it is widely recognised that climate change affects ecosystems on land and in water in many ways. • Terrestrial Noise and Vibration: Effect of ABR2 Project noise levels on ecological receptors. Further considered in Chapter 7. • Underwater Noise and Vibration: Temporary habitat loss/disturbance. Considered in Chapter 7. • Coastal Processes: Temporary and long-term marine habitat loss/disturbance and increased SSCs and sediment deposition. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Biodiversity, Flora and Fauna and these potentially interacting environmental topics.
Chapter 8 Land, Soils, Geology and Hydrogeology	The most significant interactions in relation to Land, Soils, Geology and Hydrogeology are considered to be: • Air Quality: interaction between air quality and generation of particulate matter (PM10, PM2.5), dust deposition, and potential risks from contaminated land. Contaminated Land assessments are presented in Chapter 8. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Land, Soils, Geology and Hydrogeology and these potentially interacting environmental topics.
Chapter 9 Water Quality and Flood Risk Assessment	The most significant interactions in relation to Water Quality and Flood Risk Assessment are considered to be:

Chapter	Summary of Interactions
	• Biodiversity, Flora and Fauna-Benthic Biodiversity and Fisheries: Effects of dredging, sediment handling, treatment and infilling on suspended sediment concentrations, turbidity and sediment deposition. Effects of potential mobilisation of sediment-bound contaminants and treated water discharges on receiving waters. Secondary effects of water quality changes on benthic communities, estuarine fish and migratory species. • Biodiversity, Flora and Fauna-Marine Mammals: Temporary increases in suspended sediment concentrations during dredging. Potential indirect effects on prey availability and marine mammal foraging behaviour • Land, Soils, Geology and Hydrogeology: Dredging of sediments may impact upon surface water quality. Treatment process of dredged sediments may impact upon surface water quality. • Coastal Processes: Increased SSCs and sediment deposition, which can mobilise potentially hazardous contaminants such as heavy metals into the water column. Wider coastal processes may exacerbate coastal flooding in certain locations due to physical factors that can occur individually or in combination. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Water Quality and Flood Risk Assessment and these potentially interacting environmental topics.
Chapter 10 Air Quality	The most significant interactions in relation to Air Quality are considered to be: • Traffic and Transportation: Impacts upon Air Quality due to emissions from construction vehicles during the construction period. • Population and Human Health: There is a linear relationship between exposure to air pollutants and attributed health outcomes such as hospital admission/mortality rate from respiratory and cardiovascular diseases; and Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Air Quality and these potentially interacting environmental topics.
Chapter 11 Climate	The most significant interactions in relation to Climate are considered to be: • Air Quality: interaction between air quality and greenhouse gas emissions. A climate greenhouse gas assessment is presented in Chapter 11. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Climate and these potentially interacting environmental topics.
Chapter 12 Terrestrial Noise and Vibration	The most significant interactions in relation to Terrestrial Noise and Vibration are considered to be:

Chapter	Summary of Interactions
	• Traffic and Transportation: Increased levels of noise from construction vehicles during the construction period. • Resource and Waste: Noise from sediment processing plant and associated equipment (temporary). • Population and Human Health: There is a complex relationship between noise and attributed health outcomes such as hospital admission/mortality rate from cardiovascular disease and mental health conditions (e.g. depression, anxiety and dementia). Noise can affect health both directly (in extreme circumstances, which is less common), and indirectly (through annoyance or sleep disturbance). However, the health effects from noise/vibration can also be affected by tonality and type of noise (e.g. low frequency noise, infrasound and amplitude modulation). Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Terrestrial Noise and Vibration and these potentially interacting environmental topics.
Chapter 13 Underwater Noise and Vibration	The most significant interactions in relation to Underwater Noise and Vibration are considered to be: • Biodiversity, Flora and Fauna-Benthic Biodiversity and Fisheries: Effects of underwater noise and vibration from demolition, dredging-related activities and construction vessel movements. Secondary effects of underwater noise on fish behaviour, including potential temporary disturbance or avoidance by estuarine and diadromous species. • Biodiversity, Flora and Fauna-Marine Mammals: Temporary disturbance arising from dredging and associated vessel movements. Potential behavioural responses of marine mammals to elevated underwater noise levels. Potential for extended duration disturbance due to 24-hour dredging in certain areas Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Underwater Noise and Vibration and these potentially interacting environmental topics.
Chapter 14 Coastal Processes	The most significant interactions in relation to Coastal Processes are considered to be: • Water Quality: Effect of permanent disturbances to the hydromorphological regime. • Flood Risk Assessment: Wider coastal processes should always be considered when assessing coastal flood risk, in particular thinking about how coastal flooding may be exacerbated in certain locations due to physical factors that can occur individually or in combination. The coastal process modelling as described in the Coastal Process chapter has therefore been used in this assessment. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Coastal Processes and these potentially interacting environmental topics.

