The Great Grid Upgrade
Chesterfield to Willington

nationalgrid

Our proposals for Chesterfield to Willington

We are proposing to build approximately 60 km of new 400 kV overhead electricity line between Chesterfield and Willington to allow us to carry more energy between the North of England and the Midlands.

The proposed overhead line would connect between a new substation at Chesterfield (being developed and consented as part of the Brinsworth to High Marnham proposals) and the existing Willington substation in Derbyshire.

How we identified connecting at Chesterfield and Willington

National Grid only develops new infrastructure where the existing transmission system cannot be further upgraded to meet systems security standards, where increase in demand can't be satisfied by other means or where customer connections are required.

We also consider our duties under the Electricity Act 1989, which require us to develop proposals that are efficient, coordinated and economical, and which have regard to people, the location, and the environment.

We evaluated ten potential options that could provide additional transmission capability – our substation connection points. Our Strategic Options Report (SOR) explains in detail how we have considered a range of technical, environmental, community, programme and cost factors to determine the most suitable strategic connection point options to take forward.

How we identified the Emerging Preferred Corridor

The Emerging Preferred Corridor is the proposed area within which the proposed infrastructure could be located between the connection substations.

We have carried out environmental and technical assessments to identify areas that may be sensitive to the introduction of new infrastructure within our initial study area. This also helps us to inform the routeing of the Emerging Preferred Corridor, as presented at this stage of consultation. This was achieved by:

- avoiding settlements of various sizes;
- routeing around parks, Sites of Special Scientific Interest, ancient woodland, nature reserves and heritage sites;
- designing the route to ensure infrastructure is in the lowest areas of flood risk possible in accordance with national planning policy;
- allowing for space to accommodate reasonable lengths of straight alignments;
- following existing infrastructure corridors like the M1 motorway;
- maintaining appropriate distances from community facilities and tourist attractions; and
- allowing flexibility to address future constraints identified through consultation.

Whilst the above factors have guided us to produce proposals that seek to cause the least impact, we do recognise that there will still be an impact on some communities. Throughout the development of this project, we want to work closely with those who live in the closest proximity to gain an understanding of how we could minimise and mitigate further.

chesterfield-willington@nationalgrid.com
0800 073 1047
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What is included in our proposals

To build the Chesterfield to Willington project there are several features that make up our proposals.

Overhead electricity lines and pylons

Pylons are structures which carry electrical conductors (the overhead electricity lines), insulators and fittings. These transmission networks form most system circuits in Great Britain and worldwide.

We are proposing to build approximately 60 km overhead line of steel lattice pylons in accordance with National Grid's guidance and national planning policy.

Like most overhead lines owned and maintained by NGET, the project will carry a voltage of 400 kV. These are typically around 50 metres in height, with approximately three pylons per kilometre on a straight section of corridor, potentially slightly more in places. In some locations, specific constraints such as navigable river crossings, can require considerably taller pylons to ensure safe electrical clearance from the overhead lines to the activities below them.

Connection substations

Substations are an essential component in the energy network that connect sources of generation, such as wind farms and power stations. They connect overhead and underground circuits and nearby utility systems and are critical in maintaining an efficient energy network.

The separate Brinsworth to High Marnham project includes a proposal to build and operate a new 400 kV substation in Chesterfield. This new substation would be the northern connection point for Chesterfield to Willington. The substation does not form part of this project, however it will be considered during the ongoing design studies and when assessing cumulative effects. The existing 400 kV Willington substation forms the project's southern connection point.

Modifications to existing overhead lines

Modifications to the wider transmission system and local electricity distribution networks operated by NGET and National Grid Electricity Distribution Plc (NGED) would be required to facilitate construction of the new transmission connection where it crosses existing lower voltage overhead lines.

At these locations it may be more cost-effective and have reduced environmental impacts to permanently divert or replace a length of the lower voltage overhead lines with underground cables.

As the project design evolves, we will develop and assess mitigation measures on a case-by-case basis.

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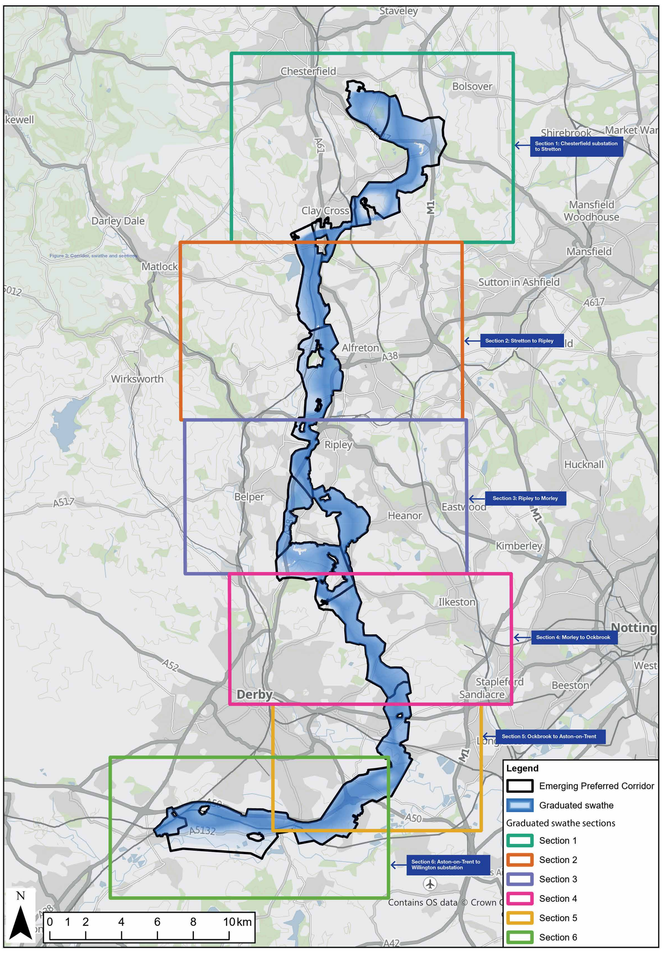
The Emerging Preferred Corridor and graduated swathe

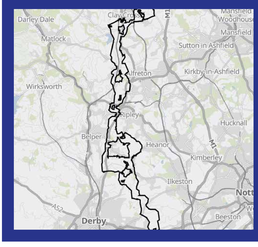
Our ‘Emerging Preferred Corridor’ is the area of land in which the overhead line could be built.

We are seeking views and local knowledge about the Emerging Preferred Corridor and location within it where we could route the new line during this consultation. We have split it into six sections so you can more easily comment on specific areas within it.



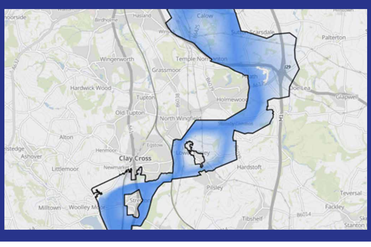
Emerging Preferred Corridor

This is indicated by the black line boundary and outlines the proposed area within which the transmission system (overhead electricity line and pylons) could be routed. This is referenced as the ‘Emerging Preferred Corridor’ or ‘corridor’.



Graduated swathe

The shaded areas within the Emerging Preferred Corridor show where the transmission system (overhead electricity line and pylons) could be situated when taking into account environmental factors and constraints. Darker shaded areas signify where infrastructure placement could potentially be more appropriate within the corridor. The shaded area is referenced as the ‘graduated swathe’ or ‘swathe’.



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