



Date: 19th June 2023

Dear Ms Curtis,

Thank you very much for allowing the public a restricted opportunity to consult on the free-go application DC/23/02118.

We understand this proposal is identical to the one which was previously refused by experienced Councillors (DC/20/05895) by a substantial majority vote (6 to refuse -1 to approve) for valid planning reasons. The reasons were: in order to protect the best and most versatile (BMV) land for the optimum purposes of agriculture; and to protect the landscape character and visual amenity of the "valued landscape forming part of the designated Special Landscape Area" for users of the public right of way, community, and tourists. In both respects, **the proposal was, and remains, contrary to the local plan as well as the National Planning Policy Framework (NPPF) and the Councillors evidently did not consider that there were any other material considerations that indicated that planning permission should be granted.**

The local plan still affords those same protections. As does the NPPF.

We also note that the refused application DC/20/05895 has been submitted and accepted for Appeal Inquiry by the Planning Inspectorate. Proceedings for the Appeal have already begun, the public have signed up to this process as a Rule 6 Party, and the Inquiry is scheduled for August. As this is so close, we ask that this free-go application be paused until after the Appeal Decision is published. We are informed that this is the approach Hertsmere Council took when Enso Energy submitted an appeal and free-go application at the same time with them. They are now waiting for the Appeal Decision to be published. The free go application does need to be determined, but there is no need to carelessly rush to do so.

All the same, we also wish to submit our comments on this application and the premature Officers Report now, and it is important to address the reasons for the resubmission of this application. We note that there is no covering letter from the Applicant and instead your email dated 15th May 2023 stated the following:

"Application DC/23/02118 is a 'free go' submission of DC/20/05895, being an identical application to that previously submitted to Mid Suffolk. My understanding is that ENSO are twin-tracking the application with the appeal (running the same proposal at the same time to the same or different determining authorities) to explore the potential for any different outcome given some changes in circumstances including the recent local elections and change of administration at Mid Suffolk, increasing number of appeals allowed for solar applications nationally and the publication of Powering Up Britain, etc."

And the Officers Report (which is clearly greatly rushed as there are so few consultee responses and the deadline for public comments is 23rd June, 9 days after your report was published, and 2 days after the Committee meeting on 21st June, thus falling short of your statutory duty to consider all responses in your recommendation):

"These changes include the publication of Powering Up Britain, including the Energy Security Plan, revised draft National Policy Statement (EN-1), revised draft National Policy Statement (EN-3) published 25th February 2023 and recovered appeal decision APP/C3240/W/22/3293667 (Telford, Shropshire) as well as an increasing number of allowed appeals for solar development."

Increasing number of appeals allowed for solar applications

The "increasing number of appeals allowed for solar applications" is an abstract argument. With the surge in planning applications for solar installations over recent years it is logical that there would equally be a surge in Council refusals,

subsequent appeals, and subsequent granting of appeals. But it is also logical that there would **also be a surge in dismissed appeals.**

As stated by the Chief Planning Officer in the Babergh Planning Committee Meeting on 8th February 2023 for the cross-boundary application for the original of this application, Councillors should consider this application and only this application, and he led Councillors to ignore other appeals because they don't know anything about the site or the policies of that Council in that area at that time in history. **BOTH of the Telford & Wrekin appeals that the applicant and officers report draws support from is currently being challenged on legal grounds by way of Judicial Review. Relying on these appeals is premature.**

For balance the Officers Report should have also drawn on recently refused appeals, but instead is biased towards only approvals.

The Officers Report also tries to draw on support from an allowed appeal in Bramley, Hampshire. The situation in Shropshire and Hampshire is different to the situation here in Suffolk. Suffolk is already a net exporter of low carbon energy from offshore wind and nuclear. And this is without the additional proposals of offshore and Sizewell C still to be built. This is evidenced by National Grid's proposals to build additional transmission lines to take the power from East Anglia to the rest of the country. Shropshire and Hampshire are not. In fact, with solar being more carbon intensive than offshore wind and nuclear, this proposal risks reducing Suffolk's existing contribution to Net Zero.

To quote the recent Alfreton appeal for a solar farm¹ which was dismissed the Planning Inspector stated *"The need for renewable or low carbon energy does not automatically override environmental protections. I have taken into account all the other matters raised including the proximity of a suitable grid connection, but in the overall balance, the harm caused to landscape character and visual amenity is decisive. The adverse impacts cannot be addressed satisfactorily on a site of this size and character, and the suggested planting mitigation measures would be seriously out of keeping and would largely worsen, rather than mitigate for the landscape and visual impact. Objectors point out that the panels could simply be replaced after 40 years but it is difficult to predict whether national energy strategy will still require large solar installations in 2062. I consider that 40 years is a very significant period in people's lives during which the development would seriously detract from landscape character and visual amenity."*

The claimed reason for approval relating to appeals cannot be relied upon and should not constitute a reason for a different decision.

Publication of Powering Up Britain, etc.

Powering Up Britain was published in March 2023 as the manifesto of the new Department for Energy Security and Net Zero. Solar PV seems to take much of a backseat throughout the document, with a more defined mention on page 20 as follows:

"Government seeks large scale solar deployment across the UK, looking for development mainly on brownfield, industrial and low/medium grade agricultural land."

