HOLT & DISTRICT FARMERS' CLUB

FOUNDED 1948

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POLLITT'S UNDERGROUND REPORT

A £300m project to bring wind power into the heart of Norfolk has made rapid progress, members of Holt & District Farmers' Club heard. Delivery of 50-tonne reels of high-voltage cable from South Korea will start later this month, said Janet Sorley, project director for civil engineers J Murphy & Sons.

The December meeting at the Feathers, Holt, was attended by about 30 members, who were clearly impressed by the scale of this five year-long project. She heads the team installing the underground connections from landfall at Happisburgh to Necton, where massive sub-stations will convert the DC (direct current) 400,000kw supply into AC (alternating current) to feed into the national grid.

JANET SORLEY of Murphy's on NOWZ Project for cabling from Happisburgh to Necton

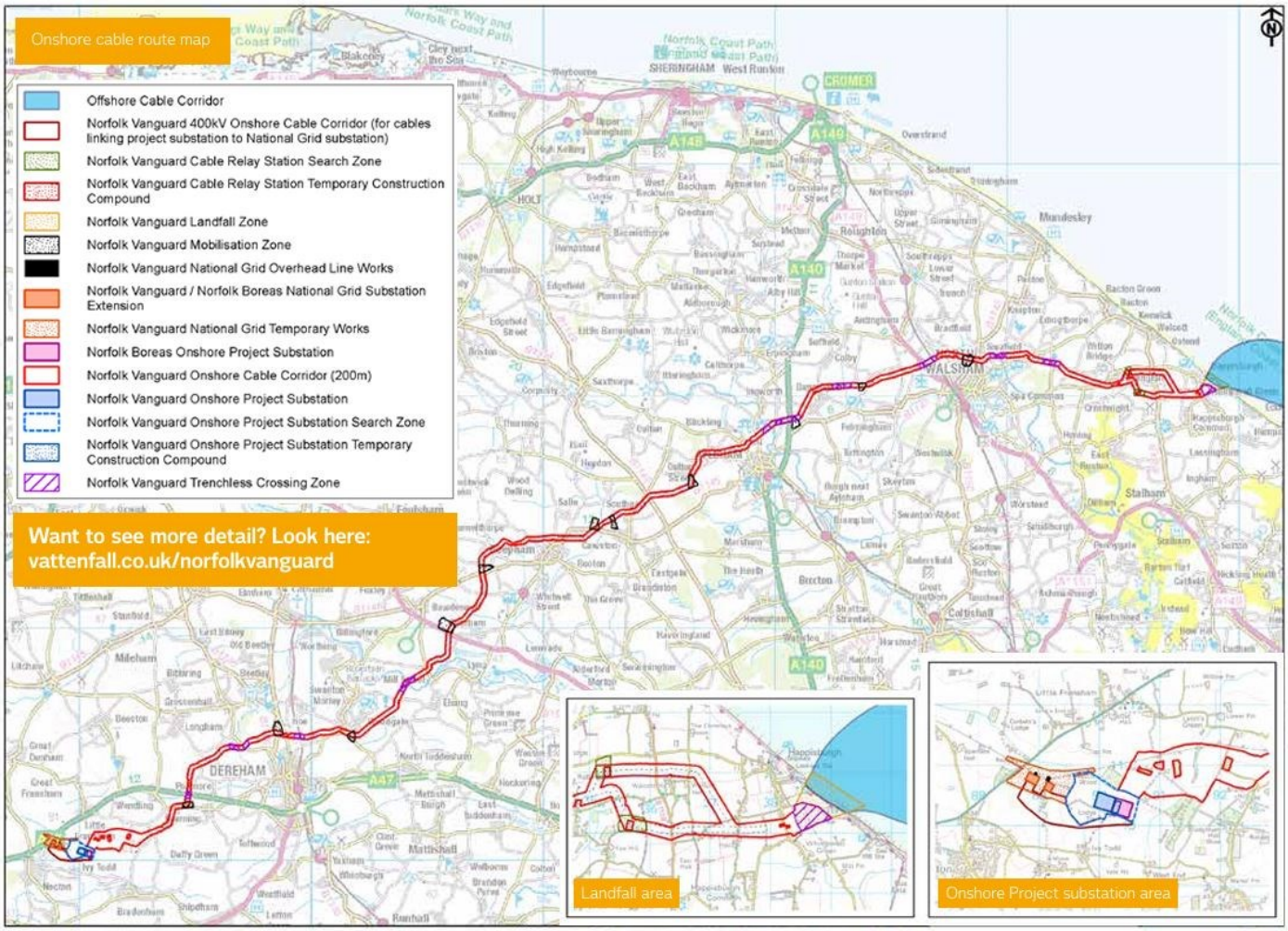
Two new sub-stations are being built to handle the potential total of 4.2 giga watts generated from three Norfolk offshore wind farms. The first two projects, Norfolk Vanguard west and Norfolk Boreas for German utiity RWE are set to be generating from 2028 while the third, Vanguard east, might be 2030.

