7.5.4 Effects on Designated Areas

The Site is not located within the boundaries of any European Sites (see Section 7.3.1). An Appropriate Assessment screening was prepared to provide the information necessary to complete an Appropriate Assessment for the Proposed Development. The screening identified and assessed a potential pathway for indirect effects on the Wexford Harbour and Slobs SPA.

Following the screening, a Natural Impact Statement was prepared which concluded that:

"Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the operation of the Proposed Development does not adversely affect the integrity of European sites."

Therefore, it can be objectively concluded that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.

As such, it can be concluded that the Proposed Development will not have an adverse impact on any European Sites designated for birds, either alone or in combination with other plans or projects.

No proposed National Heritage Area or National Heritage Area within the ZOI were considered as ornithological ecological receptors in their own right due to the separation distance from the Proposed Development and the absence of connectivity.

7.6 Mitigation and Best Practice Measures

This section describes the measures that are in place to mitigate the negative effects associated with the Proposed Development on avian receptors. Effects on avian receptors may be addressed in two ways: (i) design of the Proposed Development and (ii) management of the development phases.

Because this planning application relates to the extension of life to an existing wind farm, there will be no design stage. However, it may be noted that the original project design ensured that hard standing areas were designed to the minimum size necessary to accommodate the turbines, which avoid the potential for significant effects on avian receptors.

The development phases of a project are (i) the construction phase, (ii) the operation of the wind farm and (iii) decommissioning of the wind farm. Because this planning application relates to the extension of life to an existing wind farm, there will be no construction phase. Mitigation relating to the remaining phases are discussed below.

7.6.1 Construction Phase Mitigation

As has been detailed in Chapter 1 and Chapter 4 of this EIAR, no construction works or ground works are required as part of the existing Castledockrell Wind Farm, as the proposal seeks to extend the operational life of the existing wind farm. Therefore, there will be no loss or disturbance of habitats associated with any of the aforementioned KOR species, there are no mitigation measures proposed, and the impact will be not significant.

7.6.2 Operational Phase Mitigation

No significant operational phase impacts requiring mitigation were identified. The above review of effects on KORs considered habitat loss, displacement and barrier effects and collision risk during the operational phase. No effect significance greater than ***Low,*** as per Percival (2003) criteria, was identified for any KOR. No effect significance greater than ***Slight,*** as per EPA (2022) criteria, was identified for any KOR.

7.6.3 Decommissioning Phase Mitigation

The potential impacts associated with future decommissioning of the Proposed Development in c.20 years will be similar to those associated with a typical wind farm construction but of a reduced magnitude, due to the reduced scale of the proposed decommissioning works, as outlined in Chapter 4 of this EIAR. During decommissioning, it may be possible to reverse or reduce some of the potential impacts caused during the initial construction of the wind farm by allowing hardstands and roads to revegetate and regenerate naturally.

Upon decommissioning of the Proposed Development, the wind turbines will be disassembled in reverse order to how they were erected. All above-ground turbine components will be separated and removed off-site for reuse, recycling or disposal. The disassembly and removal of the turbines will not have a significant impact on local bird populations at the site.

It is proposed to leave turbine foundations in place underground and to allow to revegetate and regenerate naturally. Leaving the turbine foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in significant environmental nuisances such as noise, vibration and dust. It is also proposed to leave underground cable ducting in place where they are unlikely to be impacted by typical agricultural works. It is proposed that site roadways will be left in situ, as appropriate, to facilitate access for agricultural lands.

Mitigation measures, as outlined below, will be implemented during the future decommissioning phase to avoid any potential effects. A decommissioning plan will be agreed with the local authorities at least three months prior to decommissioning of the Proposed Development. This decommissioning plan will include industry best practise measures to mitigate the impact of works on birds, which may include the following:

- All machinery will work from the existing access road corridor.
- Any required vegetation removal will be conducted in line with the provisions of the Wildlife Acts 1976-2021.
- Decommissioning works will begin outside the bird nesting season as defined by the Wildlife Act 1976 as amended (1st of March to the 31st of August). Any requirement for works to run into the subsequent breeding season will be subject to pre-works bird surveys to confirm the absence of breeding birds of conservation concern. If such breeding activity is identified during the works, the nest sites will be located, and no works shall be undertaken within an agreed buffer in line with industry best practise.
- Noise limits, noise control measures, hours of operation (i.e. dusk and dawn is high faunal activity time) and selection of plant items will be considered in relation to disturbance of birds. All plant and equipment for use will comply with the European Communities (Noise Emission By Equipment For Use Outdoors) Regulations, 2001, as amended (SI 632/2001). Plant machinery will also be turned off when not in use.
- Silt fences will be installed as an additional water protection measure around existing watercourses.
- An Environmental Clerk of Works and Project Ecologist will be appointed. Duties will include:

- Organise the undertaking of a pre-works walkover bird survey to ensure that significant effects on birds will be avoided.
- Inform and educate on-site personnel of the ornithological and ecological sensitivities within the Site.
- Oversee management of ornithological issues during the works period and advise on ornithological issues as they arise.
- Provide guidance to contractors to ensure legal compliance with respect to protected species onsite.
- Liaise with officers of consenting authorities and other relevant bodies with regular updates in relation to decommissioning progress.

7.7 Monitoring

The following monitoring measures are proposed as industry best practice rather than in response to any identified impacts associated with the Proposed Development.

7.7.1 Operation

A detailed Bird Monitoring Programme has been prepared for the extended operational phase of the existing wind farm (refer to Appendix 7-6 for further details). The programme of works will monitor parameters associated with collision, displacement/barrier effects and habituation during the extended operational phase. Surveys will be scheduled to coincide with Years 1, 2, 3, 5, 10 and 15 of the extended operational lifetime of the wind farm. Monitoring measures are broadly based on guidelines issued by SNH (2009). The following individual components are proposed:

- Monthly distribution and abundance surveys: breeding walkover surveys (adapted Brown & Shepherd) and winter walkover surveys.
- Targeted bird collision surveys (corpse searches) will be undertaken with trained dogs. The surveys will include detection and scavenger trials, to correct for these two biases and ensure the resulting data is robust.

7.7.2 Decommissioning

Decommissioning monitoring surveys will be undertaken prior to the commencement of works associated with decommissioning at the Site. Additionally, if works are to continue into the breeding season, surveys will be required monthly from April to July. The survey will include a thorough walkover survey to a 500m radius of the development footprint and all works areas, where access allows. If winter roosting or breeding activity of birds of high conservation concern is identified during the decommissioning phase, no works shall be undertaken within a species-specific disturbance buffer (e.g. Forestry Commission Scotland, 2006; Ruddock and Whitfield, 2007; Goodship and Furness, 2022) in line with industry best practice. No works shall be permitted within the buffer until it can be demonstrated that the roost/nest is no longer occupied.

7.8 Residual Effects

The following species were identified as KORs and were subject to detailed impact assessment:

- Peregrine Falcon (all seasons)
- Black-headed Gull (winter season)
- Lesser Black-backed Gull (breeding and winter seasons)
- Kestrel (all seasons)
- Buzzard (all seasons)
- Sparrowhawk (all seasons)

No effect significance greater than *Low*, as per Percival (2003) criteria, was identified for any KOR. No effect significance greater than *Slight*, as per EPA (2022) criteria, was identified for any KOR. Taking into consideration the effect significance levels identified and the proposed best practice and mitigation, significant residual effects on the KORs with regard to direct habitat loss, disturbance/displacement or collision mortality are not anticipated.