It is not clear what low and medium grade refers to since those are not terms used within Natural England guidance². But it would seem to relate to the very poor, poor, and moderate levels of grades 5, 4, and 3b. This is in line with existing policy, and contrary to the proposed use of "very good quality" grade 2 BMV land and "good quality" grade 3a BMV land by this application.

Sadly, we also feel obliged to point out that **at absolutely no point in the entire Powering Up Britain document does it indicate that the local development plan, environmental concerns, and the concerns of the local community are to be overridden.**

The **new draft NPPF and NPS are just that, drafts.** And since **the NPS relates to NSIPs, of which this application is not,** the only relevant paragraph in NPS EN-3 is where it clarifies the threshold for solar development to be classed as an NSIP. However, again, we feel obliged to point out that **neither of the drafts indicate in any way that they will override the local development plan, environmental concerns, the concerns of the local community, nor do they**

¹ Appeal Reference APP/M1005/W/22/3299953

² <https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land#:~:text=Land%20capable%20of%20producing%20moderate,a%20wider%20range%20of%20crops>

indicate a change in policy towards the previous reasons for refusal. Nor do any other publications we have come across.

Recent elections and change of administration

Planning applications must be decided according to the local development plan, unless material considerations indicate otherwise. A change of administration is not a material consideration in the planning balance.

This is an identical application, and the planning rules and guidance remain unchanged. The only change is the political makeup of the Council and the Planning Committee. **If the Planning Officer ignores those reasons for refusal, and the new Planning Committee decide to override a legitimate, substantial majority decision that was made for valid planning reasons, then it will clearly be due to pre-determined bias and/or political reasons and not a change in planning policy or substantial change in the application. As such, such a dramatic change of decision on political and not planning grounds would endanger all future planning decisions as being tainted by political rather than planning considerations.**

Other reasons for refusal

For completeness, we set out the material planning considerations that we consider to be strong reasons for refusal in the report following on from this letter. This includes new information and updated information from our previous objections to DC/20/05895 & DC/21/00060.

We have removed information relating to the old northern parcel of the site, as it seems it is no longer part of the proposal. However, the documentation submitted is confusing as so much includes it still. If the northern parcel is part of this application still then our previous objections to that on DC/20/05895 & DC/21/00060 still stand.

Conclusion

We conclude that no new material considerations have arisen since the previous refusal that would legitimately warrant a change in decision made by Councillors on 15th February 2023.

The proposed development by virtue of the scale and visual prominence, especially from the footpaths through, bounding and accessing the site and from the village of Flowton and its Grade I listed church, would result in an industrialisation of a large area of the less developed and unspoilt countryside resulting in loss and major alteration to key elements and features of the landscape, impacting the intrinsic character and beauty of the countryside, introducing new development that is uncharacteristic of the surrounding landscape and designated Special Landscape Area and representing an alien and discordant feature within the arable setting that would have a significant adverse impact on the enjoyment of the countryside by users of the public rights of way and on the availability of the BMV graded agricultural land for its optimum purposes of arable agriculture.

The local plan states "The environmental and landscape sensitivity of the district means that large-scale, onshore renewable energy generation will often be difficult to accommodate in the landscape in an acceptable way"

The application continues to be contrary to the local development plan and other material considerations, and CARE Suffolk **STRONGLY OBJECT** to application DC/23/02118. We ask that the application be **REFUSED** by Mid Suffolk District Council.

Yours sincerely,



Samantha Main

Chair

Report for CARE Suffolk
Mid-Suffolk Application DC/23/02118

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1. Summary

The application continues to:

- fail to enhance the designated Gipping Valley Special Landscape Area, which it fully sits in;
- conflict with the characteristics of the Ancient Plateau Clayland and Rolling Valley Farmlands Landscape Characters of the area;
- be visible over wide extensive views due to the open undulating topography, despite mature hedgerows and tree lines already in place;
- be significant in terms of cumulative effects, both in combination and sequential to other proposed developments in the area, with no sequential effects assessed in the documentation;
- be harmful to the sequential impact of users of National Cycle Route 48, which travels through and past three neighbouring solar farm proposals;
- propose taking over 75% of productive very good quality (grade 2) and good quality (grade 3a) BMV farmland out of food production for over 40 years, for which there is no evidence the construction phase would not harm the ALC grading of, despite evidence that even temporary hardstanding harms the soil;
- be in view of and from, and harmful to the setting of, St Mary's Church Flowton a Grade 1 listed building;
- be in view of and from Flowton Hall, a non-designated heritage asset;
- omit any assessment of sequential cumulative effects as required in an ES;
- omit any alternative site studies as required in an ES;
- be utterly unrealistic in regards to transport and highways predictions and safety (for example nearby DC/21/05468 for a battery storage and substation predicts 487 heavy vehicle movements in total, but the CTMP for this application predicts a total of 480 heavy vehicle movements to construct the same PLUS an entire 30MW of solar panels and access tracks. This is not including worker movements during construction);
- ignore PROW users, such as walkers and horse riders for glint & glare and noise assessment, who would be the most significantly impacted because the PROWs are within and alongside the proposal;
- demonstrate inconsistencies within the noise survey;
- miss updated important wildlife surveys alongside other wildlife concerns, as well as relies on now out of date wildlife surveys according to Hamish Jackson – Ecological Consultant at Place Services and CIEEM Advice Appendix 1 & 2);
- be lacking any acknowledgement and assessment of RAF Wattisham as a helicopter airbase and the glint and glare effect on the military helicopters;
- propose to more than double the greenfield runoff rate (from 0.58l/s to 1.4l/s) for the battery storage and substation area, and feed this into a watercourse which is already a high flood risk area, therefore increasing the flood risk elsewhere;
- raise concerns of safety regarding the battery storage units, namely the lack of water provision and hazardous materials entering the environment (through the air and soil) during a fire event;
- and as a result of much of this, it is incomplete in its requirements under EIA Regulations.

