Fosse Green Energy

# Fosse Green Energy

EN010154

9.34 P66 Outline Specification (Clean)

VOLUME

9

Planning Act 2008 (as amended)

Regulation 8(1)(k)

Infrastructure Planning (Examination Procedure) Rules 2010

09 June 2026

Planning Act 2008

The Infrastructure Planning

(Examination Procedure) Rules

2010

Fosse Green Energy

Development Consent Order 202[ ]

# 9.34 P66 Outline Specification

| | |
|---|---|
| Regulation Reference | Regulation 8(1)(k) |
| Planning Inspectorate Scheme Reference | EN010154 |
| Application Document Reference | EN010154/EXAM/9.34 |
| Author | Fosse Green Energy Limited |

| Version | Date | Issue Purpose |
|---|---|---|
| Rev 1 | 02 June 2026 | Deadline 6 |
| Rev 2 | 09 June 2026 | Deadline 7 |
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# P66 Pipeline Crossing Specification

1. Fosse Green Energy circuit Voltage
    a. The Fosse Green Energy circuit is to be rated at 400 $kV_{RMS}$ (Line – Line).

2. Fosse Green Energy circuit Current
    a. The Fosse Green Energy circuit is to be rated to 240 MW or 347 A (Line – Line).

3. Modelled fault parameters
    a. Ground return current associated with a phase – earth fault on 4ZM OHL is assumed to be 11.56 kA.
    b. The ground return current was injected into the earthing system of NGET tower designation 4ZM525.
    c. Touch Potentials for the safety Voltage assessment on P66 Pipeline during a fault scenario assumes the fault on the OHL is cleared within 0.2 s.

4. Fosse Green Energy circuit cable size and specification
    a. The grid connection circuit is assumed to comprise of three Aluminium 1200 $mm^2$ (conductor cross sectional area) 400 kV cables.
    b. The grid connection circuit cables are to be to IEC 62067.
    c. Final cable characteristics to align with the characteristics below to ensure that the calculated current density values, presented in this document, are as accurate as possible. This assessment is to be reviewed against the final cable selection to ensure the limitations in this document are satisfied.

| | Conductor Properties | | | | Insulation Properties | | | |
|---|---|---|---|---|---|---|---|---|
| Component Name | Inner Radius (m) | Outer Radius (m) | Relative Resistivity | Relative Permeability | Outer Radius (m) | Resistivity (Ωm) | Relative Permittivity | Relative Permeability |
| Core | 0 | 0.019544 | 1.273 | 1 | 0.052044 | 1E+12 | 2.3 | 1 |
| Sheath | 0.052044 | 0.054944 | 2.09819 | 1 | 0.060944 | 1E+10 | 7 | 1 |

5. Fosse Green Energy circuit phase arrangement
    a. The Fosse Green Energy cables are to be laid in trefoil arrangement up to 15m from the nearest jointing bay either side of the P66 Pipeline crossing.
    b. The Fosse Green Energy cables are to be laid flat arrangement at joint bays.

6. Clearance between P66 Pipeline and Fosse Green Energy circuit joint bays
    a. Joint bays associated with the Fosse Green Energy circuit are not to be situated within land 100 metres either side of P66 Pipeline.

7. Fosse Green Energy circuit joint bay earthing resistance
    a. Joint bays associated with the Fosse Green Energy circuit are have a maximum resistance of 10 Ω.