7.9 Cumulative Effects

As per NatureScot guidance "Assessing the Cumulative Impacts of onshore Wind Energy Developments" (SNH, 2012), cumulative effects arising from two or more developments may be:

- **Additive** (a multiple independent additive model)
- **Antagonistic** (the sum of impacts are less that in a multiple independent additive model)
- **Synergistic** (the cumulative impact is greater than the sum of the multiple individual effects)

This section first identifies other plans and projects in the vicinity of the Proposed Development and then assesses the potential for additive, antagonistic or synergistic impacts to occur.

7.9.1 Other Plans and Projects

Assessment material was compiled for relevant developments within the vicinity of the Proposed Development. The material was gathered through a search of relevant online Planning Registers, reviews of relevant EIS/EIAR documents, planning application details and planning drawings. It served to identify past and future plans and projects, their activities and their environmental impacts. These are then considered for in-combination or cumulative effects with the Proposed Development. All plans and projects reviewed are outlined below.

7.9.1.1 Plans Considered in the Cumulative Impact Assessment

The following plans were considered in the cumulative impact assessment:

- Wexford County Development Plan (2022-2028)
- Regional Spatial and Economic Strategy for the Southern Region (2020)
- National Biodiversity Action Plan (2023-2030)

7.9.1.2 Projects Considered in the Cumulative Impact Assessment

NatureScot guidance (SNH, 2012; 2018) was consulted while undertaking the cumulative assessment. SNH (2012; 2018) emphasises that its priority is to 'maintain the conservation status of the species population at the national level.' However, it is acknowledged that consideration should also be allowed for impacts at the regional level 'where regional impacts have national implications (for example where a specific region holds the majority of the national population)'. A 25km radius of the existing turbine locations was considered a reasonable approximation of the size of a county and a 5km radius of the Proposed Development was considered a reasonable approximation for the local level.

To conduct the cumulative impact assessment, Wexford County Council online planning registers, relevant EIAR (or EIS) documents, planning application details and planning drawings in the vicinity of the Proposed Development and all associated works were reviewed to identify past and future projects, their activities and their environmental impacts. The findings of this review are outlined in the following sections.

7.9.1.2.1 *Developments/Land uses*

The review of the County Council planning register identified relevant general development planning applications in the vicinity of the Proposed Development. Most of these relate to the provision and/or alteration of one-off rural housing and agriculture-related structures, as described in Chapter 2 of this EIAR. Owing to the scale and nature of these developments, significant cumulative impacts are not anticipated.

7.9.1.2.2 Other Wind Farm Developments

Wind farm projects within 25km of the Proposed Development are provided in Table 7-12, including details of their planning status. A total of 48 no. existing turbines and 7 no. proposed turbines were identified for consideration. The environmental impacts of each permitted or existing wind farm are outlined in detail in this section.

Table 7-12 Wind energy applications within 25km of the Site

County	Wind Farm	Planning Status	Number of Turbines	Separation Distance (turbine to turbine)
Wexford	Castledockrell T12	Existing	1	c. 330m
	Bola More	Existing	6	c.2.7km
	Ballaman	Existing	2	c.6.5km
	Ballycadden	Existing	9	c.8.6km
	Gibbet Hill	Existing	6	c.8.9km
	Knockalour	Existing	4	c.10.9km
	Ballyduff	Existing	2	c.11.3km
	Ballynancoran	Existing	2	c.11.5km
	Gorey Business Park	Existing	1	c.23.1km
Wicklow	Cronelea	Existing	4	c.20.1km
	Cronelea Upper	Existing	3	c.21.8km
	Cronelea Upper 2	Existing	3	c.21.4km
Carlow	Greenoge	Existing	5	c.8.9km
	Croaghan	Proposed	7	c.10.3km
	Ballon Meats Turbine	Existing	1	c.17.9km

Castledockrell T12

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Castledockrell turbine T12, which does not form part of this application, were considered. The impacts on the local avian community from this turbine is considered to be similar to

those outlined in this chapter for the Proposed Development (Castledockrell T1 to T11). The addition of one additional turbine is unlikely to add significant cumulative impacts locally.

Bola More Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Bola More Wind Farm were considered. The planning file[10] was reviewed on the Wexford County Council Planning Register and no significant impacts on designated birds were anticipated in the report. The report does not give details on what species were utilising the wind farm site during surveys. Bola More Wind Farm is located within predominantly agricultural lands.

Ballaman Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Ballaman Wind Farm were considered. The planning file[11] was reviewed on the Wexford County Council Planning Register and no information regarding potential effects on birds was available. Ballaman Wind Farm is located within predominantly agricultural lands.

Ballycadden Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Ballycadden Wind Farm were considered. The Environmental report[12] was reviewed on the Wexford County Council Planning Register and sparrowhawk was the only species listed that was also a KOR of this EIAR. Sparrowhawk was present at local significance, habitat loss was estimated to be a low significance effect (EPA, 2002) and collision risk was assessed to be an imperceptible effect (EPA, 2002). Ballycadden Wind Farm is located within predominantly agricultural lands.

Gibbet Hill Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Gibbet Hill Wind Farm were considered. The planning file[13] was reviewed on the Wexford County Council Planning Register and no significant impacts on designated birds were anticipated in the report. Gibbet Hill Wind Farm is located within predominantly agricultural lands.

Knockalour Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Knockalour Wind Farm were considered. The planning file[14] was reviewed on the Wexford County Council Planning Register and Knockalour Wind Farm shared the following key species with Castledockrell Wind Farm: black-headed gull. Predicted impacts on black-headed gull were long-term imperceptible negative impact. No significant impacts on designated birds were anticipated in the report.

[10] *https://dms.wexfordcoco.ie/application_maps.php?q=20070008#*
[11] *https://dms.wexfordcoco.ie/application_maps.php?q=20100733*
[12] *https://dms.wexfordcoco.ie/application_maps.php?q=20091730#*
[13] *https://dms.wexfordcoco.ie/application_maps.php?q=20090266#*
[14] *https://dms.wexfordcoco.ie/application_maps.php?q=20110504#*

Ballyduff Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Ballyduff Wind Farm were considered. The planning file[15] was reviewed on the Wexford County Council Planning Register and no information regarding potential effects on birds was available. Ballyduff Wind Farm is located within predominantly agricultural lands and forestry.

Ballynancoran Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Ballynancoran Wind Farm were considered. The planning file[16] was reviewed on the Wexford County Council Planning Register and no information regarding potential effects on birds was available. Ballynancoran Wind Farm is located within predominantly agricultural lands.

Gorey Business Park

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Gorey Business Park Turbine were considered. The planning file[17] was reviewed on the Wexford County Council Planning Register and no information regarding potential effects on birds was available. Gorey Business Park Turbine is located within a built-up area of commercial land.

