

7000 Acres

7000 Acres Response to the Cottam Solar Project Application on the subject of:

Human Health and Wellbeing

**Environmental Statement Chapter 18: Socio-Economics and Tourism and Recreation
EN010132/ APP/WB6.2.18**

**Environmental Statement Chapter 21: Other Environmental Matters EN010132
APP/WB6.2.21**

Deadline 1A Submission – 7th December 2023

For the purpose of this written representation, this paper will focus on where Cottam is situated, namely in the surrounding area that borders on the town of Gainsborough. It will reference the two relevant documents submitted, **Environmental Statement Chapter 18: Socio-Economics and Tourism and Recreation EN010132 APP/WB6.2.18 and Environmental Statement Chapter 21: Other Environmental Matters EN010132 APP/WB6.2.21 both written March 2023.**

We believe, the Equality Impact Assessment for this scheme written for the applicant has not highlighted the potential health and wellbeing issues to be faced by this scheme and the others (cumulative) on the people of Gainsborough, and surroundings (Local Impact Area).

To understand the impact this scheme will have on health and wellbeing, it is important to understand the definition of health and wellbeing.

The World Health Organisation (WHO) describes the definition of health in their constitution as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.”

From a paper, Health and Quality of Life Outcomes by Ruggeri et al. (2020) 18:192, wellbeing has been defined as “the combination of feeling good and functioning well; the experience of positive emotions such as happiness and contentment, as well as the development of one's potential, having some control over one's life, having a sense of purpose, and experiencing positive relationships”.

The definitions define the context in which the environmental impact chapter on Human Health and Wellbeing should be written. Instead, the authors of the applicants document concentrate mainly on the commissioning and decommissioning, with very little substance written around the operator's gap of forty years and how this will impact on our local communities.

We do not believe that the Countryside and Rights of Way Act in any way should underpin this document as a reference to health. This is only an enabler.

There is a new Health and Social Care Act 2022 which provides the foundations to improve health outcomes, which brings together the NHS, Public Health and Social Care at a local level with the hope that this will tackle health inequalities, which should have been highlighted by the Equality Impact Assessment.

There was no mention of Lincolnshire's Long-Term Plan which has now been superseded by the Joint Forward Plan which has been published.

NPS-EN-1 (2021) mentions the importance of identifying the indirect impacts affecting health and wellbeing, as well as promoting local improvements to encourage health and wellbeing. In Chapter 21 point 21.5.10, it is essential that the applicant's documents pick up on the health impacts of the operator's cycle of 40 years, and that there is a clear understanding of the cumulative impact. There is more emphasis around the health impacts on the construction and decommissioning element which are short periods in the life cycle

of this and other schemes. The Secretary of State will want to mitigate these and we would argue that a Health Impact Assessment should have been requested. A reference to the Central Lincolnshire Plan 2012-2036 (Ref 21.9) (point 21.5.13) states clearly “The potential for achieving positive mental and physical health outcomes will be taken into account when considering all development proposals. Where any potential adverse health impacts are identified, the applicant will be expected to demonstrate how these will be addressed and mitigated”. We will attempt in this written representation to address some of this. Rightly pointed out in the applicant’s document is the reference to the Lincolnshire Joint Strategic Needs Assessment (JSNA) which highlights start well, live well and age well, and which highlights the current and future health needs. This intelligence provides data which is relevant to health as part of this assessment. The applicant has not referenced this data at all despite referencing the JSNA. The JSNA recognises that Lincolnshire has some of the most affluent and some of the most deprived areas. This development borders on one of the most deprived towns in Lincolnshire, namely Gainsborough. Further reference to this will be made later in the written representation. Our environment plays a huge role in living well, and many older people retire to rural from urban areas to get the benefit of aging well.

The document is lacking on a methodology to assess the schemes impact on Health and Wellbeing e.g., **PHE: Spatial planning for Health: An evidence resource for planning and designing healthier space (2017)**. Much of this guidance references urban and not rural planning, People choose to live in rural communities to enjoy what the natural environment offers. Industrialising our fields with solar panels, destroying our visual impacts, changing our ecosystems for years will have long term consequences on health and wellbeing which will be elaborated on later within the written representation. Planning Policy is written mainly around urban planning. The applicant should request input from Public Health (through a Health Impact Assessment), and the local NHS (Lincolnshire Integrated Care Board) who serve Lincolnshire, and really understand the issues we face in this County in areas such as Gainsborough and its surroundings. The Wales Health Impact Assessment Support Unit (WHIASU) provides good guidance for rural planning around health impacts. and specifically refers to framing around a definition of health and wellbeing that is holistic (physical and mental) that should include the social (wider) determinants of health.

