

Environmental Impact Assessment Report (EIAR)

Volume 6 of 6: Appendices

(Appendix A1.1) Transboundary Effects

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Contents

1. Transboundary Effects	1
1.1 Introduction.....	1
1.2 Consideration of Transboundary Effects.....	1
1.3 Conclusion.....	7

Acronyms and Abbreviations

Acronym	Meaning
BPS	Booster Pumping Station
BPT	Break Pressure Tank
EIAR	Environmental Impact Assessment Report
ESB	Electricity Supply Board
FCV	Flow Control Valve
GHG	Greenhouse Gases
RWI&PS	Raw Water Intake & Pumping Station
SAC	Special Area of Conservation
TPR	Termination Point Reservoir
UK	United Kingdom
WTP	Water Treatment Plant

1. Transboundary Effects

1.1 Introduction

1. The Proposed Project would comprise an abstraction of raw water from the Lower River Shannon and various elements of water supply infrastructure, which would extend from Parteen Basin in County Tipperary, through the Midlands, to Peamount in County Dublin.
2. As set out in Chapter 1 (Introduction) of the Environmental Impact Assessment Report (EIAR), the Proposed Project has been determined to be Strategic Infrastructure Development, and as such, the application for permission for the Proposed Project is being made to An Coimisiún Pleanála as required by Section 37A of the Planning and Development Act 2000 (as amended).
3. The Planning and Development Act under Section 37E(3)(d) states the following with respect to transboundary effects:

37E (3) Before a person applies for permission to the Board under this section, he or she shall...

(d) (in cases) where the proposed development is likely to have significant effects on the environment of a Member State of the European Communities or a state which is a party to the Transboundary Convention, send a prescribed number of copies of the application and the environmental impact statement [now referred to as an EIAR] to the prescribed authority of the relevant state or states together with a notice stating that submissions or observations may, during the period referred to in paragraph (a)(ii), be made in writing to the Board.

4. Where An Coimisiún Pleanála considers that there are likely significant environmental transboundary effects in any other relevant state¹, they may direct that copies of the documentation be sent to the relevant authorities in those states, as well as to the list of Prescribed Bodies in the Republic of Ireland, prior to lodgement of the planning application.
5. The nearest relevant state to the Proposed Project is the United Kingdom, which is a signatory to the Espoo Convention. The Proposed Project would be located approximately 80km from the border with Northern Ireland at its closest point, and 120km from mainland Great Britain at its nearest point.
6. As part of the Environmental Impact Assessment process, consideration must be given to the potential for significant transboundary effects to arise. The purpose of this report is to demonstrate to An Coimisiún Pleanála that there would not be any likely significant environmental effects from the Proposed Project across the boundary with any other relevant state. It addresses each environmental topic assessed within the EIAR and demonstrates the basis for its conclusion that there would be no likely significant transboundary environmental effects.

1.2 Consideration of Transboundary Effects

7. This section considers the potential for transboundary effects on other relevant states. The section draws on the conclusions of likely significant effects from the Proposed Project, detailed in Volume 3 (Environmental Assessment) of the EIAR, but only in the context of how those effects could impact another relevant state.

¹ Relevant states are members of the European Union or European Economic Area, or states that are part of the United Nations Economic Commission for Europe Convention on Environmental Impact Assessment in a Transboundary Context (the 'Espoo Convention').

1.2.1 Traffic and Transport

8. Haul Roads are part of the public road network which have been designated for the movement of construction materials, plant and labour to, from and between the infrastructure sites, the pipeline and temporary works areas. All Haul Roads for the construction of the Proposed Project are located in the Republic of Ireland (Figures 5.18 to 5.26 of the EIAR) and therefore would only affect traffic on roads within the Republic of Ireland.
9. After completion of the Construction Phase, the traffic generated during the Operational Phase of the Proposed Project would be related to the fleet of trucks delivering treatment process chemicals to, and removing sludge from, the proposed Water Treatment Plant (WTP) and by the staff travelling to and from the proposed WTP, Raw Water Intake and Pumping Station (RWI&PS), Break Pressure Tank (BPT), Booster Pumping Station (BPS), Flow Control Valve (FCV) and Termination Point Reservoir (TPR), as well as ancillary pipeline infrastructure (for maintenance). These trips would be within the Republic of Ireland.
10. There would therefore be no likely significant transboundary effects on traffic and transport in any other relevant state as a result of the Proposed Project.

