

# LT14 – Western Isles HVDC

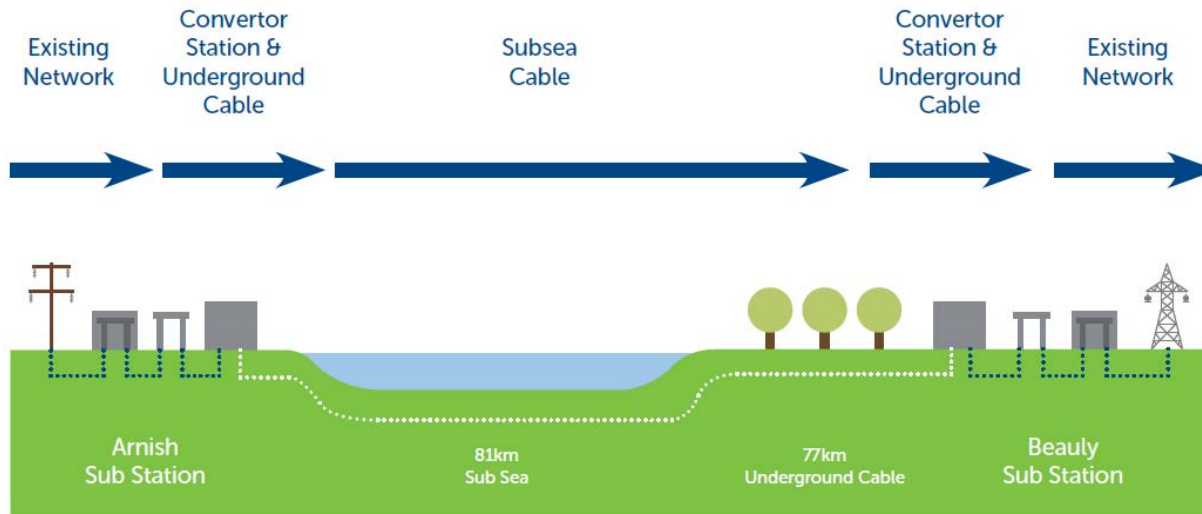
Spittal Site Visit with  
Beaulieu CLG 10/07/19



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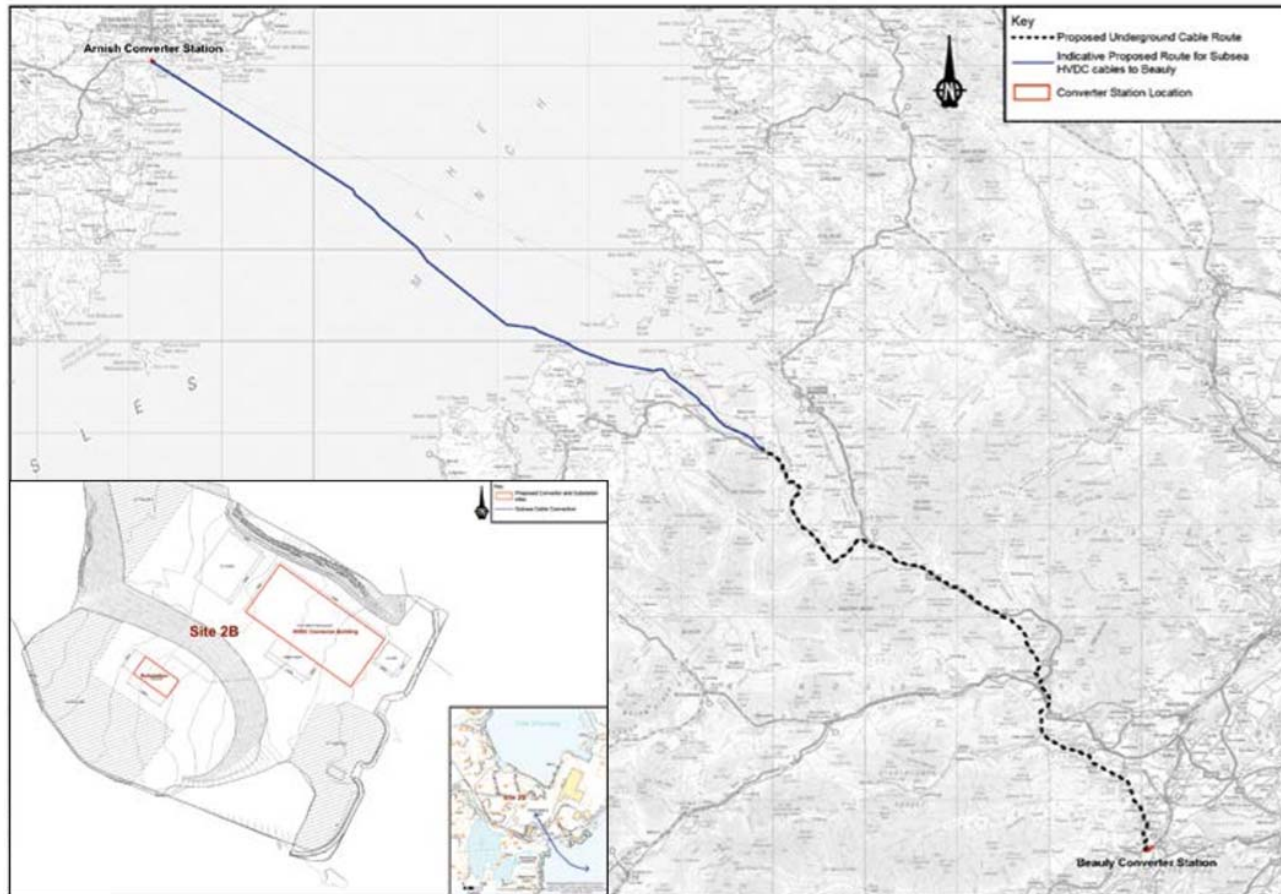