As she explained, it has been a major exercise over the past three years involving working with three district councils, 113 parish councils and a total of 101 landowners. Work started in 2023 and is scheduled for completion in mid-2028.

One-third of the ducting along the 62km route has been completed on the western section. The next phase, laying the cable will start in earnest in the new year. The route has posed many technical challenges including horizontal boring under the river Wensum and at least one Broadland river.

The Wensum stretch, between Elsing and Bylaugh, required horizontal directional drilling of 450-metre lengths - a formidable technical challenge. Once, the first bore, done in 10m lengths, was completed, then a larger cutting head was fitted for the required circumference for a duct. This has been virtually completed or should be by mid-December. A similar operation, extending to 660m, was required to pass under the River

Bure. The route involved stripping the top two metres of ground, including topsoil, across a 45-metre strip. Then, three trenches were dug, which would each contain two 225mm ducts. Then the 131mm cabling will be laid or pulled through in 1km lengths. The cable ducting, which will be at least two metres below the restored strips, have to be kept apart because underground they generate heat.



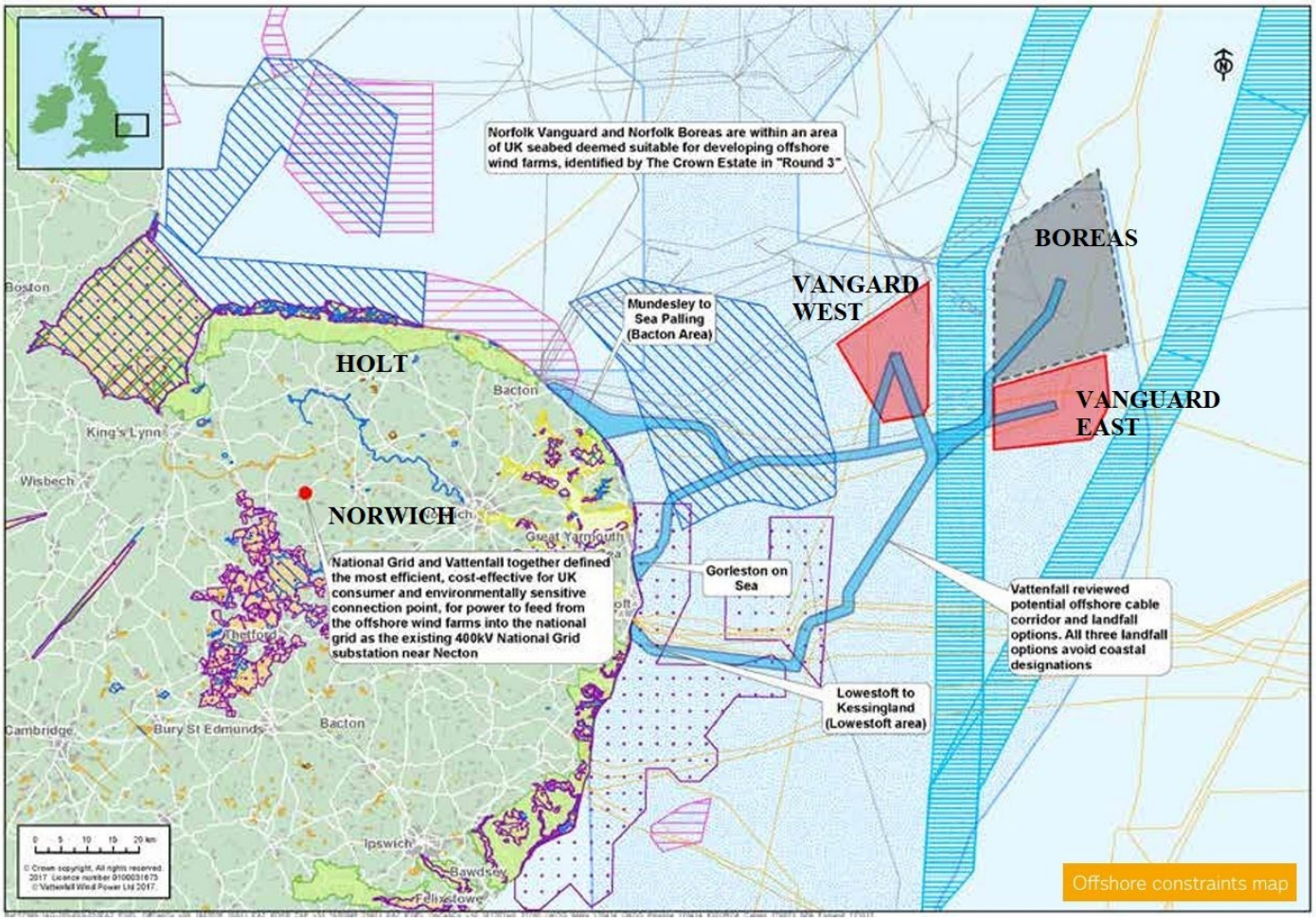
Mrs Sorley, who has spent her entire career in civil engineering, recalling that her first project was helping to design and build a Sainsbury's supermarket as an 18-year-old. And when she travels from her Bristol home, she was able to point out to her twin 16- year-old sons some of her buildings. Some of the technical challenges, especially with sensitive wildlife sites, required some imaginative solutions. For example, they had to use HDD (horizonal directional drilling) at a depth of 26m to avoid disturbing a badger sett. Some other HDD were shorter - as little as one metre in places. However, mindful of the impact on the landscape, Mrs Sorley explained that while it was not possible to plant trees over the cable trenches, hedge planting was possible. To date, a larger part of the first 17km stretch from Necton has been restored and re-planted with appropriate ground cover, working with the farmers and landowners. Several members commented that the Murphy's team seemed to be doing a good job and were restoring the subsoil and topsoil with considerable skill.