There has been no attempt to engage with Lincolnshire Public Health and NHS Lincolnshire to understand the possible Health and Wellbeing impacts this scheme will have on the surrounding areas and Gainsborough its nearest town. There might be health issues in the construction and decommissioning phase as identified by the applicant, however the applicant fails to recognise the significant impact it will have to the communities over the forty-year period (operators).

There is insufficient data within these documents to assess the significant effects on human health and wellbeing. The 2021 Census data was published in the Autumn, and other sources of data such as PHE fingertips could have provided further evidence to support this document.

The study area identified within the document, aimed to look at the direct and indirect impacts within Bassetlaw and West Lindsey. For the purpose of our written representation,

the assessment impact in Nottinghamshire (spared of land use for panels) will not be discussed, however, we will focus on the Lincolnshire impact (100% panel land use). The study area has excluded to reference the town of Gainsborough where 2 wards (Gainsborough SW and Gainsborough East) have some of the worst deprivation in the County. It does not contextualise the cumulative impact this scheme will have with the other proposed NSIP's schemes planned. This will need to be taken into consideration, as health and socio economics are inherently linked. In Gainsborough, four of the LSOA's (Local Authorities and Lower Super Output Areas) are within the top 10% most deprived LSOA's in England. A LSOA is a geographic area where the populations are between a 1000 and 3000. The Director of Public Health report 2022 "The Diverse Communities of Greater Lincolnshire" designated Gainsborough as one of the three urban industrial centres in Lincolnshire. Urban areas tend to have strong pockets of employment as opposed to the urban industrial centres where there are higher levels of economic inactivity and low social mobility. These areas tend to have a younger than average age profile, with over 60% of the population aged under 50 years and almost a quarter under 19 years of age. The article states that within these urban industrialised centres "inequalities in health life expectancy are stark". Given this, we are surprised that Gainsborough town is not highlighted in the applicants submission.

Ward	Population	IMD (Index of multiple deprivation)
Gainsborough SW	5213	40.2%
Gainsborough East	7357	51.2%
Trent PCN	39923	24.7%
Lincolnshire	800000	15.5%

By population breakdown, Trent Care Primary Care Network (this is the Primary Care Network that covers the study area), has 37.5% in the most deprived quintile compared to only 15.5% in Lincolnshire overall. In this quintile, this is the second highest in Lincolnshire. The expected population growth in Trent Care PCN is 3.1% by 2025, and 6.6% by 2035. In the older population 65+, there is a predicted increase of 45.7%, and the over 85+ by 117%.

We believe this scheme (including the others) has been strategically placed in this area which has significant deprivation. We argue that areas of deprivation are targeted for these developments because of an easier acceptance. Two papers written for the energy sector "identify that solar farms are 15% more likely to be approved in more socially and economically deprived areas" and that "demographic variables such as social deprivation can also influence the extent to which residents take action on renewable energy projects proposed in their local area; communities with higher social capital are more likely to engage in official planning processes due to their higher capacity, agency and access to networks". Is this bias towards areas of deprivation being selected because of the ease of approving them and because of less wealth in the area to object against the projects. We believe this is the

case and needs further explanation. Not referencing Gainsborough town is deliberately misleading.

The only qualitative data they referenced is outdated ONS data from 2011 (Self-Assessment of Health, Self-Assessment of Long-Term Health or Disability). In fact, there is no satisfactory qualitative assessment within this document e.g., how it makes us feel emotionally, physically, and mentally. We would suggest such feedback, but this would require an informative approach to ensure well-balanced feedback. We would expect this survey to capture the human needs of freedom, understanding, equity and fairness, security and of course mental and physical health. It should include the determinants of wellbeing, that of personal value, our emotions and intelligence, social support, community involvement, friends and family, social relationships, and liveable environments. In that way we gather information on what we are about. This should have been the qualitative data assessed by the applicant to evaluate our opinions around this scheme and the others planned. Wellbeing is subjective and about quality of life.