# LT14 – Western Isles HVDC



- To connect Island Wind Generation to the Scottish Mainland Network via 600 MW HVDC Link
- Windfarm Developers – combined 418 MW of Contracted generation
- 132 kV GIS Substation at Arnish and 400 kV GIS Substation at Beaulieu to connect to Scottish Mainland Network
- $\pm 320$  kV Al/XLPE DC Cables – Subsea and Land

# LT14 – Western Isles HVDC

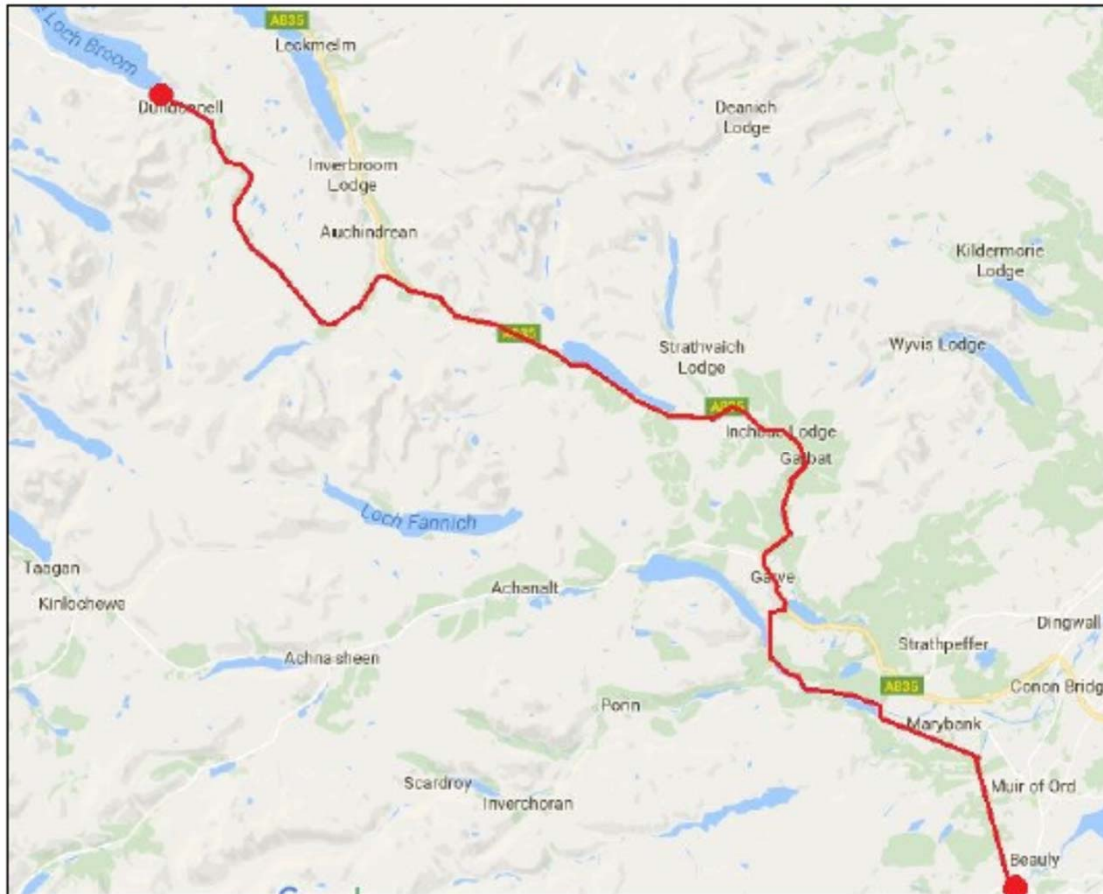


Proposed Arnish converter station site



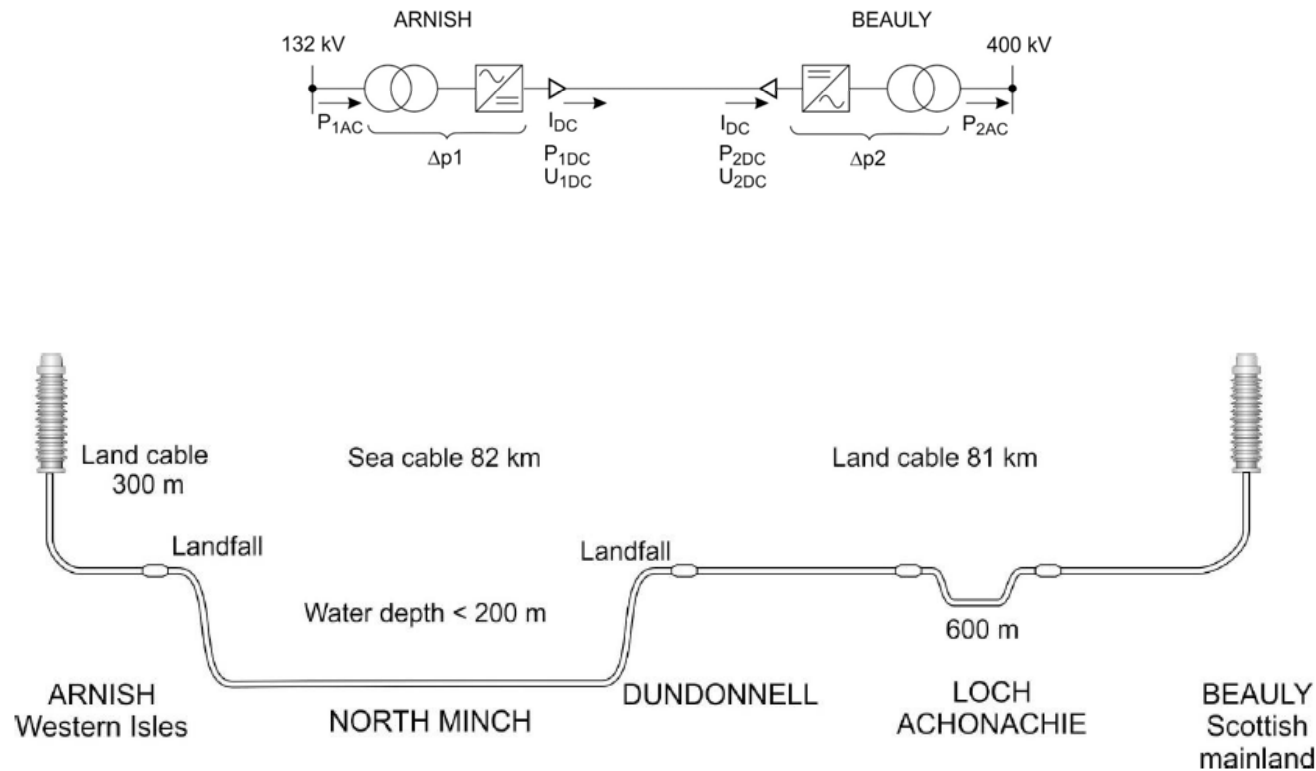


# LT14 - Land Cable Route



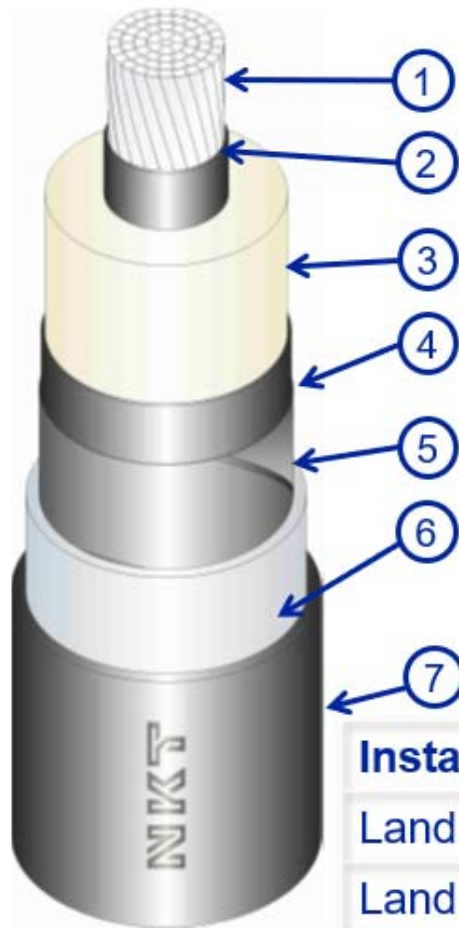
- HVDC underground circuit (2 DC cables and 1 Fibre Optic)
- From Beaulieu to Dundonnell - length 80km
- Work Sections A, B, C – to be worked on concurrently:
  - Section A: Dundonnell to Braemore Junction, within A832 highway boundary
  - Section B: Braemore jcn to Garve, within A835 highway boundary
  - Section C: Garve to Beaulieu, mostly following Beaulieu-Mossford OHL (agricultural land)

# NKT Cable Schematic



# DC Cable Design - Land

# Subsea



1. Conductor (Al) water blocked
2. Conductor screen
3. XLPE insulation
4. Insulation screen
5. Water blocking tape (semicon)
6. Lead sheath
7. Land extruded oversheath
8. Sea, armour bedding (extruded & tape)
9. Sea, armour wire
10. Sea, rovings (polymer strings)