Many farmers have in the past complained of haphazard restoration of land by careless or indifferent contractors. But Mrs Sorley said that her team was making effort to ensure that land restoration was completed sympathetically. The quantities of materials involved were massive - 20,000 litres of fuel weekly for the machinery and 18,000 tonnes of cabling, imported from South Korea. Each of the 360 reels, weighing about 50 tonnes, would provide 1km of cable, which then has to be joined to the next length. Two lines of cable would be laid in each trench but this would involve some partial later excavation to access the ducting. She said that it had been possible for a standard 22- strong team to complete about 1km of ducting in a single day

but a more normal rate was around 400m. The work had to be carried when the ground conditions were suitable - hence starting about two and a half months later because of this year's very wet spring. Once the trench had been dug, sand was then spread to protect the ducting and tiles were placed over - again to avoid possible disturbance.

She was thanked by Simon Evans. The meeting closed at 9pm.

Wind energy background



At capacity, the Norfolk Offshore Wind Zone this would represent about 10pc of the UK electricity demand. On Thursday, December 10 at 9.40am, total UK demand was 41.6 Giga watt with 51.3pc from wind generation and 1.05Gw from solar. Incidentally, on December 5 between 5.30pm and 6pm, a UK record total of 23.94GW was wind generated. The RWE planned scheme has permission for 276 turbines, each 280 metres high, in three blocks almost 50km off the Norfolk coast. Each column is between 20 and 30 metres tall, 12 metres in diameter, and sunk about 30 metres into the bedrock. The Hornsea 3 project, which will run from Weybourne to south of Norwich, is another separate project, run by Orsted

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