EHV Diversions

Understanding the process associated with diverting cables, overhead lines and associated equipment owned by UK Power Networks

EHV – Extra High Voltage

EHV, or Extra High Voltage, is the network that includes equipment and cabling for voltages above 11kV including 33kV and 132kV. These may be both transmission and distribution networks depending on location and requirement and could be underground cables or overhead lines.

Due to size and complexity, EHV Networks are costly to build and maintain. Where an EHV Network needs to be diverted to make way for a new development or road, it is essential to have early involvement as it will take time to assess the network and prepare a quotation for the works.

This guide provides an overview of the process and key considerations where EHV Diversions are required.

The process to divert an EHV Cable

The process to divert an EHV cable is the same as it is for any network diversion. An application for the diversion will need to be submitted where it will be assessed and a quotation provided. The difference is that the effort required to assess the network (which may involve coordination with National Grid) and the effort in preparing a quotation will be significantly greater.

We would encourage customers to use the pre application 'Ask the Expert' Service to understand site requirements and feasibility, then, if the work is required, to submit an application.

Timescales and cost

It is difficult to give an indication of price without project specifics and development proposals. As a typical example, a project involving the installation / relocation of an EHV Overhead Line up to 500m, including the removal of 4 x EHV Overhead line pole / spans would be priced in the region of £500,000* [this can vary significantly depending on route / ground type and third party legal considerations].

*Some elements of the work may be non-contestable

Timescales will vary and a full network assessment will be required to determine this. The scale of work required will be dependent on voltage and complexity of the network. Diversion requests will be submitted to our network planning team who will consider outage availability (that are often limited to the summer months). For 132kV there can be a 2 years+ lead in to arrange diversions.

Key Considerations

The primary consideration is time. It is essential to engage with UK Power Networks as early as possible to try and meet project timescales.

Dependent on the information available, with regards to the EHV cable in question, we may need to carry out trial holes to determine current depth and route.

EHV Fluid Filled cable

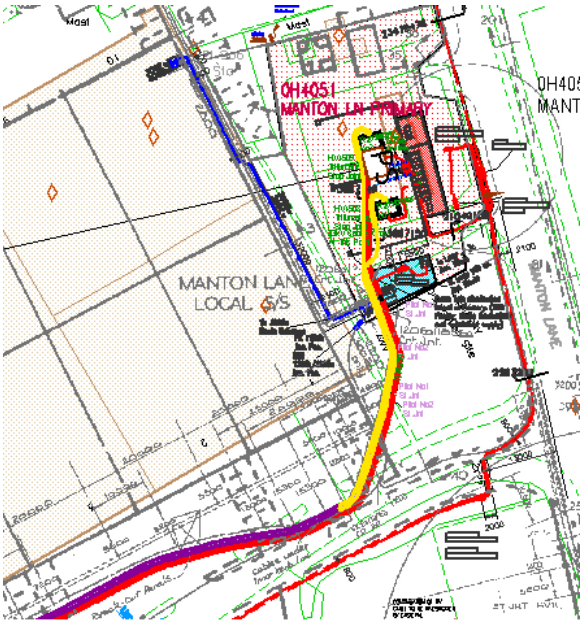
Frequently Asked Questions

Why does a quote involving EHV Diversions take longer to produce than, for example, a new LV Service?

It can take longer due to the need for a more detailed network assessment, including an understanding of the impact of diverting the EHV Network to existing connected customers, due to the complexity of the network and time to consider the appropriate design solution.

How is an EHV Cable Identified?

EHV Cable and assets should be identified on the UK Power Network records. If in doubt, ask a UK Power Networks Designer or Project Manager for advice or at an Ask the Expert Surgery for confirmation.



How will I know if I have EHV Cables on, or near, my development?

EHV Cables should be identified on our network records that can be obtained from: www.linesearchbeforeudig.co.uk

On Site, EHV cables should be identified with marker tape or concrete tiles.

In any event utility records, for the area of work, should be reviewed prior to excavation. Excavation should always be undertaken in accordance with HSE guidance 'HSG47 - Avoiding danger from underground services'

If in doubt, please ask your appointed designer, field engineer or use our 'Ask The Expert' Service:

UK Power Networks 'Ask The Expert'

References

UK Power Networks website: www.ukpowernetworks.co.uk

UK Power Networks design specification (G81) library contains technical information to help you with your works: http://library.ukpowernetworks.co.uk/library/en/g81/ [e.g.]

- EDS 08-4100 EHV Customer Demand and Generation Supplies
- EDS 08-4000 EHV Network Design
- EDS 06-0019 Customer EHV and HV Connections (including Generation) Earthing Design and Construction Guidelines

HSE - Health & Safety Executive - Electrical Safety at Work: www.hse.gov.uk/electricity/index.htm

HSE - Health & Safety Executive - Overhead Power Lines: www.hse.gov.uk/electricity/information/overhead.htm

In case of emergency call us on:
London **0800 028 0247**
East of England **0800 783 8838**
South East **0800 783 8866**

Case Study 1 – EHV Diversion – Central London Area

Two circuits fed from Main Substations, and operating at 66kV, that each comprise 3 x single core 132kV fluid filled cables and associated auxiliary cables.

The estimated total length of the route affected is approximately 530 metres involving two separate routes.

The proposed solutions is like-for-like fluid filled cable diversion. The new route is through adopted roads.

Key deliverables of the project:

- Cable route excavation and duct installation, approximately 530m
- Installation of 6 x 540m of 400mmsq x 1 core copper conductor fluid filled 66kV cable
- Installation of 540m telecom cable
- Installation of 1080m pilot cable
- Joint bay excavations
- Planned Outages
- Cable joints of the power cables and joints of all auxiliary cables
- Successful pressure testing of new circuits followed by energisation

Non Contestable work = £ 1,500,000

Total price = £ 1,500,000

Note: Groundworks and duct installation may be completed by the customer, at their cost, please discuss this with your designer or project manager.

Case Study 2 – EHV Diversion at development site – Eastern Area

33kV cable diversion (not fluid filled)

Diverting existing 33kV circuits crossing the site to make way for new development

Key deliverables of the project:

- Installation of approximately 120m of 2 x 33kV circuit
- Materials including cable and joints, ducting
- Excavation and reinstatement
- Jointing new cable onto existing cable
- EHV Network outages
- Senior Authorised Person/s time

Non Contestable work = £ 100,000
Contestable work = £ 400,000

Total price = £ 500,000