
**Appendix A26.2
ESB Networks -
Hansfield Feasibility
Report**



Energy for
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Hansfield 110 kV Substation emerging preferred site location option and connection method to the Dunfirth – Kinnegad – Rinawade 110 kV transmission line for Irish Rail DART+ West

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Engineering and Major Projects, One Dublin Airport Central, Dublin Airport, Cloghran, Co. Dublin,
K67 XF72, Ireland.

Phone +353 (0)1 703 8000

www.esb.ie

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Change History of Report

Date	New Revision	Author	Summary of Change

Executive Summary

This report has been prepared for Irish Rail by ESB Engineering and Major Projects, to highlight the emerging preferred site location option and connection method proposed for a new 110/38 kV Substation near Hansfield, Dublin 15 and its connection method to the Dunfirth – Kinnegad – Rinawade 110 kV transmission line. The report will be submitted with Irish Rail’s railway order application to An Bord Pleanála (ABP).

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1 Introduction

1.1 Scope and Purpose of this Report

This report has been prepared by ESB Engineering and Major Projects to identify the emerging preferred options for the new Hansfield 110 kV Substation and connection route / site to the National Grid. The report is required by Irish Rail for the purposes of inclusion with their Railway Order to ABP.

Six sites for the Substation were initially assessed with 'Site E' and the Dunfirth – Kinnegad – Rinawade 110 kV emerging as the preferred options. The site requirements and study area criteria as per the initial report are as follows:

- Site is expected to contain an Indoor 110 kV GIS double busbar, an Indoor 38 kV GIS single busbar, 2 x 63 MVA Power Transformers' and 2 x Future 10 MVA Power Transformers'
- Site to be acquired should be a minimum of ca. 85 m x 75 m = 1.57 acres
- Substation roads and provision for offloading equipment
- Boundary treatment – 5 m curtilage area allowed for security, screening, maintenance access, etc.
- Connect the new Substation via two 110 kV line / cable interface masts installed underneath the Dunfirth – Kinnegad – Rinawade 110 kV transmission line and the circuit will be looped into the substation by cable.
- There is a good local road network to cater for the underground 110 kV cables and construction traffic.

2 Emerging Preferred Substation Site

2.1 Site E

Substation Site E is located in a large field 4 km to the west of the Clonsilla – M3 Parkway railway line. The site has the Dunfirth – Kinnegad – Rinawade 110 kV transmission line passing overhead. The nearest dwelling is approximately 100 m away. Site access would be along the eastern boundary of the field and exit on the local road. There would be a good line of sight for vehicles entering and exiting the site.



Figure 1: Site E overview

2.1.1 Emerging Preferred Connection Option

The connection from the new substation at Site E to the National Grid will be via the Dunfirth – Kinnegad – Rinawade 110 kV transmission line. Two line / cable interface towers would be constructed on the site boundary under the Dunfirth – Kinnegad – Rinawade 110 kV line and looped into the substation.

Connections to the Irish Rail Stations will be via underground cables along the local road network.

2.1.2 Site Planning & Zoning

Site E is currently being used for agricultural purposes. No previous planning applications have been registered on the Site. The area is zoned as Agricultural. *Source: Fingal Co.Co. Planning.*