Cronelea Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Cronelea Wind Farm were considered. The planning file[18] was reviewed on the Wicklow County Council Planning Register and no information regarding potential effects on birds was available. Cronelea Wind Farm is located within predominantly agricultural lands.

Cronelea Upper Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Cronelea Upper Wind Farm were considered. The planning file[19] was reviewed on the Wicklow County Council Planning Register and no significant impacts on designated birds were anticipated in the report. Cronelea Upper Wind Farm is located within predominantly agricultural lands.

Cronelea Upper 2 Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Cronelea Upper 2 Wind Farm were considered. The planning file[20] was reviewed on the An Bord Pleanála and no information regarding potential effects on birds was available. Cronelea Upper Wind Farm is located within commercial forestry.

[15] *https://dms.wexfordcoco.ie/application_maps.php?q=20034003#*
[16] *https://dms.wexfordcoco.ie/application_maps.php?q=20033444*
[17] *https://dms.wexfordcoco.ie/application_maps.php?q=20071625*
[18] *https://www.eplanning.ie/WicklowCC/AppFileRefDetails/014805/0*
[19] *https://www.eplanning.ie/WicklowCC/AppFileRefDetails/2460106/0*
[20] *https://archive.pleanala.ie/en-ie/case/125044*

Greenoge Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Greenoge Wind Farm were considered. The planning file[21] was reviewed on the Carlow County Council Planning Register and no information regarding potential effects on birds was available. Greenoge Wind Farm is located within predominantly agricultural lands and peatlands.

Croaghan Wind Farm

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Croaghan Wind Farm were considered. The planning file[22] was reviewed on An Bord Pleanála and Croaghan Wind farm shared the following key species with Castledockrell Wind Farm: black-headed gull, peregrine falcon, kestrel, sparrowhawk and buzzard. Habitat loss, disturbance/displacement and collision risk were considered to be localised, slight or imperceptible and reversible for all key species.

Ballon Meats Turbine

The potential for the Proposed Development to result in significant cumulative or in-combination effects when assessed alongside Ballon Meats Turbine were considered. The planning file[23] was reviewed on the Carlow County Council Planning Register and no information regarding potential effects on birds was available. Ballon Meats Turbine is located within agricultural lands.

7.9.2 Assessment of Cumulative Effects

There were six KORs identified at the Proposed Development: peregrine falcon, black-headed gull, lesser black-backed gull, kestrel, buzzard and sparrowhawk. A key consideration in the assessment of the potential for cumulative impacts to result in significant effects on KORs is proximity. For the purposes of this cumulative assessment, the local scale is considered to be a 5km radius of the Site. There was one turbine (Castledockrell T12) and one wind farm (Bola More) within 5km of Castledockrell Wind Farm; the remaining were within 5-25km. The habitats within Castledockrell Wind Farm and the wind farms within the wider 25km radius are predominantly agricultural lands with smaller areas of forestry and peatlands. These habitats are abundant at the county scale and are not rare locally. The separation distance between turbines within the 25km radius is large enough that barrier effects are unlikely and the overall density of turbines within the 25km radius is low.

Following SNH (2012) guidance, the cumulative impact assessment has been carried out at the scale of the importance rating of the receptor: County Importance (peregrine falcon, black-headed gull, lesser black-backed gull); and Local Importance Higher Value (kestrel, buzzard, sparrowhawk). The assessment of cumulative effects on KORs is provided below. In particular, cumulative displacement associated with operational turbines is assessed. Short-term impacts (e.g. decommissioning disturbance) are highly unlikely to give rise to significant cumulative impacts. Direct habitat loss effects are not anticipated as there is no new infrastructure proposed.

7.9.2.1 Peregrine falcon (County Importance)

Foraging peregrine was infrequently recorded within the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

[21] *https://www.eplanning.ie/CarlowCC/AppFileRefDetails/99851/0*
[22] *https://www.pleanala.ie/en-ie/case/318705*
[23] *https://www.eplanning.ie/CarlowCC/AppFileRefDetails/13256/0*

The potential for developments at a county scale (25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. The habitats within the identified wind farms within 25km of the Proposed Development comprise agricultural grassland, peatland, woodland and commercial forestry. Some of these habitats offer some foraging potential for peregrine. However, given the separation distance and that these habitats are not considered to be a scarce resource within 25km of the Proposed Development, significant cumulative impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.9.2.2 Black-headed Gull (County Importance)

Black-headed gull were recorded travelling over the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

The potential for developments at a county scale (25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. Castledockrell T12, Bola More, Ballaman, Ballycadden, Knockalour, Ballynancoran and Ballon Meats turbines are located within agricultural habitat. Gibbet Hill turbines are located within agricultural and peatland habitats and Ballyduff, Cronelea and Greenoge turbines are located within commercial forestry and agricultural grassland habitats. Croaghan Wind farm is located predominantly within commercial forestry. Some of these habitats (agricultural grassland) offer some foraging potential for black-headed gull. However, given the separation distance and that these habitats are not considered to be a scarce resource within 25km of the Proposed Development, significant cumulative impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farm located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.9.2.3 Lesser Black-backed Gull (County Importance)

Lesser black-backed gull were recorded travelling over the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

The potential for developments at a county scale (25km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. Castledockrell T12, Bola More, Ballaman, Ballycadden, Knockalour, Ballynancoran and Ballon Meats turbines are located within agricultural habitat. Gibbet Hill turbines are located within agricultural and

peatland habitats and Ballyduff, Cronelea and Greenoge turbines are located within commercial forestry and agricultural grassland habitats. Croaghan Wind farm is located predominantly within commercial forestry. Some of these habitats (agricultural grassland) offer some foraging potential for lesser black-backed gull. However, given the separation distance and that these habitats are not considered to be a scarce resource within 25km of the Proposed Development, significant cumulative impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farm located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.9.2.4 Kestrel (Local Importance)

Kestrel were recorded hunting within the Site and breeding territories were identified adjacent to the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

There are no wind energy developments located within the foraging range of kestrel. The core foraging range of kestrel is 1.8km (based on a maximum home range of $10km^2$ (Village, 1990)). There is only one turbine within 1.8km of the Proposed Development. Furthermore, the Proposed Development is predominantly in an area of agricultural grassland with small areas of woodland/scrub in the wider area, habitat types that are predominantly utilized for hunting and/or nesting. However, these habitat types are not rare locally. Therefore, significant cumulative impacts are not predicted.

The potential for developments at a local scale (5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. There was one turbine (Castledockrell T12) and one wind farm (Bola More) within 5km of Castledockrell Wind Farm. Castledockrell T12 and Bola More are located within agricultural habitats which offer some foraging potential for kestrel, however given the fact that these habitats are not scarce in the local area, significant impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farm located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.9.2.5 Buzzard (Local Importance)

Buzzard were recorded hunting within the Site and breeding territories were identified adjacent to the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

There is only one turbine (Castledockrell T12) located within the foraging range of buzzard. The core foraging range of buzzard is 1km (based off a maximum home range of 3km^2 (Walls & Kenward, 2001)). There is only one turbine within 1km of the Proposed Development. Furthermore, the Proposed Development is predominantly in an area of agricultural grassland with small areas of woodland/scrub in the wider area, habitat types that are predominantly utilized for hunting and/or nesting. However, these habitat types are not rare locally. Therefore, significant cumulative impacts are not predicted.

