

FROM: STUART MENZIES
TO: NATIONAL INFRASTRUCTURE PLANNING

OBJECTIONS TO THE INSTALLATION OF SOLAR FARMS ON UP TO 10000 ACRES OF LINCOLNSHIRE FARMLAND

1. GENERAL COMMENTS

These solar farms should not be built next to or in view of residential houses, on prime farm land, in areas that will cause soil erosion or have an adverse effect on wildlife, streams or anywhere else that would interfere with the natural scenic beauty of our countryside. There will be a four year construction schedule for the Cottam Solar Project and three other similar projects planned for the West Lindsey District of Lincolnshire, meaning four Nationally Significant Infrastructure Projects (NSIPs) within a few miles of each other all being examined independently. These projects combined will transform the area into a 10,000 acre building site and ultimately this would be the largest solar complex in Europe. This is just not acceptable to the local community due to the impact all the construction work will have on the well being and mental health of residents of the whole area, and all four of these solar projects should be assessed together due to the massive impact they will have on the local infrastructure.

On top of all the disturbance to the natural habitat of the wildlife and plants in installing the panels in the fields, there will be a massive disruption, disturbance and unnecessary damage to more farmland and plant/animal habitat by many miles of cable trenching across the countryside, to install the underground cables to the grid connection points at the existing Cottam National Grid substation. This development will have an adverse impact on the character of local countryside as well as major, irretrievable loss of wildlife, from the initial 2 years of disruption caused by heavy construction traffic and then throughout its operational life.

The proposed cable routes Island Green Power (IGP) have indicated are totally nonsensical and all routes for all Cottam solar projects are several miles distant from the existing Cottam grid substation connection point. Running cables from from Pelham/ Blyton/Corringham to Cottam will involve accessing ten different land parcels and will mean massive unneeded civil works for laying the cable route. The choice of cable route is almost laughable and clearly hasn't been given much thought from many perspectives, e.g. planning, engineering, geographical, ecological disruption and impact on the environment and wildlife.

These four solar projects will dominate and not blend into the local landscape, plus the thousands of acres of solar panels will be highly visible and very difficult to hide on the rolling countryside and next to main roads, particularly the B1398 'Lincoln Cliff Road,' which is an Area of Great Landscape Value (AGLV). We made the choice to live in or be surrounded by the countryside, if these proposals go ahead the [REDACTED] issues would be enormous for many people. Their lives being impacted by 4 years of construction on a 10,000 acre building site, a total landscape change and the oppression of 15 feet high solar panels looming over everywhere you look.

These solar farms/panels will have a massive impact on rural homes due to land grabs for the installation of 15 feet high mechanised solar panels, vast battery storage containers and associated equipment, including CCTV being sited close to homes. These projects will change peoples rural lifestyle to one with an industrial outlook and a number of features

associated with these solar farms were inadequately communicated in the early stages of IGP's engagement with the local communities. Consequently one begins to wonder what other information about the schemes has not been relayed accurately.

The Cottam Solar Project will cover over 3,000 acres of farmland and because 3 other solar projects are proposed for the West Lindsey area up to 10000 acres of farmland could be lost to solar arrays, batteries and electrical transformers within 7 miles of each other. These projects will make West Lindsey the most solar farm dense region in Europe and therefore the magnitude of these projects will cause total landscape domination in many local areas.

This solar project, if approved, covers a large area of food producing farmland and will industrialise this land, and in fact the whole area, and has the potential to impact on employment and skill levels in the agricultural industry. Also, losing large areas of farmland will lead to a loss in food production capability, quite important right now bearing in mind the war in Ukraine and current food shortages in the UK. In fact this solar project will generate half the output of the current largest solar farm in Europe and thus will be a hugely inefficient use of productive farmland in the area.

The loss of up to 10000 acres of farmland at a time when food security is a real issue both nationally and globally. The land should be left as food producing farmland and not decimated by these obscene monstrous solar panels. This precious commodity should not be used for these land hungry, inefficient solar projects that will provide little net gain in the UK's energy capacity.

