

## Overhead lines

### Introduction

For electricity to be of use there has to be a method of getting it from the generator to the user, eg via a system of overhead lines.

An overhead line is simply a conductor or conductors suspended above the ground by a wooden pole or a larger steel pylon. The conductors may or may not be insulated, depending on the voltage line.

In England and Wales the National Grid runs 7200 kilometres of overhead line.<sup>1</sup>

### Up, up and away

Conductors have to be held above the ground so they do not get damaged or cause a hazard to people and animals. Exactly how far above the ground and the design of the pole or pylon that supports them depends on the voltage of the line.

### Low voltage lines

In the UK, lines carrying lower voltages are mounted on wooden poles with cross arm beams to support the conductors. These are the overhead lines generally used for connecting individual homes to the electricity grid. The poles are about 15 m high, with a further 1 m buried in the ground to secure the pole.

In urban areas tubular steel poles set into concrete may be used instead of wooden poles.

### High voltage lines

Lines carrying higher voltages are carried on steel pylons of varying heights and designs. These are built from a lattice work of steel and are used to carry lines across country from power stations to substations and between individual substations.

Each overhead line project may make use of a number of different pylon designs for different purposes. For example, pylons used to support a change of direction or terminating a line path will need to be stronger and more heavily constructed than a pylon supporting a line on a straight path.



<sup>1</sup> [www.nationalgrid.com](http://www.nationalgrid.com)