1.2.2 Noise and Vibration

11. Any noise emissions during construction and operation of the Proposed Project would be local to the construction working width, Haul Roads, and infrastructure sites.
12. Given that the border with Northern Ireland is approximately 80km from the Proposed Project and its associated construction works, and all Haul Roads would be within the Republic of Ireland, there would be no likely significant transboundary effects in any other relevant state from noise emissions as a result of the Proposed Project.

1.2.3 Biodiversity

13. The assessment of the potential for the Proposed Project to impact upon European sites, presented in the Natura Impact Statement, concluded that with the implementation of the mitigation measures, the Proposed Project would not adversely affect the integrity of any European site (directly or indirectly), either alone or in combination with other plans or projects.

1.2.3.1 Lower Shannon Special Area of Conservation

14. The Proposed Project would have some level of residual effect on biodiversity within the boundary of the Lower River Shannon Special Area of Conservation (SAC) during the construction phase. This is the only European site that falls within the footprint of the Proposed Project. The residual effects on non-qualifying interest habitats and species within the Lower River Shannon SAC would be from the loss of woodland at the RWI&PS and impacts on local bat populations.
15. None of these residual biodiversity effects compromise the overall biodiversity resource of the Lower River Shannon SAC that relates to the integrity of the site; thus, no likely significant construction effects are predicted.
16. During operation, the Proposed Project would involve the abstraction of water from Parteen Basin, which has the potential to impact on hydrology, water quality and geomorphology. There could also be habitat degradation as a result of hydrological impacts, i.e. rivers flowing into Lough Derg, Parteen Basin, the Lower River Shannon and the headrace and tailrace canals. However, the water abstraction would not significantly change the current hydrology, water quality and geomorphology of Lough Derg and Parteen Basin as evidenced by the hydrological model and water quality modelling.

17. None of these residual biodiversity effects compromise the overall biodiversity resource of the Lower River Shannon SAC that relates to the integrity of the site; thus, no likely significant operational effects are predicted.

1.2.3.2 Other European Sites

18. There would be no likely significant adverse effect for any other European site within the zone of influence, as all other European sites are remote from the Proposed Project. There would be potential impact pathways connecting the sites to the Proposed Project, such as hydrological connections, however mitigation will be implemented to avoid any adverse effects on the integrity of the sites. This mitigation will include, for example:
- Direct discharge of untreated water from on-site dewatering will not be allowed
 - Methods for watercourse crossings and instream works will be prepared and agreed with the Inland Fisheries Ireland
 - Buffer zones will be put in place for watercourses or waterbodies within or adjacent to construction works
 - Sediment runoff will be controlled by the use of appropriate silt fencing and ponds.
19. During operation, and prior to the implementation of mitigation measures, the only impacts with a potentially significant effect on European sites are associated with habitat degradation (e.g. discharges from washout valves and discharge outfalls, changes to geomorphology of rivers/streams, spread of invasive species). However, mitigation measures will be implemented, as set out in Chapter 8 (Biodiversity) of the EIAR, to ensure that the receiving environment is protected, and the integrity of European sites is maintained.

1.2.3.3 Conclusion

20. In conclusion, there would be no likely significant adverse effect on any European site during either construction or operation of the Proposed Project. There would be no effect on any other sensitive ecological receptors in any other relevant state given the distance to the nearest state (80km from Northern Ireland). There would therefore be no likely significant transboundary effects on biodiversity from the Proposed Project.