We also wish to note that many of the documents submitted are old versions which describe and assess the original scheme. This has caused much confusion amongst some members of our group, who are concerned the original fields 1, 2, and 3 are back. This confusion is also reflected in some of the public comments that have already been submitted by the public. We sincerely hope this is not the case, and the proposal only includes fields 4, 5, and 6.

2. Local Validation Lists

The following is taken from the Babergh and Mid Suffolk Council website³:

For a planning application to be valid, there are statutory and local information requirements that apply to each application type. These are commonly known as the national and local lists.

National requirements apply to all planning applications in England. Local requirements are set by the local planning authority, with regard to local policies and constraints.

Babergh and Mid Suffolk's local validation lists (including the national validation requirements) were adopted on 23 January 2020. In March 2022, the lists were reviewed - which resulted in some minor revisions. There was a further six week consultation which ended in January 2023.

Subsequent to the consultation, the local lists were updated in April 2023. This was prior to the submission of this free-go application. There are two lists. Part Two is for Major and Minor Development and is relevant in the validation of this application.

Item 22 states:

22. Manufacturers Specification(s)

- *A manufacturers specification provides details of a specified product that could be involved with the proposal. This provides valuable information on the plant/product to enable material planning judgement on safety, noise and disturbance and operation criteria that may be significant in understanding the extent of benefit or harm of the proposed development.*
- *A manufacturers specification will be required for the installation of any of the following:*
 - o *Air conditioning units*
 - o *Air Source Heat Pumps (Shall require a full acoustic assessment relating to the air source heat pump noise from the site shall be undertaken in accordance with "MCS 020 - MCS Planning Standards for permitted development installations of wind turbines and air source heat pumps on domestic premises")*
 - o *Electrical goods*
 - o *Lighting*
 - o *Machinery*
 - o *Materials*
 - o *Satellites dishes*
 - o *Solar panels*
 - o *Speakers*
 - o *Ventilation/extraction systems*
 - o *Wind turbines*
 - o *Caravans*
 - o *Shepherd's Huts*
- *The specification should include:*
 - o *Photo of product*
 - o *Dimensions/sizes*
 - o *Technical information about the product, including noise, performance*

This was also a requirement of the previously refused application under the local lists adopted on 23rd January 2020.

Given the importance that the Council appears to place on these documents in determining material planning considerations (i.e. the "valuable information"), and the same considerations that the public have demonstrated to be important to them throughout the consultation process of the previously refused application DC/20/05895, it is bewildering why officers have validated the application without these documents.

³ <https://www.midsuffolk.gov.uk/planning/development-management/apply-for-planning-permission/national-and-local-validation-requirements/>

3. Landscape

Proposal

1. The application is for a solar farm of 87 acres crossing the District boundaries of Mid Suffolk and Babergh councils, and the Parish boundaries of Flowton, Burstall, and Bramford for a duration of 40 years, plus construction and decommissioning. The proposal would consist of an unknown number of fixed solar panels mounted onto a metal framework secured by posts pile driven into the ground. These panels would be positioned in orderly rows about 3-6m apart depending on the ground conditions, with the minimum height of the panels being 0.8m from the ground, and the upper edge being up to 3m from the ground.
2. The revised site consists of fields 4, 6, and 6 in one parcel of land, which straddles the parish borders of Flowton, Burstall, and Bramford, and the district border of Babergh and Mid Suffolk.
3. There would be 6 large green metal shipping containers dotted around the site to contain inverters and transformers. Drawing B4.0 shows each container measuring about 12.2m long by 2.4m wide and about 2.9m high. They would sit mounted up to 0.6m off the ground depending on ground conditions, for a total maximum height of 3.5m above an aggregate base.
4. There would be a further 20 large metal shipping containers uniformly arranged comprising batteries for a battery storage system. Drawing BD1-01-P02 shows these would be in an area of approximately 2800sqm. Drawing B12.0 shows each container measuring about 12.2m long by 2.4m wide and about 2.9m high. There is little information about the construction of this area, however the applicant has advised the ground underneath will be made up of 300mm deep of permeable gravel, with the containers raised an unspecified height from the ground. We understand the battery storage area would be enclosed with 2.4m high welded steel mesh fencing to SR2 security rating as per drawing BD1-01-P14.
5. It is understood from the noise report that there would be 4 externally mounted HVAC units per container, however these are not shown on the drawings so the height and or width of the containers would likely be larger.
6. There would be a substation and other ancillary buildings situated adjacent to the battery storage area. Drawing BD1-01-P02 shows this would be in an area approximately 1350sqm. There is little information about the construction of this area, and no mention of any mounting above ground level nor the construction of the foundation. **There is confusion about the fencing in of this area, as ES paragraph 3.3 states it would be enclosed but the site plan does not show this (drawing BD1-01-P02).**
7. Stretches of gravel track would be constructed permanently on the site and the vehicle access would be from Church Hill, Burstall.
8. Drawing BR6.0 Rev 2 shows a 2.0m high deer fence, with CCTV cameras every 50m on posts up to 2.4m high as per drawing BR11.0.
9. The solar arrays would be set back from the edge of the site by a buffer strip of varying widths. The site would be sown with a grassland mix after construction, which would be managed for the lifetime of the development. Some of the areas outside the solar panels would be sown with a grassland and/or wildflower mix.
10. Some hedging and trees alongside PRoWs and field boundaries would be introduced, but not along all of the publicly accessible routes including the proposed new permissive path which would have no screening from the fencing nor solar arrays.

