

Appendix 10.3

Monitoring Report

Archaeological monitoring of test pits on Greenlink Project, Hook Peninsula, Co. Wexford

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Project Type: Infrastructural Development

Introduction

The Greenlink Interconnector Project comprises an underground cable interconnector with associated converter stations between the existing electricity grids in Ireland and the UK. The project will provide a new grid connection between Greatisland transmission substation in Co. Wexford and Pembroke transmission substation in south Wales. The converter stations will be connected to each other by two electricity cables and a fibre optic cable that will enable the both converter stations to communicate for control purposes.

The onshore element in Ireland comprises of the following temporary and permanent elements:

- **Landfall Compound** - a temporary landfall compound at Baginbun, where the high voltage direct current (HVDC) cable will be installed underground, below the beach and cliff at Baginbun Beach, by horizontal directional drilling (HDD);
- **HVDC Cables** - two HVDC electricity cables with a nominal capacity of 500 megawatts (MW), installed underground from the landfall at Baginbun to the converter station, including jointing bays and ground level marker posts at intervals along the route;
- **Converter Station** - a converter station situated close to the existing Eirgrid 220kV Greatisland substation in Wexford;
- **Tail Station** - A 220kV Loughtown substation located beside the converter station. The tail station connects the HVAC 220kV cable into the 220kV grid via the existing Eirgrid Greatisland substation.
- **Converter Station Construction Compound** - temporary compound for the construction of the converter station and tail station at Greatisland
- **Cable Contractor Compounds** - three temporary cable contractor compounds will be required (i) at the landfall site close to Baginbun Beach (ii) at the proposed converter station and (iii) one along the onshore route in the townland of Lewistown;
- **HDD Compounds** - temporary HDD contractor compounds are required. One will be located close to the cable contractor compound at Baginbun Beach with another HDD compound located at either side of the Campile River Estuary crossing;
- **High Voltage Alternating Current (HVAC) Cables** - one 220 kV HVAC electricity cable circuit consisting of three cables, installed underground connecting the converter station via the Loughtown tail station to the existing EirGrid substation;
- **Fibre Optic Cables** - fibre optic cables for operation and control purposes, laid underground with the HVDC and HVAC cables; and
- **Fibre Optic Cables** - fibre optic cables for operation and control purposes, laid underground with the HVDC and HVAC cables; and
- **Community Gain Roadside Car Parking near Baginbun Beach** - in consultation with Wexford County Council, circa 54 roadside car parking spaces will be constructed; and
- **Community Gain in Ramsgrange Village** - in consultation with Wexford County Council, extension to existing footpaths, four new street lights and a speed activated sign at Ramsgrange.

Part of the project includes greenfield sites on Greatisland, north and south of the Campile River in the environs of Dunbrody Abbey and at Baginbun Head. The Greenlink interconnector is planned for commissioning in 2023.