1.2.4 Water

21. The Proposed Project crosses seven catchments, all within the Republic of Ireland, including: four Lower Shannon catchments; the northernmost part of the Barrow catchment; the south-east tip of the Boyne catchment and the western edge of the Liffey and Dublin Bay catchments. The Proposed Project would potentially impact waterbodies within these catchments during construction and operation by, for example:
- Disruption to surface water flows, across land and in water bodies
 - Mobilisation of sediment and changes to the hydromorphology of watercourses
 - Potential for the mobilisation of polluting substances
 - Discharge from wash out valves at temporary discharge points and permanent outfalls during planned maintenance which could impact water quality, scouring of water body beds and the remobilisation of silt.
22. The nature of the Proposed Project is such that direct impacts, in relation to the pipeline and infrastructure sites, are likely to be limited to those water bodies being crossed, in very close proximity to a crossing point, or that have been identified as permanent washout locations, requiring the installation of a new outfall. Indirect impacts, in relation to the pipeline and infrastructure sites, can occur up to 5km from the Proposed Project as a result of hydrological connections to downstream water bodies and national or

international designated sites. Even when taking this wider study area into account, however, it is unlikely that the Proposed Project would affect a waterbody within another relevant state given the distance to the nearest state (80km from Northern Ireland).

23. The Proposed Project would abstract raw water from the eastern shore of the manmade Parteen Basin, downstream of Lough Derg (Derg Heavily Modified Water Body). At peak demand, up to 300Mld of raw water would be abstracted. ESB currently manage water levels within a Normal Operating Band on Lough Derg and an upper and lower water level on Parteen Basin. ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.
24. To assess the impact of the abstraction from the Parteen Basin, the upstream limit of the study area was determined to be Meelick Weir. The Meelick Weir and nearby Corclough Bridge on Incherky are points of hydraulic control, which entirely partition the whole Shannon upstream from activities at the Lough Derg and Derg Heavily Modified Water Body. The downstream limit of the study area was determined to be the confluence of the Shannon and the Ardnacrusha Tailrace (North Ballycannon_010) at Limerick Dock. The diurnal tidal influence on levels and flows at this point mean that any change in the Tailrace flow, as a result of a change in the duration of flow through Ardnacrusha Generating Station, would be imperceptible in Limerick Dock at the confluence. All waterbodies within these upstream and downstream limits that could potentially be impacted by the Proposed Project abstraction are located entirely within the Republic of Ireland.
25. The level of abstraction proposed has been assessed through the use of sophisticated models for hydrology and water quality (see Chapter 9 (Water) of the EIAR). The output of this modelling has indicated that there would be no significant adverse effects on any of the waterbodies assessed within the study area as a result of the abstraction.
26. As such, there would be no likely significant adverse effect on any waterbody in any other relevant state. There would therefore be no likely significant transboundary effects on the water environment from the Proposed Project.

1.2.5 Soils, Geology and Hydrogeology

27. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect soils and geology within the Republic of Ireland. The Proposed Project would not impact any groundwater body in another relevant state and given the distance between the project and Northern Ireland, there would be no hydrogeological pathway to groundwater in another relevant state.
28. There would therefore be no likely significant transboundary effects on soils, geology and hydrogeology in any other relevant state as a result of the Proposed Project.

1.2.6 Agriculture

29. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect agricultural landholdings within the Republic of Ireland. There would be no likely significant transboundary effects on agriculture in any other relevant state as a result of the Proposed Project.

1.2.7 Air Quality

30. Any emissions to air during construction and operation of the Proposed Project would be local to the construction working width, Haul Roads, and infrastructure sites.
31. Given that the border with Northern Ireland is approximately 80km from the Proposed Project and its associated construction works, and all Haul Roads would be within the Republic of Ireland, there would be no likely significant transboundary effects in any other relevant state from air emissions as a result of the Proposed Project.