To install these solar farms on land capable of producing cereals around Gainsborough in Lincolnshire will be a totally inefficient use of food producing farmland and the projects should NOT be allowed to proceed on this basis. If the government is determined, in it's quest for zero carbon, that solar farms are needed to be a major part of the energy mix, then solar panels should be compulsorily installed on the roofs of all new build factories and houses, and in time on all those similar buildings currently existing. Clearly installing solar panels on all buildings has the potential to reduce the energy costs for the owners and/or occupiers. According to the BRE National Solar Centre, in 2016 there was an estimated 250,000 hectares (617,764 Acres) of south facing commercial roof space in the UK. If utilised this could provide approximately half of the UK's electricity demand, therefore surely it is 'no brainer' to install solar panels on all commercial buildings instead of decimating food producing rural farmland.

Island Green Power state the Cottam solar project has the potential to generate around 600MW, in reality that level of output will not be achieved for the vast majority of time due to the solar panel capacity factor. Therefore their statement that the Cottam solar farms will replace 30% of the former generation of the coal fired Cottam Power Station is inaccurate and incorrect. As of June 2021, UK installed solar capacity was over 13.5GW, with the 72MW Shotwick Solar Farm being the largest in the country. Annual generation was slightly under 13TWh in 2020 (4.1% of UK electricity consumption). Peak generation was less than 10GW. Solar PV panels have a capacity factor of around 10% in the UK climate. The Department of Energy and Climate Change (DECC) assumes an average capacity factor of 9.7% for solar photovoltaics in the UK. Basically solar farms are an inefficient use of land when the contribution to the energy mix they make is considered.

When one considers the electricity needs of this country to meet the future demand, planning and constructing solar farms with a capacity factor of less than 10% makes me

wonder what the point is, especially with a solar panel efficiency of around 30% meaning vast acres of farm land are needed to install anything meaningful. The Grid system will struggle without the CCGTs for the foreseeable future with solar farms providing a minuscule contribution only when the sun is shining and/or light levels are high. The solar farms will be of absolutely no help in meeting demand during a tea time system peak in the middle of winter, i.e. when it is dark and very cold. Also, the solar farms capability to provide system frequency response or voltage regulation/MVAR provision, major requirements from a generator to ensure system stability, are both minimal

I understand more than 60% of the world's solar panels are made in China. Therefore, I expect much of the other equipment Island Green Power are likely to install at the Cottam Solar Farm, if it's approved, e.g. switchgear, transformers, inverters, protection equipment, batteries etc., will most likely come from China or the Far East too. In 2021 China started building 33 gigawatts of coal-based power generation, according to the Helsinki based Centre for Research on Energy and clean Air (CREA). That is the most new coal-fired power capacity China has undertaken since 2016 and says CREA, three times more than the rest of the world combined. So, by installing solar panels and other equipment manufactured in China it seems Island Green Power is moving part of the UK's carbon footprint to China and possibly elsewhere in the Far East. Also, transportation of all these goods from the Far East will cause a further increase in the global carbon footprint created by these solar projects.

Nobody or company in this country with decent moral or ethical principles should be procuring anything from China right now, because to do so will support the Chinese global economic status and their capability to spy etc on the west and possibly invade Taiwan. Also, China's human rights record is appalling and that is another reason companies in the UK should not be trading with them, but I believe it's all about the money and the greed of the organisations involved.

Island Green Power state a very large Battery Energy Storage System (BESS) for storing electricity on-site will be installed and I believe this will be near Willingham-By-Stow. These type of batteries are known, from problems elsewhere, to be a source of danger from chemical spillage and fire, therefore they should not be located near to any type of property or housing estates. If the project goes ahead it is essential, from a safety perspective, for these batteries to be located away from residential areas and close to the Grid connection point.

The project plan is for the electricity stored in the BESS to be released into the national grid when it's needed most. It may also enable energy to be imported from the national grid so it can be stored until it is needed. However, in terms of being able to support/improve Grid System stability at a time of critical need the battery capacity (50MW or so I believe) will be totally insignificant and thus will provide minimal help to the System, or the demands of the nation on a winter's night when there is a howling gale and it is minus 10 DegreesC and system stability is under stress.

2. EXAMPLES OF INADEQUACIES WITHIN THE Cottam PRELIMINARY ENVIRONMENTAL INSPECTION REPORT (PEIR) - Chapter 9: Ecology and Biodiversity.

To demonstrate my concerns about these solar projects and the inadequacies of the Cottam PEIR I sent some sample comments/questions, based on the comments below to IGP and they have failed to respond to anything. Therefore, it would appear that many of

the environmental aspects associated with the rural countryside and farmland, likely to be impacted upon by the construction and operation of the solar farms, were not thoroughly considered or communicated to the public during the consultation process. As far as I am concerned this means that Island Green Power did not fully and properly engage with local communities during that process.

