



The North-South 400 kV Interconnection Development

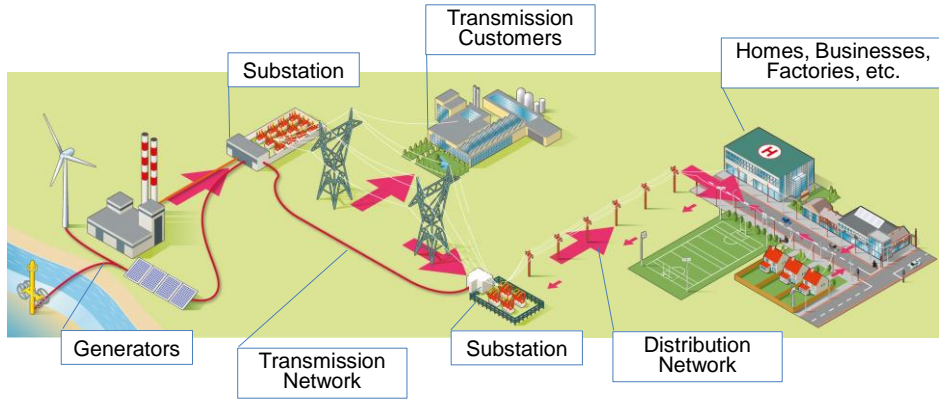


Overview of the North-South 400 kV Interconnection Development

Des Cox, Senior Planning Consultant, EirGrid

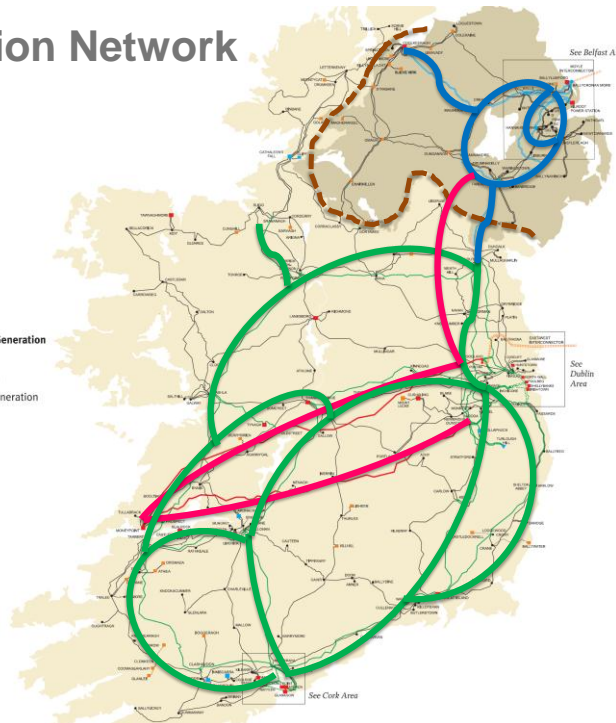


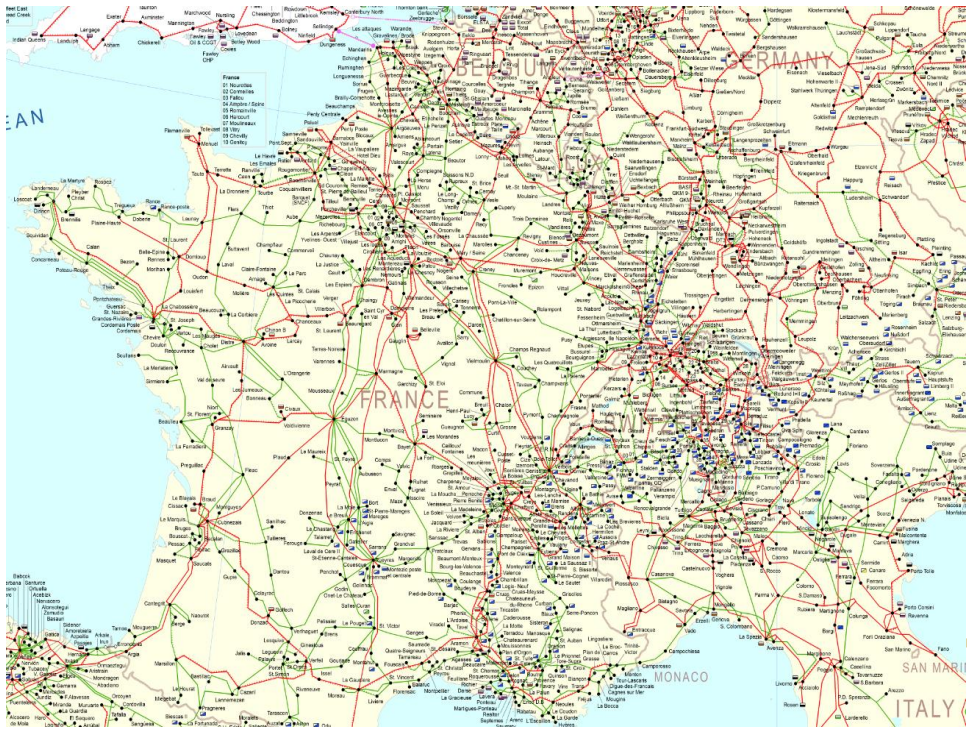
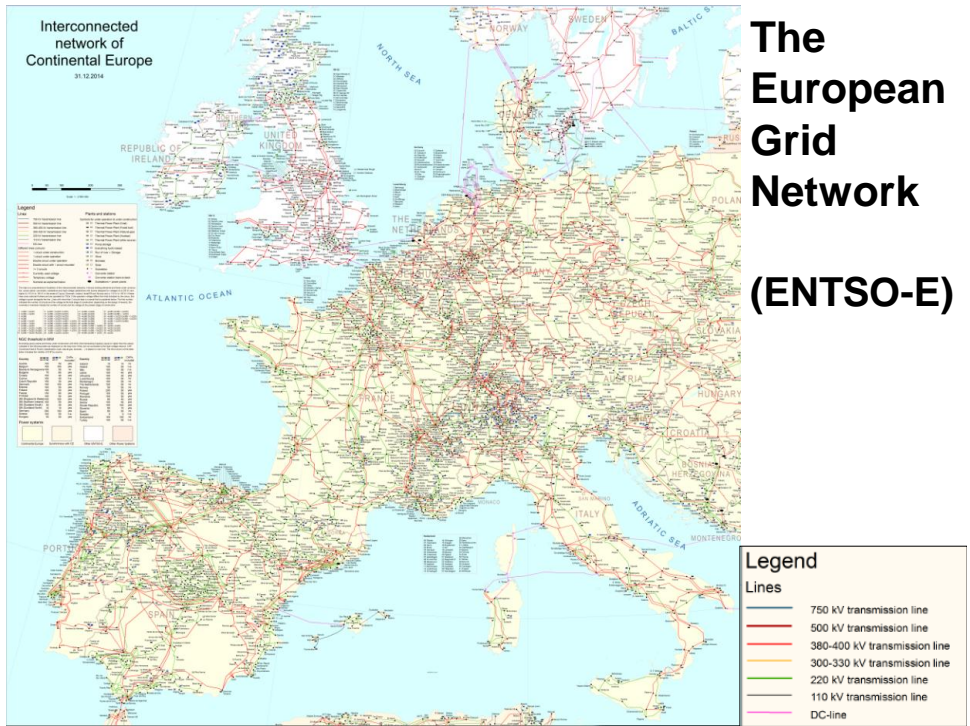
Overview of the Transmission System



