REPORT

Environmental Report

Echelon Dub 30 Grid Connection

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1. INTRODUCTION

AWN Consulting has been commissioned by Crag Wicklow Limited, to undertake an Environmental Report (ER) in support of a section 146B request for proposed alterations to a permitted development (An Coimisiún Pleanála reference VA27.315200 (permitted under ABP-315200-22)).

The permitted development is located north of the existing Kish Business Park, Arklow, Co. Wicklow. It comprises a 110 kV substation with Gas Insulated Switchgear (GIS) technology and two 110 kV underground transmission cables (connecting to existing 220 kV overhead lines to the northwest of the proposed substation), along with associated and ancillary works.

The proposed alterations can be summarised as the modification of the permitted alignment of the two 110kV underground transmission lines, Cable Circuit Route A, and B (hereafter referred to as Circuit A and Circuit B), to realign Circuit B to run parallel to Circuit A, along the same routing. This alteration presents a reduced impact from the development (compared to the permitted layout), as it avoids the opening of roads and traversing lands along two circuits. The distance between the two circuits is 4m.

1.1 Purpose, Scope and Methodology

This report aims to provide an overview of the potential environmental impacts associated with the proposed changes to the permitted development (VA27.315200). The findings will assist the Commission in making an informed decision regarding the Section 146B request.

The report evaluates the proposed design modifications and assesses whether they could lead to additional environmental impacts compared to those identified in the original Environmental Report submitted with the permitted development application.

The likelihood of significant effects on the existing environment, if any, as a result of these changes, is carefully considered. The Environmental Report (ER) reviews each relevant environmental factor, as assessed by qualified experts, and includes an analysis of both the construction and operational phases of the development.

The assessment of the quality, magnitude, and duration of potential effects follows the criteria outlined in the EPA's Guidelines on the Information to Be Contained in Environmental Impact Assessment Reports (2022).

2. PROJECT DESCRIPTION

2.1 Permitted Development (ACP Ref. VA27.315200)

The permitted development site is c. 8.68 ha of predominantly agricultural land, located in the townlands of Kish, Bogland, Ballynattin, and Ballintombay, to the south of Arklow, County Wicklow. As outlined in the Inspector's Report dated 09 May 2023 for permitted development, the original application included the following elements:

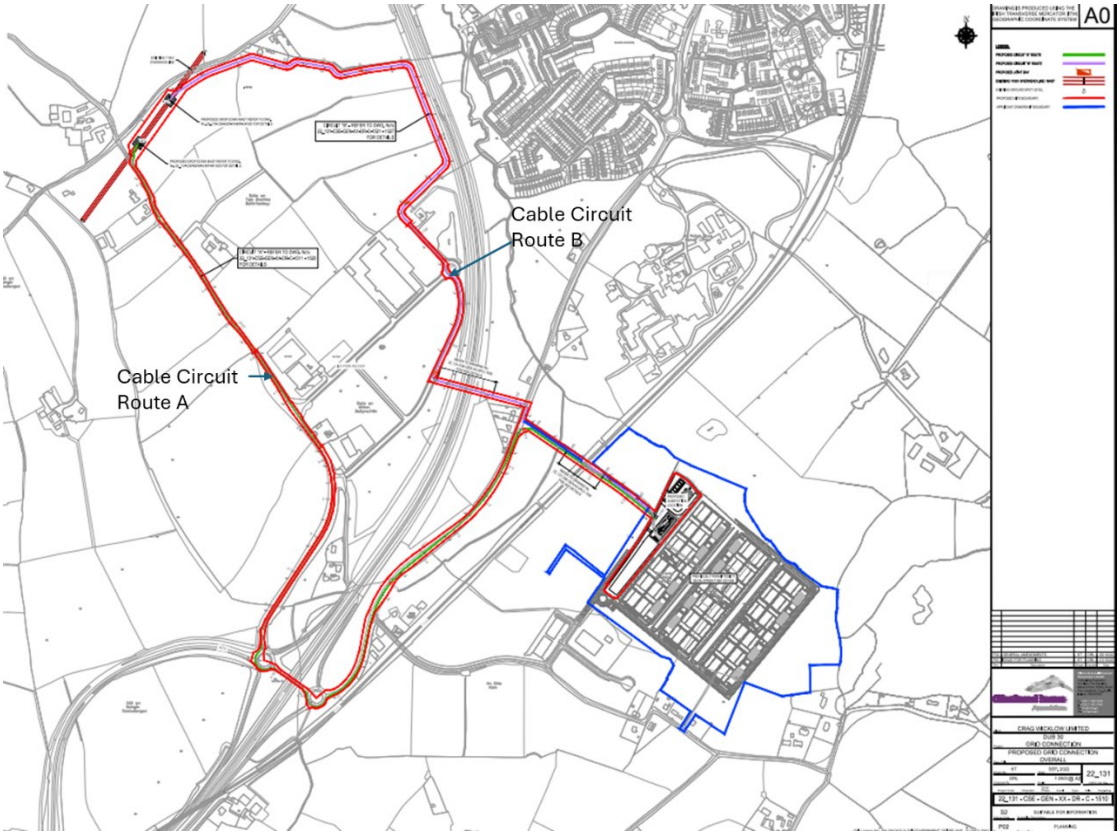
- A new 110kV Gas Insulated Switchgear (GIS) substation: The substation site is within a wider landholding which is subject to an extant permission for an ICT facility / data centre development immediately to the east under PA Ref. 20/1088. The substation compound on the northern part of the site is subdivided into two parts:
  - The southern part accommodates a two-storey 110kV GIS substation building (c. 1,299 sq.m), 15.2 metres high with a metal cladding finish. This is set back from the new access road to the west with an intervening landscaped area.
  - The northern part of the compound will accommodate a single-storey client control building (c. 419 sq.m) and four transformers to the rear / east and associated underground services. The client control building is c. 6.2 metres high. The transformers will be provided with fire walls between each, c. 9.9.m high. Both parts of the substation compound are to be enclosed within c. 2.4m high security fencing. To the south of the compound is an area of land reserved for future development. The substation development will require the regrading of the site, and the creation of a retaining wall along the boundary with the permitted ICT facility development to the east. The access roads to the west and north of the site comprise part of the previously permitted development (PA Ref. 20/1088).