Figure 2: Site E Zoning - Agricultural

2.1.3 Ownership

The property is in Private Ownership. *Source: landdirect.ie*

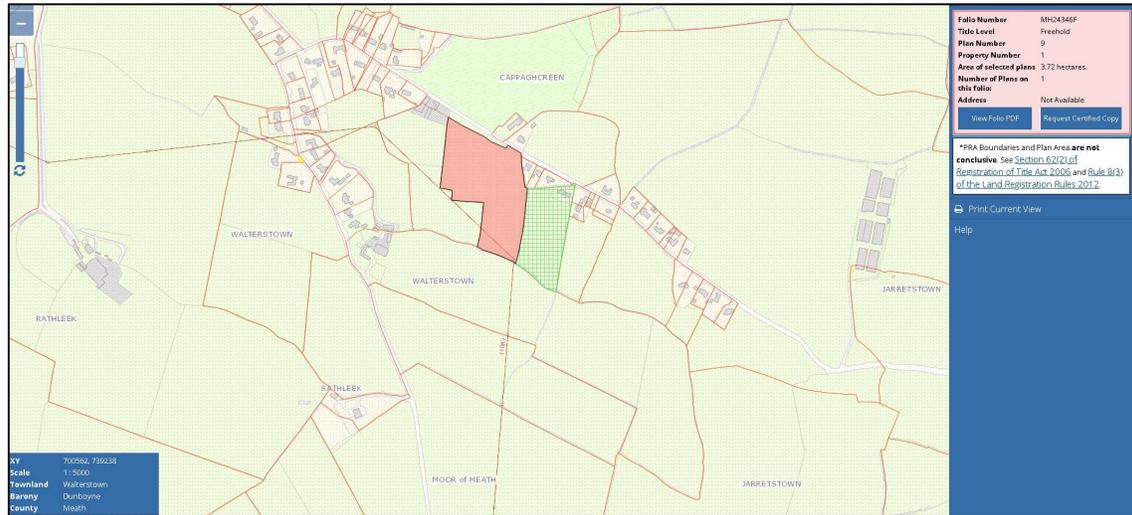


Figure 3: Site E Freehold

2.1.4 Ecological Constraints & Flooding History

In the search area, there are a number of streams passing near the sites. Adequate measures to protect these streams will be put in place, such as culverts and exclusion zones during the construction phase if necessary.

There is no history of flooding in the area. The map below shows the nearest expected area of fluvial (river) flooding in the event a 1-in-1,000 year flood and a 1-in-10 year flood. Source: floodinfo.ie