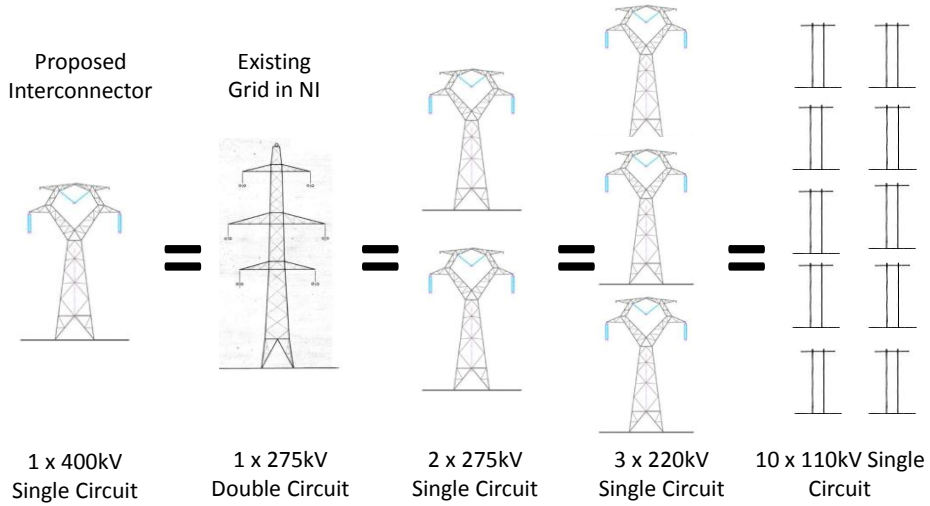
Transmission Network

- 400kV Lines
 - 275kV Lines
 - 220kV Lines
 - 110kV Lines
 - - - 220kV Cables
 - - - 110kV Cables
 - - - HVDC Cables
 - 400kV Stations
 - 275kV Stations
 - 220kV Stations
 - 110kV Stations
- Transmission Connected Generation**
- Hydro Generation
 - Thermal Generation
 - ▼ Pumped Storage Generation
 - Wind Generation



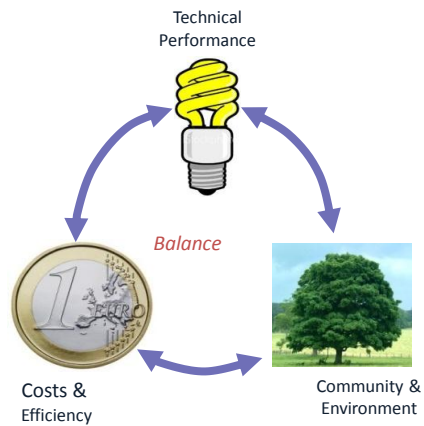


Equivalent Capacity



The Balance of Grid Development

- ✓ Safe
- ✓ Secure
- ✓ Reliable
- ✓ Economical
- ✓ Efficient
- ✓ Due regard for the Environment



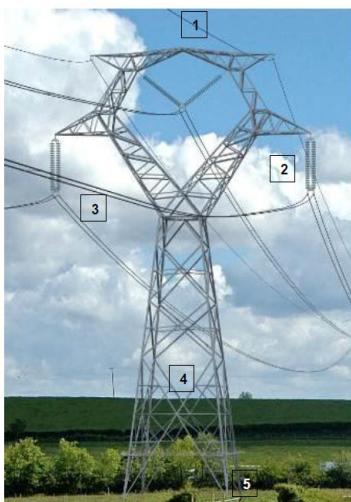
The Nature and Extent of the Development – the Overhead Line

- New single-circuit 400 kV overhead line of approximately 100.5 km in the counties of Monaghan, Cavan and Meath
- Extending from the border with NI in Co. Monaghan to the existing 400 kV Woodland substation, Co. Meath



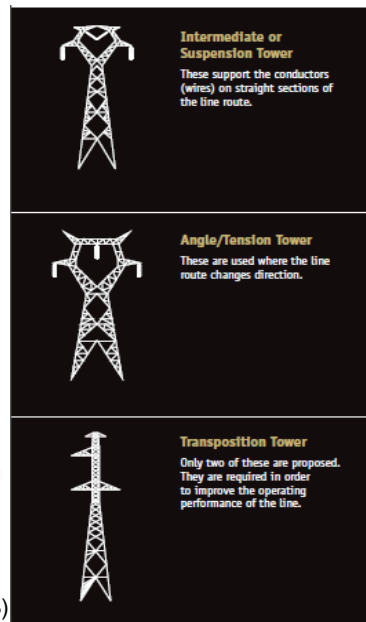
(Fig. 2.1 Vol. 3B)

400 kV Overhead Line Design



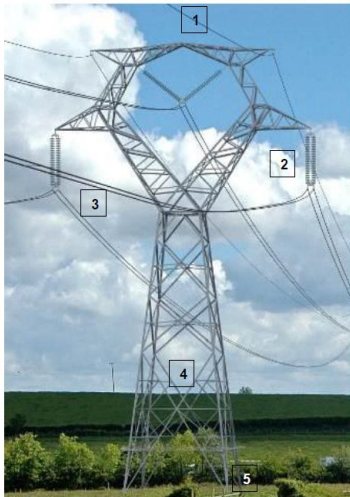
(Fig. 6.25, Vol. 3B)

1. Earthed Shield wires
2. Insulators
3. Conductors
4. Tower
5. Concrete foundation for each tower footing



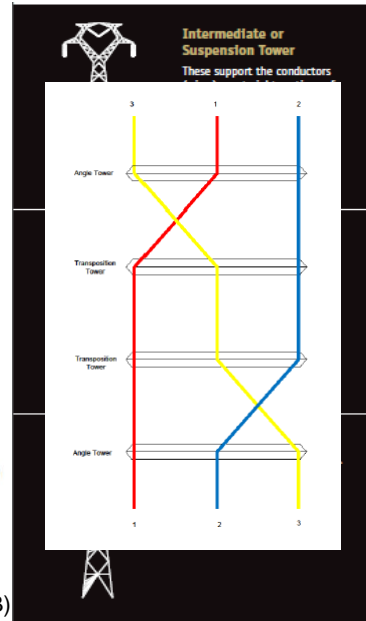
(Fig. 5.19, Vol. 3B)

400 kV Overhead Line Design



1. Earthen Shield wires
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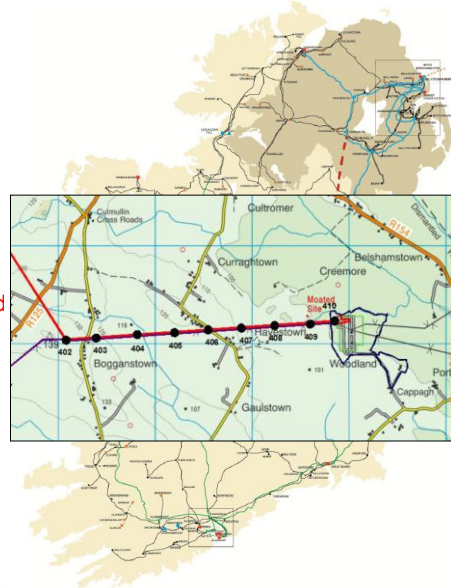
(Fig. 6.25, Vol. 3B)