- Two 110 kV underground transmission cables: The proposed 110kV underground transmission lines form a loop-in loop-out connection to the existing 110 kV Arklow – Banoge overhead line, divided into two separate circuits, Circuits A and B. Two new dropdown masts (c. 17 metres high) are proposed to facilitate the connection of these circuits to the overhead transmission line and a section of the existing overhead line between these new masts will be removed. The route of each circuit is described below:

  - Proposed Circuit Route A runs west from the substation, crossing under the railway line and Moneylane Stream. At the R772, the cable route runs south-west to Junction 21 on the M11, including a second crossing of the Moneylane Stream. The route crosses under the M11 at Junction 21, and turns north along the L6187, entering agricultural lands at Ballintombay, adjacent to Knockeneahan Road, to terminate at the existing 110 kV Arklow – Banoge overhead line. (c. 2.933 km).
  - Proposed Circuit Route B runs west from the substation, crossing under the railway line and Moneylane Stream. At the R772, Circuit B turns briefly northeast before turning west across agricultural lands. The route crosses under the M11, runs through internal roads of the Arklow IDA Business Park. From the business park, it runs along the edge of agricultural lands adjacent to the M11 and Knockeneahan Road (L2190) to terminate at the 110 kV line at Ballintombay. (c. 2.216 km.).
  - The distance between proposed Circuit A and B is 4 meters.

The permitted 110 kV substation and two 110 kV underground transmission cables subs' layout and overall permitted development redline are shown in Figure 1 below.

Figure 2-1 Permitted 110kV substation and two 110kV underground transmission cables layout (ACP Ref. VA27.315200)



2.2 Proposed Change

The proposed alterations to the Strategic Infrastructure Development, which this Section 146B relates to, can be summarised as the modification of the permitted alignment of the two 110kV underground transmission lines, Cable Circuit Route A, and B (hereafter referred to as Circuit A and Circuit B), to realign Circuit B to run parallel to Circuit A, and along the same routing. Details of the proposed alterations are provided below. This alteration presents a reduced impact from the development (compared to the permitted layout), as it avoids the opening of roads and traversing lands along two circuits. The distance between the two circuits is 4m. The proposed change is described below and presented in Figure 2.2 below.

The underground cables are a single circuit 110 kV cable and communications ducts and five joint bays that will follow a linear route of 2,872 m (Circuit A) and 3,074 m (Circuit B); originating at the proposed 110 kV Substation and terminating at the existing 110 kV Arklow – Banoge overhead line. The proposed change of the two Circuits can be summarised as follows:

- In the proposed alterations, Circuit A generally follows the same alignment as in the permitted development, with some minor changes. As permitted, Circuit A proceeds westwards from the site of the substation, crossing the rail line. Next, instead of running along the R772, it traverses agricultural lands adjacent to the R772, travelling south-west, before rejoining a short section of the R772 and crossing underneath the M11 at Junction 21. It then proceeds along the L6817 before entering agricultural lands to the east of the L6187, terminating at the existing Arklow-Banoge overhead line.

- Other minor changes to the alignment of Circuit A occur where the circuit connects to the substation; where it crosses the M11; and where it enters agricultural lands from the L6187 to connect to the drop down mast and overhead line.
- The proposed modified Circuit B will proceed westwards from the site of the 110kV GIS substation, crossing the nearby rail line, then proceed south-west parallel to the R772 and Circuit A, cross the Moneylane Stream and then cross underneath the M11 motorway at Junction 21. It will then proceed along the L6187, continuing until it meets Knockenrahan, then proceed north-east along part of the Knockenrahan Road before entering agricultural lands adjacent to Knockenrahan Road to the south, terminating at the existing 110kV Arklow – Banoge overhead line.
- In addition to these alterations, the location of the permitted drop-down masts has been adjusted slightly to facilitate the realignment of the proposed Circuit B. The drop-down mast for Circuit A has been repositioned 8m south of the permitted location, and the drop-down mast for Circuit B has been repositioned 10.5m north of the permitted location.