Relevant Policy

National Policy

11. The NPPF p.130 states *"Planning policies and decisions should ensure that developments: a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development; b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping; c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities)..."*
12. The NPPF p.155 states *"To help increase the use and supply of renewable and low carbon energy and heat, plans should: a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);..."*
13. The NPPF p.158 states *"When determining planning applications for renewable and low carbon development, local planning authorities should: a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and b) approve the application if its impacts are (or can be made) acceptable..."*

14. The NPPF p. 174 states that *“Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;...”*
15. It is clear from these policies that, whilst renewable energy development is supported, it is not done so where there would be adverse impacts on the landscape and location it is sited in.
16. This was further reinforced, with a specific mention of large-scale solar development such as this proposal, in the House of Commons oral statement of 29 January 2014 when the Planning Minister, Nick Boles, stated *“The policies in the national planning policy framework are clear that there is no excuse for putting solar farms in the wrong places. The framework is clear that applications for renewable energy development, such as solar farms, should be approved only if the impact, including the impact on the landscape – the visual and the cumulative impact – is or can be made acceptable. That is a very high test.”*
17. Further guidance is given in Planning Policy Guidance at paragraph ID 5-013-20150327 which states *“The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively.”*
18. The UK Solar PV Strategy Part 1 of October 2013 sets out four guiding principles for solar PV, the third of which states, amongst other things, that solar PV should be *“appropriately sited, give proper weight to environmental considerations such as landscape and visual impact.”* Following publication of this strategy, the Minister for Energy and Climate Change, Greg Barker, produced a letter dated 1 November 2013 indicating that *“...inappropriately sited solar PV is something that I take extremely seriously and am determined to crack down on.”*
19. The Solar Trade Association also maintains a list of “10 Commitments” for good solar farm development. These include *“2. We will be sensitive to nationally and locally protected landscapes and nature conservation areas, and we welcome opportunities to enhance the ecological value of the land. 3. We will minimise visual impact where possible and maintain appropriate screening throughout the lifetime of the project managed through a Land Management and/or Ecology plan.”* It further states in the notes that *“Land selected should aim to avoid affecting the visual amenity of landscapes, maintaining their natural beauty, and should be predominantly flat, well screened by hedges, tree lines, etc., and not unduly impact upon nearby domestic properties or roads.”*

Local Policy

20. Local policies and development plans further support the national policy outlined above.
21. The Mid Suffolk Local Plan 1998 policy GP1 states *“Proposals should maintain or enhance the character and appearance of their surroundings, and respect the scale and density of surrounding development;..”*
22. Further it states at p.2.4.3 *“The guiding principle in the countryside is that development should benefit the rural economy and maintain or enhance the environment. New development in rural areas should be sensitively related to existing settlement patterns and respect the historic, wildlife and landscape character of its surroundings.”*
23. Further policy E10 states *“Applications for new industrial and commercial development in the countryside will not be permitted unless an overriding need to be located away from towns and villages can be demonstrated. Where such need can be demonstrated applications will be considered on their merits having regard to the following:- ... the impact of the development on the surrounding countryside, including its landscape and wildlife features;...”*
24. MSDC Core Strategy 2008 states its core strategies as:
 - a. *“SO1: To protect, manage, enhance and restore the landscape, biodiversity and geodiversity of the District.”*
 - b. *“SO4: To protect, manage, enhance and restore the historic heritage / environment and the unique character and identity of the towns and villages by ensuring that new developments are appropriate in terms of scale and location in the context of settlement form and character.”*
 - c. *“SO12: Promote high quality, sustainable tourism.”*
25. Further policy CS5 states *“The Council will protect and conserve landscape qualities taking into account the natural environment and the historical dimension of the landscape as a whole rather than concentrating solely on selected areas, protecting the District's most important components and encourage development that is consistent with conserving its overall character.”*
26. It writes further at p.3.103 for The Rural Economy where it states *“It is a key principle for sustainable development in rural areas that development in the open countryside away from settlements should be strictly controlled with the aim of protecting the countryside for the sake of its intrinsic character and beauty. The diversity of our landscape, heritage and wildlife contributes to the attractiveness of the area as a location to do business and as a source of tourist interest, which can be enjoyed by all.”*
27. The MSDC Core Strategy Focused Review 2012 states in p.3.7 *“The environmental and landscape sensitivity of the district means that large-scale, on-shore renewable energy generation will often be difficult to accommodate in the*

landscape in an acceptable way. The attractions of the countryside for tourism for the district, an important sector of the local economy, mean that maintaining its environmental qualities while promoting access is essential.”

28. The emerging Joint Local Plan policy LP19.1 states “To protect and enhance landscape character development must: a. Integrate positively with the existing landscape character of the area and reinforce the local distinctiveness and identity of individual settlements.”