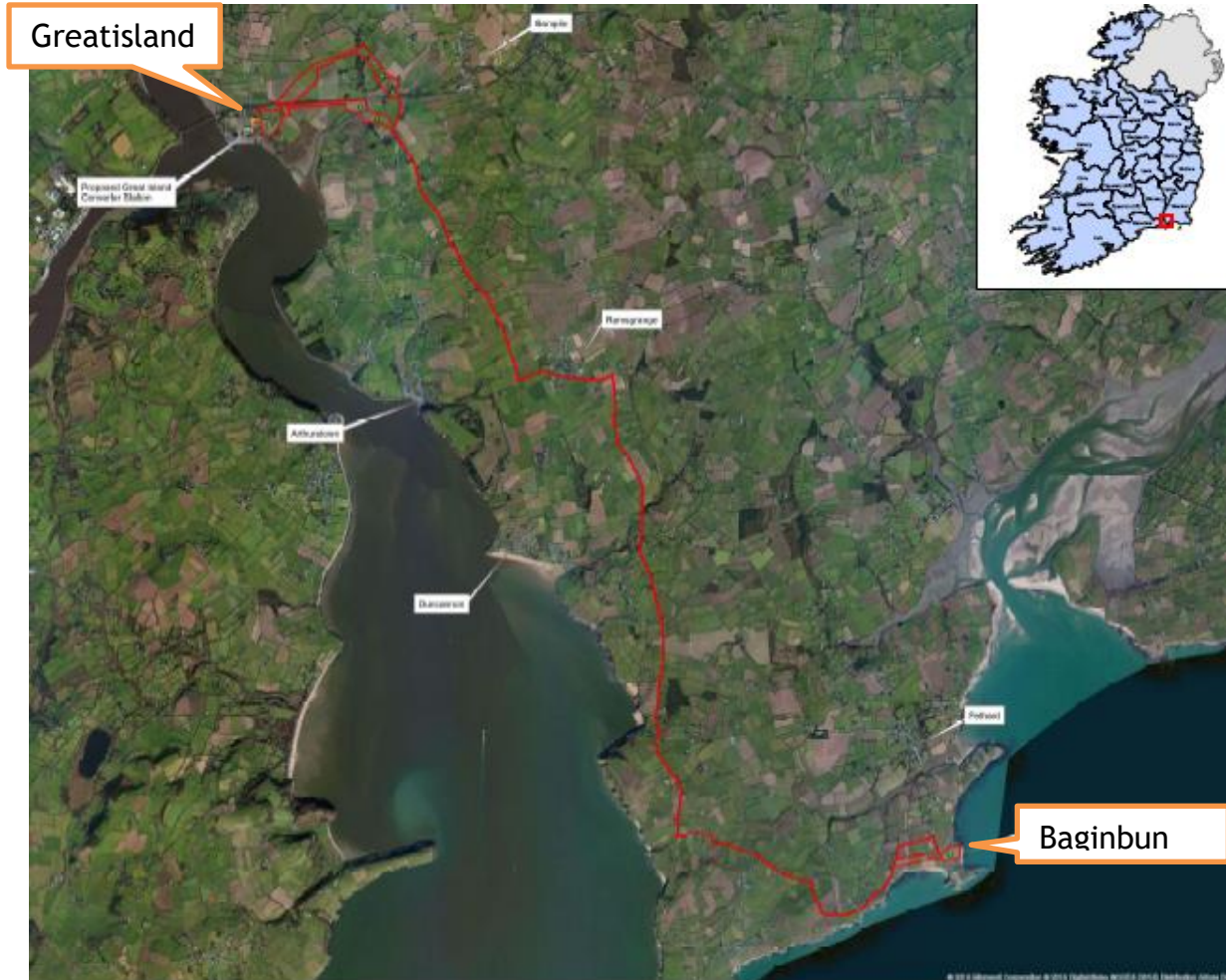


Figure 1: Proposed Development

As part of the proposed development a geophysical survey was requested as part of the ground investigation to survey the ground conditions at the area of landfall for the connector cable, the cable route towards the Greatisland substation and the proposed converter substation. Four complexes of archaeological site were identified as being close to the proposed route:

- Baginbun (Ramstown) Anglo-Norman Invasion landing site and earthworks.
- Templetown Possible Deserted Medieval Village.
- Kilcloggan Castle - adjacent to archaeological constraint zone.
- Dunbrody Cistercian Abbey, Parish Church and graveyard and Castle (Jacobean House).

It was recommended that all ground disturbances within the four complexes of archaeological monuments be monitored by a suitably qualified archaeologist.

It was also recommended that all greenfield areas and any ground disturbance associated with the excavation of launch and receptor pits should also be archaeologically monitored.

Archaeological monitoring of geotechnical test pits

Test pits were excavated to examine:

- A. Geothermal characteristics of the subsoil.
- B. The underlying substrata for construction purposes.

A. Geothermal investigations (Fig.2).

These pits were excavated in greenfield sites on Greatisland, north and south of the Campile River and at Baginbun (Ramstown) on January 17th 2019. The pits were excavated to depths of 1.2-1.4m. Prior to excavation, the sites were archaeologically assessed and there were no surface indications of archaeological remains. The six pits were excavated using a mechanical excavator with a toothed 1m wide bucket.



Figure 2: Geothermal meter *in situ*

1. Greatisland

Two locations on Greatisland were to the east of the Power Station (Fig 3). These were designated TP01-3 and TP02-3; TP01-3 was to the south of TP02-3. The soil profile was similar in both with an upper level of topsoil, 0.2-0.3m deep over boulder clay (Fig. 4 and 5). Shattered bedrock was uncovered at the base of the test pits and is identified as Rhyolite which forms the bedrock on Great Island.



Figure 3: Test pit (TP01-3 and TP02-3) locations at Greatisland



Figure 4: Greatisland Excavated Test Pit TP01-3



Figure 5: Greatisland Excavated Test Pit TP02-3

2. North and South of Campile River

Test pit TP0-1 was to the north of the Campile River and TP0-2 to the south (Fig. 6). Both were in greenfield locations. The soil profile in TP0-1 was 0.2-0.3m of topsoil over boulder clay and shattered bedrock (Rhyolite) at a depth of 0.7m. TP0-2 had a similar profile with an upper topsoil layer of c. 0.2m (Fig. 7 and 8).