(Fig. 5.19, Vol. 3B)

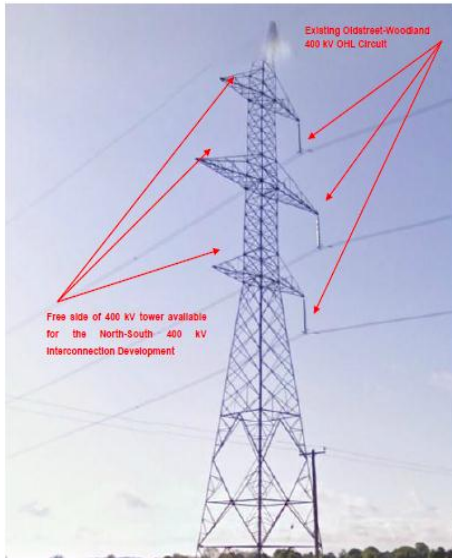
The Nature and Extent of the Development – the Overhead Line

- New single-circuit 400 kV overhead line of approximately 100.5 km in the counties of Monaghan, Cavan and Meath
- Extending from the border with NI in Co. Monaghan to the existing 400 kV Woodland substation, Co. Meath
- **Approximately 2.85 km strung on unused northern side of existing Oldstreet-Woodland 400 kV double-circuit**



(Fig. 2.1 Vol. 3B)

Existing 400 kV Overhead Line

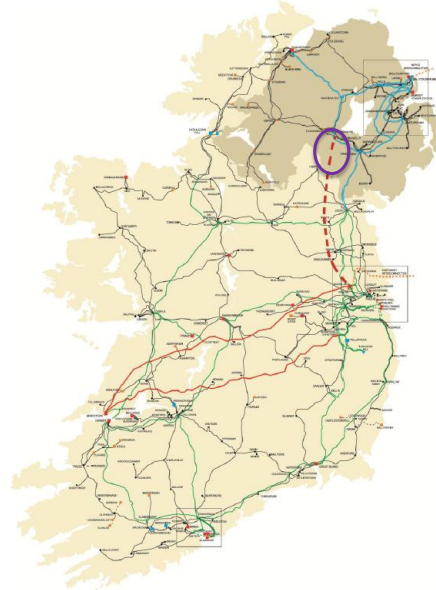


(Fig. 6.30 Vol. 3B)

- Double-circuit 400 kV overhead line on approach to Woodland Substation
- Conductors on each circuit are in a vertical rather than horizontal configuration hence the need for taller structures

The Nature and Extent of the Development – the Overhead Line

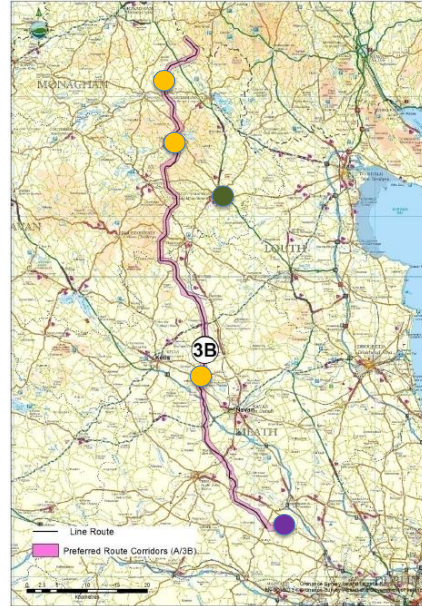
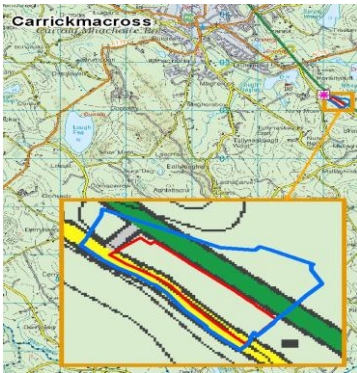
- New single-circuit 400 kV overhead line of approximately 100.5 km in the counties of Monaghan, Cavan and Meath
- Extending from the border with NI in Co. Monaghan to the existing 400 kV Woodland substation, Co. Meath
- Approximately 2.85 km strung on unused northern side of existing Oldstreet-Woodland 400 kV double-circuit
- Concurrent proposal by SONI for the portion of the overall interconnector in NI, extending from the NI border to a planned 400 kV substation at Turleenan, Co. Tyrone



(Fig. 2.1 Vol. 3B)

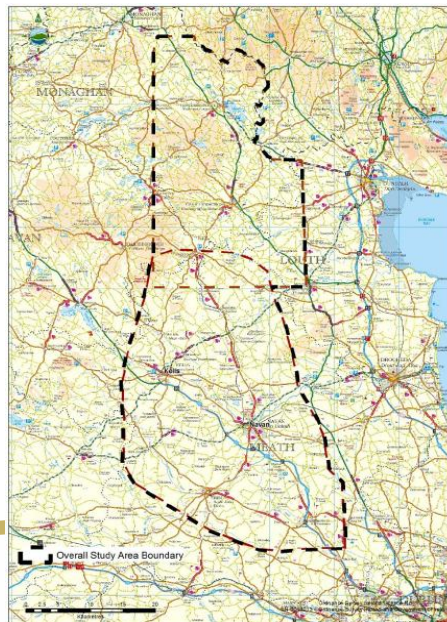
The Nature and Extent of the Development – Associated & Ancillary

- Associated modifications to existing 110 kV lines at intersection with proposed lines
- Associated western extension of existing Woodland 400 kV Substation
- Associated construction materials storage yard
- All associated and ancillary development



(Fig. 5.18
Vol. 3B)

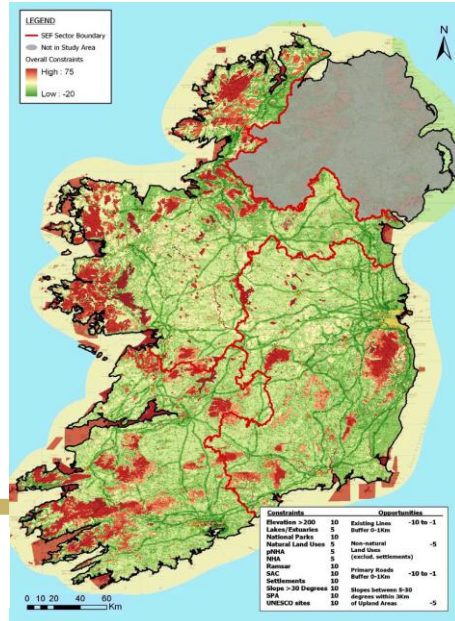
Receiving Environment



(Fig. 5.7 Vol. 3B)

