

I live in the rural community of Sturton by Stow, currently being threatened by solar farms, which in total amount to 10,000 acres (16.25 square miles of glass panels 4.5 metres high), which if approved will surround us completely, ruining the agricultural, picturesque, and historical landscape of the Trent Plain.

It is almost impossible to separate the harmful effects of each of the solar projects because they combine to despoil the whole area around 30 villages and for this reason they should be considered together, as a complete entity by the Inspectorate, rather than individually.

The impact on our wellbeing and mental health cannot be underestimated, together with the effect this will have on tourism, hospitality in the area and property prices.

Climate scientists have predicted we will lose hundreds of square miles of arable land in Lincolnshire around the Wash and low-lying areas of the East Coast due to rising sea levels, despite the UK's efforts which have reduce CO2 emissions below 1% of the total global contribution.

The fertile farmland in this part of Lincolnshire has fed the nation since Roman times and the area is often referred to as the 'Breadbasket of Britain'.

Events in Ukraine have recently demonstrated the UK's vulnerability to supplies of imported grain and the effect on cereal prices.

It is worth remembering that during WWII, when the population of the UK was almost 30% less than it is today and every available acre or square foot of land was under the plough or the spade, food rationing was introduced due to the action of German U-boats.

Although the developer claims West Burton Solar to have a 'potential' output of 600MW, the average annual load factor at northern latitudes is a maximum of 11% and will therefore deliver a maximum average of only 60MW throughout the year. Solar panels do not produce power during the night or during cold winter months when power is most needed.

Although much is made by the developer of reducing the UK's CO2 emissions, the power generated will not reduce the cost of electricity to the consumer, yet solar farms will receive payments when they are shut down, increasing the cost to the consumer.

The most beneficial siting of solar panels is on the roofs of domestic, commercial, and industrial buildings, where the electrical power generated is supplied and consumed at the point of use, reducing demand on the national grid, and benefitting the consumer directly.

The economic viability of West Burton Solar depends largely on the use of large battery energy storage systems (BESS) of 600MW, which is much larger than its annual average load factor can supply.

Therefore, the battery capacity would be used by the National Grid to store energy generated elsewhere.

This brings into question the justification for not siting the BESS at West Burton Power Station and consideration by the Planning Inspectorate under a separate planning application from the National Grid as the main user.

Battery energy storage systems of this size carry the serious risk of fire, explosion, release of toxic gases, water & ground contamination, which cannot easily be controlled and contained by emergency services operating in a rural area, with poor access, insufficient water supply and limited resources.

West Burton Power Station is sited is well away from populated areas, is supervised, contained, controlled, already has adequate water supplies and good road access for the Nottinghamshire Fire Brigades, which have attended serious fires at this location in the past, when the station was operational.

The 400kv connection to the National Grid currently being considered at West Burton would be far better utilised by receiving the output from several small modular nuclear reactors (SMR's), which would provide a continuous source of zero carbon electricity, not intrude on the landscape, nor take up productive farmland.

West Burton Power Station is uniquely suitable for SMR's by its remote location, cooling water supplies and grid connections and should be considered as part of an integrated national energy infrastructure strategy along with food and agriculture extending into the future.

The visual impact of 2,484 acres (3.88 square miles) of 4.5-metre-high solar arrays cannot be underestimated, trivialised, or ignored and will blight the landscape around Sturton by Stow, Saxilby and Marton villages for the next 60 years.

Covering this huge area with inclined 4.5-metre-high glass panels will also prevent the natural mitigation of surface water runoff by the soil during periods of heavy rain and storm conditions.

The areas within and around West Burton 1 and West Burton 2 were completely inundated in November 2019 and on 21 October 2023, as were thousands of acres of adjacent productive farmland extending from Odder to Normanby along the banks of the river Till.

Defra's Sustainable Drainage System (SuDS) Directive requires one cubic metre of storage capacity for every 50 square metres of impervious area.

Yet, despite Defra's concerns to prevent local flooding from impervious surfaces, there appears to be no similar requirement for the West Burton Solar developer to prevent storm water running off an estimated 5 million square metres of glass into the drains and ditches which deliver into the River Till, along with the storm water from the other 3 projects, all of which are sited on the River Till catchment area.

Using formula adopted by Defra's SUDS Directive for rainwater infiltration, the West Burton Solar developer would have to provide a storage capacity of 100,000 cubic metres to contain the surface water run-off from its solar arrays, requiring over 40 acres of 0.6- metre-deep swales to contain the surface water runoff.

