

6. **S/2301/02/CIRCULAR 14/90 - STOW-CUM-QUY, FEN DITTON AND HORNINGSEA BURWELL TO HORNINGSEA 132 KV DUAL CIRCUIT OVERHEAD LINE, LAND IN THE PARISHES OF STOW-CUM-QUY, FEN DITTON AND HORNINGSEA FOR 24 SEVEN UTILITY SERVICES LTD**

INTRODUCTION

24seven (formerly Eastern Electricity) is the company responsible for the operation and maintenance of the electricity distribution networks serving East Anglia. The network is owned by EPN Distribution Limited and 24seven has a contract with them governing its operation. EPN is a "Public Electricity Supplier" and the statutory requirements governing the supply of electricity are set out in the Electricity Act 1989.

24seven, on behalf of EPN, is applying to the Secretary of State for the Department of Trade and Industry (SoS) under section 37 of the 1989 Act for consent to construct a 132,000volt dual circuit overhead tower line from Burwell to Horningsea. Consent constitutes "deemed planning permission" and may be given subject to conditions. The procedure requires formal consultation with Cambridgeshire County Council, East Cambridgeshire District Council and South Cambridgeshire County Council so that the views of the local authorities can be taken into account by the SoS prior to a decision being reached on the application. The local authorities may object to the proposed development and give grounds for doing so and/or request that a Public Inquiry be held before the SoS gives his direction.

The application is accompanied by an Environmental Statement (ES). The ES addresses the following issues: Description of need and options; Project description; Planning Policy framework; Landscape and Recreation; Ecology; Archaeology; Conservation Areas and Listed Buildings; Agriculture; Highways; and Health and Safety. The principal permanent effect has been identified as concerning the visual impact of the proposed power line in respect of its impact on the character of the local landscape and views from within and across it.

SITE AND PROPOSAL

Running approximately North/South, and to the west of Burwell is a 400kv line which forms part of the National Grid.

Off this from the existing sub-station at Burwell, a 132kv overhead power line on lattice towers crosses the open countryside to the north of Reach and to the north-west of Swaffham Prior, Swaffham Bulbeck, Lode and Stow-Cum-Quy. At Snout Corner, to the south-east of Horningsea the line divides, running south to the sub-station at Fulbourn and west across the Cambridge sewage works, the Science Park and the remainder of the Northern fringe (NB this latter section has recently been placed underground.)

The Circular 14/90 application, received on 28<sup>th</sup> November, proposes the erection of a 2.55km/1.6mile (within South Cambridgeshire) 132kv overhead electricity line on steel pylons, the average height of which will be 30.0m as is the existing line. The proposed route will run to the north-west and parallel to the existing, at a distance of between 50m and 110m.

POLICY

The route in South Cambridgeshire lies entirely within the Green Belt and Area of Best Landscape (1995 Structure Plan and 1993 Local Plan only)

The following policies are relevant:

Cambridgeshire Structure Plan (1995)

Policy SP10/1 Protection of Grades 1, 2 or 3a agricultural land from irreversible development

Policy SP12/1 Restriction of development in the countryside  
Policy SP12/2 Development in Areas of Best Landscape

Policy SP12/5 Nature conservation zones  
Policy SP12/6 Development and landscape character  
Policy SP12/7 Retention and creation of wildlife habitats  
Policy SP18/3 Green Belt

#### South Cambridgeshire Local Plan (1993)

Policy CS5 Development by statutory undertakers  
Policy C1 Development in Areas of Best Landscape  
Policy C3 Protection of long distance views  
Policy C13 Protection of wildlife habitats  
Policy C16 Archaeology

#### Local Plan No 2: Proposed Modifications 2002

Policy GB2 Development within the Green Belt  
Policy CS10 Development by utility companies  
Policy EN1 Landscape Character Areas  
Policy EN10 Nature Conservation: identified sites  
Policy EN15 Nature conservation: unidentified sites  
Policy EN19 Requirement for archaeological evaluation

#### APPLICANT'S JUSTIFICATION OF NEED

The proposal is a consequence of recent increases in demand for electricity and the anticipated growth in demand which will arise from future development in the Cambridge area. The electricity supply for the City of Cambridge and its surrounding area is obtained from the National grid Company's (NGC) site at Burwell. Supplies from Burwell are distributed to Cambridge by a double circuit tower line operating at 132,000volts. This supplies two grid sub-stations at Histon and Fulbourn from where distribution at lower voltage takes place.

Over the last six years load growth on the Cambridge network has increased significantly above the average for the EPN network – about 3% compared with 1% across the EPN network as a whole. The capacity limit from NGC at Burwell has now been reached. The envisaged continued development in the region has major implications for the electricity supply infrastructure for Cambridgeshire.