Figure 6: Test pit locations north and south of the Campile River



Figure 7: South of Campile River Test Pit TP0-02



Figure 8: Trial Pit TP0-01 at Campile River

3. Baginbun (Ramstown)

The sub-strata at Baginbun comprise siltstone/mudstone on the east and sandstone on the west divided by a fault line. Both test pits (TP0-1 and TP0-2) were within the siltstone/mudstone area. The field had been tilled and the surface vegetation was the remnants of a cereal crop. Both test pits had an upper layer of 0.6m of topsoil over boulder clay.



Figure 9: Test pit locations at Baginbun Head



Figure 10: Baginbun Head Test Pit TP0-1



Figure 11: Baginbun Head Test Pit TP0-2

A. The underlying substrata for construction purposes.

Further test pits were excavated in greenfield sites on Great Island, north of the Campile River and at Baginbun (Ramstown) on March 13th and 18th 2019. The pits were excavated to depths of 3-3.5m using a mechanical excavator with a toothed 1m wide bucket. Prior to excavation, the sites were archaeologically assessed and there were no surface indications of archaeological remains.

1. Greatisland

The test pits were on a south-facing slope on low-lying ground facing out towards the Waterford Estuary. TP01-3 was to the south and TP01-2 to the north (Fig. 12). Both had similar soil profiles of 0.2-0.3m of topsoil over boulder clay and shattered Rhyolite bedrock below.