Table 2-1 below summarises the proposed alterations, referencing both the permitted and proposed layouts.

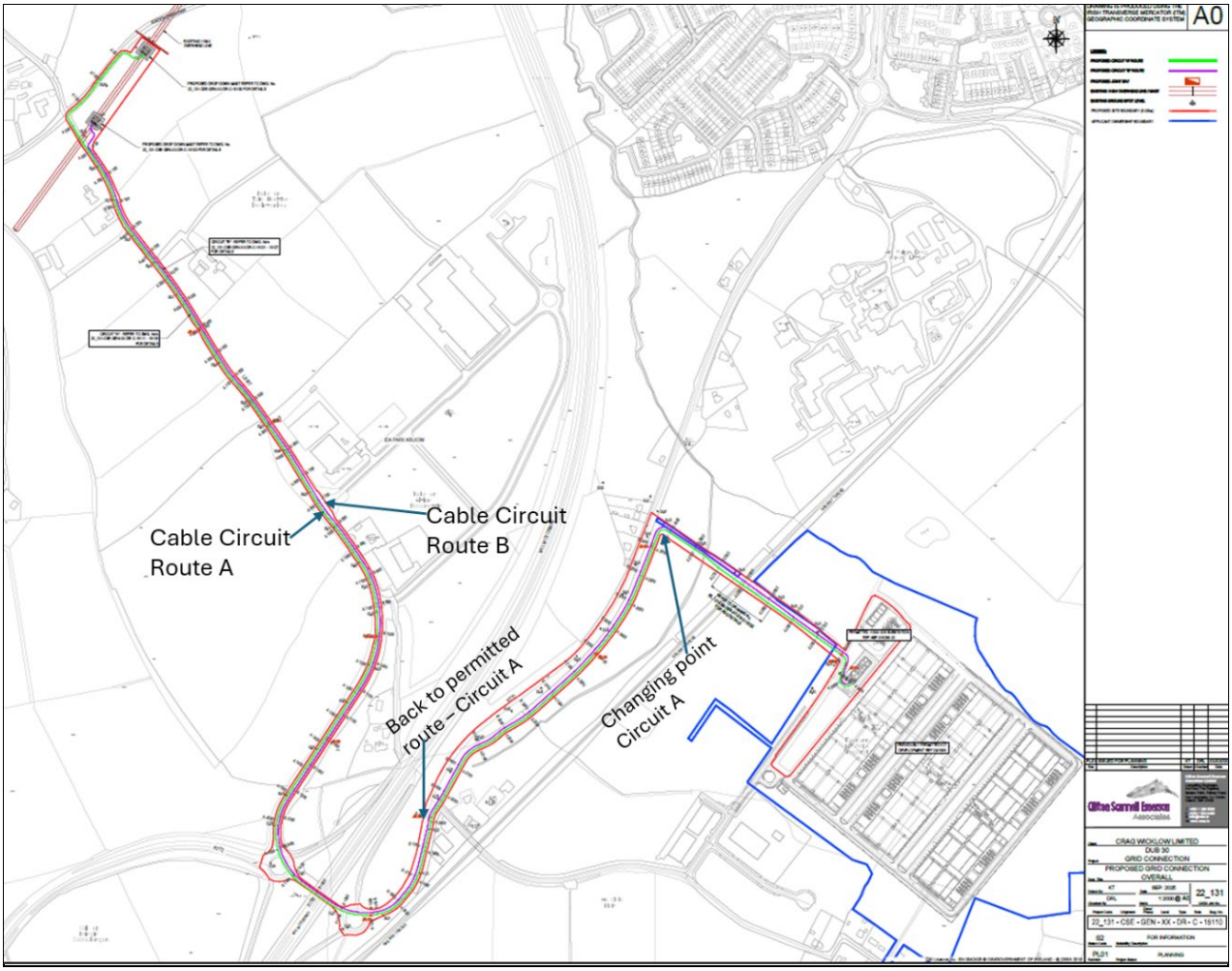
Table 2-1: Proposed alterations

Description	Permitted	Proposed
Circuit A length	2,888m	2,872 m
Circuit B length	2,164m	3,074 m
IE HDD Circuit A Crossing length	90m	101m
IE HDD Circuit B Crossing length	90m	101m
M11 HDD Circuit B Crossing length	137.5m	No longer required.
Joint Bays Circuit A	5 units	5 units
Joint Bays Circuit B	4 units	5 units

As part of this assessment, it is considered that only two 110 kV underground transmission cable sections of the original application will undergo modifications. The remaining project elements will remain unchanged from the permitted development. Thus, this ER evaluates only the environmental impacts of the changes to the two 110 kV underground transmission cable sections.