Receiving Environment

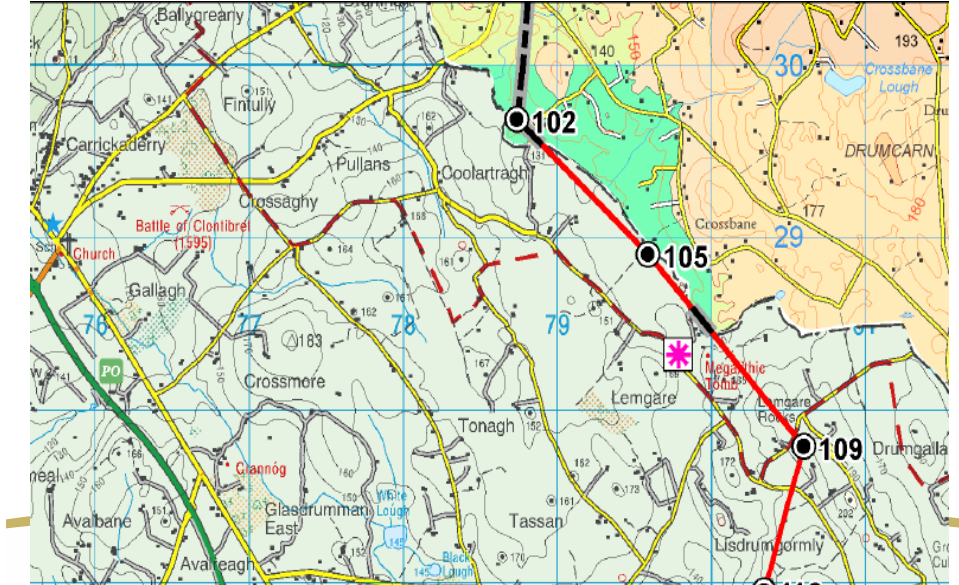
- SEA for the *Grid25 Implementation Programme 2011-16* identifies national Overall Development Potential Rating.
- More environmentally constrained areas are indicated in red.
- The area of the north-east of Ireland is identified as generally of low, or localised constraint.



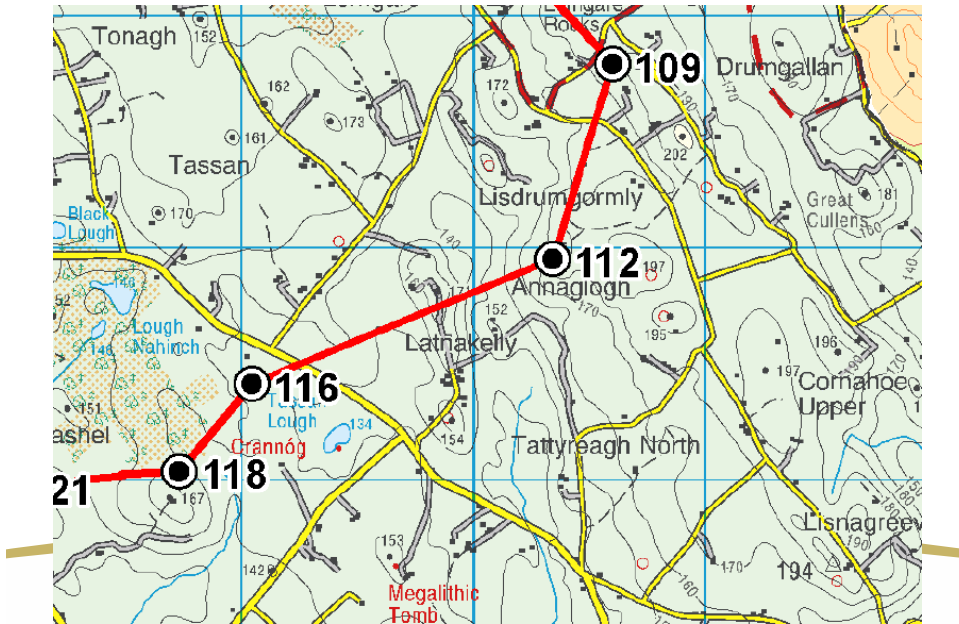
(Grid25 Implementation Plan 2011-2016 - SEA in Reference Material, Vol. 3B)

The Alignment of the Proposed North-South 400 kV Interconnection Development

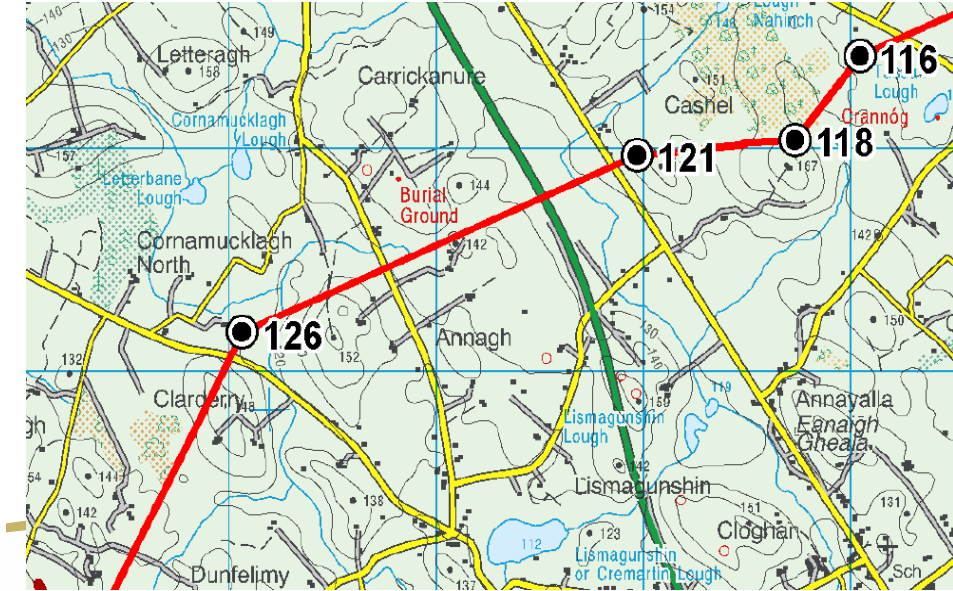
Lemgare to Lisdrumgormly Towers 102 to 109



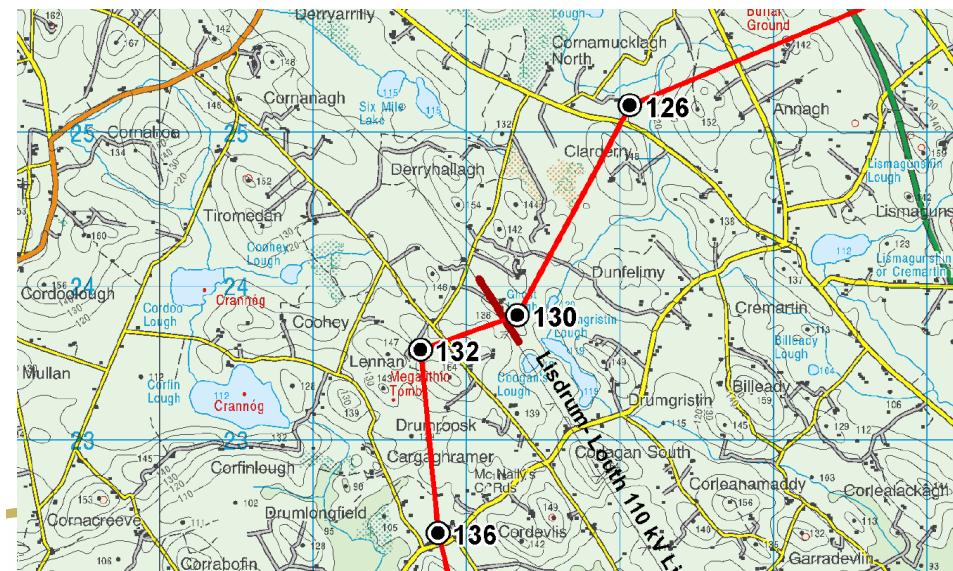
Lisdrumgormly to Cashel Towers 109 to 118