1.2.8 Climate

32. Climate impacts (that is those occurring as a consequence of climate change) are observable at a national and global scale. The assessment of significance is based on whether the increase in greenhouse gas (GHG) emissions associated with the Proposed Project represents a significant contribution to global atmospheric GHG concentrations in the context of national carbon budgets.
33. The Irish Government has committed to reducing GHG emissions in the Republic of Ireland to net zero by 2050. Three carbon budgets have been set for 2021-2025, 2026-2030 and 2031-2035 with the aim to set the Republic of Ireland on a pathway to climate neutrality by 2050. The climate assessment reported in the EIAR quantifies the GHG emissions associated with the Proposed Project by calculating the whole life net GHG emissions, then compares the net project GHG emissions to the relevant Irish national and sectoral carbon budgets.
34. In line with relevant guidance, as set out in Chapter 13 (Climate), the crux of significance regarding the effect on climate is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050. Mitigation has taken a leading role within the guidance. Therefore, the assessment includes mitigation and embedded design measures to reduce the effect of the Proposed Project on climate.
35. The Proposed Project can be considered to align with Ireland's trajectory towards net zero by 2050 as it has reduced its construction and operational emissions through embedded design, Corporate Power Purchase Agreements and other mitigation measures which align with the current and emerging Climate Action Plans (see Section 13.5 in EIAR Chapter 13 (Climate)). It is concluded that the Proposed Project would not have a significant environmental effect on GHG emissions. Therefore, there would be no likely environmental significant transboundary effects in terms of global climate.

1.2.9 Population

36. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect communities within the Republic of Ireland. There would be no likely significant transboundary effects on communities in any other relevant state as a result of the Proposed Project.

1.2.10 Human Health

37. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect human health within the Republic of Ireland. There would be no likely significant transboundary effects on human health in any other relevant state as a result of the Proposed Project.

1.2.11 Landscape and Visual

38. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect landscape character within the Republic of Ireland.
39. Visual effects from the Proposed Project have the potential to occur over a variety of distances due to the visual context, nature of works, topography, and intervening vegetation.
40. The new permanent, above-ground features and infrastructure sites which would remain during the Operational Phase are likely to give rise to the greatest long-distance views of the Proposed Project, particularly where elevated viewpoints occur within the surrounding area. The maximum distance over which the Proposed Project might give rise to significant visual effects is approximately 10km, based on a precautionary approach and Zone of Theoretical Visibility (see Section 16.2.2 in Chapter 16 (Landscape and Visual)). This 10km study area is associated with the WTP and RWI&PS only, with other elements of the Proposed Project having smaller study areas of 1km to 5km, representing the reduced distance over which significant effects have the potential to occur.
41. Given that the border with Northern Ireland is approximately 80km from the Proposed Project and its associated construction works, there would be no likely significant transboundary landscape or visual effects in any other relevant state from the Proposed Project.

1.2.12 Cultural Heritage

42. Any effects on cultural heritage assets, including archaeological remains, historic buildings, and historic landscapes, would be limited to within the construction working width and surrounding area.
43. Given that the border with Northern Ireland is approximately 80km from the Proposed Project and its associated construction works, there would be no likely significant transboundary effects on cultural heritage in any other relevant state from the Proposed Project.

1.2.13 Material Assets

44. Material assets are resources that have intrinsic value, including built services and infrastructure (such as canals, railway lines, water supply infrastructure, gas transmission infrastructure, and power lines).
45. The Proposed Project is located entirely in the Republic of Ireland and therefore would only affect material assets within the Republic of Ireland. There would be no likely significant transboundary effects on material assets in any other relevant state as a result of the Proposed Project.