The proposed site layout is shown in Figure 2-3 below.

Figure 2-2 Proposed alterations



2.3 Proposed Construction Methodology

The construction methodology for Circuit A remains as permitted, with all previously permitted methodologies and materials unaltered for this application, and is now proposed for Circuit B, i.e the construction methodology for Circuit A will be the same as per Circuit B. As a result, the HDD crossing under the M11 Motorway is no longer required. Other than the slight rerouting of Circuit A and the relocation of permitted Circuit B, adjusting the location of the permitted drop-down masts for Circuit A and B, no further changes are proposed. All previously envisaged construction methodologies and materials will remain unchanged.

Additionally, the construction of the proposed changes will have to be compliant with all planning conditions previously imposed on the permitted development, along with any future conditions imposed on this application and outlined in Section 2.4 below.

2.4 Planning Conditions (ACP Ref. VA27.315200)

The planning conditions for the permitted development and considered relevant to this assessment are outlined below. Among others, during construction and operational phases, the development will be required to comply with:

Condition 2

The undertaker shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the undertaker shall complete the following:

a) *Implement in full all mitigation measures set out in Chapter 11 of the Environmental Impact Assessment Report, save as may otherwise be required in order to comply with the conditions of this permission.*
b) *Employ a suitably qualified archaeologist who shall prepare a final report describing the results of all archaeological monitoring and any investigative work and excavation required, and any necessary post- excavation specialist analysis.*
c) *The Construction and Environmental Management Plan shall identify the location of any and all relevant archaeological and cultural heritage constraints as set out in the Environmental Impact Assessment Report or identified in any subsequent archaeological investigations.*
d) *The Construction and Environmental Management Plan shall identify all likely archaeological impacts and all mitigation measures to be employed to protect the archaeological and cultural heritage during all phases of site preparation and construction activity.*

The undertaker shall agree in writing with the planning authority details regarding any further archaeological requirements prior to commencement of construction works. In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanala for determination.

Condition 3

Prior to the commencement of development, final details with regard to the design of the crossing of Moneylane Stream, in line with Sections 7.3.3.1 and 7.5.1.1 of the Environmental Impact Assessment Report, shall be submitted to and agreed in writing with the planning authority. Such details shall include revised drawings in respect of such works.

Condition 6

During the construction phase, the undertaker shall adhere to the measures set out in the following documents:

a) *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes, published by the National Roads Authority in 2006.*
b) *Bat Mitigation Guidelines for Ireland v2. Irish Wildlife Manuals, No. 134, published by the National Parks and Wildlife Service (2022).*
c) *Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes, published by the National Roads Authority in 2008.*

The requirements of any licence required from the National Parks and Wildlife Service shall be strictly adhered to and details of any such licence shall be submitted to the planning authority.

Condition 10

A detailed Construction Traffic Management Plan shall be submitted to and agreed in writing with the planning authority, prior to the commencement of development, which shall, inter alia, include details in relation to the following matters:

a) *Details of the timing and routing of construction traffic to and from the construction site and works areas, and associated directional signage, and proposals to manage the delivery of abnormal loads to the site including the routing and scheduling of such movements.*

b) Measures to obviate queuing of construction traffic on the adjoining road network.
c) Details of the management of traffic on public roads during works associated with installation of proposed transmission cables.
d) Alternative arrangements shall be put in place for pedestrians and vehicles in the event of the closure of any public road or footpath during the course of site development works.
e) Details of measures to ensure safe access and egress of construction traffic to and from the public road, where such is required to facilitate installation of transmission cables.

Condition 11 (a)

Proposed underground transmission cable crossings of the national road and motorway network shall be undertaken in accordance with the detailed requirements, and with the consent, of Transport Infrastructure Ireland and all relevant stakeholders.

Condition 12

Pre and post construction phase surveys of relevant public roads shall be carried out by the applicant. The location and extent of such surveys shall be agreed in writing with the planning authority prior to the commencement of works on the site, along with final road reinstatement details and specifications.

Condition 13

a) No works shall be undertaken within the railway track support zone or railway embankments and railway mounds and ditches shall not be interfered with, save with the prior agreement of larnr6d Eireann.

b) The proposed transmission cable crossing of the railway shall be subject to a licence agreement with Iarnród Éireann.

c) The finalised construction methodology and design of the cable crossing and the final agreed plans in accordance with the requirements of larnr6d Eireann shall be submitted to the planning authority prior to the commencement of development.

d) Installation or operation of the proposed development shall not interfere with railway track signalling systems or track circuits.

Condition 14

The hours of construction set out in the Environmental Impact Assessment Report shall be amended such that construction works within 100 metres of any residential property shall take place only between the hours of 0900 hours and 1700 hours, Monday to Friday, with no works on Saturday, Sundays or Bank Holidays

3. EXISTING ENVIRONMENT

As Circuit B is to be relocated parallel to Circuit A, with a separation distance of 4 m between them, and given that the proposed alterations affect only the permitted Circuit A area—including the two permitted drop-down masts—the description of the existing environment presented here focuses solely on the footprint of the permitted Circuit A and proposed areas of the new two Circuits and their surrounding environment. It does not represent the entire redline boundary of the permitted development.