It is a known fact that people in rural communities tend to be healthier than urban, and that people in rural areas tend to be older. They have a higher life expectancy and a lower number of potential years of life lost (PYLL) from cancers, coronary heart disease and stroke. However, these will present when people reach a very much older age. This can be attributed to the quality-of-life people in rural communities live by, where social cohesion, rural networks, lifestyle factors and the environment, all create a healthy way of life. However, young adults tend to migrate out of the countryside for further education to the larger cities and towns, whereas older adults (some with children) tend to move in. Therefore, rural communities tend to have above average middle-aged and older people. There is a concern that if our environment is altered (industrialised farms with solar panels), both this scheme and the cumulative impact of others stretching from Saxilby to above Gainsborough, will have the effect to possibly drive more younger people out (outward migration) leaving a more vulnerable older population. This would increase the risk of social isolation and loneliness due to networks breaking down. The consequences of this would be on social care, which is mainly supported by a younger population. A recent Defra article "Delivering for rural England – the second report on rural proofing" (April 2022), states clearly there are concerns for health and social care needs in rural areas, because of the disparity of an increased older population in rural areas compared to urban. It also recognises that it is becoming more difficult to recruit healthcare professionals to work in rural areas. Who will look after the older population, the unpaid carer? We already have 11.1% unpaid carers in this area (2017). Our healthcare system is already overstretched and this will place further demands on workforce recruitment. In Chapter 18, point 18.5.30 references this as a shortfall in population in their 20's and 30's within the Local Impact area due to a possible "brain drain" as young professions seek to find employment and better quality of life outside the Local Impact area. This substantiates our concern around older people and the potential risk to social care.

When we look at physical health, it is important to obtain local Quality Outcome Framework (QOF) data to understand the impacts that this and the other schemes might pose to health

outcomes and wellbeing e.g. QOF data from NHS digital shows that there is a higher modelled prevalence of Chronic Obstructive Airways disease (chest disease) in the Gainsborough area. This would highlight disease prevalence e.g. cardiovascular, respiratory, musculoskeletal conditions, diabetes, chronic kidney disease, cancer incidence, obesity as well as mental health. Data from this area in many cases shows significant increase to the England average e.g. Stroke, Cardiovascular disease and COPD. ONS data from 2011 showed in the Gainsborough and surrounding areas 20.7% of people with a limiting long-term illness or disability. In this area, there is a higher premature mortality rate than the Lincolnshire rate, +/- 973 deaths per 100000 patients which is the third highest in Lincolnshire and higher than the Lincolnshire average. The higher the deprivation equates to an increase in multimorbidity.

In the 25-year environment plan, it states clearly that “the natural environment, resident or visitor, improves our mental health and feelings of wellbeing by reducing stress, fatigue, anxiety and depression”. It even includes an ambition to explore the potential offered by environmental therapies and the benefits of nature. The WHO recognises that depression is one of the leading causes of illness and disability among adolescents and adults. They also state that mental health illness will become a major issue globally over the next 20-30 years. The Lincolnshire Joint Strategic Needs Assessment, has shown that there will be a predicted increase in depression in the 65+. The ONS (via NOMIS) showed the mortality rate (per 100,000 population) due to mental health conditions (2017) in Lincolnshire to be above the national average. Our depression rates in Lincolnshire are above average at 10%, this compares to 9% nationally. As part of the 2017 Joint Strategic Needs Assessment (JNSA) listening event held in Gainsborough town, mental health in adults was identified as one of the top 5 priorities. In fact, depressive disorders are the second top cause of years lived with disability for adults in Lincolnshire (Global Burden of Disease). Changing our environment has the potential to further increase depression rates, because those who live in the countryside, many out of choice, do so to gain benefit to their mental health. The link between green space and health outcomes has been well researched and validated. From the PHE paper Improving Access to green space: A new review for 2020, exposure to green space has huge benefit to physical and mental health, which in turn improves health outcomes with reduced mortality, stroke, coronary heart disease as well as reducing stress and decline in cognitive function (dementia). There is huge benefit in reduction of depression, anxiety, and fatigue in greener environments, however the paper points out the beneficial effects are greatest for socioeconomically disadvantaged groups in improving mental wellbeing. Something we should think about for Gainsborough town and its use of rural surroundings to provide this.

Furthermore, it is well recognised that there is poor mental health in farming communities. In the UK there is a high suicidal rate amongst farmers, and the impact of this and these developments needs to be fully recognised as a possible impact on the farmers in the area that farm to make a living and are let down by those who have opted to place solar panels on their fields. This creates inequality between farmers and could lead to a health inequality e.g. long-term mental health.

More concerning is the number of people at the open forum listening event with the public who expressed concerns at how this and other schemes would affect their mental health. Their recreational space is the wide-open countryside and its visual affect it has on them. Creating new village recreational facilities will not compensate. It states in Chapter 21 point 21.5.16 that these factors have been addressed! Please explain how? Point 21.5.42 talks about outdoor recreation centres for adults and youths are not expected to be significant. We think the author does not understand rural communities. We are surrounded by open countryside, which is our recreational space. Country lanes are our cycle paths.