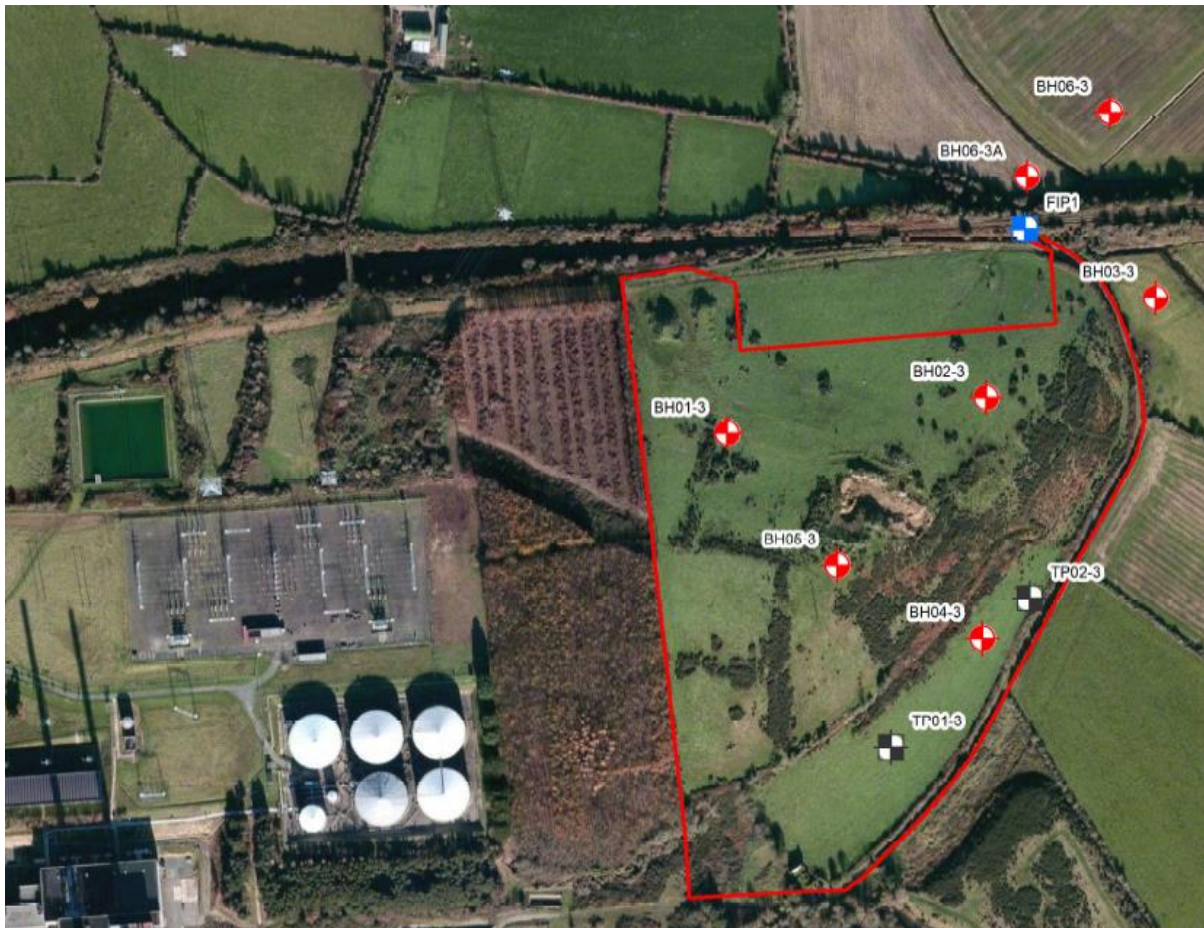


Figure 12: Greatisland Test pit locations



Figure 13 Greatisland TP01-3

2. North of the Campile River

One test pit, TP01-2 was excavated north of the Campile River on a south facing slope overlooking the river valley (Fig. 14). The test pit had a similar soil profile to those on Greatisland with 0.2-0.3m of topsoil over boulder clay and shattered Rhyolite bedrock below (Fig. 15).

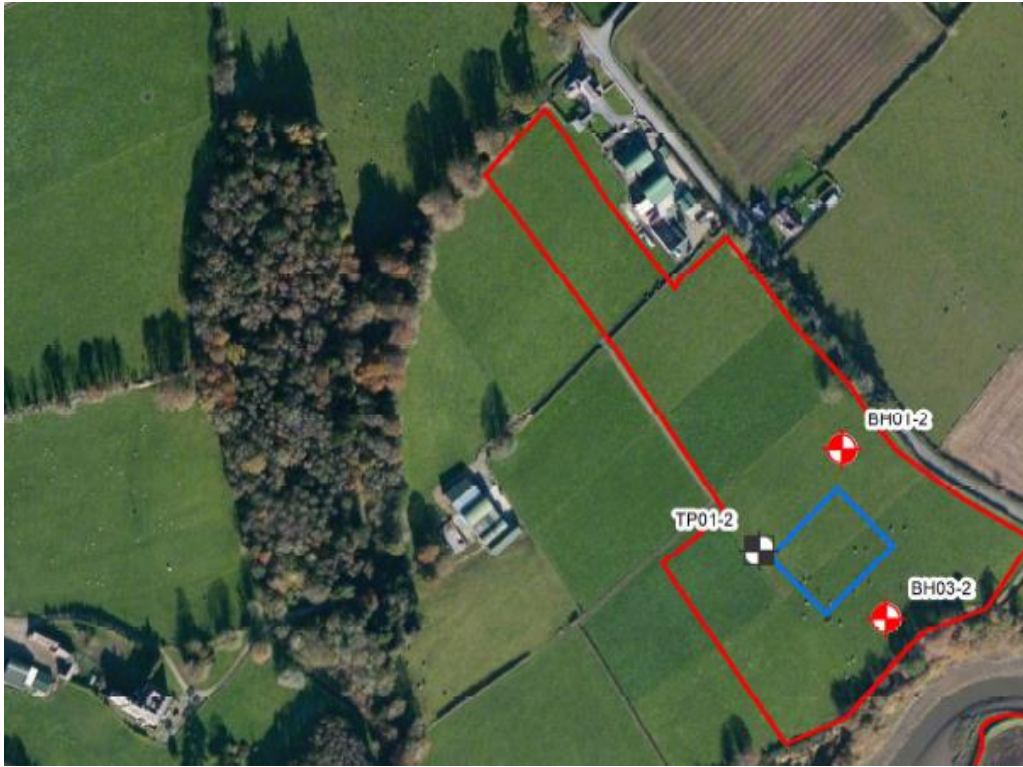


Figure 14: Test pit location North of Campile River



Figure 15: Test pit TP01-2 North of Campile River

3. Baginbun Head

Two test pits, TP01-1 and TP02-1 were excavated in a field where a cereal crop had previously been harvested at Baginbun Head (Fig 16). The stratigraphy was c. 0.6m of topsoil over boulder clay and shattered siltstone/mudstone bedrock beneath (Fig. 17).



Figure 16: Test pits at Baginbun



Figure 17: Baginbun Test Pit TP02-1

Other Investigative Ground Disturbance

A series of bore-holes were also made in greenfield locations to examine the geological sub-strata. The bore was c. 200mm wide and augered down (Fig. 18). The method is not conducive to observing strata or archaeological content.



Figure 18: Bore-hole drilling north of the Campile River

Results

Prior to excavation the locations were inspected to determine if there were any surface anomalies or indications of archaeological remains, none were observed. The test pits were excavated under archaeological supervision. No archaeological finds or features were uncovered by the ground disturbance.