The two Circuits and drop-down masts are generally surrounded by agricultural lands, as well as some once-off developments associated with these agricultural holdings. The off-road areas of Circuit A and B can be accessed via existing agricultural or private road access points.

Along the two Circuits, there is an existing water main network traversing along the existing Regional Road R772, M11, through the existing Arklow Business Park and Kish Business Park. And there are existing surface water control networks (the Moneylane 10 stream) traversing the L6187, R772 and M11 roads, the Irish Rail railway line and through the Kish Business Park. The Moneylane 10 flows North before merging with the Ballyduff Stream c. 1.4 km downstream. The Ballyduff Stream enters the River Avoca a further 2.2 km downstream before eventually flowing into the southwestern Irish Sea at Ballybrittas Bay c. 8 km downstream of the proposed development site. There are no Europeans sites at the mouth of the Avoca River, the closest, Buckroney-Brittas Dunes and Fen SAC (Site code 000729), is located approximately 5 km to the north of the river mouth. The Kilpatrick Sandhills SAC is located over 6 km to the south along the coast. Potential adverse effects on these European sites from the proposed development are highly unlikely given the distance of removal.

There are no proposed Special Areas of Conservation (pSAC), Special Protection Areas (SPAs) or Natural Heritage area (NHA) within the study area boundary. No European Sites or Natural Heritage Areas (NHAs) occur at or in the vicinity of the project. The nearest European site to the proposed two Circuits is the Arklow Rock Askintinny (Site Code 001745) 1.2 km to the East. There are no wetlands, significant riparian areas, river mouths, coastal zones, marine environment, mountains, forest areas or nature reserves and parks within the study area.

The proposed Circuit A and B areas are predominantly comprised of improved agricultural grassland, with associated hedgerows, along with buildings and artificial surfaces, in particular roads, along which the majority of the Circuit passes. The Circuit passes through agricultural fields and will be passed under the Moneylane Stream and the Dublin-Rosslare rail line by means of Horizontal Directional Drilling (HDD). The habitats recorded along permitted Circuit A are mainly buildings and artificial surfaces. Some mature trees along hedgerows may be removed along the cable Circuits (at permitted parts of the two Circuits), but no notable veteran trees were noted during the survey on 17 June 2020, and no bat roosts are likely to be disturbed.

The Moneylane Stream drains the land between the Motorway and the Railway. The Moneylane Stream is culverted in part and will be under passed by HDD and not affected by the proposed development. There were no invasive species recorded during the habitat survey. There were no signs of badgers in the study areas of the cable routes.

There are no groundwater source protection zones, bathing locations, or recreational waterbodies within the proposed two Circuits or in their immediate vicinity. There are also no karst features, mineral localities, Geological Heritage sites or active quarries in the area.

The bedrock aquifers underlying the proposed two Circuits, according to the GSI (www.gsi.ie/mapping) National Draft Bedrock Aquifer Map, are classified as a Locally Important Bedrock Aquifer (LI), which is described by the GSI as bedrock as 'moderately productive only in local zones.'

According to the original submission, Circuit A is located within Flood Zone C, which is characterised by a low risk of flooding from all sources, including tidal, fluvial, pluvial, and groundwater flooding. No historical flood events have been recorded within the study area or its immediate surroundings. Consequently, the proposed realignments of Circuits A and B will also be situated within Flood Zone C, where the overall flood risk remains low.

There is no potential impact on recorded archaeological, architectural, or cultural heritage sites associated with the proposed two Circuits. There are no recorded sites of architectural heritage value listed in the National Inventory of Architectural Heritage for the county, or in the Register of Protected Structures.

The nearest sensitive receptors to the permitted and proposed Circuit A and B are the dwellings and commercial buildings located along the two Circuits.

4. CONSIDERATION OF ENVIRONMENTAL IMPACTS

Given that the alteration to Circuit A is minor—comprising an approximately 700-metre realignment to follow agricultural land instead of the original path along R933—and that Circuit B is proposed to run parallel to Circuit A, at a distance of approximately 4 metres, the environmental impacts of these changes are expected to be similar to those identified for the original Circuit A. Relocating Circuit B adjacent to Circuit A will also eliminate the environmental impacts previously associated with Circuit B in its original alignment.

To accommodate the realignment of Circuit B, the locations of the permitted drop-down masts have been slightly adjusted. The drop-down mast for Circuit A has been repositioned 8 metres south of its permitted location, while the mast for Circuit B has been shifted 10.5 metres north of its originally approved position. There are no significant impacts associated with the two drop-down masts mentioned in the original submission. The distances between the proposed dropdown Mast A and the northwest residential properties are 81.5m, and the southwest residential properties are 108m. The distance between the proposed dropdown Mast B and the northeast residential properties is 229 m.