Cashel to Cornamucklagh North Towers 118 to 126



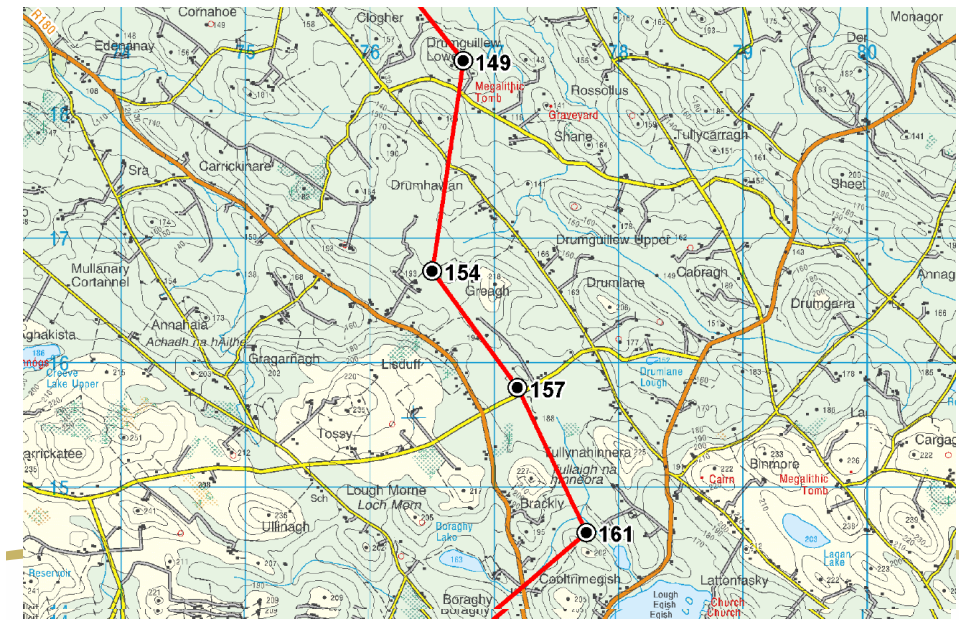
Cornamucklagh North to Cornanure (Monaghan Barony) Towers 126 to 136



Cornanure (Monaghan Barony) to Drumguillew Lower Towers 136 to 149



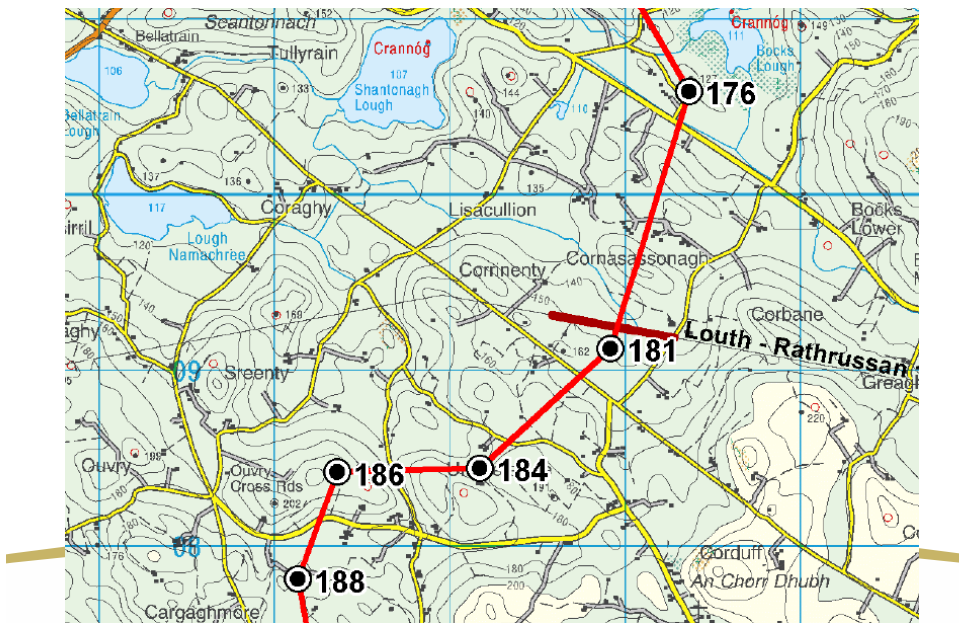
Drumguillew Lower to Cooltrimegish Towers 149 to 161



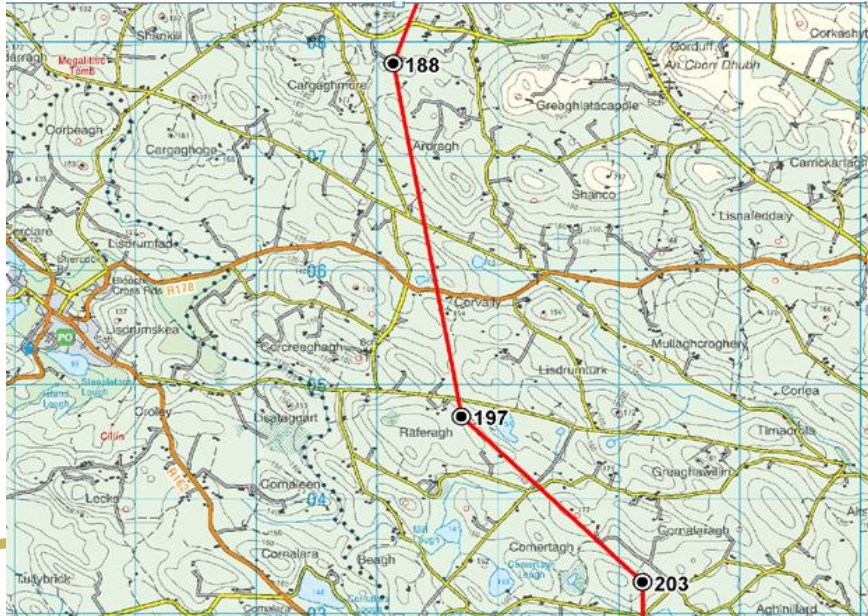
Cooltrimegish to Tullyglass Towers 161 to 176