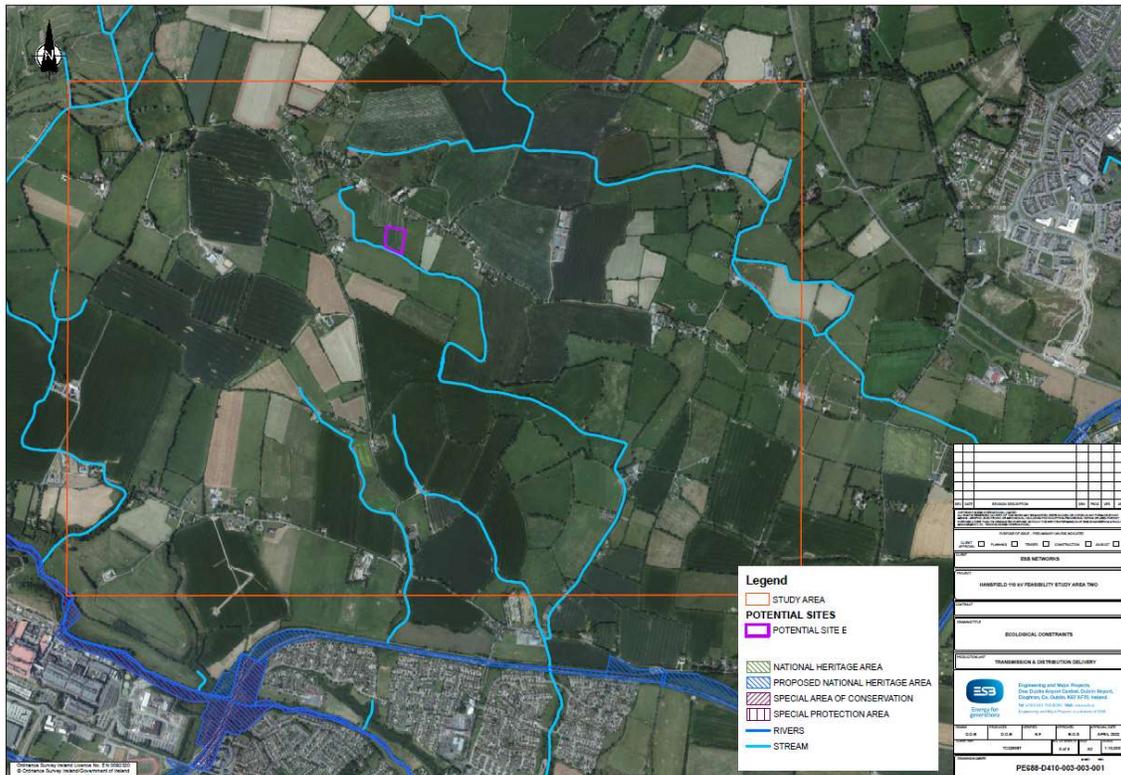


Figure 4: Local streams near sites

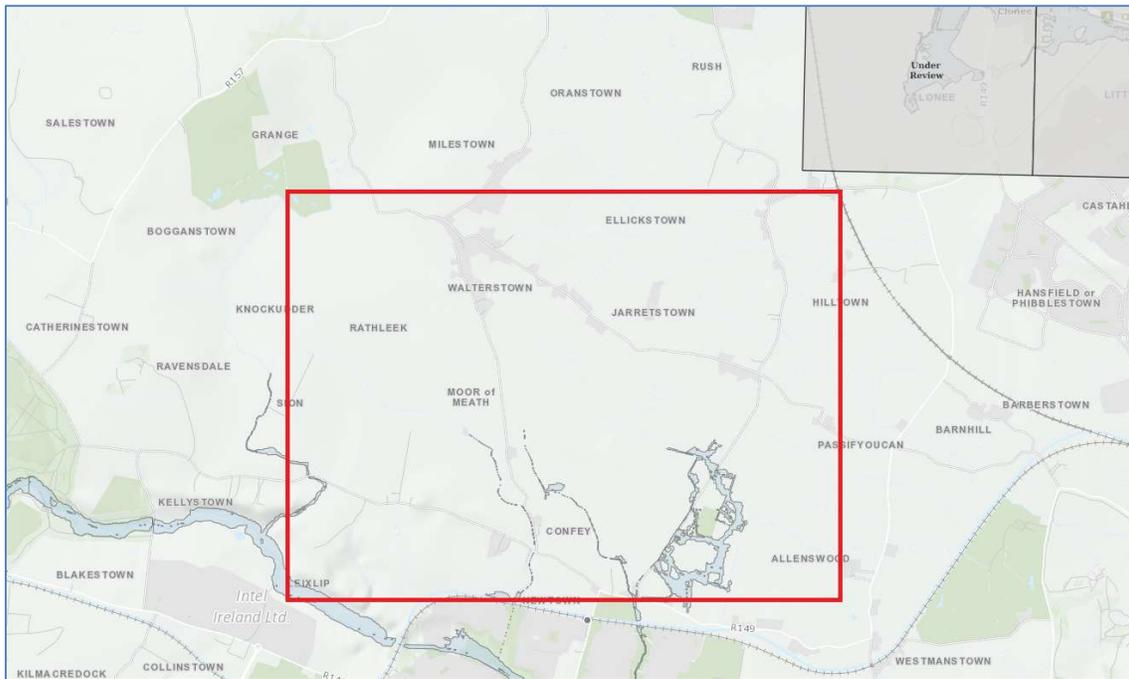


Figure 5: 1-in-100 probability of flooding events

3 Conclusions

Following an assessment by ESB Engineering and Major Projects, the emerging preferred location for the new Hansfield 110 kV Substation is Site E. It is the most suitable site and meets all the technical requirements for the Substation and will be connected directly to the Dunfirth – Kinnegad – Rinawade 110 kV transmission line and no 110 kV underground cables are required.

It should be noted that whilst Site E is the emerging preferred site, other sites and connection options are also technically feasible in the event that Site E could not be progressed for whatever reason.