To meet the continuing load growth it is necessary to increase the capacity at Burwell, to increase the number of circuits between Burwell and Cambridge and to provide additional capacity at the grid sub-stations. The tower line circuits from Burwell to Histon and Fulbourn grids are operating at their maximum capacity and it is therefore necessary to increase the number. Failure to do so could lead to widespread losses of supply for extended periods. Faults are more likely to produce a cascading affect as the remaining equipment is overloaded and either trips or fails. Equipment failures at this voltage can take months to resolve. A failure to maintain security of supply contravenes EPN's licence obligations so to "do nothing" is not an option.

As well as the proposed strategy, an alternative was considered: connecting the Burwell Super Grid Substation to Fulbourn Grid with two circuits following a similar route to the existing 33kv overhead circuit, a distance of about 15 km. However, the proposed strategy is considered preferable as it involves the minimum amount of new construction and maximises the use of existing assets. To achieve the proposed strategy a number of options were evaluated. The existing towers already carry the maximum structural loads acceptable for their design and safety requirements so it is not feasible to increase the electrical load capacity of the line by replacing the conductors or by adding additional circuits. Whilst it would be possible to increase the load capacity of the two circuits by replacing the existing

towers with the design used for higher voltages, this would not provide the necessary four circuits. There is no design approved for use in the UK, which is capable of taking four circuits. If there were it would be about 30.0m wide and visually 'heavier' than two rows of pylons.

The options considered to be technically feasible were:

- i) Two separate circuits of 'H-Type' wood pole construction would require a swathe of land approximately 40 metres wide. The span achievable with this design is approximately half that of steel towers, greatly increasing the difficulties in both locating pole positions and the amount of agricultural land affected. The size of conductor for wooden pole construction is limited and would impose a significant constraint on the capacity available for future network development. Cost: approximately twice that of a double circuit steel tower line.
- ii) Two underground cable circuits. Cost: at least five times that of a double circuit steel tower line. This ratio is based on the same route as the proposed overhead line but to avoid significant interference with archaeological, ecological, drainage and agricultural interests, a route substantially following the highway would be needed, thus increasing the length of excavation and reinstatement and therefore the cost. There are no network benefits from installing cable. Data indicates that, per kilometre, a greater number of faults occur on 132 kv cables than on 132 kv overhead lines. Repair times and costs are also significantly greater for cables.

Another option, but not seriously considered for obvious reasons, is to run a parallel line from the National Grid near St Neots, the line passing close to Papworth Everard, Elsworth, Knapwell, Dry Drayton, Girton and Histon. The other difficulty with such a route is its length as the amount of power reduces over distance.

#### CONSULTATIONS

Fen Ditton Parish Council objects as 'it would have a detrimental environmental effect on Quy Fen, which is a Conservation Area'. (NB Quy Fen is a Site of Special Scientific Interest, an S.S.S.I. not a Conservation Area.)

Horningsea Parish Council recommends refusal stating:

"A 4 circuit structure (as used in Europe) would be preferable in this case. Duplication is cheaper and easier but very environmentally unfriendly. Figure 7 omits to show Quy Fen as an area open to public access and this is surely significant. We need a visit from 24/7 utilities to our next Parish Council meeting".

Following a Parish Council meeting at which representatives of 24/7 came to give a presentation of the scheme, Horningsea Parish Council still maintains its objection, stating:

1. We remain very concerned about the environmental impact of a second series of pylons and cables/wires. The route passes through or adjacent to important areas of countryside including Quy Fen which is an SSSI and public space used by the parishioners of Horningsea, Fen Ditton and Quy for recreational purposes. Horningsea was also the site of an important Roman settlement, and although the proposed route does not pass over the Site of Archaeological Importance there are remnants of the Roman settlement in many of the fields in Horningsea Parish. You will be aware that the National Trust has a plan to purchase much of the land over which the cables will pass, as they regard this as a unique area of our natural heritage. It will be impossible to disguise the cables or reduce the environmental impact.
2. We found it difficult to accept the argument that the cost of putting cables underground was prohibitively expensive. The suggested cost of £10m appears to be minimal in the context of the reasons for the requirement to double to amount of power. If the new developments by the University at Madingly Road, Addenbrookes and the "new development" (at Oakington or wherever) require such additional power, the cost of contributing to the underground cabling

should be included in the planning permission. We also consider that when planning permission is granted for such large-scale developments, some consideration should be given to use of alternative sources of energy, which may in the long run be more sustainable in any event.

