

A well-designed solar facility could benefit a local community, but industrialisation of large swathes of the Cambridgeshire / Suffolk landscape, engulfing local villages and irreversibly damaging the local environment brings both green and ethical credentials of the proposal into doubt. The loss of productive agricultural land is portrayed as necessary to meet demands for renewable energy, yet food security is equally critical and diverse alternatives could be considered to meet energy demands. To date, consultation has been inadequate and much of the documentation lacks sufficient detail or evidence. Where risks are identified mitigation is vague and all too often results in no change to the identified risk. Sunnica can inspire little confidence when they persistently disregard local communities and attempt to force through changes without transparency and open discourse. Ultimately, a Spanish backed concern reliant on international supply chains and a construction firm from Yorkshire is not investing for the interests of local communities or the environment, but for profit. Opportunity undoubtedly lies with the extensive BESS to allow energy trade with the National Grid, rather than provision of a renewable energy.

## 1.0 Scale, design and infrastructure

1.1 The scale of the project is huge in comparison with the majority of solar projects. The proposal would result in the industrialisation of greenfield sites across large swathes of Cambridgeshire and Suffolk. Multiple settlements with a significant population are impacted and changes to the landscape would be extensive. As a result there would be irreversible damage to a diverse range of habitats with resultant loss or displacement of associated wildlife.

1.2 Development of four separate sites with connection to a distant substation by 15 miles of cabling cannot be considered efficient. Such forced extension of the project incurs proportionally greater use of ancillary materials such as concrete, hardcore, cabling and fencing due to the need for connectivity (electrical and transport) and security. The extent of environmental damage wrought by proposed clearance for cabling alone is substantial; this will not contribute to energy production and only offers financial benefit to Sunnica. More efficient would be to identify suitable land close to a substation to minimise the need for cabling.

1.3 Impact on the landscape and visual amenity appear to be significantly underestimated. The battery containers will be particularly prominent at 6m in height. Proposed mitigation will do little to obscure these industrial monstrosities. Even well managed, broad hedgerows would take time to establish and offer limited cover during winter even for the lower level development.

1.4 Due to the size of the project, there will be prolonged disruption to local communities throughout the construction phase. Traffic disruption, disturbance through noise and vibration, dust, and distress at seeing destruction of the rural environment would result in sustained stress on local communities.

1.5 The scale of the project in which vast numbers of relatively inexpensive solar panels are thrown up with poorly thought out design and mitigation, suggests little interest in a sustainable future providing renewable energy with minimal impact on the environment. The inclusion of extensive battery energy storage systems (BESS) embedded in the proposal, although not integral to the production of renewable energy, is only suggestive of profiteering through energy trading.

## 2.0 Battery energy storage system (BESS)

2.1 Lithium-ion battery technology is associated with significant risk of thermal runaway, leading to fire and explosion. Thermal runaway incidents are particularly difficult to control and extinguish. The scale of BESS proposed by Sunnica poses an unprecedented risk with potentially limited expertise in preventative and emergency planning.

2.2 Whilst lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke, perhaps the greater threat is the emission of toxic gasses, namely carbon monoxide, hydrogen fluoride and phosphoryl fluoride. Inhalation of hydrogen fluoride can result in chronic lung disease with a high morbidity and mortality.

2.3 The proximity of the BESS to residential areas and associated amenities such as schools is concerning. Coupled with this is the lack of comprehensive emergency planning, giving little confidence in Sunnica's awareness of and commitment to their responsibilities as a developer.

2.4 Investigation of a number of high profile incidents have suggested a lack of experience with BESS technology as a contributory factor; as I understand, Sunnica have no experience of constructing and maintaining such a large installation. Other investigations have been unable to identify a cause, suggesting understanding of this technology is limited and making such large installations unsafe.

2.5 Safety measures will require each BESS to have complex heating, cooling, ventilation and monitoring systems, all requiring significant power themselves to sustain. As a result, the inclusion of such a substantial BESS component surely negates some of the benefits of generating solar power.

### 3.0 Green and ethical credentials

3.1 Whole lifetime carbon balance should be considered in any true measure of contribution to 'net zero', encompassing production and transport of components, including ancillary materials such as concrete, cabling and fencing. Similarly loss of productive agricultural land should be accounted for as it increases carbon mileage on food with greater reliance on imports.

3.2 In addition to lithium, common constituents of lithium ion batteries include cobalt, nickel and manganese. Extraction and mining of such materials is generally recognised to be hugely damaging to the environment resulting in irreversible pollution. Couple with this is the potential for exploitation of indigenous populations, including children. The inclusion of excess BESS for Sunnica's financial gain will likely leave a legacy of toxicity and abuse in almost exclusively developing nations that will tarnish the United Kingdom's reputation for years to come.

3.3 Electronic waste is notoriously difficult to recycle at end of life, meaning much of the material will be destined for landfill. This is coupled with a risk of heavy metal pollution with breakdown, potentially leaching into water supplies. All potential alternatives offering longer life or recycling opportunity should be considered.