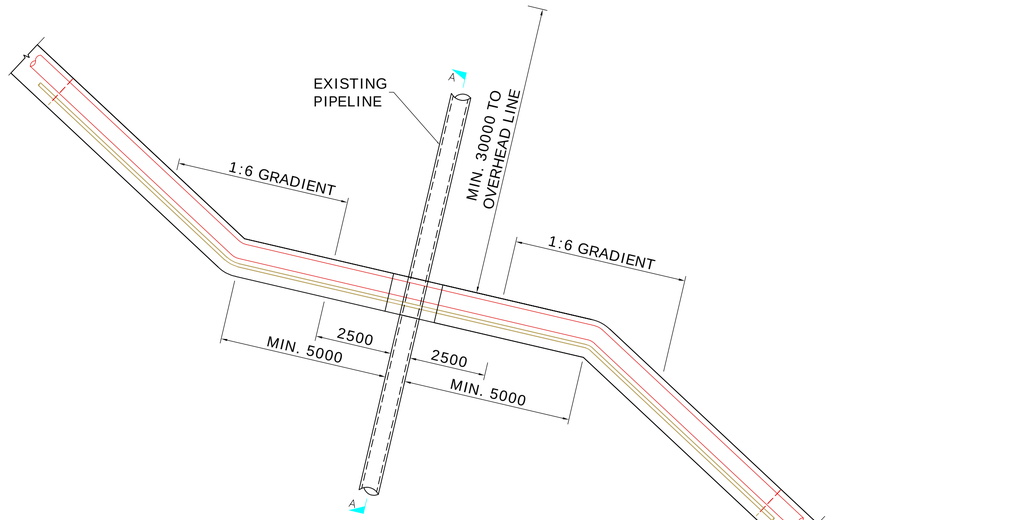
8. P66 Pipeline and Fosse Green Energy circuit crossing angle
    a. The Fosse Green Energy circuit is to cross P66 Pipeline at 90 °. This 90 ° angle is to be maintained for a minimum of 5 m either side of the crossing.

9. P66 Pipeline and Fosse Green Energy circuit minimum separation
    a. The Fosse Green Energy circuit to P66 Pipeline separation is to be a minimum of 600 mm.

10. Fosse Green Energy circuit
    a. The Fosse Green Energy circuit assumed to be laid in ducts. Concrete encasement is acceptable.

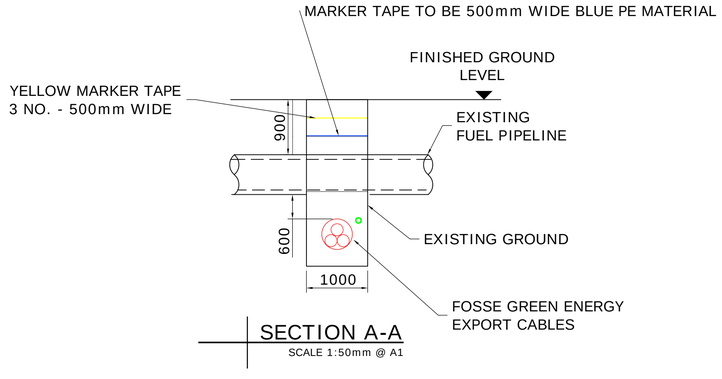
11. Separation between Fosse Green Energy circuit and existing NGET OHL
    a. The minimum separation between the Fosse Green Energy circuit and the outermost conductor of the existing NGET OHL is to be 30 m.

# P66 Pipeline Crossing Indicative Drawings




PLAN VIEW - PIPELINE UNDERCROSSING

SCALE 1:100mm @ A1




SECTION A-A

SCALE 1:50mm @ A1

NOT FOR CONSTRUCTION

FOR INFORMATION ONLY

| 400kV Cable Characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Conductor Properties | | | | Insulation Properties | | | |
| Component Name | Inner Radius (m) | Outer Radius (m) | Relative Resistivity | Relative Permeability | Outer Radius (m) | Resistivity (Ωm) | Relative Permittivity | Relative Permeability |
| Core | 0 | 0.0195 | 1.2730 | 1 | 0.0520 | 1.0000E+12 | 2.3000 | 1 |
| Sheath | 0.0520 | 0.0549 | 2.0982 | 1 | 0.0609 | 1.0000E+10 | 7 | 1 |



