

Response from D E Tyrer, Cefn Maen Isaf, Saron, Denbigh

My reference 10031293

8.1 - Do you agree with the applicant that the benefits that would be derived from undergrounding the cable as a means of reducing visual effects are likely to be outweighed by the effects of underground cables on habitats, ground cover, land management and unknown archaeology? Please provide a brief explanation.

Reply

SP Manweb has stated that undergrounding would increase the length of line from 17km to 24km. In the absence of information to the contrary, it is reasonable to assume that an underground route would favour roads and verges rather than farmland. If so, there is unlikely to be an effect on habitats, etc.

1.17 - Comment on the cost of alternative technological approach to making a connection.

Reply

SP Manweb's starting point is that overhead cabling is normal. Anything else has to be justified. This is simply not the standard in the industry in this country or in Europe. France, for example, is heavily involved in a project to bury most new and many existing cables underground. Most new wind farms in Scotland are undergrounded. In 2013 NRG Expert published 'Electricity T&D White Paper'. This provided an overview of the political and technological events that that influenced electricity transmission and an insight into the future of the industry. In it they reported 'Underground cabling is becoming increasingly attractive for use, mainly for environmental and aesthetic reasons. it is often cost neutral to cable underground for cables up to 150kV.'

SP Manweb mentions a total figure of up to £71.3m for undergrounding. This gives $71.3/24 = £2.97\text{m per km}$. SP Manweb states that undergrounding would be 4 times more expensive than overhead. Working this back, gives a figure for overhead cabling of $2.97/4 = £742,500 \text{ per km}$.

A report by Balfour Beatty, commissioned by Western Power for the Brechfa Forest project concluded that undergrounding 132kv cable would result in an approximate cost of £986,000 per km. Using SP Manweb's figures for overhead cable, undergrounding is only £986,000 - £742,500 = £243,500 more than overhead cable.

A case study by the French company RTE (Reseau de transport d'electricite) 'Experience in France' reported that the underground/overhead cost ratio is

- 90kv = 0.85
- 225kv = 1.2 to 2

This bears no relationship to the 4 times figure quoted by SP Manweb.

Apportioning the highest French figures for 225kv to get a figure for 132kv cable gives an estimated ratio of $2/225 \times 132 = 1.17$. Applying this figure to SP Manweb's overhead cost gives $£742,500 \times 1.17$

= £868,725. This is passably close to the Balfour Beatty figure of £986,000. It's nowhere near SP Manweb's figure of £2.97m.

It is clear that the figures SP Manweb has produced must be considered questionable and unreliable. They are nowhere near other sources. They must receive an appropriate degree of disbelief when considering the cost/ advantages of overhead compared with underground.