4.1 Land, Soils, Geology and Hydrogeology

The proposed relocation of Circuit B, partial realignment of Circuit A, and minor repositioning of two dropdown masts will eliminate the need for the 137.5m HDD M11 Circuit B Crossing, and slightly reduce the length of Circuit A. However, the changes will result in an overall increase of 774m in the combined length of Circuit A and B.

The proposed changes above are not expected to result in significant additional soil-related impacts compared to the original design. The relocation of the two Circuits and dropdown masts will be constructed on a footprint with the same soil profile as the original submission. All construction methodologies will be in line with those approved as part of the permitted development. Although the combined Circuit length has increased slightly, most of the excavated soil generated during construction will be reused on site, thereby minimising the need for off-site disposal and reducing associated environmental effects such as transportation, waste generation, and soil resource depletion. There will be a local loss of agricultural soil, however, the area of development is small in the context of the overall agricultural land available in the region and has been zoned for enterprise and employment development.

In compliance with conditions 2 and 10 for permitted development (refer to Section 2.4), the construction of the two Circuits and dropdown masts will be required to implement all mitigation and monitoring measures proposed as part of the original submission, and adhere to a detailed Construction Environmental Management Plan (CEMP) to be agreed with the planning authority.

It is anticipated that the proposed relocation of the two Circuits and dropdown masts will be minor and will not materially change the identified impacts on land, soils, geology, and hydrogeology from the original submission during both the construction and operational phases. The implementation of the above-mentioned mitigation measures and compliance with the existing planning conditions for permitted development will ensure that no significant impacts arise.

No additional mitigation measures are required beyond those previously detailed in the ER prepared for permitted development. The predicted effect on Land, Soils, Geology, and Hydrogeology from the overall development will remain ***short-term-imperceptible-neutral*** with a ***negligible*** impact magnitude for the construction phase and ***long-term-imperceptible-neutral*** with a ***negligible*** impact magnitude for the operational phase.

4.2 Hydrology

The proposed relocation of Circuit A will ultimately place the proposed development slightly closer to the Moneylane 10 Stream, located to the east of Circuit A. The distance of the permitted Circuit A to Moneylane Stream is 25m (at pitch point), and for the amended proposals, Circuit A is located approximately 21m, and Circuit B is located approximately 17m from the Moneylane Stream. However, there will be no hydrological connection from the proposed two Circuits to surface water bodies and downstream habitats; the Moneylane Stream will be under-passed by HDD, avoiding any potential effects on water quality as per the original submission.

There will be no hydrological connection from the proposed two dropdown masts to surface water bodies and downstream habitats.

The proposed changes do not add any instream works or alter the previously permitted construction strategy. During construction, the development will adhere to a detailed CEMP to be agreed with the planning authority. All associated mitigation measures remain unchanged, as well as the expected impacts during construction.

The proposed relocation of the two Circuits and dropdown masts will not include any additional hardstanding and therefore will not generate additional runoff once operational.

Overall, the proposed change is considered minor and will not materially change the identified hydrological impacts outlined in the ER for the original submission. No additional mitigation measures will be required other than as previously set out in the ER. The predicted effect on Hydrology from the overall development will remain ***short-term—imperceptible-neutral—for the construction phase and long-term—imperceptible-neutral—***for the operational phase.

4.3 Biodiversity

The proposed relocation of Circuit A is minor, covering a distance of approximately 700 m through agricultural land. Circuit B will be relocated parallel to Circuit A, maintaining a 4 m separation between the two circuits. Consequently, the relocation does not affect the previously approved redline boundary of the overall development. Therefore, according to the updated Appropriate Assessment (AA) Screening submitted as part of this submission, the proposed changes do not materially affect the mapping or Source-Pathway-Receptor model undertaken. The proposed change does not create any hydrological pathways to the downstream protection areas identified in Section 3 of this Report and in the updated AA Screening submitted for this Application, therefore, the proposed changes will have no impact on any European sites.

The area affected by the proposed relocation of Circuit A comprises predominantly agricultural grassland and bare soil habitats of low ecological value. The revised alignment of Circuit B represents a reduction in development impact compared with the permitted layout, as it avoids the need for road openings, prevents the loss of approximately 100 m² of non-native woodland, and eliminates the need to traverse land along two separate circuits. The proposed changes will not alter hedgerow loss, as all affected hedgerows lie within the already permitted routes for Circuits A and B. No effects on biodiversity are anticipated from the relocation of dropdown masts, as the affected area comprises agricultural land. Accordingly, the proposed relocation is not expected to result in any additional habitat loss.

The proposed modifications are minor and will not materially alter the identified impacts on biodiversity from those submitted as part of the original submission. Adherence to the detailed CEMP and compliance with the existing planning conditions for permitted development will ensure no significant impacts occur.