To counter balance this, there is growing evidence of the social benefits of forestry and woodlands. This is particularly important as an environment for improving health and wellbeing. By creating forests and woodlands on the peripheries of towns and cities, creating shaded areas could help to manage the intense “heat islands” in urban areas where people could go out and cool down if extreme heat, due to climate change, occurs. Also, trees are natural, and serve the purpose of “carbon sinks”. Local forests around Lincoln have served as therapeutic places to help improve mental health patients’ (e.g. Hill Holt Woods which provides a nature based therapeutic service). From the Defra article “Delivering for rural England – the second report on rural proofing” (April 2022), it was interesting to note under wellbeing in rural areas, that the Government is investing £ 5,8 million through a Green Social Prescribing Programme introduced to prevent and tackle mental health issues, through engagement in nature-based activities. The largest solar farm in the world is Bhadla Solar Park in India (14,000 acres). This has been strategically placed in a desert with no human inhabitants around it. The cumulative size of all four proposed schemes from Saxilby to above Gainsborough, makes it one of the biggest in the world. We question why such a large scheme be placed around our communities without Public Health involvement from the start? A planned 5th scheme in Lincolnshire will now stretch even further to as far as Collingham near Newark.

Rural communities overall have very little exposure to noise. A separate written representation on this topic has been submitted. There is also very little light pollution. A recent session from the House of Lords described both artificial sources of light and noise as neglected pollutants. If both excessive or unwanted, they will have impacts on human health and wellbeing. It is presumed that light pollution has the potential to disrupt sleep. Our rural community has minimal light pollution, so perimeter lights around the scheme could potentially have a health and wellbeing impact, similar to noise. The applicant states in Chapter 21 point 21.4.2 that it is anticipated that no permanent visible lighting structures will be used on this scheme and that security lighting will be infrared, also with limited lighting associated with substations and occasional maintenance and emergency around the energy storage facility. Please clarify, as lighting with motion sensors would be a problem in wind, and animal perimeter fence movement.

In Chapter 18, point 18.8.20, we challenge the statement for all the reasons stated in our written representation that in the Local Impact area, general population health and wellbeing, disability and long-term health conditions are anticipated to be neutral effects.

Also, access to primary care is anticipated to be neutral. Currently, access to primary care in Lincolnshire remains a huge challenge, and with the influx of temporary workers for all the schemes this would equate to one extra General Practitioner required, which is in itself a challenge. This would put extra burden on an already stretched primary care. This would require extra resourcing. We have significant Lincolnshire workforce issues due to rurality.

Lastly, we request a special hearing to address health and wellbeing.

References:

- 1. What shapes community acceptance of large-scale solar farms? A case study of the UK's first 'nationally significant' solar farm Philippa Roddis a, Katy Roelich b, Katherine Tran c, Stephen Carver c, Martin Dallimer d, Guy Ziv**

- 2. The role of community acceptance in planning outcomes for onshore wind and solar farms: An energy justice analysis Philippa Roddisa,, Stephen Carvera, Martin Dallimerb, Paul Normana, Guy Ziv**

- 3.PHE Local Government Association Health and Wellbeing in rural areas Case Studies (2017)**

- 4. Green and Blue Spaces and Mental Health New Evidence and Perspectives for Action WHO Global Office for Europe (2021)**

- 5. H M Government A Green Future: Our 25 Year Plan to Improve the Environment (Chapter 3) (2018)**

- 6. WHIASU Quality Assurance review framework for HIA – Criteria Matrix WHIASU/Public Health Wales Green L, Parry Williams, Edmonds N (2017)**

- 7. Reimagining the rural: What's missing in UK rural policy? Centre for Rural economy Newcastle University**

8. Lincolnshire Joint Needs Assessment December 2018 (update)
9. Project Gainsborough Population Needs Analysis Data Pack (Draft VO-1) West Lincolnshire CCG Ann Johnson-Brown 17 October 2017
10. Delivering for rural England – the second report on rural proofing Department for environment, food and rural affairs April 2022
11. The diverse communities of Lincolnshire Director of Public Health report 2022
12. Lincolnshire Primary Care Network Alliance Annual Report 2020-21
13. NHS Lincolnshire Joint Forward Plan 2023-2028
14. Statistical Digest of Rural England August 2022 Edition Department for environment, food and rural affairs
15. Health Impact Assessment in spatial planning A guide for local authority public health and planning teams PHE October 2020
16. A tale of two country sides: Remote and rural health and medicine University of Central Lancashire updated January 2022
17. PHE: Improving access to greenspace A new review for 2020
18. The neglected pollutants: the effects of artificial light and noise on human health House of Lords Science and Technology Committee 2nd report of Session 2022-2023
19. Lincolnshire JSNA (Lincolnshire Health Intelligence Hub)