It is evident local ecology and diversity will be changed forever if these projects are allowed to proceed and for this reason they should be prevented from proceeding. Despite IGP stating there are gains they describe little of what they will do to actually provide a single gain.

Para 9.9 Biodiversity Net Gain and Ecological Enhancements

COMMENT - The two paragraphs 9.9.1 and 9.9.2 are all I can see with reference to Biodiversity Gain and Ecological Enhancements and these give minimal detail during the consultation phase about what IGP are going to do for Biodiversity Net Gain and Ecological Enhancements. Para 9.6 Preliminary Assessment of Effects

Habitats

Woodland

Construction Phase Impacts - 9.6.33 STATES - *“A protective development-free buffer of 20m from all woodland has been designed into the scheme..... “*

QUESTION - How do we know 20m is enough for obscuring the public’s view of the monstrous solar panels?

9.6.34 STATES - *“Woodland in close proximity to construction works would remain sensitive to degradationIn the absence of mitigation, the severity of these impacts would range from minor to severe but would be expected to be short or medium term and reversible in the long term.”*

COMMENT - I believe long term reversibility on the impact of woodland is not acceptable because in the interim plant and wildlife species will be lost forever.

9.6.35 STATES - *“Construction activities could lead to a small amount of noise and possibly light disturbance to the species within the woodland.....It should be noted that a certain amount of noise disturbance, dust deposition and run off would be anticipated as a result of routine agricultural activities, and as such impacts are likely to be similar to the current baseline conditions.”*

COMMENT - Agricultural activity impacts of noise and light disturbance are in no way comparable to those which will be present with the solar farms large, cumbersome and environmentally unfriendly construction activities.

Hedgerows and Trees

Construction Phase Impacts - 9.6.43 STATES - *“A protective development-free buffer of between 5m and 12m from all hedgerows has been designed into the scheme, to be installed during the construction phase and observed for the life of the scheme thereafter.”*

9.6.44 STATES - *“All individual in-field trees will be retained within the Sites. Such trees act as island or stepping-stones for wildlife and these are to be buffered from development according to their ecological value (between 8m and 12m from extent of Root Protection Zone). In addition, they are to be ‘reconnected’ to field boundaries through the planting of corridors of hedgerow and trees, improving their contribution to Green Infrastructure as corridors of dispersal.”*

QUESTION - How will wildlife scared off by the construction phase be encouraged to return and thrive?

Bats

Construction Phase Impacts - 9.6.80 STATES - *“No artificial construction lighting is considered likely to be required outside of the winter months. During winter, artificial lighting may be required within the construction zone due to the short day lengths....., As bats are in hibernation during the winter months, and only active occasionally for short periods, they are unlikely to be significantly affected. Therefore, it is anticipated that fragmentation of habitat as a result of light pollution will not occur.”*

QUESTION - Anticipation is no surety that the construction period winter lighting will not have a long term impact on the bat population, how can it be assured that fragmentation will not occur?

Operational Phase Impacts

Ecological Enhancement

9.6.86 STATES - *“The planting of new hedgerows and the management of diverse field boundaries stands to benefit bat populations through an increased number of roosting opportunities and increases in foraging capacity respectively.”*

QUESTION - What happens to the bats after hedgerows are disturbed and before new hedgerows are planted and are mature?

Otter and Water Vole

Construction Phase Impacts - 9.6.92 STATES - *“Otters and water voles may be impacted through direct harm (to animals or their burrows) or disturbance during any construction activity affecting ditches, watercourses etc.”*

9.6.93 STATES - *“Barriers to movement in the form of severed or blocked/culverted watercourses and linear natural features may cause population fragmentation, etc.”*

9.6.94 STATES - *“Construction activities and, potentially, routine operation and maintenance may cause disturbance to otters and water voles within shelter and accidental harm to their habitat or burrows.”*

Residual Effects

9.6.101 STATES - *“residual effects upon otters and water voles are considered to be neutral and not significant.”*

QUESTION - How can this be the case when Construction Phase Impacts 9.6.92 to 9.6.94 are taken into consideration?