Special Landscape Area Policy

29. The Mid Suffolk Local Plan maps show that the entire site is located within the Gipping Valley Special Landscape Area (SLA).
30. The MSDC Plan identifies that the SLA is afforded this protection because of “areas of countryside where undulating topography and natural vegetation, particularly broadleaved woodland, combine to produce an area of special landscape quality and character.”
31. At p.2.4.7 it states “Traditional features, such as a pattern of small fields formed by hedges, ditches and ponds and interspersed with ancient woodland, give many parts of the District’s landscape an interest and variety that is worthy of conserving in its own right. It gives a diversity of habitat that is essential for wildlife. Where these features combine with an interesting topography or as part of a river valley, they create a special quality of landscape in direct contrast to the more intensively farmed areas where trees and hedgerows have been removed and the countryside has become featureless.”
32. Policy CL2 of the Local Plan 1998 saved policies states “Within Special Landscape Areas, particular care will be taken to safeguard landscape quality, and where development does occur it should be sensitively designed, with high standards of layout, materials and landscaping.”
33. The supporting paragraph 2.4.9 to policy CL2 states “Wherever possible the District Planning Authority expects major utility installations, particularly power lines, to be located away from Special Landscape Areas because of their visual intrusion. Any proposals put forward by the utility companies eg. gas, water and electricity suppliers, will need to demonstrate that more environmentally acceptable sites, routes or systems are not available. The feasibility of undergrounding power lines should be assessed taking a balanced view of the archaeological and ecological impact of undergrounding.”
34. In the Babergh District Council Action Plan 2004 on paragraph 6.20 Gipping Valley it recognised that “The impact of new development in this area is a particular issue in this locality...”
35. The emerging Joint Local Plan maps no longer include this designation but do show that the site is within the new ‘Recreational Disturbance Avoidance and Mitigation Strategy’ (RAMS) protection area for the Suffolk Coast.
36. However policy LP19 in the emerging Joint Local Plan continues to provide protection, stating “To protect and enhance landscape character development must:
- Integrate positively with the existing landscape character of the area and reinforce the local distinctiveness and identity of individual settlements.*
 - Proposals must be sensitive to their landscape and visual amenity impacts (including on dark skies and tranquil areas); subject to siting, design, lighting, use of materials and colour, along with the associated mitigation measures;*
 - Enhance and protect landscape character and values and heritage assets such as; locally characteristic landscape features, for example by use of materials which complement the local individual landscape character, archaeological and historic patterns of settlement and land use and designations; being demonstrably informed by local guidance, in particular the Council’s Joint Landscape Guidance, the Suffolk Landscape Character Assessment and Settlement Sensitivity Assessment.*
 - Consider the topographical cumulative impact on landscape sensitivity.”*

Baseline

37. The proposed site sprawls across three parishes of Flowton, Burstall, and Bramford. The development would be visible from residential and public areas within all three parishes.
38. Bramford is a core village⁴ and in the emerging Joint Local Plan is described as a fringe settlement of Ipswich. The village has been under severe encroachment from the town in recent years and subject to large housing increases, evidencing the change from core village to fringe settlement. It includes a number of scattered dwellings comprised under “Bramford Tye” into the rural countryside which has been well preserved from development.
39. The remaining settlements are dispersed across the landscape. Each parish contains a main central settlement, with the addition of scattered dwellings and farmsteads in the wider areas of the parishes. The remainder of the

⁴ Mid Suffolk Local Plan 1988

parishes is rural countryside in agricultural use, predominantly arable with some pasture around the valley floor.

The site area is of arable agricultural use, with some areas for wildlife under an agricultural stewardship scheme, which is funded by taxpayer money. There are distinct areas of unspoilt open countryside around each settlement.

40. The topography of the area is of sloping valley sides dissected by small river valleys, and this allows for “*extensive panoramic views*”⁵ out across the countryside, especially from the many PRoWs that cross the fields. For example Hill Farm, Burstall can be very prominently seen on the hilltop from St Mary’s Church, Flowton.
41. There are several PRoWs that will be partially or fully impacted by the proposal. One of these are bridleways, the rest footpaths. There is one further existing permitted footpath, and a proposed new permitted footpath.
42. Fields 4, 5 & 6 are on a westerly facing valley slope. This is quite a prominent slope falling around 30m from top to bottom.

Below photo taken from the National Cycle Route 48 along Flowton Road, looking at fields 4, 5 & 6.



43. The Suffolk Landscape Character Assessment (SLCA) describes the site as both Rolling Valley Farmlands and Ancient Plateau Claylands. Both landscape characteristics are of open undulating countryside with sloping valley sides created by small river valleys, with areas of plateau, with “*...blocks of ancient woodland being a consistent feature. This woodland frames the valleys and is often present on the upper slopes.*” These features are very evident in the area.
44. There are few mentions of development, and of what there is mentioned it is of a “*dispersed settlement pattern of loosely clustered villages, hamlets and isolated farmsteads of medieval origin*”⁶ which was shaped by the “*agricultural prosperity*”⁷ of the area. Further “*much of this landscape retains its historic patterns, of both the agricultural and built environment.*”⁸ The below image shows the dispersed nature of existing settlement patterns.