The developer has provided very limited capacity, or facility for rainwater mitigation and has given the flooding risks scant consideration claiming the soil mitigation would remain the same which is clearly not the case.

Land drainage from West Burton, Gate Burton, Cottam, and Tillbridge Solar projects all drain into the catchment area of the River Till, which is pumped up into the Fosdyke Navigation Canal at Odder to the west of Saxilby and then flows into the Brayford Pool in the centre of Lincoln.

Under storm conditions, when the water level in the river Witham is high, the Environment Agency and Upper Witham Drainage Board routinely turn off the transfer pumps on the River Till to prevent flooding around the Brayford Pool in centre of Lincoln, causing the River Till to overflow its flood banks, inundating farmland and the access roads to the villages of Stow, Sturton by Stow, Bransby and Broxholm.

I have serious concerns about the restriction of access to remote communities by emergency services due to the

increased flood risk arising from all four Solar projects.

High water levels in the River Till also exacerbate flooding problems over 10 miles away, due to rising water levels in drainage dykes delivering into the Till.

When one considers the storm water runoff from a total of 10 square miles of solar panels delivering onto the catchment area of the River Till, the flooding will be spectacular, and no amount of 'mitigation' by the developers will equal that already provided by the soil itself and the existing drainage systems, which have stood the test of time.

Most of the soil on the proposed development areas has a high clay content, which despite its ability to hold moisture and produce high crop yields, becomes saturated during prolonged periods of heavy rain, allowing excess water to shed off directly into the dykes.

Another characteristic of clay soil is its hard, impervious nature when dry, following a drought, when rainwater from a sudden storm will run off faster than it can be absorbed.

The West Burton Solar development would change the whole character of the environment from a rural and pastoral landscape into one of the largest industrialised areas in the world with a significant impact on the rich diversity of wildlife, which currently inhabit the fields, ditches, and hedgerows.

Insufficient effort has been made by the developer to determine the effects of the changes in hydrology on aquatic vegetation, invertebrates, flora, fauna, wildlife in general in the dykes, ditches, and the River Till.

Much of the land being appropriated is owned by landlords who do not live in the area and rent their land to tenant farmers who stand to lose their livelihoods if this scheme, along with others in the area is approved, with a consequent loss of farming skills and agricultural output on which the nation depends.

The reflected glare from the panels would be a hazard to motorists travelling along the A1500, A156, B1241, and affect commercial aircraft & gliders from local airfields at Sturgate and Kirton in Lindsey, which regularly use the airspace above the Trent Valley.

The panels on West Burton 3 and Gate Burton Energy Park immediately to the North will remind passengers on the Lincoln - Retford railway line that they are passing through an industrialised landscape where one it was open countryside.

West Burton 3 surrounds the ancient Bishop's Palace to the south of the A1500 which is a moated manor and the residence of St Hugh who was Bishop at St Mary's Minster at Stow before the building of Lincoln Cathedral.

To allow the surrounding of this ancient structure with solar panels, when it is part of our local ecumenical heritage, would be an act of cultural, historical, and religious vandalism.

The upheaval and disruption caused by the installation of thousands of tons of solar panels, together with cable connections, inverters, transformers, and battery storage systems will be extreme and cause a great deal of inconvenience with access to local communities, restrictions of essential and emergency services along roads, which are already challenging and inadequate.

The sourcing of an estimated 60,000 tonnes of solar panels from countries such as China also raises socio-economic and ethical considerations.

It is estimated that the amount of global CO₂ released to the atmosphere during mining, processing, manufacture & transport of the panels alone would amount to 65,000 tonnes CO₂.

The developer claims that 600MW of solar energy output would avoid the release of 120,000 tonnes of CO₂/year.

However, at an average annual load factor of 11%, GBSP would save only 13,200 tonnes/year and therefore take 6 years to recover the 78,000 tonnes CO₂ released by solar panel manufacture alone.

The heaviest demand for electrical power is in the southeast of England and many people in this part of the Northeast Midlands question why land along the banks of the Thames estuary is not being considered with grid connections to the redundant power station sites of Kingsnorth and the Isle of Grain. rather than take up the valuable productive farmland of Lincolnshire.

This would reduce power transmission losses which over 150 miles are significant, and the annual average load factor is likely to be higher at a more southerly latitude.

A project of this size would never have been considered in the 'home counties' of the southeast.

As a retired Chartered Chemist, Senior Engineer with the CEGB and former Pollution Inspector serving with Her Majesty's Inspectorate of Pollution within the Department for the Environment, solar farm projects such as West Burton would never have received operational approval based on their technical and environmental submission.

Roger Jones, CChem, MRSC