1.2.14 Resource and Waste Management

46. There are limited steel suppliers and manufacturers within the Republic of Ireland. As such, the Republic of Ireland largely relies on imports for steel and steel products and therefore the Proposed Project is likely to import from global markets too. In April 2021, the World Steel Association provided an estimation that global steel demand would increase by 5.8% by 2028. Recent global market reports for steel, as detailed in Chapter 19 (Resource & Waste Management), do not identify any issues with supply to meet the increasing demand and it is likely that supply would be secure for the duration of the Construction Phase. No significant transboundary effects are anticipated from an international supply of steel.
47. A proportion of waste generated by the Proposed Project is anticipated to be hazardous. This would include:
 - Waste road surfacing materials, such as bitumen containing coal-tar, where there is a requirement to cross roads by open trenching for tunnelling of the pipe and for the underground cable sections

- Hazardous wastes potentially generated in the Construction Compounds and Pipe Storage Depots where materials, plant and equipment would be stored during the Construction Phase
 - Excavated waste from the decommissioning of a former petrol station that could be contaminated with hazardous substances from in-situ disused pumps and an underground storage tank
 - Unexpected/unrecorded landfill wastes that are discovered during construction
 - Small quantities of hazardous waste from general construction activities, such as waste oils, oil-contaminated filters, brake fluids and other such materials.
48. The magnitude of impact from waste has been assessed by determining the percentage of the remaining landfill void capacity that would be depleted by the anticipated waste during the construction of the Proposed Project. However, there is no commercial hazardous waste landfill capacity in the Republic of Ireland and a large percentage of hazardous waste is currently exported to the UK. It is also unlikely that the Republic of Ireland will gain new hazardous waste landfill capacity to coincide with the Construction Phase of the Proposed Project. On this basis, the potential impact of the Proposed Project due to the generation of a small amount of hazardous waste has been assessed based on the available hazardous landfill capacity in the UK rather than in the Republic of Ireland.
49. Currently there is approximately 15.6 million tonnes of hazardous landfill capacity in the UK, which could drop to 4.9 million tonnes by 2033. If a worst-case scenario is assumed that approximately 2% of the construction and demolition waste and excavated waste is hazardous but subject to national trends for treatment and recovery (which is approximately 50% for construction and demolition waste and 99% for excavated waste), then 535 tonnes of hazardous waste could require licenced disposal (see Table 19.39 in Chapter 19 of the EIAR (Resource and Waste Management)).
50. Based on these figures, hazardous landfill capacity in the UK is expected to reduce by <0.1% as a result of the hazardous waste forecast. This would not result in significant adverse effect, in line with the assessment criteria detailed in Chapter 19 (Resource and Waste Management). Therefore, there would be no likely significant transboundary effects in the form of hazardous waste capacity in the UK.
51. No other significant transboundary effects on resource and waste management would occur within any other relevant state as a result of the Proposed Project.

1.2.15 Risk of Major Accidents and Disasters

52. A risk assessment for major accidents and disasters has been undertaken and is included in Chapter 20 of the EIAR (Risk of Major Accidents and Disasters). This shows that risks from hazards are being mitigated through the project design. None of the hazards identified have the potential to cause effects outside of the Republic of Ireland.

1.3 Conclusion

53. In conclusion, there would be no likely significant transboundary effects in any other relevant state as a result of the Proposed Project.
54. The majority of effects from the Proposed Project would be localised to the areas around the permanent infrastructure and construction working width, with no pathway to any other relevant state. Some effects, including traffic related effects along the Haul Roads used during the construction of the Proposed Project, would extend further from the location of the Proposed Project, but would still be entirely within the Republic of Ireland with no pathway to any other relevant state.

55. The export of hazardous waste is the only impact that is anticipated to affect another relevant state, as it is anticipated that hazardous waste generated by the Proposed Project would be sent to the UK. However, the impact on the UK's hazardous waste capacity would be negligible, based on the low volumes of hazardous waste that would need to be disposed from the Proposed Project, resulting in a not significant effect. There would, therefore, be no likely significant transboundary effects on hazardous waste capacity in the UK.