The potential for developments at a local scale (5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. There was one turbine (Castledockrell T12) and one wind farm (Bola More) within 5km of Castledockrell Wind Farm. Castledockrell T12 and Bola More are located within agricultural habitats which offer some foraging potential for buzzard, however given the fact that these habitats are not scarce in the local area, significant impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farms located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.9.2.6 Sparrowhawk (Local Importance)

Sparrowhawk were recorded hunting within the Site. The impacts of disturbance as a result of the Proposed Development are assessed to be of low significance. No significant effects of collision risk are anticipated at the county, national or international level.

There is one existing wind farm located within the foraging range of sparrowhawk. The core foraging range of sparrowhawk is 3.3km (based off a maximum home range of 3,528ha (Marquiss and Newton, 1981)). Castledockrell T12 and Bola More Wind Farm lie within 3.3km of the Proposed Development. Castledockrell T12 and Bola More are located within agricultural habitats which offer some foraging potential for sparrowhawk. Additionally, the Proposed Development is also predominantly in an area of agricultural grassland with small areas of woodland/scrub in the wider area, habitat types that are predominantly utilized for hunting and/or nesting. However, these habitat types are not rare locally. Therefore, significant cumulative impacts are not predicted.

The potential for developments at a local scale (5km) to result in significant cumulative or in combination effects when assessed alongside the Proposed Development were considered. There was one turbine (Castledockrell T12) and one wind farm (Bola More) within 5km of Castledockrell Wind Farm. As discussed above, Castledockrell T12 and Bola More are located within agricultural habitats which offer some foraging potential for sparrowhawk, however given the fact that these habitats are not scarce in the local area, significant impacts are not anticipated. Furthermore, no significant effects were reported for any of the wind farm located within a 25km radius (county scale) of the Proposed Development.

The potential for other developments to have resulted in significant cumulative or in combination effects when assessed alongside the Proposed Development was considered. Taking into consideration the separation distance between other wind farms and the Proposed Development, reported effects at other wind farms, the abundance of similar habitats in the wider area and the predicted effects of the Proposed Development, no significant residual additive, antagonistic or synergistic effects have been identified.

Significant cumulative effects are not predicted.

7.10 Conclusion

Following consideration of the residual effects (post-mitigation), it is concluded that the Proposed Development will not result in any significant effects on any of the identified KORs. No significant effects on receptors of International, National or County Importance were identified. Provided that the Proposed Development is operated and decommissioned in accordance with the design, best practice mitigation and detailed monitoring programme that are described within this application, significant individual or cumulative effects on the identified KORs are not anticipated.

8. LAND, SOILS AND GEOLOGY

8.1 Introduction

8.1.1 Background and Objectives

This Environmental Impact Assessment Report (EIAR) chapter provides a baseline assessment of the environmental setting of the Proposed Development in terms of land, soils and geology and discusses the potential likely significant effects of extending the wind farm's operational life. This chapter also discusses any mitigation measures required to be put in place to limit any identified potentially significant effects to soils and geology and provides an assessment of residual impacts and significance of effects. Hydrogeology and groundwater are not discussed in this chapter as they are discussed in detail in Chapter 9: Hydrology and Hydrogeology of this EIAR.

8.1.2 Statement of Authority

This section of the EIAR has been prepared by Keelin Bourke and Gráinne Griffin and reviewed by Sean Creedon, all of MKO.

Keelin is an Environmental Scientist with MKO having joined the company in September 2023. Keelin holds a BSc (Hons) in Environmental Science from University College Cork and an MSc (Dist) in Environmental Engineering from Trinity College Dublin. Prior to taking up her position with MKO, Keelin worked as an Environmental Health and Safey Officer in an EPA licensed Waste Transfer Station in Cork City. Keelin's current key strengths and areas of expertise are in environmental surveying, report writing and environmental mapping. Since joining MKO, Keelin has become a member of the MKO Environmental Renewables Team which work on producing high quality Environmental Impact Assessment Reports for a variety of Renewable Energy clients.

Gráinne is an Environmental Scientist with MKO with over 4 years' experience in the environmental consultancy sector, which included ecological roles as a marine mammal observer and an aerial survey operator. Gráinne holds a BSc in Applied Freshwater & Marine Biology from ATU Galway and a MSc in Environmental Leadership from the University of Galway. Gráinne's key strengths and areas of expertise include managing and researching reports in areas of environmental conservation and policy, ecology, renewable energy, marine spatial planning, and climate action. Gráinne has experience in report writing, including Appropriate Assessments, Natura Impact Statements, feasibility studies and EIA screening reports. Gráinne also holds skills in environmental restoration project research and design. Since joining MKO Gráinne has been involved in coordinating environmental site work for a wide range of developments, assisting in stakeholder engagement, scoping exercises, organising and attending pre-application meetings with local authorities and An Bord Pleanála. Within MKO, Gráinne has been assisting managers in the coordination and production of EIARs for largescale SID wind energy developments. Gráinne also holds a membership with the Chartered Institute of Ecology and Environmental Management (CIEEM).

Sean is an Associate Director in the Environment Team at MKO. He oversees a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. Sean has over 22 years' experience in program and project development, holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

8.1.3 Relevant Legislation

The EIAR is prepared in accordance with the requirements of European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the 'EIA Directive') as amended by Directive 2014/52/EU. The requirements of the following legislation are complied with:

- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2001 – 2018;
- Directives 2011/92/EU and 2014/52/EU on the assessment of the effects of certain public and private projects on the environment, including Circular Letter PL 1/2017: Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive);
- S.I. No. 349 of 1989: European Communities (Environmental Impact Assessment) regulations and subsequent amendments (S.I. No. 84 of 1995, S.I. No. 352 of 1998, S.I. No. 93 of 1999; S.I. No. 450 of 2000; S.I No. 538 of 2001); S.I. No. 30 of 2000 the Planning and Development Act, 2000; and S.I 600 of 2001 Planning and Development Regulations and subsequent amendments, on the assessment of the effects of certain public and private projects on the environment;
- Planning and Development Act, 2000, as amended;
- S.I. No 296 of 2018: S.I. No. 296 of 2018: European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 which transposes the provisions of Directive 2014/52/EU into Irish law; and,
- The Heritage Act 1995, as amended

8.1.4 Relevant Guidance

The land, soils and geology chapter of this EIAR was prepared having regard, where relevant, to guidance contained in the following documents:

- Environmental Protection Agency (2022): Guidelines on the Information to be contained in Environmental Impact Assessment Reports;
- Environmental Protection Agency (2015): Draft - Advice Notes on Current Practice (in the preparation of Environmental Impact Statements);
- Environmental Protection Agency (2015): Draft – Revised Guidelines on the Information to be contained in Environmental Impact Statements;
- Environmental Protection Agency (2003): Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements);
- Environmental Protection Agency (2002): Guidelines on the information to be contained in Environmental Impact Statements);
- European Commission (2017) Guidance on Screening;
- European Commission (2017) Guidance on Scoping;
- European Commission (2017) Guidance on the preparation of the Environmental Impact Assessment Report;
- Institute of Geologists Ireland (2013): Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements; and,
- National Roads Authority (2005): Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.