Polecat, Hedgehog and Harvest Mouse

Construction Phase Impacts

9.6.106 STATES - *“Harvest mouse stand to be adversely affected by the loss of arable crop within which to make nests and forage. The impact of habitat loss would be felt for the life of the Scheme and potentially be of moderate to high severity.”*

Mitigation Measures

9.6.110 STATES - *“Taking into account the protective precautionary measures of the CEMP, and the positive habitat management measures of the LEMP, residual effects on polecat and hedgehog should be able to reduce to neutral levels and be non significant. Minor adverse residual effects on harvest mice are considered likely to be non significant due to the replacement of lost suitable habitat with substantial tussocky and tall grassland within the majority of the Sites and cessation of intensive arable practices.”*

QUESTION - How are minor residual effects on harvest mice non significant if 9.6.106 is accurate?

Badgers

Construction Phase Impacts

9.6.171 STATES - *“During construction works, if deep trenches are left open overnight or high voltage machinery is present, there may be potential for injury or mortality to badgers exploring the site during the night.”*

Mitigation Measures

9.6.177 STATES - *“All contractors will be informed about the presence of setts via a toolbox talk delivered by an ecologist prior to construction. No machinery will be driven within buffers or materials stored in them.”*

QUESTION - How can it be assured that toolbox talks will ensure that deep trenches are not left open and high voltage machinery is not present, so that the potential for badger injury or fatality is eliminated? AND How will badger baiting be stopped/prohibited?

9.8 Cumulative Effects

Cottam Solar Project – and Gate Burton Energy Park –

9.8.2 STATES - *“The above schemes are likely to be very similar to the proposed Scheme, in that they will both revolve around the reversion of arable fields to solar arrays and battery energy storage, and retain, protect and (it is assumed) enhance the vast majority of their boundary habitats, which are the most important ecological assets. Consequently, the likelihood of cumulative effects on protected species associated with the boundary habitats is low.”*

COMMENT - This cannot be correct! **AND QUESTION** - Where is the evidence to confirm the likelihood on protected species associated with the boundary habitats is low?

9.8.3 STATES - *“Ground nesting bird species of open countryside will be adequately mitigated for by the proposed Scheme, although the presence of the above schemes may combine to cause a fragmentation effect within the local landscape. Similarly, harvest mice stand to be adversely affected by the loss of arable, and although mitigation is proposed, cumulative effects from the combination of these schemes may result. Impediments to the movement of deer may be increased through the cumulative effect of these developments as they are the only mammal species considered likely to be impacted by the presence of perimeter fencing.”*

COMMENT - These detrimental cumulative impacts on birds and other wild life are utterly unacceptable, they will be disturbed by these projects and there will be fatalities and the loss of some species from the area forever! **AND QUESTION** - What are the mitigation measures for disturbing ground nesting birds and harvest mice, and why should impeding the movement of deer be allowed by these unneeded solar farms?

3. Cottam PEIR – Volume 2 Appendices to Chapter 14: Transport and Access - 6 Mitigation Measures

Section 6.2 STATES - *“Vehicle Movement:- (iii) Where possible, construction deliveries by HGV will be coordinated to avoid the network peak hours of 08:00-09:00 and 17:00-18:00;*

“ **COMMENT** - These proposed times for deliveries overlap peak hours and so the deliveries need to avoid the hours of 08.00 to 10.00 and 16.30 to 18.30

Cottam PEIR:- Table14.9 STATES- *“Forecast Construction Vehicle Trip Generation (HGV)Construction Vehicle Movements average per day are 60* **AND From Cottam**

PEIR:- Table 14.10 Forecast Construction Vehicle Trip Generation (Construction Workers-LGV) Average Workers traffic movements per day are 400.”

Cottam PEIR Volume 1 Chapter 14 Transport and Access:- From Table 14.9 “Forecast Construction Vehicle Trip Generation (HGV) Forecast Construction Vehicle Movements average per day are 48” **AND From** Table 14.10 “Forecast Construction Vehicle Trip Generation (Construction Workers - LGV) Average Workers traffic movements per day are 400”

COMMENT - Also within the Gate Burton Energy Park PEIR, paragraph 2.5.14, states there will be a total of 368 traffic movements per day during the peak construction period. So combining these numbers with the Cottam and Cottam average vehicle movements for construction and workers traffic per day during the construction period, gives a total 1276 traffic movements per day across all three projects. This is utterly ridiculous on the country roads, some very narrow, that it is proposed will be used for site access. Of these movements there will be heavy construction traffic and these have the potential to cause major damage to the country lanes being used and vibrational structural damage to some buildings close to the these roads. Totally outrageous and unacceptable!