Fosse Green Energy

PROJECT

Fosse Green Energy

CLIENT

Fosse Green Energy Ltd

CONSULTANT

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LEGEND

- PE CABLE DUCT
- HDPE COMMUNICATION DUCT
- RED MARKER STRIP OR STEEL PLATES
- YELLOW MARKER WARNING TAPE

A = XLPE APPROVED DUCT, SDR=11, DIAMETER TBC
B = XLPE APPROVED DUCT, SDR=11, DIAMETER TBC

NOTES

1. DRAWING IS FOR INDICATIVE PURPOSE ONLY.
2. DO NOT SCALE FROM THIS DRAWING USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS ARE IN MILLIMETERS, ALL CHAINAGES, LEVELS AND CO-ORDINATES ARE IN METERS UNLESS DEFINED OTHERWISE.
4. NO EXCAVATION SHALL COMMENCE UNTIL THE CONTRACTOR HAS CONSULTED UP TO DATE SERVICES DRAWINGS AND CARRIED OUT AN ELECTROMAGNETIC LOCATOR (EML) SCAN.
5. HAND DIG ONLY WITHIN 500mm OF EXISTING SERVICES.
6. NO JOINT BAYS WILL BE LOCATED WITHIN 100M OF THE PIPELINE.
7. CROSSING WILL BE PERFORMED WITH A CROSSING ANGLE OF 90 DEGREES. THIS ALIGNMENT WILL BE MAINTAINED FOR 5M EITHER SIDE OF THE PIPELINE.
8. CROSSING FINALINE THE CABLES WILL PASS UNDER THE PIPELINE WITH A MINIMUM SEPARATION OF 600MM.

0 1250 2500 mm

1:50

LEGISLATION

Regulation 5(2)(a) Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

ISSUE PURPOSE

Deadline 6 Submission

PROJECT NUMBER

60700987

FIGURE TITLE

400kV PIPELINE CROSSING

FIGURE NUMBER REV.

Figure 1-1 01

EN010154/APP/9.34

# Appendix A Baseline AC Data Report

3rd Jun 2026

# Tech Note: FINALINE Baseline AC Data Nearby to Fosse Green

## 1 Summary

This document contains baseline AC interference data nearby to proposed Fosse Green 400kV cable crossing during routine CP surveys of FINA between April 2019 and May 2026.

These routine measurements only provide an initial assessment of AC interference. A more detailed assessment involves a more intensive survey approach such as repeat AC datalogging to test against criteria in BS EN ISO:18086.

The data is displayed in section 2.

The data indicates some degree of AC interference as voltages are around 1V. However, in BPAs interpretation the existing AC voltages are not sufficient to warrant detailed testing at this location, but the area will continue to be reviewed routinely.

The cause of the AC interference is not known to BPA, but is likely to be the existing 400kV OHL crossing. The loading on this OHL during these surveys is not known to BPA.

Any significant upgrades to electrical infrastructure nearby to or crossing FINA should undergo an assessment to determine risk to FINA.

By: Matthew Emery

Position: Lead CP Engineer

Date: 3rd June 2026

# 2 Survey Data

## 2.1 TEST LOCATIONS

Test location included in this report are displayed below in Figure 1.