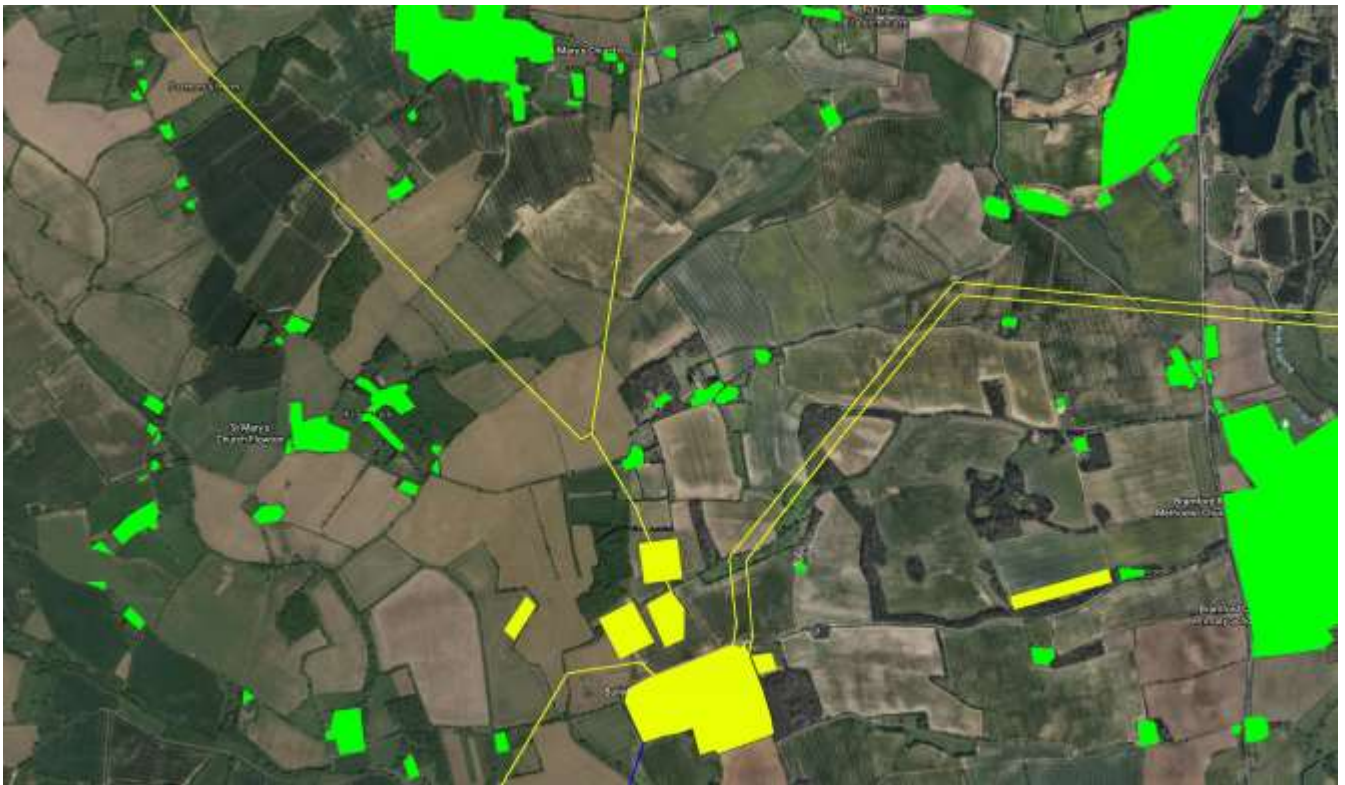
Below photo shows existing residential, agricultural and business development in green. Built and approved industrial energy infrastructure is in yellow.

⁵ Document R007 LVIA paragraph 6.7.55

⁶ Ancient Plateau Claylands

⁷ Rolling Valley Farmlands

⁸ Rolling Valley Farmlands



45. In terms of development guidance it states in the Rolling Valley Farmlands Guidance Note that *“In these valley side landscapes, the visual impact of new vertical elements is increased by the landform. Therefore new buildings are likely to have a significant impact on both the character and visual amenity of valley floor and valley side landscape types. The setting of specific features and elements of these landscapes, such as small-scale enclosure patterns or historic buildings and monuments, can also be significantly damaged. The majority of development will, to some degree, be subject to this problem. Therefore, it is essential to manage this issue effectively, taking every opportunity at the earliest stages of the development of the proposal to modify and improve it or to be clear with the applicant that the impact of the proposal is unacceptable or may be at a high risk of refusal due to landscape impacts.”*
46. In the Ancient Plateau Claylands it states the aim *“To retain, enhance and restore the distinctive landscape and settlement character. In particular strengthening the woodland, parkland and prairie landscape with appropriate planting and safeguarding the dispersed settlement pattern.”*

Analysis

Landscape Character

47. It is clear from both the descriptions of the landscape character and visiting the site that it is deeply rural and tranquil in nature. Given the unspoilt nature of the site and area around it, it would be of high sensitivity to uncharacteristic development.
48. The hedging proposed by the applicant would mitigate its impact on the landscape. However, the proposed hedging would take time to mature (discussed more in the Ecology section) and would not completely screen the development, particularly in the winter months. Even when the hedge was in full leaf, there would still be a perception of the development beyond.
49. Hedge screening along the site boundaries would reduce the site’s openness and create a sense of enclosure. As a consequence it would detract from the character of the immediate area by blocking views of the ancient woodland, wider landscape, and the historic landscape including St Mary’s Church in Flowton.
50. Furthermore, due to the nature of the undulating topography and openness of the surrounding area, views into the site would remain. We do not agree with the applicant’s assessment of a low adverse or neutral impact on the plateau landscape character. Even the applicant states *“the proposed vegetation would not compensate for the loss of the open aspect, which is distinctive to plateau landscapes.”*⁹
51. Whilst the proposal is described as temporary in nature, 40 years is nonetheless a long time. Given that the applicant states that they may apply to extend its duration towards the end of the 40 years, the possibility of it