No additional mitigation measures will be required other than as previously set out in the biodiversity report for the original submission. The predicted effect on Biodiversity from overall development will remain ***neutral, imperceptible and long-term*** for the construction phase, and there will be no effects on biodiversity during the operational phase.

4.4 Air Quality and Climate

When compared to the permitted development, the relocation of the permitted Circuit B and alteration of permitted Circuit A reduce the number of highly sensitive residential properties within 20m of the Circuits from eight to seven. The slight repositioning of dropdown mast A and B will not affect the air impact on sensitive receptors, as the distances between the new dropdown mast locations to sensitive receptors are higher than 20m Therefore, the proposed relocation will be minor and will not materially alter the previously assessed air quality impacts on these receptors.

The relocation of the two circuits will not generate increased dust, add any new emission points, affect emission levels or result in additional traffic.

Overall, the proposed change will not result in changes to quantities of materials or construction activities; therefore, the previous assessment outlined in the Air Quality and Climate Chapter for permitted development remains valid and unchanged. All the previously envisaged construction methodologies, envisaged operations, and mitigation measures will remain unchanged from the original submission.

Adherence to the detailed CEMP and compliance with the existing planning conditions for permitted development will ensure no significant impacts occur.

No additional mitigation measures will be required other than as previously set out in the Air Quality and Climate Chapter for the original submission.

The predicted effect on Air Quality and Climate from the overall development will remain ***negative to neutral, short-term*** and ***imperceptible*** for the construction phase and ***long-term, neutral*** and ***imperceptible*** during operations.

4.5 Noise and Vibration

Construction works associated with the underground cable will be temporary in duration. The excavation and reinstatement of the underground cable works will be ongoing in sections as the project proceeds. When compared to the permitted development, the relocation of the permitted Circuit B and alteration of permitted Circuit A will reduce the number of sensitive receptors located along the permitted Circuit B. The main noise-generating activities associated with the underground cable are the excavation of the trench along the route. Therefore, the proposed changes will not materially alter the previously assessed noise impacts on the remaining receptors.

The relocation of the two Circuits and dropdown masts will not generate increased noise and vibration during construction or operation. It will not have an effect on additional traffic with potential traffic-related noise emissions. All the previously envisaged construction methodologies, operations, and mitigation measures will remain unchanged from the original submission.

As outlined in Section 2.3 and 2.4, during its construction and operation, the development will be required to comply with a number of conditions for the permitted development, which will ensure no significant impacts occur with respect to noise.

No additional mitigation measures will be required beyond those previously set out in the Noise and Vibration chapter for the original submission. The predicted effect on Noise and Vibration associated with the construction phase will remain unchanged:

- Noise associated with the grid connection route is stated to be **negative, significant, and brief**.
- Noise associated with these traffic construction activities, the associated effect is stated to be **neutral, imperceptible and temporary**.

- Vibration associated with these construction activities, the associated effect is stated to be **neutral, imperceptible and temporary.**

The operational noise impact of the proposed changes will remain ***neutral, imperceptible*** and ***long-term*** during the operational phase.

4.6 Landscape and Visual Impact

As both the permitted and proposed Circuits A and B are underground cables, the proposed changes to Circuits A and B will not result in any landscape or visual impacts. The slight relocation of the dropdown masts will not impact the landscape or visual receptors.

Therefore, the predicted effects on landscape and visual receptors from the overall development will remain **neutral or negative,** but **not significant** at commencement.

4.7 Archaeological, Architectural and Cultural Heritage

It is stated in the submitted application that: *Although no features of archaeological or architectural heritage were identified along the proposed underground route, and the majority of the route has been extensively and significantly developed in the past, the route traverses a number of greenfield areas. In these areas, there is the potential for previously unrecorded archaeological features to survive.* The greenfield areas are mostly within permitted Circuit B. The relocation of Circuit B to run parallel to Circuit A will reduce potential impacts on any as-yet unknown sub-surface archaeological features. However, certain greenfield areas remain, including a section at the 110 kV Substation, and areas extending approximately 434 m northwest of the permitted 110 kV Substation where the two permitted circuits pass and the locations of the dropdown masts. Therefore, the conclusions outlined in the Archaeology Chapter for the original submission remain valid.

In the absence of mitigation measures, the potential impact on as yet unknown sub-surface archaeological features during the construction phase is **negative, profound and permanent.**

During construction, the developer must comply with planning condition no. 2 for the permitted development.

After the implementation of mitigation measures set out in Condition 2 above, during the construction phase, the academic knowledge gained from the excavation of these features, and / or the excavation of features found during monitoring, means that the residual effect on as yet unknown sub-surface archaeological features is **imperceptible, positive, and long-term**.

There are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operational phase of the Proposed Development.

No additional mitigation measures are necessary beyond those already specified in the Archaeology Chapter for the original submission. The predicted effect on Archaeology, Architectural, and Cultural Heritage from the overall development will remain unchanged.

