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factsheet

Undergrounding

National Grid considers every case for using underground cables for amenity reasons instead of overhead lines on its merits, but in view of the extremely high additional costs the company reserves detailed considerations for those places where the benefits of maintenance of visual amenity can be demonstrated to:

- outweigh the adverse effects upon other environmental factors;
- justify the high additional cost; and
- where it is technically possible and will not conflict with our statutory duties.

In identifying such places, National Grid takes account of the views of professional authoritative advisors, statutory environmental bodies and other organisations as it feels appropriate.

Guidelines for consideration of undergrounding of new high voltage transmission connections

The excessive cost of high voltage underground transmission coupled with the environmental and operational disadvantages are important reasons for the limited use of underground cables at 400,000 volts (400kV). National Grid's approach is to seek overhead connections wherever possible.

The following guidelines set out the categories of area which National Grid believes are the highest priority and where consideration may be given to undergrounding. They indicate those exceptional circumstances where National Grid believes undergrounding might be justified.

Exceptionally constrained areas

The term "exceptionally constrained areas" has been adopted to refer to situations where physical or amenity factors related to landscape, land use and development weigh most heavily against the use of overhead lines and therefore where consideration of underground cables is warranted. In such areas, judgement on the merits of each case will be required to justify the use of underground cables.

The nature of the "exceptionally constrained areas" varies in urban, rural and estuary crossing areas and the key factors are outlined as a basis for the consideration of the potential use of underground cable.

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- **Exceptionally constrained urban areas:** Urban areas where there may be exceptional constraints on siting of overhead transmission lines comprise those locations where the density of residential, community and associated development and public open space is such that a reasonable direct overhead route is impracticable.

- **Exceptionally constrained rural areas:** Of special concern in the siting of overhead transmission lines in the countryside is the protection of important landscape features in nationally or internationally designated areas of amenity value. These designated areas comprise National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts and World Heritage Sites. "Exceptionally Constrained Rural Areas" comprise those locations within or immediately alongside those designated areas where the scale of new high voltage transmission towers and conductors would dominate unspoilt landscape and cause serious damage to major open views of spectacular panoramas, crests of prominent rides and skylines or attractive small scale valleys seen from important locations within or immediately alongside the designated areas.

- **Exceptionally constrained estuary and major river crossings:** These occur where the exceptional difficulty and cost of an overhead line would be comparable with or exceed those of an underground cable.

Potential use of underground cable

When planning the routeing for transmission connections in exceptionally constrained areas, consideration may be given to the use of underground cables.

The potential use of underground cable in, or close to, exceptionally constrained urban, rural or estuary crossing areas would require that this is shown to be the most cost effective means of avoiding the need for high voltage overhead lines which would seriously harm the amenity of these areas. Consideration would have to be given in any case to the adverse effects on amenity of underground cables, sealing end compounds, terminal towers and ancillary equipment and to technical considerations that apply.

As a result of these considerations National Grid would expect lengths of underground cable to be short. These guidelines give a positive indication of the circumstances which National Grid believe could justify the use of high voltage underground cable. As stated previously a judgement on the merits of each case will be required.