8.2 Methodology

8.2.1 Desk Study

A desk study of the Proposed Development site and the surrounding study area (i.e., lands within the immediate vicinity of the wind farm) was completed in September and December 2023. The desk study involved collecting all the relevant geological data for the wind farm site and study area. This included inspection and/or consultation with the following:

- Environmental Protection Agency (EPA) database (www.epa.ie);
- Tailte Éireann GeoHive Geospatial Data Hub (www.geohive.ie);
- Geological survey of Ireland (GSI) – 1:100,000 Bedrock Aquifer Map;
- GSI – Groundwater Database (www.gsi.ie);
- Groundwater Vulnerability Map (www.gsi.ie);
- Bedrock Geology 1:100,000 Scale Map Series, Sheet 19 (Geology of Carlow-Wexford). (GSI, 1994);
- GSI – 1:25,000 Field Mapping Sheets, and,
- General Soil Map of Ireland 2nd Edition (www.epa.ie)

8.2.2 Walkover Survey

A visual inspection of the existing Castledockrell Wind Farm and surrounding area was undertaken by MKO on the 26th of September 2023. The purpose of the site inspection was to assess the site for any surface indications of residual effects to land, soils and geology resulting from the historic construction and operation of the wind farm. Particular attention was paid to identifying the potential areas of soil erosion that might be the result of incorrect backfilling of excavations, or that may have arisen from operation of machinery and vehicles on the site. No evidence of any residual effects to land, soils and geology such as any geotechnical movements was observed.

8.2.3 Scoping and Consultation

The scope of this chapter of the EIAR has also been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties. This consultation process is outlined in Section 2.6 of this EIAR.

With respect to land, soils and geology relevance, the Geological Survey Ireland (GSI) responded to this scoping request and requested MKO utilise their publicly available datasets, particularly their Groundwater Vulnerability Map in the course of the compilation of this chapter, which has been undertaken, as set out in Section 8.2.1 above.

8.2.4 Impact Assessment Methodology

Using information from the desk study and site walkover visual assessment, an estimation of the importance of the soil and geological environment within the study area is assessed using the criteria set out in Table 8-1 (NRA, 2009[1]).

[1] *Guidelines for Assessment of Ecological Impacts of National Roads Schemes, National Roads Authority (2009)* https://www.tii.ie/technical-services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf

Table 8-1 Estimation of Importance of Soil and Geology Criteria (NRA, 2009).

Importance	Criteria	Typical Example
Very High	Attribute has a high quality, significance or value on a regional or national scale. Degree or extent of soil contamination is significant on a national or regional scale. Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale.	Geological feature rare on a regional or national scale (NHA). Large existing quarry or pit. Proven economically extractable mineral resource.
High	Attribute has a high quality, significance or value on a local scale. Degree or extent of soil contamination is significant on a local scale. Volume of peat and/or soft organic soil underlying site is significant on a local scale.	Contaminated soil on site with previous heavy industrial usage. Large recent landfill site for mixed wastes. Geological feature of high value on a local scale (County Geological Site). Well drained and/or high fertility soils. Moderately sized existing quarry or pit. Marginally economic extractable mineral resource.
Medium	Attribute has a medium quality, significance or value on a local scale. Degree or extent of soil contamination is moderate on a local scale. Volume of peat and/or soft organic soil underlying site is moderate on a local scale.	Contaminated soil on site with previous light industrial usage. Small recent landfill site for mixed wastes. Moderately drained and/or moderate fertility soils. Small existing quarry or pit. Sub-economic extractable mineral resource.

Importance	Criteria	Typical Example
Low	Attribute has a low quality, significance or value on a local scale. Degree or extent of soil contamination is minor on a local scale. Volume of peat and/or soft organic soil underlying site is small on a local scale.	Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils. Uneconomically extractable mineral resource.

The criteria (EPA, 2022[2]) for the assessment of impacts require that likely impacts are described with respect to their extent, magnitude, type (***i.e.,*** negative, positive, or neutral) probability, duration, frequency, reversibility, and trans frontier nature (if applicable). The descriptors used in this environmental impact assessment are those set out in EPA (2022) Glossary of Impacts as outlined in Chapter 1 of this EIAR. In addition, the two impact characteristics, proximity and probability, are described for each impact and these are defined in Table 8-2.

Table 8-2 Additional Impact Characteristics.

Impact Characteristic	Degree/ Nature	Description
Proximity	Direct	An impact which occurs within the area of the proposed project, as a direct result of the proposed project.
	Indirect	An impact which is caused by the interaction of effects, or by off-site developments.
Probability	Low	A low likelihood of occurrence of the impact.
	Medium	A medium likelihood of occurrence of the impact.
	High	A high likelihood of occurrence of the impact.

In order to provide an understanding of this descriptive system in terms of the geological/hydrological environment, elements of this system of description of impacts are related to examples of potential impacts on the geology and morphology of the existing environment, as listed in Table 8-3.

Table 8-3 Impact descriptors related to the receiving environment

Impact Characteristics		Potential Geological/Hydrological Impacts
Quality	Significance	
Negative only	Profound	Widespread permanent impact on:

[2] ***EPA (2022),*** https://www.epa.ie/publications/monitoring-assessment/assessment/EIAR_Guidelines_2022_Web.pdf

Impact Characteristics		Potential Geological/Hydrological Impacts
Quality	Significance	
		› The extent or morphology of a designated site › Regionally important aquifers. › Extents of floodplains. › Loss of a geologically sensitive site. › Mitigation measures are unlikely to remove such impacts.
Positive or Negative	Very Significant/ Significant	Local or widespread time dependent impacts on: › The extent or morphology of a cSAC / ecologically important area. › A regionally important geological feature (or widespread effects to minor geological features). › Extent of floodplains. › Widespread permanent impacts on the extent or morphology of a NHA/ecologically important area, › Mitigation measures (to design) will reduce but not completely remove the impact – residual impacts will occur.
Positive or Negative	Moderate	Local time dependent impacts on: › The extent or morphology of a cSAC / NHA / ecologically important area. › A minor geological feature. › Extent of floodplains. › Mitigation measures can mitigate the impact OR residual impacts occur, but these are consistent with existing or emerging trends
Positive, Negative or Neutral	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Positive, Negative or Neutral	Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Neutral	Imperceptible	No impacts, or impacts which are beneath levels of perception, within normal bounds of variation, or within the bounds of measurement or forecasting error.

8.3 Receiving Environment

8.3.1 Site Description and Topography

The Proposed Development is situated on a relatively flat area of agricultural land at the plateau of sloping hills to all sides, approximately 2.6km from Templeshanbo Village and 3.6km from

Ballindaggan villages to the southwest and 2.5 km from Castledockrell Village to the east. The Proposed Development is located 8.1km west of Ferns and 6.5km south of Bunclody in the townlands Kilcullen, Ballynelahillan, Carranroe, Tomatee, Knockduff and Sroughmore.

The Proposed Development consists of a proposed lifetime extension of life to the existing Castledockrell Wind Farm for an additional 20 years. Castledockrell Wind Farm consists of 11 no. turbines located to the northwest of Castledockrell Village, with access via a Local Road, L2012. As previously mentioned, the wind farm is located on the upland agricultural land located at the top of a plateau of sloping hills to all sides which form natural boundaries of the existing wind farm site.