⁹ Document ES Chapter 5 Landscape and Visual Impact Assessment Paragraph 5.249

being permanent cannot be ruled out. And for the duration of this development, there would be conspicuous and incongruous regimented rows of metal and glass over the site which would represent an industrial development in the open countryside. With the development as a whole, the structures would create a significant industrial urban feeling in the landscape and detract from the landscape character of the site and surrounding areas.

52. The site would connect the village of Flowton to Burstall with development. This would join the two villages together and not be in keeping with the current dispersed development pattern.
53. With respect to noise, the evidence suggests that the development would generate low levels of noise beyond the site boundary, with the potential for significant adverse effects along significant footpath PRoWs. This would have an eroding impact on the tranquillity of the immediate environment.
54. The development does not demonstrate that it would maintain or enhance the qualities of the Special Landscape Area, and the design and type of development would do it harm.
55. The development would be incongruous with the existing landscape character of the area. We believe that the proposal would result in an adverse impact on landscape character of major significance in the short term, gradually reducing to moderate significance over time. The development therefore fails to meet policy relating to landscape impacts, including the conditions related to policies on renewable energy generation.

Visual Amenity

56. Views of the site would be available from a significant number of public places, in particular the PRoWs that run through or next to the site. Most of these are footpaths, with one of them bridleways. Many of these PRoWs are well used as they provide circular walking routes, or important connecting routes between village the two villages.
57. Tye Lane and Flowton Road are also part of National Cycle Route 48.
58. Viewpoints along the footpaths between fields 5 & 6 would be of high sensitivity. The views are currently very open and rural in nature, which would change to an enclosed corridor. According to the methodology set out in the LVIA (Diagram 5.1) this would result in a magnitude of change of high, resulting in major significance reducing to major-moderate over time (Diagram 5.2). This is a significant adverse impact. This reduction would be based on the success of the mitigation planting along these routes, but we do not agree with the applicant's assessment that this would reduce to slight significance or neutral.
59. We understand that guidance points towards reinforcing the historic patterns of boundary lines. These boundaries appear to be clear already, but the applicant intends to introduce a new row of trees within field 5 that would create a new boundary line.¹⁰
60. For these reasons and those given above under "landscape character", we are not persuaded that the scale of impact from these viewpoints would reduce to much less than major-moderate in the medium to long term. Moving further away from the site, the scale of visual impacts would generally be considerably less and would not be extensive, though views into the site from the village of Flowton, St Marys Church in Flowton, and National Cycle Route 48 would ultimately remain due to the topography.
61. We believe that there would be a significant adverse impact on visual amenity and this is not supported in planning policy.

Cumulative Impact

62. A recent High Court judgement¹¹ on 18th February 2021 reaffirmed that the cumulative impact of energy developments must be taken into account during the decision-making process.
63. The area here is already under significant energy development pressure due to the location of the Bramford Substation, which in itself is 45.8 acres. The East Anglia One and East Anglia Three Substations are also in the area, as well as several smaller energy projects already approved.
64. In addition to the Enso Energy proposal there is another proposal by EDF Energy and Statkraft. Together these three proposals would join the area to the village of Bramford and ultimately the County Town of Ipswich.
65. Further, the applicant's contract with National Grid is for a two stage development:¹² the first stage is 49.9MW and the second is 7.1MW. The applicant has stated numerous times that they may come back for more. This demonstrates that the cumulative impact is potentially even greater than that of the map above, and questions their true intention of output with this first stage of development.
66. It was recently announced that, due to significant expected offshore and nuclear development, National Grid have proposed up to three new transmission connections in/out of Bramford Substation: two of these travel from Norwich to Tilbury, with Bramford in the middle; and one with Twinstead Tee, Essex.

¹⁰ Landscape and Ecology Enhancement Plan

¹¹ R (Pearce) v Secretary of State for Business, Energy and Industrial Strategy [2021] EWHC 326 (Admin)

¹² National Grid TEC Register 9th June 2023 for Bramford Green Limited

67. The development of this project would contribute significantly to the industrialisation of a rural agricultural area. It would not be in keeping with the landscape character of the area, it would cause substantial harm to a valued landscape, and it would adversely impact the visual amenity of the public.
68. In addition to this, Suffolk County Council are strongly advocating for undergrounding of the EA GREEN overhead line and pylon project through the Gipping Valley SLA¹³ and called for the recognition of this designation within the assessment.¹⁴ The proposed swathe for the EA GREEN project overlaps the proposed site of this planning application. BMSDC also showed concern for the SLA in its response to the same consultation. There is obviously not much point in protecting the SLA designation from the pylons, if the District Council go ahead and cover it with solar panels.
69. Furthermore, the National Grid TEC Register 9th June 2023 indicates additional industrial infrastructure with approved connections in the area: a 300MW BESS with Clearstone Energy; a 500MW BESS with Alcem; and a BESS of unknown capacity by Statkraft (in addition to the solar farm and BESS mentioned above which is connecting into the UKPN Distribution Network). There is also a solar farm with RNA Energy in the Burstall/Hintlesham area that would connect to the UKPN Distribution Network. All of this industrial development paints a dire picture of significant cumulative impact across all areas, not just landscape and visual impact, for this area and must be taken into consideration.
70. Precedent is a very real issue because previous decisions are material considerations in a planning decision. This can easily snowball into catastrophic cumulative impact and mass destruction of the countryside and environment.