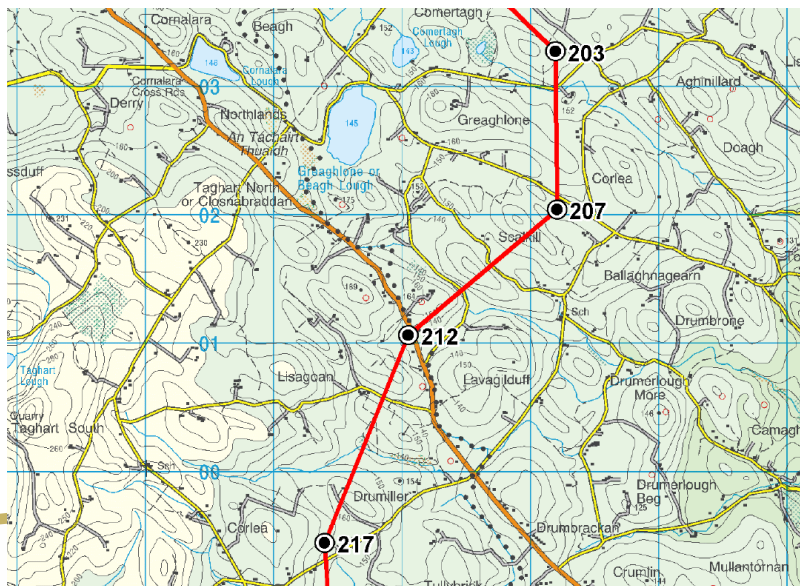
Tullyglass to Ardragh Towers 176 to 188



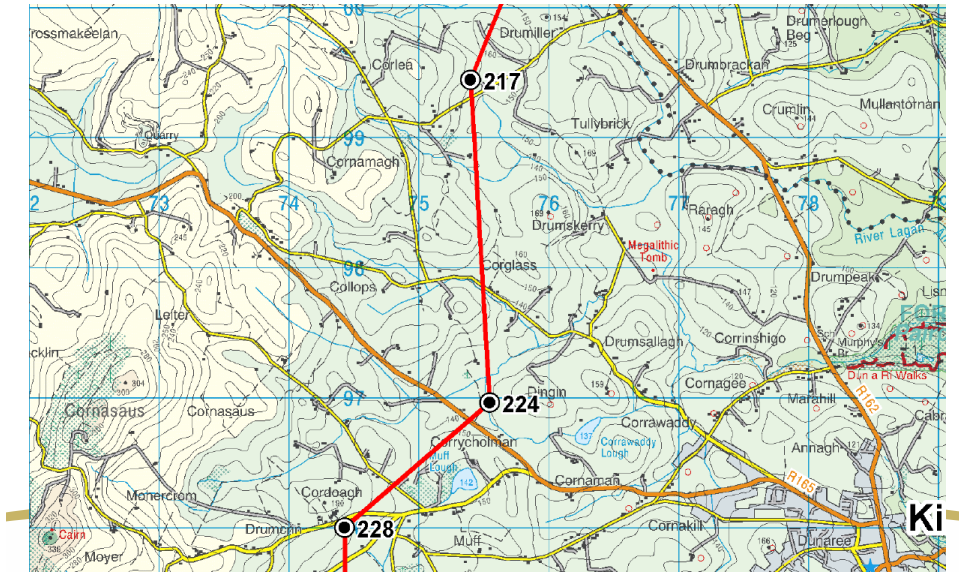
Ardragh to Doagh Towers 188 to 203



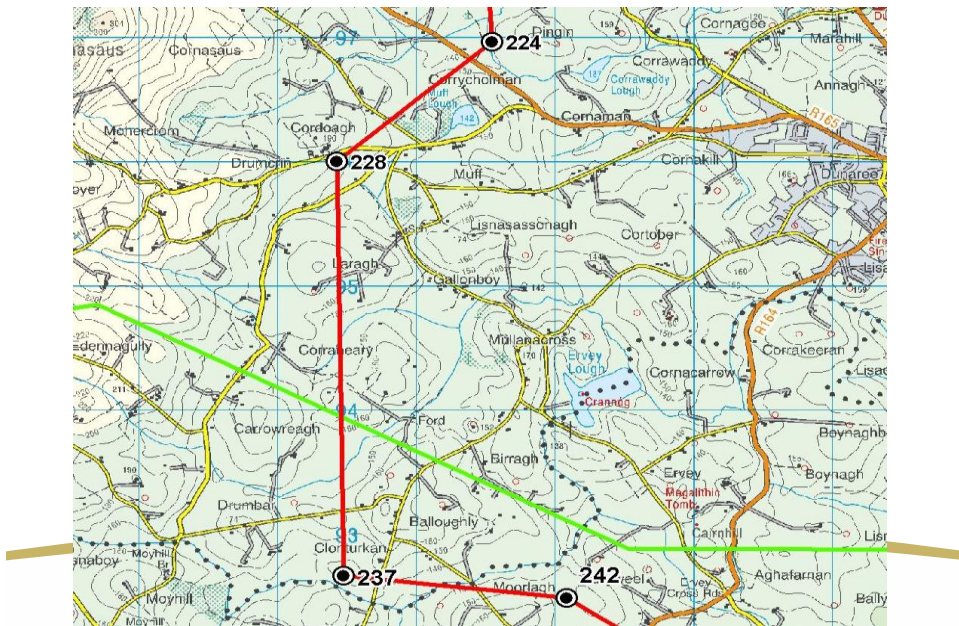
Doagh to Corlea (Clankee Barony) Towers 203 to 217



Corlea (Clankee Barony) to Cordoagh (ED Enniskeen) Towers 217 to 224



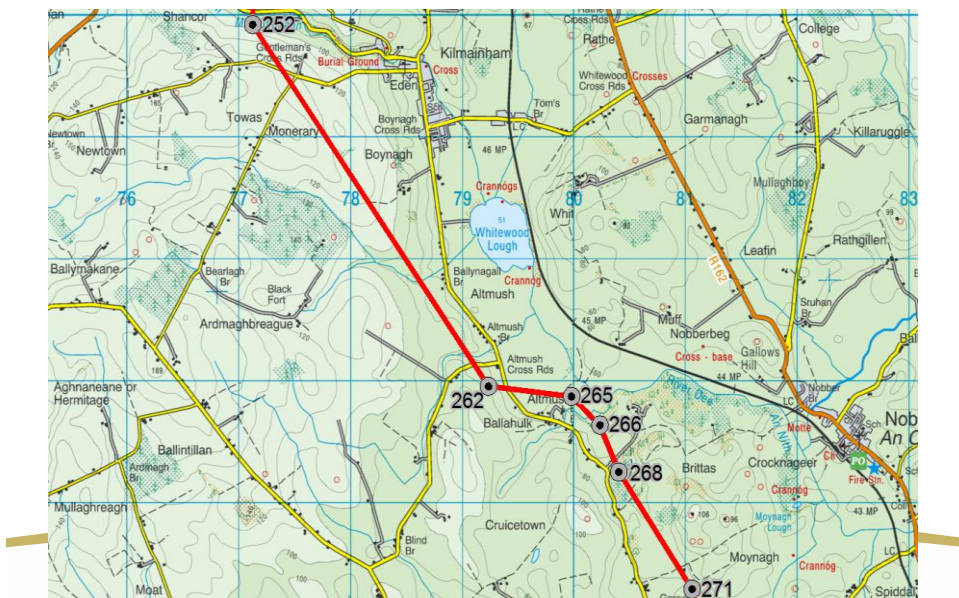
Cordoagh to Clonturkan Towers 224 to 237



Clonturkan to Shancor Towers 237 to 252



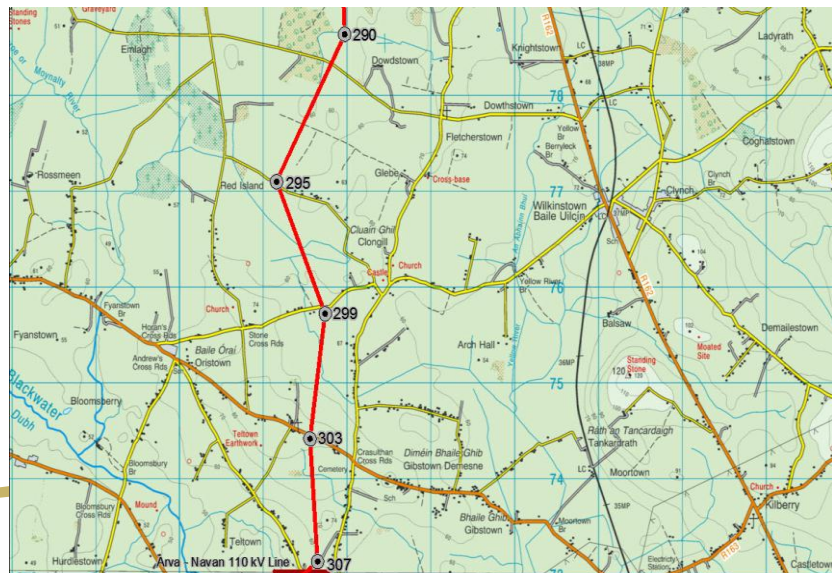
Shancor to Rahood Towers 252 to 271



Rahood to Dowdstown (ED Castletown) Towers 271 to 290



Dowdstown (ED Castletown) to Diméin Bhaile Ghib (Gibstown Demesne) Towers 290 to 307