## Installation

## Conductor Area

Land Normal

1200 mm<sup>2</sup> Al

Land Peat

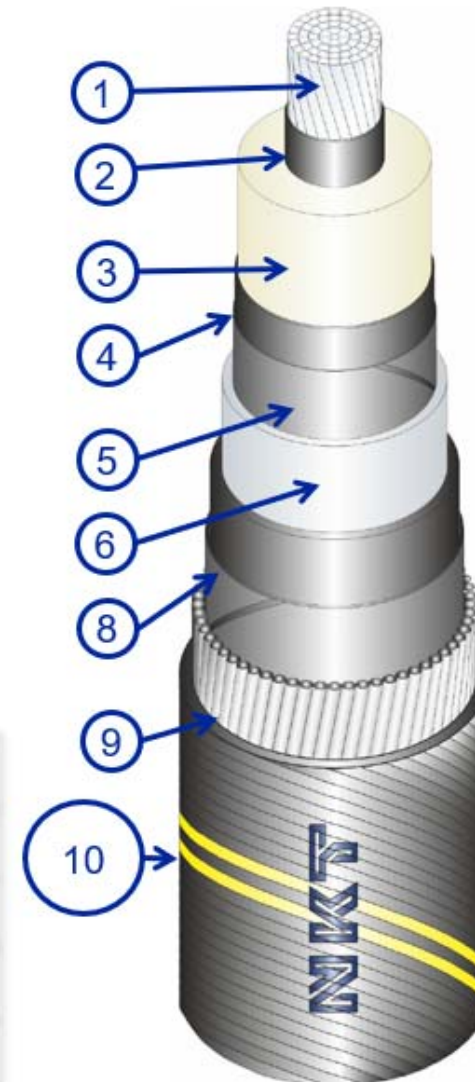
1700 mm<sup>2</sup> Al

Subsea HDD

1130 mm<sup>2</sup> Al

Subsea Normal

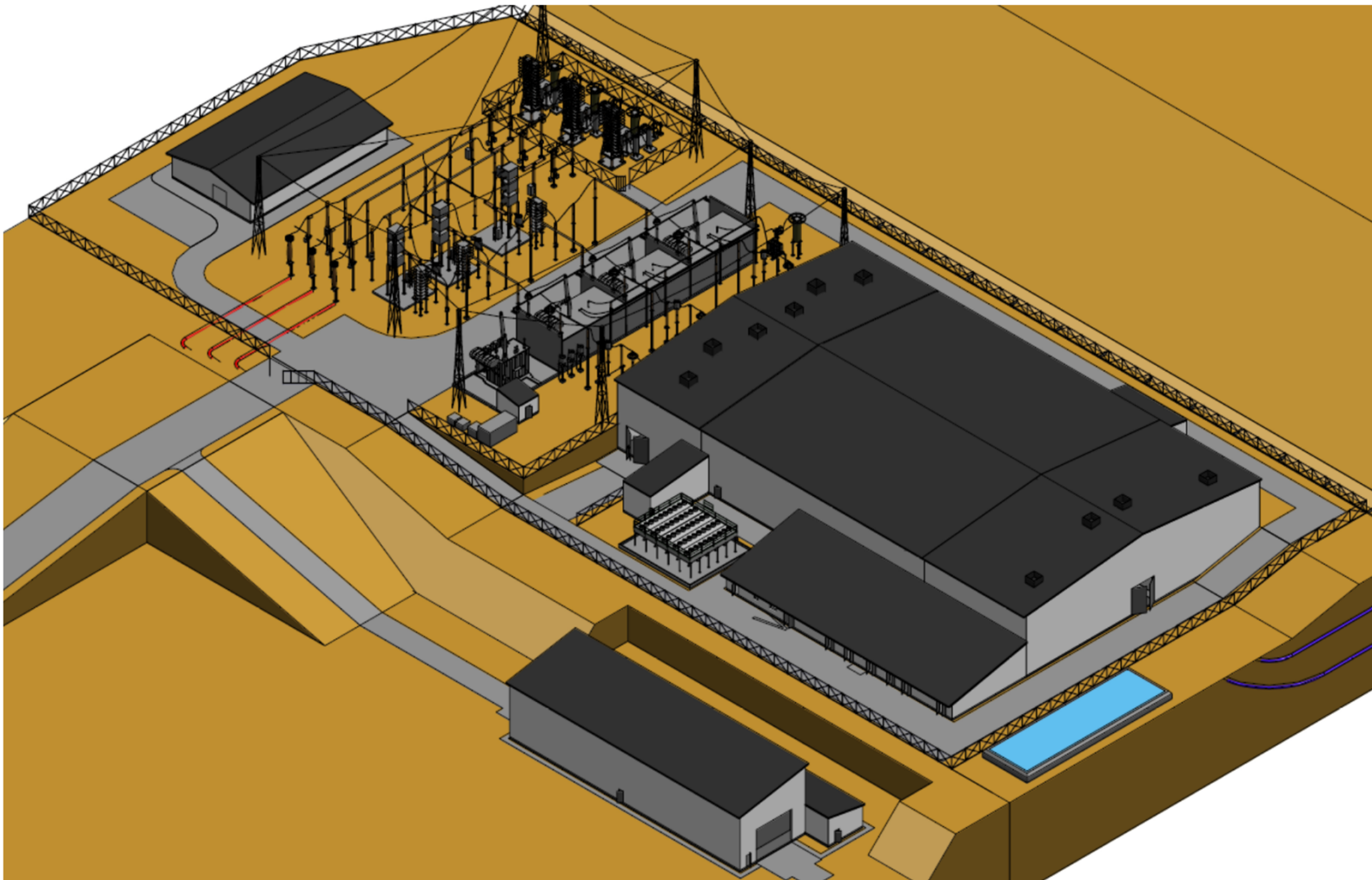
1070mm<sup>2</sup> Al



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# Beauly Layout



# Beauly – Converter Station Location





An aerial photograph of the Beaulieu Converter Station. The station features a large, dark, rectangular building with a flat roof, surrounded by extensive electrical infrastructure including numerous tall pylons and a complex network of power lines. The station is situated in a rural area with fields and some trees. A road runs along the right side of the image.

# Beaulieu - Converter station

# Thank you