3. We do not accept the suggestion that there is no alternative route for the cables, as it seems that if a southern route were taken to link into Fulbourn, the existing cables would be sufficient for the northern parts of the city, including the new developments.
4. Despite the assurances given by members of '24seven', members of the public remain very concerned about the health impact of living close to or under the cables. A particular concern was raised about the health of livestock and horses, which graze in the fields under the route.

For these reasons we would ask the relevant authorities to reject the application."

Stow-Cum-Quy Parish Council makes no recommendation, but has the following comments:

- i) Could the new line not be erected closer to the existing?
- ii) Regarding Health and safety. All the information relates to a single 132kv overhead line. Is there information on EMI's produced from parallel/double lines? Results from research to possible health risk suggest a statistical increased risk to children in homes with an averaged magnetic field over 0.4 micro teslas – this applies to fewer than half per cent of children in the UK – how many is that?"

The Environment Agency states that the line will cross at least three 'statutory Main Rivers' for which consent will be required, consent is required for works within 9.0m of the top of a river bank and that there should be no raising of ground levels as the site is within a flood risk area.

See also the attached appendix for County Consultations.

#### REPRESENTATIONS

A letter has been received from agents acting for the Bottisham United Charities, which supports the objections made by various Parish Councils to the environmental impact that a second row of pylons would have on the fen landscape. The latter also refers to difficulties farmers would have in cultivating their fields.

#### PLANNING COMMENTS

There will be very little impact of the line on the countryside when viewed from public roads. The closest point will be from the Fen Ditton/Horningsea Road, immediately after the point where it crosses the A14 towards Horningsea. Here, Snout Corner is 750m away and, because the line runs away to the north-east, at an angle of approximately 30° to the road, it will be over 1km distant at the other end of the village.

The fundamental impact from the additional row of pylons (10 in total in South Cambridgeshire) will be to the fen landscape as seen from the numerous public rights of way, footpaths and bridleways, which criss-cross this landscape. Low Fen Drove Way, The Drove Way and Harcamlow Way all pass under the line with the last two being linked to each other by three other paths within 400m of the route of the new line.

In the accompanying Environmental Impact Assessment, reference to the mitigation effects to the proposal are given as:

- "6.83 The mitigation of the adverse effects of constructing overhead lines is generally achieved at the stage of broad scale route planning. There is also scope at a more detailed level to plan the route to avoid damaging features of the landscape. The route selection and detailed alignment

has minimised the adverse effects.

- 6.84.1 There is considerable scope for the reinforcement of hedgerows and the planting of trees near the overhead line. This could be done in a way which is consistent with the visual characteristics of the fens as outlined in the Cambridgeshire Landscape Guidelines such as by the planting isolated trees and clumps or by the planting of substantial belts. The aim would be to enrich the visual characteristics of the area and to assimilate rather than to screen the line.
- 6.85 The strategy would have most beneficial effect in the area to the north of Swaffham Bulbeck Lode. The fact that the visual effects outlined above have a dispersed nature as opposed to concerning a limited number of specific viewpoints means that tree planting will mitigate the effects wherever it occurs within the area and within 2km of the line. It is recommended that this approach should be explored at a more detailed level in consultation with landowners and officers of the local authorities.”

What concerns me here is the last paragraph, 6.85. The applicants recognise that the visual effects of the second row of pylons will have a damaging effect on the landscape and that this will be over a large area – reference is made to an area within 2km of the line, the solution would appear to be “explore at a more detailed level in consultation with landowners” the reinforcement of hedgerows and the planting of trees.

This is (hopefully) finding a solution to a problem after permission has been ‘granted’, and dependant upon other parties agreeing.

Measures of mitigation, ie landscaping, should be submitted at the time of the proposal, not afterwards. What guarantee is there that the planting will be implemented and, more importantly, maintained? The proposal will have a negative impact on views from within and into this relatively flat landscape.

Equally, the visual amenities of the Green Belt should not be injured by proposals for development within it (para 3.15 Planning Policy Guidance 2, ‘Green Belts’). Visual harm will occur.

Part of the proposed route immediately adjoins Stow-cum-Quy Fen SSSI and five of the tower locations are within 200 metres of it. The ES requires monitoring of the construction of these towers to ensure no physical disturbance to the SSSI.

The adverse visual impact has to be balanced against the need for the proposal to support the continuing and future development of the Cambridge Sub-region.

#### RECOMMENDATION

Until such time as detailed plans of mitigation have been prepared and agreed, I would advise Members to object to the proposal because of its detrimental visual impact on the stretch of open fenland landscape, which is designated Green Belt and area of best landscape in the county structure plan and 1993 approved local plan.