Diméin Bhaile Ghib (Gibstown Demesne) to Durhamstown Towers 307 to 324



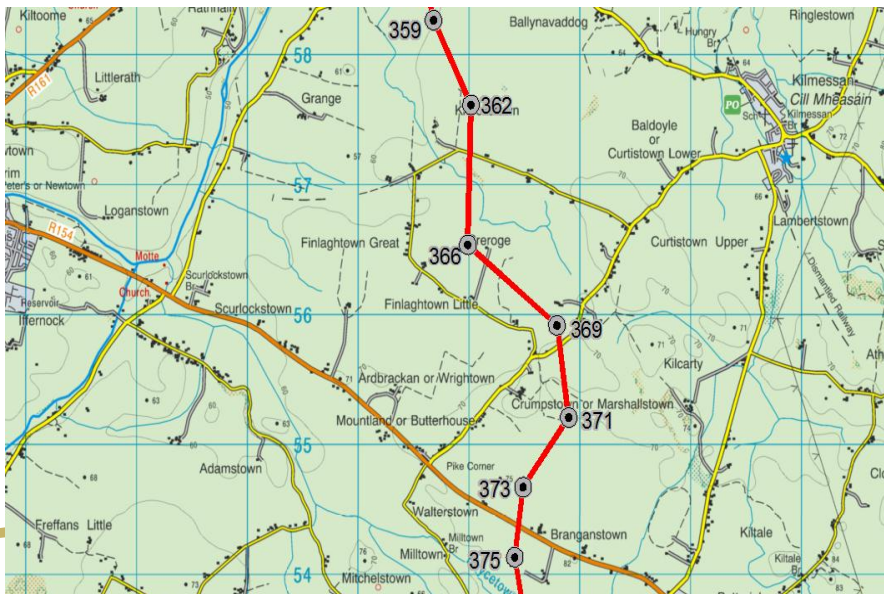
Durhamstown to Philpotstown (ED Bective) Towers 324 to 342



Philpotstown (ED Bective) to Trubley Towers 342 to 359



Trubley to Branganstown Towers 359 to 375



Branganstown to Culmullin Towers 375 to 392



Culmullin to Bogganstown (ED Culmullin) Towers 392 to 402 (Existing Oldstreet to Woodland OHL Route)

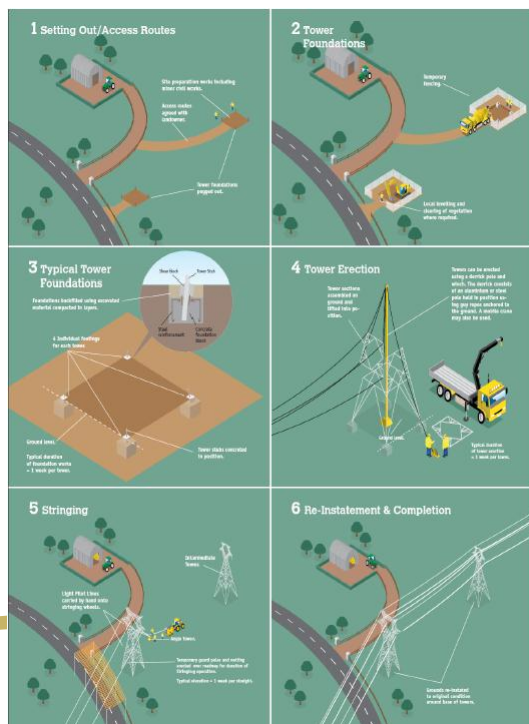


**Bogganstown (ED Culmullin) to Woodland
Towers 402 to 410
(Existing Oldstreet to Woodland OHL Route)**



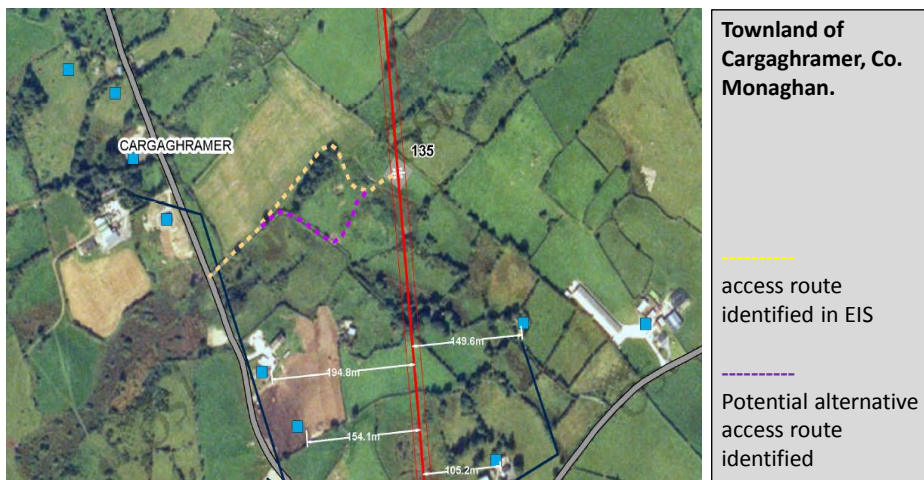
Construction and Temporary Access

(Fig. 7.2 Vol. 3B)



(Source: Landowner Information Brochure (July 2013) for illustrative purposes only)

Tower 135: Identified Alternative Temporary Construction Access Route





The North-South 400 kV Interconnection Development



Overview of the North-South 400 kV Interconnection Development

Appendix

Alternative Temporary Access Routes

Reference

“Response to the Issues Raised in Submissions / Observations”, Section 6.2.1.3, Potential Access Route Changes, p 97:

“6.2.1.3 Potential Access Route Changes

- 17 Some landowner submissions raise issues in respect of the access route proposed over their lands and in one case suggested an alternative route.

Applicant’s Response:

- 18 It is always EirGrid’s objective to facilitate landowner requests where practicable and where it does not create additional impact. However, it was not feasible, within the timeframe available to complete this response report, to carry out a full evaluation of potential changes to approximately 11 no. access routes requested either by a landowner or under consideration due to issues landowners have raised.”