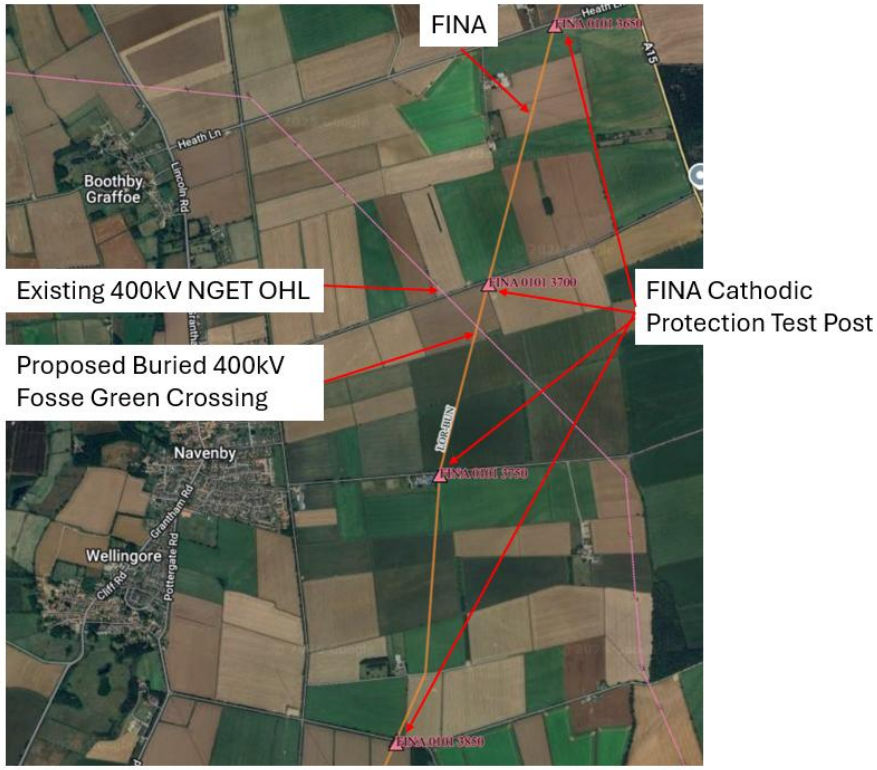


**Figure 1**: GIS Image of nearby Cathodic Protection Test Posts

## 2.2 SURVEY DATA

Tabulated survey data of single AC voltage measurements recorded during routine cathodic protection surveys is displayed below along with a graph.

| CP ID | Chainage (km) | Location Description | Latitude | Longitude | Pipe AC Voltage | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | May-26 | Jan-26 | Jul-25 | Dec-24 | Aug-24 | May-23 | Sep-22 | Jun-22 | Sep-21 | Apr-21 | Sep-20 | Mar-20 | Oct-19 | Apr-19 |
| 3650 | 65.4 | 121 008601 B1202 B Graffoe Heath RDX39S | 53.12835 | -0.4943 | 0.597 | 0.138 | 0.154 | 1.006 | 0.317 | 0.706 | 0.162 | 0.57 | 0.35 | 0.2 | 0.112 | 0.21 | 0.312 | 0.278 |
| 3700 | 66.9 | 121 004586 Green Man Rd RDX40S | 53.11501694 | -0.49998334 | 0.862 | 0.24 | 0.122 | 0.819 | 0.981 | 0.799 | 0.119 | 0.5 | 0.31 | 0.27 | 0.134 | 0.169 | 0.291 | 0.384 |
| 3750 | 68 | 121 003575 Navenby Heath Rd | 53.10517246 | -0.50419026 | 0.451 | 0.81 | 0.476 | 1.143 | 0.116 | 0.927 | 0.386 | 0.84 | 0.36 | 0.34 | | | | |
| 3800 | 69.6 | 121 001559 Wellingore Rd RDX42N | 53.09149933 | -0.5079 | 0.558 | 0.57 | 0.214 | 1.046 | 0.709 | 0.663 | 0.423 | 1 | 0.34 | 0.17 | 0.198 | 0.19 | 0.459 | 1.204 |
| 3850 | 69.7 | 121 001559 Wellingore Rd RDX42S | 53.09133148 | -0.50793332 | 0.533 | 0.553 | 0.242 | 0.222 | 0.671 | 0.675 | 0.418 | 0.92 | 0.16 | 0.45 | 0.054 | 0.222 | 0.46 | 1.196 |

**Table 1:** Single pipe AC voltage measurements recorded between Apr 19 to May 26 during routine cathodic protection surveys