4.8 Traffic and Transportation

The proposed relocation of Circuit B and partial realignment of Circuit A will route through a greenfield rather than along the R772 road. This change will reduce the impact associated with the ducting and cabling works that would otherwise require trenching and reinstatement within the R772 public roads. However, ducting and cabling works will still be required along L6187 public road as per the original submission.

The residual construction-phase effects, therefore, remain consistent with the original submission—**temporary, insignificant, and negative**. No impacts are anticipated during the operational phase for either circuit.

4.9 Material Assets

The proposed relocation of Circuit B, partial realignment of Circuit A, and slightly repositioning of two dropdown masts will not change land use, property, and access, foul drainage infrastructure, power and electrical supply, portable water supply and telecommunication. The relocation of Circuit B will utilise what will be provided for Circuit A.

No additional mitigation measures are necessary beyond those already specified in the Material Assets Chapter for the original submission. The residual construction-phase effects, therefore, remain consistent with the original submission—**neutral, imperceptible, and short-term to long-term**. No impacts are anticipated during the operational phase for either circuit.

4.10 Waste Management

The proposed relocation of Circuit B, partial realignment of Circuit A, and minor repositioning of two dropdown masts will eliminate the need for the 137.5m HDD M11 Circuit B Crossing, and slightly reduce the length of Circuit A. However, the changes will result in an overall increase of 774m in the combined length of Circuit A and B. It was estimated that c. 0.046 m^3 of material will be excavated to facilitate the proposed development including the 110kV substation. It has been calculated by the project design team that all of the excavated material will be reused on site. Therefore, the increase in the length of Circuit A and B does not result in any material changes. Thus, the previous waste assessment outlined in the Waste Management chapter for permitted development remains valid and unchanged.

No additional mitigation measures are necessary beyond those previously set out in the Waste Management chapter for the original submission. The predicted effect on Waste from the overall development during the construction phase will remain ***short-term, imperceptible,*** and ***neutral*** during the construction phase, and there will be no residual impacts during the operational phase, as there is no operational waste being generated.

4.11 Population and Human Health

As the impacts from sections 4-1 to 4-10 remain unchanged compared to the original submission, the impacts of the proposed relocation of the permitted Circuit A, B, and two dropdown masts remain consistent with the original submission as follows:

Construction Phase:

- Businesses and Residences: imperceptible, temporary and neutral impact
- Landscape Amenity and Tourism: neutral, slight and permanent impact
- Land and Water Emissions: short-term, imperceptible, and neutral impact.
- Air Emissions: short term, direct, negative and imperceptible impact
- Noise and Vibration Emissions: negative, slight and temporary impact
- Traffic and Transportation: short term, insignificant and negative impact.

Operational Phase:

- Businesses and Residences: imperceptible, positive impact

- Landscape Amenity and Tourism: neutral, slight and permanent impact
- Land and Water Emissions: short-term, imperceptible, and neutral impact.
- Air Emissions: Long term, and imperceptible impact
- Noise and Vibration Emissions: negligible impact
- Traffic and Transportation: long term, insignificant and neutral impact.

No additional mitigation measures are necessary beyond those previously set out in the Population and Human Health chapter for the original submission.

It is noted that the proposed relocation of Circuit B, partial realignment of Circuit A, and slightly repositioning of two dropdown masts will reduce the number of sensitive receptors located along the permitted Circuit B and reduce the number of highly sensitive residential properties within 20m of the Circuits from eight to seven.

4.12 Appraisal of Interactions

This assessment has concluded that there will be no additional impacts and some reduced impact associated with the proposed relocation of the permitted Circuit A, B, and two dropdown masts. It is anticipated that impacts from the interaction of the assessed environmental factors will remain unchanged and in line with the Environmental Impact Assessment Report (EIAR) prepared for the original submission.

4.13 Appraisal of Cumulative Impacts

This assessment has concluded that there will be no additional impacts associated with the proposed relocation of the permitted Circuit A, B, and two dropdown masts. The cumulative impacts for the overall development will be largely unchanged and in line with the EIAR prepared for the original submission.

5. CONCLUSION

In conclusion, the proposed alterations, as outlined in Section 2.2, do not result in any material changes to the environmental impacts previously assessed in the EIAR submitted for the permitted development (ACP Ref. VA27.315200). The environmental effects during the construction and operational phases are consistent with those described in the original EIAR, and the mitigation measures set out in the relevant reports and planning conditions provided for the permitted development are considered appropriate and sufficient to ensure that any potential adverse effects are avoided and/or minimised.

The original assessment across the various environmental topics, including population and human health, land, soils, geology, and hydrogeology, hydrology, biodiversity, air quality and climate, noise and vibration, archaeological, architectural and cultural heritage, and waste management, remains applicable, with no new impacts arising from the proposed changes.

As a result of this assessment, it has been concluded that the proposed relocation of the permitted Circuit A, B, and two dropdown masts and associated alterations proposed under this section 146B request will have no additional effect on the environment and that the environmental impact for the overall development remains unchanged. It is also concluded that the proposed alterations will not have an impact on any European Site.