Alternative Access Routes, March 2016

Tower 123 – LCT051 [SI(2015)-0049]

Figure 1.1



Table 1.1

Environmental Review Topic	Tower 123 Access Route Comment
Ecology	The alternative access route uses an existing gap in the hedgerow in the southeast of the field, crossing improved agricultural grassland to the tower. The alternative route is slightly preferable as it utilises an existing gap in the hedgerow. Having considered the potential impact of this alternative route, there is no change to the overall ecological impact evaluation submitted.
Cultural Heritage	The proposed alternative is a minor adjustment to the access route in an area where there are no previously recorded archaeological or architectural heritage features. Having considered the potential impact of this alternative route from a cultural heritage perspective, there is no preference.
Traffic	No change off the public road network.
Soils/Geology	No significant issues with either access track option. Type 2 tracks already recommended. No preference.
Agronomy	The impact from either option is imperceptible. The alternative route option is closer to the field boundary and uses an existing farm track and will therefore cause less damage to land and is preferable.

Tower 135 – LCT070 [SI(2015)-0655]

Figure 1.2



Table 1.2

Environmental Review Topic	Tower 135 Access Route Comment
Ecology	The alternative route follows an existing farm track, is shorter and utilises an existing gate to access improved grassland at the tower site. This alternative route is slightly preferable. Having considered the potential impact of this alternative route, there is no change to the overall ecological impact evaluation submitted.
Cultural Heritage	Alternative route avoids the location of a farmstead depicted on 1st Edition OS Maps but which is no longer extant by the time of the 2nd Edition survey. Alternative route would be slightly preferred.
Traffic	No change off the public road network.
Water/Soils/Geology	No significant issues with either access track option. No preference.
Agronomy	The impact from either option is imperceptible. The alternative option, which crosses over green field for a shorter distance, will cause less damage to land and is preferable.

Tower 137 – LCT073 [SI(2015)-0184]

Figure 1.3



Table 1.3

Environmental Review Topic	Tower 137 Access Route Comment
Ecology	The alternative access route uses an existing gap in the hedgerow in the southeast of the field, crossing improved agricultural grassland to the tower. Having considered the potential impact of this alternative route, it is slightly preferable, with however no change to the overall ecological impact evaluation submitted.
Cultural Heritage	Both existing and alternative access routes skirt the location of a house depicted on the 1st edition OS Map. From a cultural heritage perspective there is no preference.
Traffic	No change off the public road network.
Water/Soils/Geology	No preference. Moderately steep slope (1:4) on either access route option. No significant issues with either access track option.
Agronomy	The impact from the original access route is lower, because it crosses over green field for a shorter distance. However, the difference is very small and there is no preference for either.

Tower 139 – LCT 076 [SI(2015)-0015]

Figure 1.4



Table 1.4

Environmental Review Topic	Tower 139 Access Route Comment
Ecology	The alternative route follows an existing access track for most of its length, avoiding hedgerow crossings, and entering the improved agricultural lands via an existing farm entrance. The alternative access route is slightly preferable with no change to the overall ecological impact evaluation.
Cultural Heritage	There is a house depicted on the 1st edition OS Map adjacent to the alternative route. The existing access would be slightly preferred from a cultural heritage perspective.
Traffic	Access to Tower 139 changed from L7430 onto a narrow private lane off the L3403. There will be no change to daily maximum peak traffic envisaged along haul routes.
Water/Soils/ Geology	No significant issues with either access track option. No preference.
Agronomy	<p>The alternative access route is preferable because it uses the existing access (rather than access across another farm) and crosses green field for a shorter distance, thus reducing damage to land. The overall significance of impact on LCT-076 will not change due to the alternative access route.</p> <p>The impact from construction traffic on adjoining land parcel LCT-076A to the west will increase but remains imperceptible.</p>

Tower 159 – LCT 108 [SI(2015)-0076]

Figure 1.5

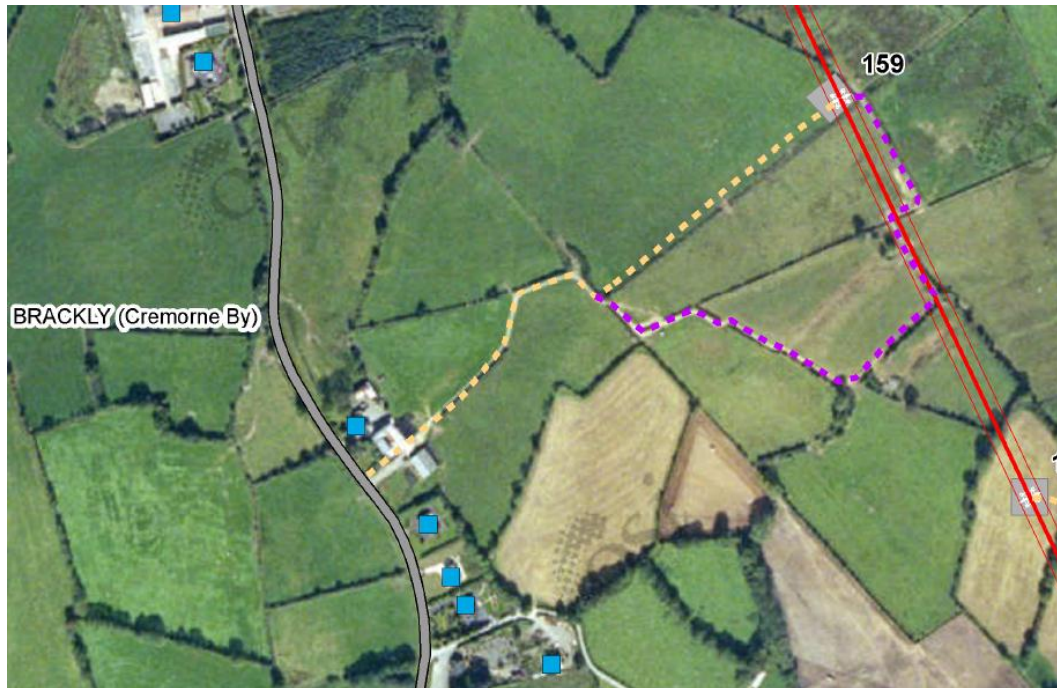


Table 1.5

Environmental Review Topic	Tower 159 Access Route Comment
Ecology	The alternative access route follows an existing farm track throughout its length, avoiding hedgerow crossings. Having considered the potential impact of this alternative route, it is slightly preferable, with no change to the overall ecological impact evaluation submitted.
Cultural Heritage	There are a number of farmsteads and houses depicted along the alternative route on 1st edition OS mapping. The existing access is shorter and there is a single house depicted on the OS mapping. Therefore the existing route would be slightly preferred from a cultural heritage perspective.
Traffic	No change off the public road network.
Water/Soils/Geology	No significant issues with either access track option. No preference.
Agronomy	The alternative route is preferable because although it uses the existing farm yard access and a longer access route via the existing farm road, it will reduce land damage. The residual impact due to either of the access route options is imperceptible.

Tower 191 – LCT165 [SI(2015)-0064]

Figure 1.6



Table 1.6

Environmental Review Topic	Tower 191 Access Route Comment
Ecology	The alternative access route follows an existing track and enters the improved agricultural grassland at the tower site via an existing farm gate. Having considered the potential impact of this alternative route, it is slightly preferable, with no change to the overall ecological impact evaluation submitted.
Cultural Heritage	Alternative route passes in the vicinity of a farmstead/house marked on the 1st edition OS Map. The existing access would therefore be slightly preferred from a cultural heritage perspective.
Traffic	No change off the public road network.
Water/Soils/Geology	No significant issues with either access track option. No preference.
Agronomy	The impact from either option is imperceptible. The alternative option is preferable because it uses an existing farm track and will cause less damage to land.