Chapter	Summary of Interactions
Chapter 15 Material Assets – Traffic and Transportation	The most significant interactions in relation to Material Assets – Traffic and Transportation are considered to be: • Air Quality: interaction between air quality and construction traffic emissions. A transport assessment is presented in Chapter 15. • Climate: The road traffic information provided in this chapter has been utilised to quantify the potential GHG emissions associated with road traffic generation on the immediate road network as a result of the construction and operation of the Project. • Services: Effect of temporary movement of water and electrical plant during installation of temporary connections or should the usage of bowsers or generators be implemented, these will require delivery via HGV vehicle movements. • Population and Human Health: A change in transport nature (i.e. increasing presence of HGVs) and flow rate can cause negative mental and social health and wellbeing impacts through increasing perceptions of severance, reducing pedestrian amenity (and potentially causing fear/intimidation effects) and increasing risk of accident and injury. • Resource and Waste: Impacts of any vehicle movements associated with hauling or removing waste materials with effects of vehicle movements on traffic. Further considered in Chapter 15. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Material Assets – Traffic and Transportation and these potentially interacting environmental topics.
Chapter 16 Material Assets - Services	There are no significant interactions with Material Assets – Services.
Chapter 17 Cultural Heritage	The most significant interactions in relation to Cultural Heritage are considered to be: • Coastal Processes: Increased SSCs and sediment deposition leading to indirect impacts on cultural heritage receptors, including marine archaeology and alteration of sediment transport regime leading to indirect impacts on marine archaeology receptors. • Landscape and Visual: Effect of temporary (during construction phase) loss or addition of elements arising because of the Project on views from and towards cultural heritage features. Effect (during operational phase) of change to landscape elements within the Port Estate arising because of the Project on views from and towards cultural heritage features. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Cultural Heritage and these potentially interacting environmental topics.
Chapter 18 Landscape and Visual	There are no significant interactions with Landscape and Visual
Chapter 19 Population and Human Health	The most significant interactions in relation to Population and Human Health are considered to be:

Chapter	Summary of Interactions
	• Air Quality: interaction between air quality and the relationship where project related emissions are potentially translated into potential health outcomes for nearby communities. Further information is presented in Chapter 19. • Underwater Noise and Vibration: Underwater noise at levels that could cause discomfort to nearby (<100m) human divers. • Services: Effect of temporary disruption to services and utilities during temporary connection requirement works being undertaken or should emergency issues arise with loss of services and utilities, impacting local populations. • Terrestrial Noise and Vibration: Effect of ABR2 Project noise levels on the amenity of human receptors. Further information is presented in Chapter 19. • Landscape and Visual: Effect of temporary (during construction phase) loss or addition of elements arising because of the Project resulting in indirect effects on views. Effect (during operational phase) of change to landscape elements within the port facility arising because of the Project resulting in indirect effects on views. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Population and Human Health and these potentially interacting environmental topics.
Chapter 20 Resource and Waste	The most significant interactions in relation to Resource and Waste are considered to be: • Water Quality: Effect of temporary water quality impacts from construction waste. • Land, Soils, Geology and Hydrogeology: Treatment and re-use of dredged sediments will significantly reduce disposal to landfill. Any surplus dredged sediment material may need to be disposed as waste or sent off site to a recovery/soil treatment facility. Consideration of each interaction provided in the relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Resource and Waste and these potentially interacting environmental topics.

21.6 Assessment Summary and Conclusions

The potential cumulative effects of consented schemes nearby the ABR2 Project were assessed. Relevant projects were selected, and the project team defined significance thresholds and criteria for assessment. These were based on professional judgement, alongside relevant standards and guidelines, to determine whether in combination effects give rise to additional levels of significance.