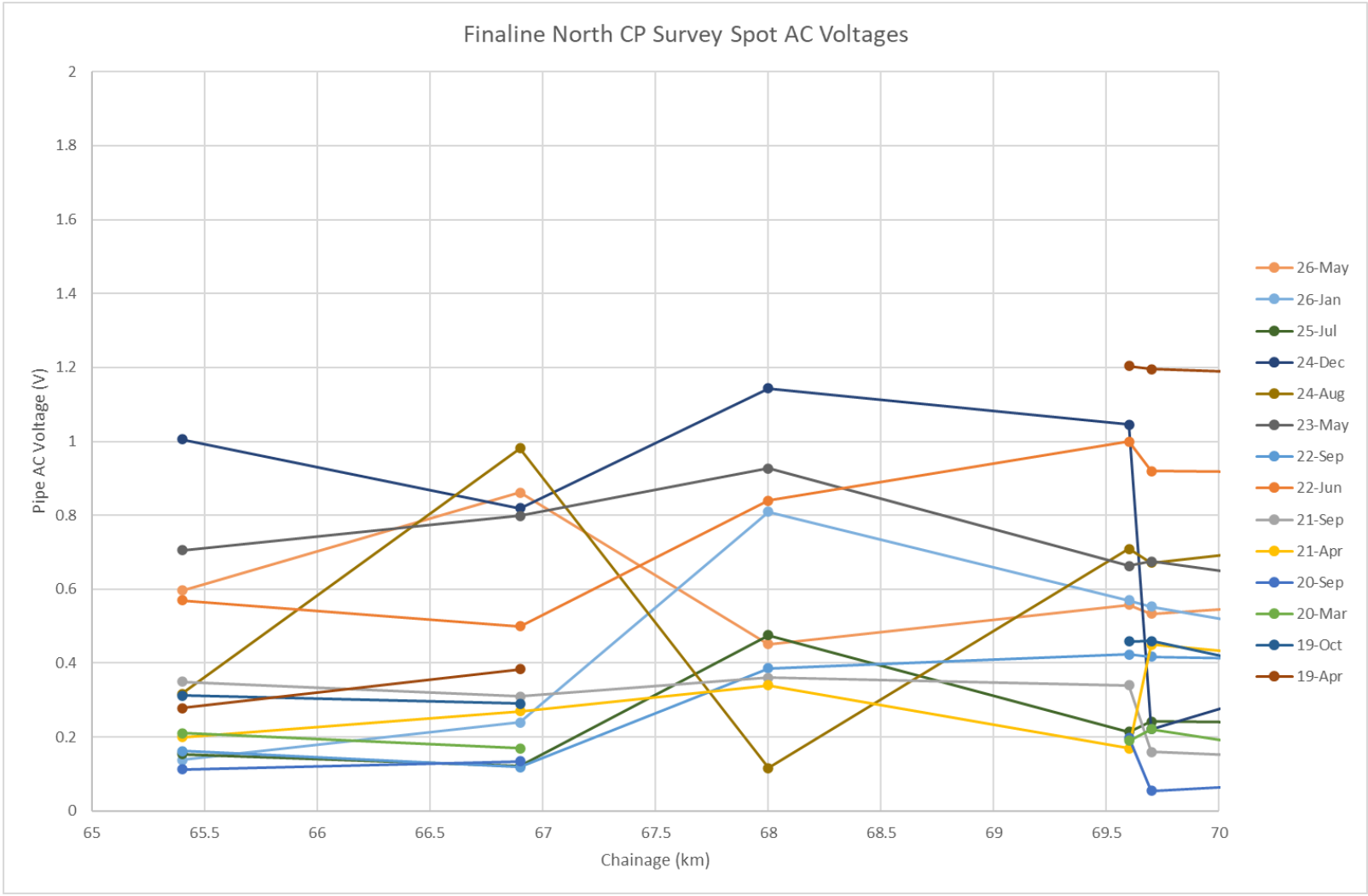


**Figure 2**: Graph displaying single pipe AC voltage measurements recorded between Apr 19 to May 26 during routine cathodic protection surveys