

GREEN GEN TOWY USK

EMF Information

The Green GEN Towy Usk proposal is for a new 132kV connection, approximately 97 kilometres in length between the Nant Mithil Energy Park in Powys and a new substation, to be developed by National Grid, on the existing 400kV (400,000-volt) transmission line near Llandyfaelog, in Carmarthenshire.

What are EMFs?

Electric and magnetic fields (EMFs) are produced wherever electricity is used or transmitted. Our household wiring, appliances and electricity supply are all sources. So, they are around us all the time in modern life. Overhead lines are a source, but just one of many.

Overhead lines produce both electric and magnetic fields, each of which have different properties. Electric fields are screened very easily, so a house, trees, in fact most things between you and the overhead line will shield against these, so exposures are very small.

Magnetic fields aren't screened easily and pass through most things, so we will concentrate on these, but there's lots of information about electric fields on www.emfs.info, if you want to know more.

	Distance from centre of overhead line					
	Directly under overhead line	5m	10m	25m	50m	100m
Maximum current flow	38.9	30.8	14.5	2.1	0.32	0.05
Typical daily current flow	19.5	15.4	7.3	1.1	0.16	0.02

Table 1: Calculated magnetic fields in microtesla (μT) from proposed overhead line at minimum conductor to ground design clearance

What EMF would this project produce?

Overhead lines vary in the current they can carry, which affects the level of magnetic fields produced. The proposed overhead line will operate at 132kV and will have a maximum current that it can carry.

Most of the time it will carry less current than the maximum possible, and these levels are what we describe as 'typical'. Below are the levels of magnetic field exposures you would expect from the overhead line on a typical day's operation.

Also included are the maximum possible magnetic fields the overhead line can produce when it's carrying the maximum current.

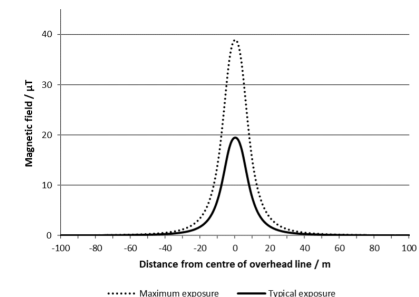


Figure 1: Calculated maximum and typical magnetic fields from proposed overhead line at minimum conductor to ground design clearance

How do these compare to other exposures?

The magnetic fields reduce very quickly with distance from the overhead line. During a normal day, the EMFs will have reduced to background levels around 45 m from the overhead line, which is about the length of two tennis courts. A background field is what you'd expect to find in an average home in the UK, not close to an overhead line.

The maximum possible exposure under the overhead line is 38.9 microtesla (μT) which is similar to using a hairdryer or walking close to microwave when it's cooking.

Underground Cables

Similar to overhead lines, underground cables produce magnetic fields.

In general, the magnetic fields from cables are slightly higher directly on top than the equivalent overhead line, but the fields tend to reduce more quickly with distance.

The electric field is screened by the metallic sheath of the cables.

Are these levels of EMF safe?

There are limits in place to protect us all against EMF exposure. These limits have been based on careful reviews of the science by independent scientific experts, who recommend safe levels of exposure for the public and workers. The exposure limit for members of the public is 360 microtesla, so even directly underneath the overhead line the levels are just a small fraction of the limit.

After many decades of research and hundreds of millions of pounds spent investigating the issue, there are no established health effects below the exposure limits.

Where can I get further information?

Further information is available in the booklet 'EMFs: The Facts' published by The Energy Networks Association (ENA) and on the website www.emfs.info

You can also contact National Grid's EMF Helpline on 0845 702 3270 or by email at emfhelpline@nationalgrid.com.



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TOWY UK**