The 3FM Project and MP2 Project were considered significant in terms of cumulative impact, as these projects involve potentially overlapping construction activities of a similar nature taking place across the navigation channel from the ABR2 Project. The MP2 Project was selected due to the potential overlapping for construction activities of some of its later phases of marine infrastructure after the commencement of the ABR2 Project. Should planning be granted for the 3FM Project, there will be potential for overlapping of the construction activities planned within Dublin Port after the commencement of the ABR2 Project

The key environmental topics with potential cumulative effects with the ABR2 Project were: Biodiversity; Water Quality; and Climate. Construction phase mitigation measures were identified to prevent the potential interaction, and thus mitigate the potential for, cumulative effects on all of these environmental topics.

As part of the wider approach to Capital Projects in Dublin Port as detailed in their respective CEMPs, DPC have a commitment to undertake only one capital or maintenance dredging campaign at any one time within the Port. As the dredged material from the ABR2 Project is also treated rather than dumped at sea. This removes any potential for cumulative effects between the 3FM, MP2, maintenance or capital dredging campaigns and the ABR2 Project. This means that the dredging element of the ABR2 Project will not overlap with 3FM capital dredging and/or DPC maintenance dredging campaigns, thus reducing potential impacts to water quality, biodiversity/habitat deterioration and underwater noise. Under the 3FM Project, an estimated 70,000m^3 of Dredge Material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under an amended IE licence, subject to availability of receptor capacity. The license revision process, and its in built controls, will therefore ensure that the two projects will not result in cumulative impact thus reducing potential impact to Waste. In terms of the operation phase of the in-port projects, such as the 3FM and MP2 Projects, it is noted that these developments will facilitate greater shipping and road traffic movements at the port. This is intrinsic to the objectives of the ABR2 Project.

The ABR2 Project will facilitate greater shipping and road traffic movements in the port environs which although will have positive cumulative impacts for traffic and transportation, will inherently have adverse residual cumulative impacts with regards to climate. However, the ABR2 Project complies with existing and emerging policy requirements implemented in the CAP25 and elsewhere, which includes national measures such as the electrification of the road haulage fleet and the biofuels blend. With regards to the ABR2 Project, DPC has adhered to the requirements of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended, and the Climate Action Plan 2024. For impacts under the

direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

DPC has commissioned and published the Conservation Strategy 2024 for the entire Dublin Port Estate. This involves a strong commitment to Heritage values across all of DPC's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the parent ABR Project, the MP2 Project, the 3FM Project and the ABR2 Project involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the overall site. The Liffey-Tolka Project also offers a significant contribution to Port-City integration. Consequently, these projects connect to provide a heritage landscape with an overall positive social and cultural cumulative impact. As the ABR2 Project includes the potential for the introduction of a treatment area and stockpiling at the historic North Wall Quay Extension, specific mitigation measures to ensure that this protected feature is not damaged by activities and can be reversed to its original condition have been included within the ABR2 Project.

The other selected projects were assessed across all environmental topics, and no significant cumulative impacts (positive or negative) were identified on the basis that the ABR2 Project mitigations were applied. Therefore, no further cumulative impact mitigations were required.

The potential interactions between environmental aspects arising from within the ABR2 Project were assessed. Each technical environmental chapter within the EIAR identifies and analyses the potential for other environmental interactions. These chapters also detail environmental baseline information and identify the significant potential and residual construction and operational effects/impacts of the discrete ABR2 Project. The cumulative assessment identified many potential inter-relationships and interactions. Additional mitigation measures were included to minimise and/or off-set the potential for significant effects resulting from such interactions.

All potential cumulative effects and environmental interactions of the ABR2 Project's construction and operational stages are included in **Chapter 21**. All mitigation measures for the ABR2 Project resulting from the individual assessments, and the cumulative effects and environmental assessment are listed in detail in **Chapter 22 Summary of Mitigation Measures** and the Project Construction Environmental Management Plan (CEMP). Provided the suggested mitigation measures as listed in the environmental chapters are employed during construction and/or operation the overall impact to the environment, even considered in combination, is considered not significant.