The Environmental Impact Assessment Report (EIAR) Study Area for the Proposed Development is approximately 97 hectares (ha) while the total development footprint of the Proposed Development (i.e., the existing Castledockrell Wind Farm) is approximately 3.23 ha. The vast majority of the EIAR study area is under agricultural use, split between arable and pastural land throughout the site.

The topography across the site is relatively flat and slopes downwards in all directions. The site has a maximum elevation of approximately 218 metres Ordnance Datum (m OD) in the west of the site, at T05 and a minimum elevation of approximately 170 metres Ordnance Datum (m OD) in the east of the site at T11. The Blackstairs Mountains run from the northwest to southwest of the windfarm site. Mount Leinster and Black Rock Mountain occur to the east of the site, with peak elevations of 796 mAOD and 599.6 mAOD respectively. The predominant land use in the areas surrounding Castledockrell Wind Farm is agricultural land and small patches of commercial forestry to the east, with scattered one-off housing and small developments.

The Proposed Development contains approximately 3.8 km of site roads, constructed of consolidated gravel with a running width of approximately 4.5m. Access to the site for maintenance and landowner traffic such as maintenance vehicles is via the current existing entrance to the southwestern section of the wind farm site from the L2012 Local Road which runs adjacent to the site. The L2012 Local Road runs in a north-south direction connecting to the R745 Regional Road at the Monalee Cross Roads and to the L2007 Local road at Bola Beg. The location of the Proposed Development and site topography is shown on Figure 8-1.

8.3.2 Soils and Subsoils

According to GSI Mapping (www.gsi.ie) The Proposed Development is dominated by three soil types: shallow and well drained Non-Calcareous Bedrock at Surface (RckNCa), deep, well drained mineral till derived from metamorphic rocks (mainly acidic in nature) [TMp] and deep well drained mineral till derived chiefly from lower Palaeozoic rocks (mainly acidic in nature) [TLPSsS]. There are also bands of alluvially derived mineral AlluvMIN) along the River Slaney and other smaller watercourses in the wider area surrounding the site.

GSI mapping for the site indicates that the site and surrounding area is underlain by Lower-Middle Ordovician slate, sandstone, greywacke and conglomerate.

The Teagasc soils map (www.gis.teagasc.ie/soils/map) identifies the soil associations within the Castledockrell Windfarm site as loamy soils over gneiss and schist bedrock (800a) and within the wider region of the site as fine loamy soils over shale and slate bedrock (1100e). These soils are generally not very well drained and not well suited to intensive agricultural practices, unless accompanied with the use of lime and fertilizers regularly. Previous investigation of the site provided in the original EIS prepared for Castledockrell Wind Farm noted that soil depths were measured at between 0.1-0.3m. The local subsoils map is shown on Figure 8-2.

It was noted during the site walkover that most of the site is under agricultural use for pasture and arable activities. Low levels of soil erosion are likely due to farm machinery action.

8.3.2.1 Bedrock Geology

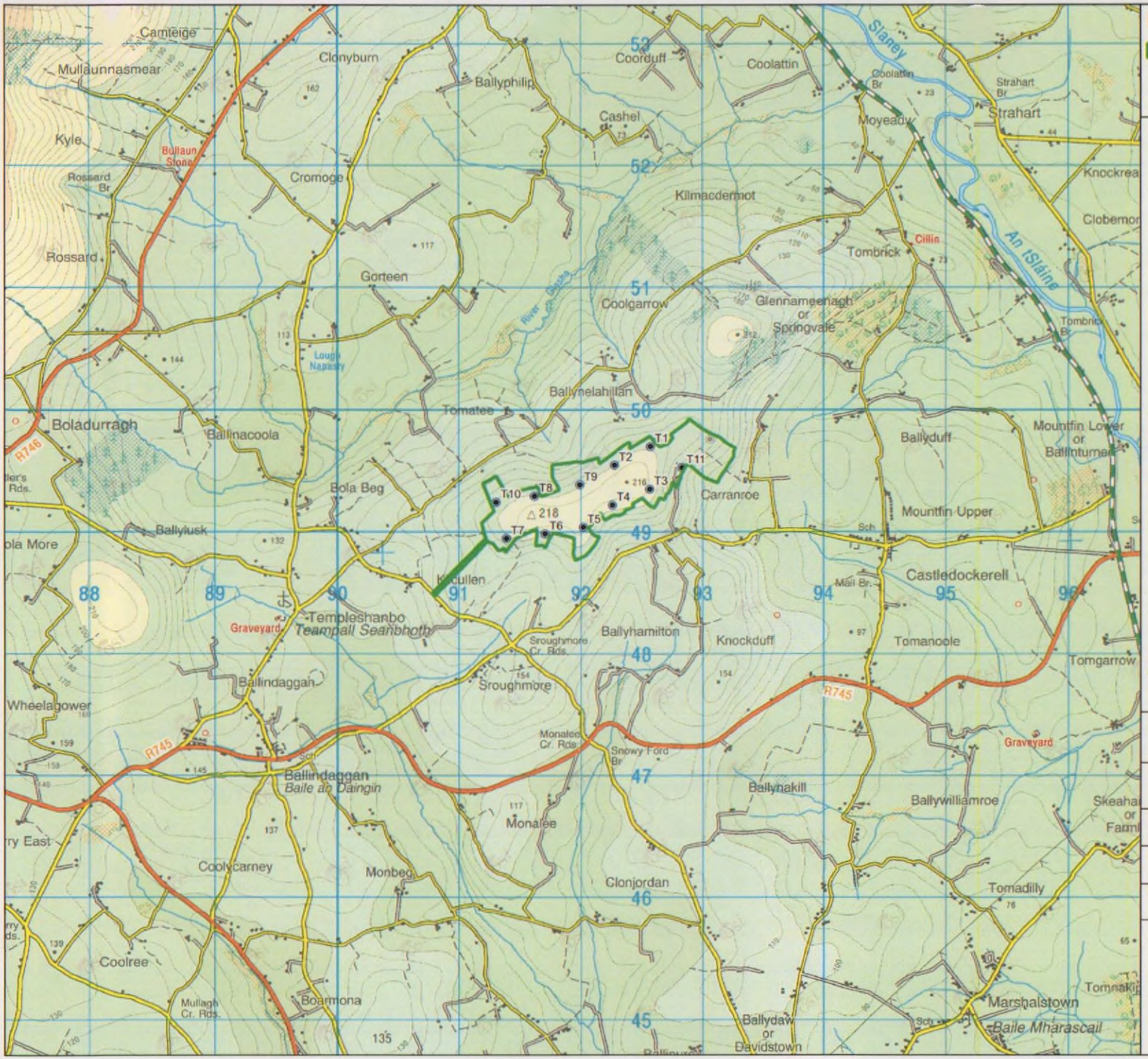
Based on the GSI bedrock map of the region, the site of the Proposed Development is underlain by the Maulin Formation (OTMAUL) consisting of dark blue-grey slate, phyllite and schist and the Ballylane Shale Formation (OABYLA) consisting of green-grey and grey slates and shales interbedded with green of pale grey siltstones. The Maulin Formation is classified by the GSI as being a locally important aquifer which is generally moderately productive in local zones, while the Ballylane shale Formation is classed as a Poor Aquifer that is generally unproductive except for local zones.