3.4 Realistically, full restoration after decommissioning is unlikely and certainly wouldn't occur within the lifetime of many local residents impacted by the development. With likely removal of topsoil and other damage, the land is more likely to be sold on for other commercial use such as housing or other forms of industrialisation.

3.5 Whilst solar energy should be viewed as a valuable asset in delivering Net Zero, the greatest success will only be achieved through best application of innovative technologies. There are many more inspirational examples with use of brownfield sites, in particular contaminated and

otherwise unusable land such as landfill and former industrial sites. The 'Delivering a Net Zero National Health Service' plan means the hospital I work at has photovoltaic roof panels amongst other solutions; this should become the expectation for any public, industrial or residential new build. Just up the road solar car ports are being installed at a park and ride site; imagine if this was replicated at every park and ride site, out of town shopping centre, airport car parks, etc. Many of these locations will have far better connectivity to the National Grid or enable off-grid supply direct to local consumers.

3.6 Any Nationally Significant Infrastructure Project should be an opportunity to showcase best practice. Central to this should be evidence of an ethical, transparent, and environmentally-sustainable supply chain. We should not be left wondering at the potential wider costs with abuse of Uyghur in Xinjiang and pollutive extraction of rare minerals.

#### 4.0 Ecology and biodiversity

4.1 Both the Fenland and Breckland habitats are of significant conservation importance, supporting diverse and often unique species. Equally, loss of habitats such as hedgerows and arable field margins should not be underestimated and the proposed mitigation appears woefully inadequate. There is little consideration given to the practicalities of population recovery following habitat loss, considering how long it would take trees and hedgerows to mature.

4.2 Data collected regarding the impact of loss of habitat and disturbance of wildlife appears woefully inadequate, however, to enable informed decisions. Firstly, there is a lack of breadth in both habitat and species coverage. Secondly there is insufficient consideration given to the seasonal and life cycle influence. Finally, risks such as loss and fragmentation of habitat (including nesting and feeding grounds), displacement, disturbance, obstruction, light pollution, visual distortion, and noise pollution, are not extensively investigated to understand the extent of impact on populations and the potential for adaptation and recovery.

4.3 At a minimum of 2.5m in height the 'deer fence' will prevent free movement of most large mammals. Whilst Sunnica displays an image of sheep grazing amongst solar panels on their website, wildlife is apparently not so welcome to feed. One can only hazard a guess at the measures that will be taken to combat any wildlife such as badgers that dare to excavate beneath their security.

4.4 Raptors will likely continue to feed on small mammals, birds and carrion within the perimeter if able to overcome the disturbance. The risk associated with obstruction of flight paths is unknown though and could result in a decline in local buzzard, red kite, barn owl and hawk populations. Similarly the impact of glare and potential for disorientation is unknown.

4.5 Similarly little consideration has been given to migratory bird populations in the form of both overwintering species and summer visitors. These include aerial feeders such as Swifts, Swallows, and House Martins, all of which have been in dramatic decline.

4.6 The impact of solar panels on feeding bats is also poorly understood and lacking consideration. With a variety of species in the area, those feeding on insects over the solar panels may face disruption of echolocation, leading to direct injury and death, as well as starvation and distress.

4.7 Whilst some mitigation has been proposed for stone curlew, the extent seems insulting considering the investment by other parties in active preservation of the species in East Anglia following dramatic decline in numbers.

## 5.0 Land use

5.1 Whilst it is recognised there is an urgent need for renewable energy, sustainability also calls for local productivity. Any benefit of producing renewable energy on agricultural land would immediately be negated by the hefty carbon footprint associated with the import and distribution of food. Instead we should seek to preserve productive agricultural land and utilise non-productive sites for renewable energy production.

5.2 The vast majority of land identified for development is productive agricultural land. Much of it can be classified as Best and Most Versatile Land and should thus be protected to continue provision of crops.

5.3 Climate change is increasing pressure on agricultural productivity with more areas liable to be pushed into classification of poor productivity. It is therefore imperative areas of better productivity are sustained as agricultural land.

## 6.0 Transport

6.1 The rural road network is unfit for the movement of large numbers of heavy goods vehicles and a substantial workforce for a minimum of two years, during the construction phase. Taking Elms Road as an example, there is barely passing room for large vehicles and there is significant breakdown of tarmac even with current traffic. Recent inclement weather has shown how vulnerable the road is with water standing long after rain has stopped, covering much of the road in places and obscuring hazards such as potholes. During harvest periods the tarmac is frequently muddied, resulting in a risk of skidding, due to need of vehicles transitioning on and off adjacent fields. The road is entirely unsuitable for carriage of additional traffic associated with the development. Similarly the tight junction into Freckenham from Elms Road with poor visibility and limited pedestrian amenity is an accident waiting to happen if development associated traffic is directed through the village.

6.2 Many of the roads within the proposed development area are narrow, single carriageways. The extent of removal or damage to hedgerows and other vegetation would be extensive to give access to construction sites. More appropriate would be to locate such a development in an industrial area with better transport links.

6.3 Disruption through road closures, particularly through the construction phase, will undoubtedly force excess traffic through villages, endangering local residents, many of whom are elderly and vulnerable.