In addition Air Quality will be polluted and there will be noise and light pollution from all construction and workers traffic road movements, and site heavy machinery, this is unacceptable for the local communities and for IGP to expect people to tolerate the massive disturbance to their lives

4. THE DIRTY SIDE OF SO-CALLED GREEN ENERGY

There are large production and waste problems associated with the massive use of solar panels.

Solar panels require vast amounts of heavy metals which are usually mined in appalling conditions in third world countries.

Going green is supposed to be about a cleaner and fairer planet, but clearly there is a toxic downside of renewable solar energy. Solar panels are made out of plastic, silicon, aluminium, glass and copper, with small amount of toxic materials such as lead and hexavalent chromium. The significant issue about the UK trying to meet emission targets is that large numbers of these solar panels could or will be needed to be manufactured.

Generally solar panels have a 20 year life after which they may well be dumped and left to degrade. Recycling solar panels requires acids, which are also toxic, and energy intensive heavy machinery. Those attempting to recycle panels say it is cheaper to landfill than recover what value remains. If life expired solar panels etc., are sent to a dump somewhere in Africa, for example, children rip them and other electrical equipment apart to extract small traces of precious metals, exposing themselves to toxic levels of lead in the process.

Building batteries, that are needed as back-up at solar farms, requires large amounts of cobalt often sourced from Congo in Africa where children dig it out of ground with their bare hands.

There seems to be a great irony with regard to the UK pursuing a green energy future, because we appear to be concentrating more on renewables than we do on the one clean

energy source that is proven to be sustainable and that is nuclear power. We are currently building one new 3.2GW nuclear power station at Hinkley Point but that will not be commissioned/operational until 2027 at the earliest. I believe plans are in place to build another new nuclear station at Sizewell, but it will take maybe 15 years for that to be fully operational.

Clearly by appearing to opt for the development of solar farms in preference to deciding to build new nuclear power stations 10 or so years ago, the government appears to have chosen the wrong option in trying to ensure the UK has a sustainable, stable and reliable electricity supply system.

5. AGRICULTURAL LAND

I understand the Environment Secretary is proposing to change the definition of “best and most versatile” agricultural land, to include lower grade 3b land, to try and ensure it can be used for growing crops and so stop solar farms being built on it. Land graded as 3b covers 29% of agricultural land and has the capability of producing high yields of a variety of crops. Security of food production is a critical issue for the UK and it should be ensured that valuable farm land is protected. Energy security can be achieved without compromising food production. There are many potential sites for the installation of solar panels/farms, including commercial roof space, brownfield sites and poorer grade land. Land is a finite resource and so should be used for high priority activities, of which surely food production comes ahead of solar energy, the government must ensure this is the case. It is outrageous that Solar Energy UK would appear to be putting profit ahead of sensible land use.

Therefore, as the vast majority of IGP Cottam and Cottam planned solar projects are planned for installation on grade 3b land, none should be given permission to proceed as there are proposals, pending or in place, to redefine lower grade 3b land to best and most versatile agricultural land for crop growing.

6. DECIMATION OF HEDGEROWS AND WILDLIFE HABITAT

Island Green Power have sought planning permission for the removal of circa 55,000 metres (55 kilometres or 35 miles) of Lincolnshire Hedgerows for the West Burton Solar Site! With the other solar planning proposal's in our area 10,000 acres of food producing farmland we will be lost along with 100's of miles of hedges. As well as homes for wildlife, hedges contribute to services such as atmosphere regulation, sustainable urban drainage, reducing airborne particulates and atmospheric pollution. They also improve the aesthetic appearance which has been proven to enhance mental health and well-being. In some areas pollution has been proven to have long term and short term negative health effects. Where will the wildlife go when these hedges are removed (birds, insects, hedge hogs, mice, badgers and other mammals and amphibians?) Hedges are an essential part of the ecological system. Hedges support 80 percent of woodland birds, 50 percent of our mammals and 30 percent of our butterflies.

The industrialisation of 10,000 acres of our food producing farmland and the removal of miles and miles of hedges must be stopped. Hedgerows are essential corridors and our wildlife depend on them for survival.

These solar projects will decimate 10,000 acres of food producing Lincolnshire farmland and beautiful countryside. Our hedges full of nature and wildlife, our community, our well

being, our lives are all under threat due to solar industrialisation. There should be no threat to having to live in and around an industrial power plant in rural Lincolnshire. Solar panels/farms should be installed on all commercial, industrial and domestic building roof tops, not on food producing farmland!