A bedrock geology map of the area is included as Figure 8-3.

8.3.2.2 Geological Heritage and Designated Sites

There are two recorded Geological Heritage sites within the wider area surrounding Castledockrell Wind Farm. The Caim Mine (WX010) a disused mining site is located approximately 8.8km southwest of the EIAR Study Area. The site consists of an historic mining site, in operation intermittently from 1815 to 1846, along with steam engine chimneys and significant volumes of spoil. This is a countywide important natural geological structure due to it being a rare example of historic mining in County Wexford. The Blackstairs Mountains, a Geological Heritage Site (WX006) approximately 10km southwest of the Castledockrell Windfarm site contains a number of tors which are granite outcrops that have been eroded by wind action since the Quaternary Period and blockfields of boulders and large stones formed by physical weathering of the rock. This is a countywide important natural geological structure due to its unique and impressive formation. The location of these geological heritage sites in relation to the Proposed Development is provided on Figure 8-4.

There are a number of designated sites (both national and EU Natura 2000 sites) located within proximity of Castledockrell, as shown in Figure 8-4 below. The Slaney River Valley Special Area Conservation is located approximately 3km at its nearest point, to the north, northeast and southeast of Castledockrell Windfarm. The Blackstairs Mountains Special Area Conservation is also located approximately 5.1km to the west of the Castledockrell Windfarm site boundary. Further assessment of potential impacts to designated sites are included in Chapter 6: Biodiversity, the Natura Impact Statement (NIS) and Chapter 7: Ornithology of this EIAR.



Map Legend

- EIAR Site Boundary
- Proposed Development Turbines
- Turbine 12

N

Drawing Title	Site Topography
Project Title	Casteldockrell Wind Farm Extension of Operational Life
Drawn By: EM	Checked By: BT
Project No.: 210847	Drawing No.: Figure 8-1
Scale: 1:30,000	Date: 2025-02-28

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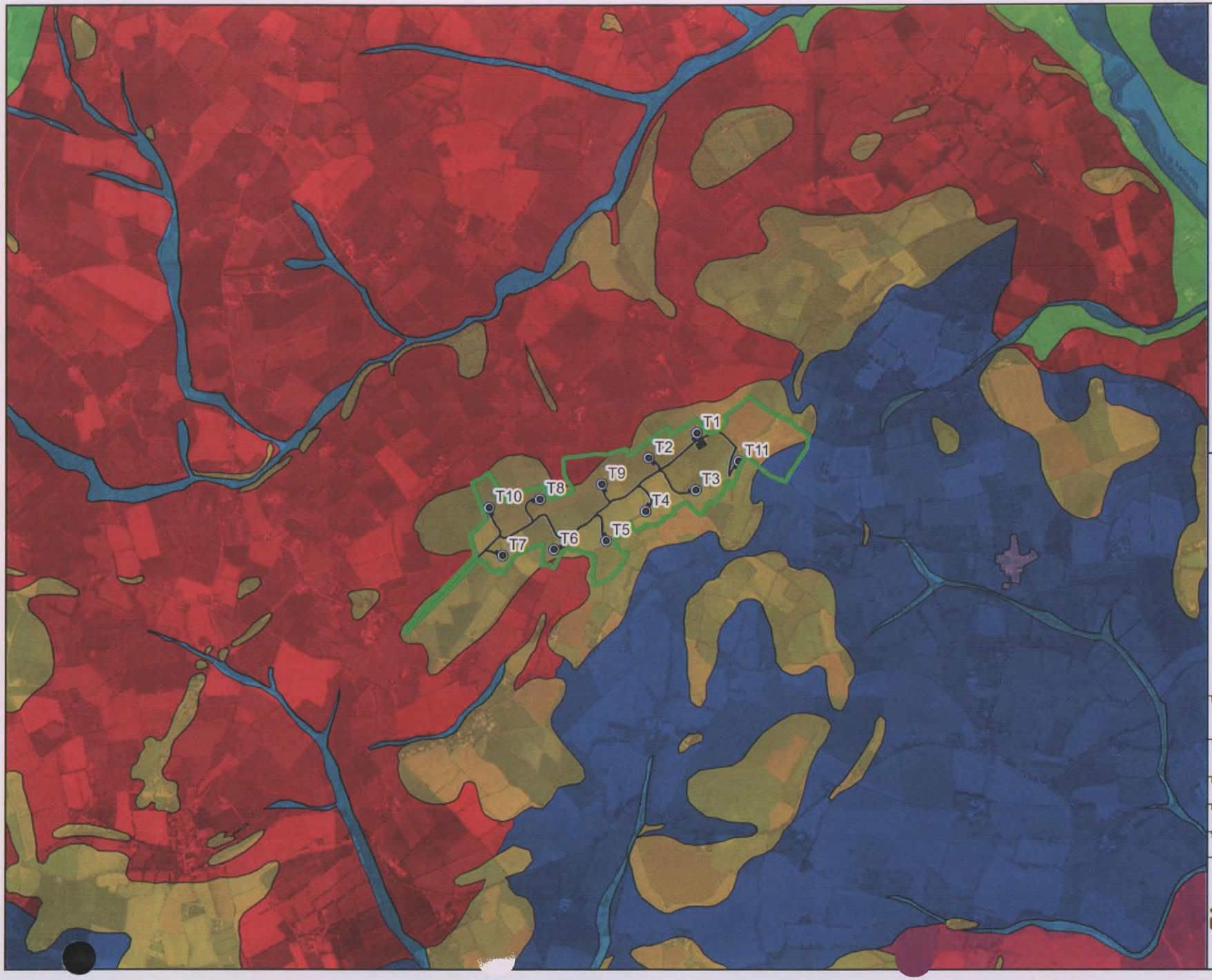

Map Legend

- EIAR Site Boundary
- Proposed Development Turbines
- Castledockrell Wind Farm Footprint
- Turbine 12
- Turbine 12 Footprint

Local Subsoils

- A - Alluvium Undifferentiated
- GLPSsS - Sandstone and Shale Sands and Gravels
- Made - Made Ground
- Rck - Rock
- TGr - Granite Till
- TLPS - Shale Till
- TLPSsS - Sandstone and Shale Till
- TMp - Metamorphic Till

N

Drawing Title: Local Subsoils

Project Title: Castledockrell Wind Farm Extension of Operational Life

Drawn By	Checked By
EM	BT
Project No.	Drawing No.
210847	Figure 8-2
Scale	Date
1:30,000	2025-03-03

