National Grid reveals the first T-pylon in the UK

First opportunity to see the new design of high voltage pylons set in the countryside

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- The training line will demonstrate all five of the family of T-pylons – each designed to perform different functions on the transmission network
- Important stage in developing the T-pylon before it is used on new transmission lines

Construction of National Grid's new T-pylon has begun at the company's training academy. The building of the training line of pylons will be the first opportunity to see the new design in the landscape.

The T-pylon was the winner of an international design competition to look for a 21st century design to carry high voltage overhead lines. The winning design from Bystrup, the Danish architects and engineering company, is 35 metres high – up to one third lower than the conventional steel lattice pylon.

A span of six of the new T-pylons will be built at the Eakring training academy in Nottinghamshire. The different pylons all have a different function.

- The standard suspension pylon that is designed to carry the cables in a straight line. Two suspension pylons will be built at Eakring.
- A D30 pylon which can allow for the greater pressure and weight of turning the cables at an angle of up to 30 degrees.
- An F10 flying angle suspension pylon which can allow a turn of up to 10 degrees – the first time such a pylon has been used in the UK.
- A pair of terminal diamond pylons which end a line at a substation or take the cables underground.
- A gantry terminal which is an alternative design of terminal pylon with the same function as the diamond terminal pylon.

Since the design competition in 2011, National Grid has worked with other engineers and partners to turn the design into reality and make sure the design could cope with all the stresses placed on a pylon. Is it mechanically sound? Can it withstand wind gusts of more than 80 mph or the additional weight of ice on the cables during extreme weather?

David Wright, Director of Electricity Transmission Asset Management at National Grid said:

"We've been able to answer yes to the hundreds questions that need to be asked before we can introduce a new type of pylon. The training line has enabled us to learn so many lessons about how to manufacture and build the T-pylon. I'm incredibly proud of the high standard of engineering that brought us to this point"

"We developed the new style of pylon so that we could have a 21st century design to offer as we plan new transmission routes. The T-pylon is not a replacement for the steel lattice pylon but it's a new option and in some landscapes its shorter height and sleeker appearance can offer real advantages".

The ground works, foundations and erection of the T-pylon at Eakring have been carried out by Balfour Beatty. William McElwain, UK Territory Director at Balfour Beatty said:

"We're delighted to be working in partnership with National Grid to deliver this landmark project. As part of the construction process, we've supported the development of methodologies and processes to determine the safest way to build all five of the new designs which is a fantastic opportunity for Balfour Beatty. After years of planning, it's great for everyone involved to finally see the T-pylons become a reality".

Steel manufacturer Mabey Bridge have produced the monopole and T cross section of the T-pylons as well as doing the final painting of the structure at their factory in South Wales. Russells Ductile Castings in Yorkshire and Bradken have been involved in metal castings. Other companies involved are Allied Insulators and Eaves.

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Notes for editors

Due to the constraints of the site at Eakring, the six t-pylons are set closer together than they would be on a normal transmission lines. The neighbouring lattice pylons are also used for training and are not full height.

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National Grid in the UK:

- We own and operate the electricity transmission network in England and Wales, with day-to-day responsibility for balancing supply and demand. We also operate, but do not own, the Scottish networks. Our networks comprise approximately 7,200 kilometres (4,474 miles) of overhead line, 1,500 kilometres (932 miles) of underground cable and 342 substations.
- We own and operate the gas National Transmission System in Great Britain, with day-to-day responsibility for balancing supply and demand. Our network comprises approximately 7,660 kilometres (4,760 miles) of high-pressure pipe and 618 above-ground installations.
- As Great Britain's System Operator (SO) we make sure gas and electricity is transported safely and efficiently from where it is produced to where it is consumed. From April 2019, Electricity System Operator (ESO) is a new standalone business within National Grid, legally separate from all other parts of the National Grid Group. This will provide the right environment to deliver a balanced and impartial ESO that can realise real benefits for consumers as we transition to a more decentralised, decarbonised electricity system.
- Other UK activities mainly relate to businesses operating in competitive markets outside of our core regulated businesses; including interconnectors, gas metering activities and a liquefied natural gas (LNG) importation terminal – all of which are now part of National Grid Ventures. National Grid Property is responsible for the management, clean-up and disposal of surplus sites in the UK. Most of these are former gas works.

Find out more about the energy challenge and how National Grid is helping find solutions to some of the challenges we face at https://www.nationalgrid.com/group/news
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