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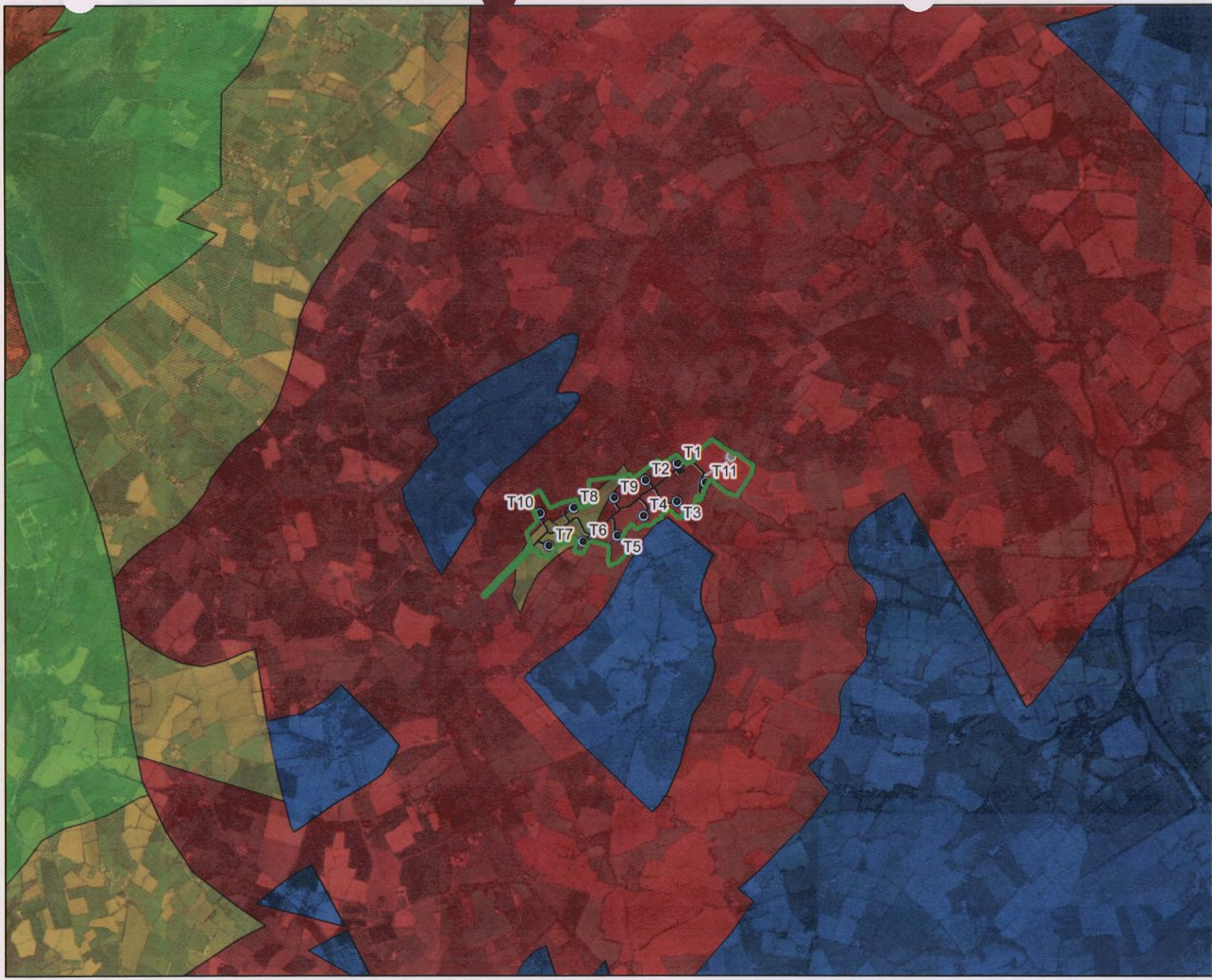

Map Legend

- EIAR Site Boundary
- Proposed Development Turbines
- Castledockrell Wind Farm Footprint
- Turbine 12
- Turbine 12 Footrpint

Bedrock Geology

- LTGRNT - Granite (undifferentiated)
- OABYLA - Ballylane Formation
- OAOAKL - Oaklands Formation
- OTMAUL - Maulin Formation
- OTMAUL3 - Ballybeg Member

N

Drawing Title

Bedrock Geology

Project Title

Castledockrell Wind Farm Extension of Operational Life

Drawn By	Checked By
EM	BT
Project No.	Drawing No.
210847	Figure 8-3
Scale	Date
1:45,000	2025-03-03

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Map Legend

- EIAR Site Boundary
- Proposed Development Turbines
- Castledockrell Wind Farm Footprint
- Turbine 12
- Turbine 12 Footprint
- Special Areas of Conservation
- Geological Heritage Sites

N

Drawing Title: Geological Heritage and Designated Sites

Project Title: Castledockrell Wind Farm Extension of Operational Life

Drawn By	Checked By
KB	ÓM
Project No.	Drawing No.
210847	Figure 8-4
Scale	Date
1:75,000	2024-03-29

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8.3.2.3 Soil Contamination

According to the EPA online mapping (https://gis.epa.ie/EPAMaps), there are no licenced waste facilities on or within the immediate environs of the Proposed Development.

There are no historic mines in the immediate vicinity of the site that could potentially have contaminated tailings, but Caim Mine, a historic disused mine site is located approximately 8.8km southeast of the Proposed Development site. There are also a number of sites which have been noted on Cassini 6inch map indicating historical quarrying for slate and quartz took place in the vicinity of the Proposed Development site. However, there is no evidence of historic soil contamination due to these practices in the site and surrounding the Proposed Development.

The site walkover survey did not identify any evidence of potential soil contamination at or adjacent to the Proposed Development and there is no record from the existing wind farm's operational phase of any environmental incidents with the potential to cause soil contamination.

8.3.2.4 Economic Geology

The GSI Online Minerals Database accessed via the Public Data Viewer shows one Sand and Gravel quarry, Ballingale Quarry (Reg. no: QS0510) approximately 5km east of the Proposed Development. There are no other extractive industries within the near vicinity of the Proposed Development.

The GSI online Aggregate Potential Mapping Database shows that the Proposed Development is not located within an area mapped as being of 'Very High' or 'High' granular aggregate potential (i.e., potential for gravel reserves considered Low).

8.4 Characteristics of the Development

The Proposed Development consists of a 11 no. turbine wind energy development, constructed in 2011. The 11 no. turbines are all Enercon E70 model with a combined maximum total capacity of 25.3 MW. The turbines have a hub height of 84.5m, a rotor diameter of 71m and an overall tip height of 120m.

The existing operational wind farm includes a control building, site roads, and associated underground internal cabling. The Proposed Development is connected to the National Grid via an onsite 110kV substation and 110kV underground cable to the Lodgewood 220kV Substation (approximately 6.3km southeast of the Proposed Development). However, it should be noted that as the grid connection does not form part of the Proposed Development, as defined in Chapter 4 of this EIAR, and does not form part of the accompanying planning application. The existing grid connection has been considered as part of the cumulative assessment.

The original construction of the wind farm in 2010 required the excavation of soil and subsoil to facilitate turbine foundation construction and trenching from the cable ducts. Significant excavations were not required, and as confirmed during the site walkover in September 2023, all disturbed areas appear to have been returned to their pre-construction grades.

8.5 Likely, Significant Impacts and Mitigation Measures Implemented

8.5.1 Do-Nothing Scenario

The 'Do-Nothing' scenario entails the decommissioning of the existing wind farm once the current planning permission expires in 2025 and restoration of the site to its original use as agricultural lands for pasture and crops.