Recent Decisions

71. We also wish to highlight the decision for application B/12/01132/FUL/NC to Babergh District Council. This was for the erection of three small wind turbines at Gate Farm, Flowton. The application was refused on the following grounds...
72. *"Having regard to the special landscape qualities of the area it is considered that the installation of three turbines in this location would be intrusive and would be detrimental to the local character of the Special Landscape Area and the wider countryside. It is considered that amendments could not be made to this proposal which would make the application acceptable in landscape terms."*
73. In the recent Alfreton appeal for a solar farm¹⁵ the Planning Inspector dismissed the appeal stating *"The need for renewable or low carbon energy does not automatically override environmental protections. I have taken into account all the other matters raised including the proximity of a suitable grid connection, but in the overall balance, the harm caused to landscape character and visual amenity is decisive. The adverse impacts cannot be addressed satisfactorily on a site of this size and character, and the suggested planting mitigation measures would be seriously out of keeping and would largely worsen, rather than mitigate for the landscape and visual impact. Objectors point out that the panels could simply be replaced after 40 years but it is difficult to predict whether national energy strategy will still require large solar installations in 2062. I consider that 40 years is a very significant period in people's lives during which the development would seriously detract from landscape character and visual amenity."*

Conclusion

74. The development fails to meet local and national policy previously listed. Whilst renewable energy is supported by planning policy, development must respect the landscape, and applications should only be approved if the impact is (or can be made) acceptable. We do not believe that the applicant has made those impacts acceptable, nor do we believe that they can be made acceptable. Furthermore, the threat of cumulative impact is indissmissible and if the Council were to allow the snowball to start, the avalanche would be intolerable for the area. The application should therefore be refused.

¹³ Paragraph 1.35 of the SCC response to the EA GREEN non-statutory consultation

¹⁴ Paragraph 9.4 of the SCC response to the EA GREEN non-statutory consultation

¹⁵ Appeal Reference APP/M1005/W/22/3299953

4. Land Use and Soil

Enso Energy propose to use 89 acres of arable agricultural land for their solar development. A further 10 acres will be disrupted during the cable laying process, but this is presumed to be for only one agricultural season.

Enso Energy states in their Planning Statement *“Both the NPPF paragraph 171 and footnote 53 [correct paragraph is 175 and footnote 58] and local development plan policies CS04 and CR11 seek to resist the loss of Best and Most Versatile (BMV) land, meaning grades 1, 2 and 3a as defined in the NPPF Glossary and the MAFF 1988 guidance for grading the quality of agricultural land. Guidance requires the proposed use of any agricultural land to be necessary and for poorer quality land to be used in preference to higher quality agricultural land.”*

We are very much in agreement that poorer quality land should be used for development. What the applicants are proposing is quite the opposite.

Enso Energy have completely omitted the local development plan policy for BMV land in the Agricultural Land Classification assessment, making no mention of it at all. Saved policy of the Mid Suffolk Local Plan CL11 states *“The District Planning Authority will encourage the conservation of agricultural land. Particular protection will be afforded to the Best and Most Versatile agricultural land (namely grades 1, 2 and 3a of MAFF’s Agricultural Land Classification.”*

The Agricultural Land Classification Assessment gives a figure of 20% grade 2, 55.4% grade 3a, 24.6% grade 3b. This is a significant majority of BMV land grades, and would therefore be contrary to planning policy, both local and national.

During the Planning Committee meeting on 15th February 2023, when DC/20/05895 (for which this DC/23/02118 is the free go application) was determined, experienced Councillors pointed out that Grade 2 land is very rare and they do not come across it very often. It is very likely that Grade 2 land is Mid Suffolk’s highest grade of land.

Further, Enso Energy’s approach to finding the suitable poorer quality land appears to be questionable. Even a desk-top study would demonstrate its likely unsuitability in terms of using BMV land.

Wrong type of connection targeted

Enso Energy state *“the Applicant is targeting transmission connected rather than distribution connected projects and so is limited to sites proximate to National Grid substations rather than connecting into overhead lines...”*¹⁶ This, however, goes against recent UK Government policy¹⁷ that seeks to install distributed/embedded renewable energy, which is connected into overhead lines, and thus contributing to the goal of a ‘smart grid’.

Chooses a connection in an area of predominantly grade 2

Enso Energy state *“The use of agricultural land is necessary in this case as the location of the Proposed Development is driven first and foremost by its requirement to be close to an available grid connection point, i.e. the adjacent Bramford Substation...”*¹⁸

The ALC Map 1988 (page 29) shows that East Anglia is primarily mottled with grades 2 and 3 land.¹⁹ Yet it appears that, when starting with their connection point, Enso chose one in the centre of a large area of grade 2. The below ALC map shows grade 2 land in light blue, and grade 3 land in green. Yellow and orange colours represent low grades of agricultural land and would have been a better starting point in terms of looking for poorer quality land.

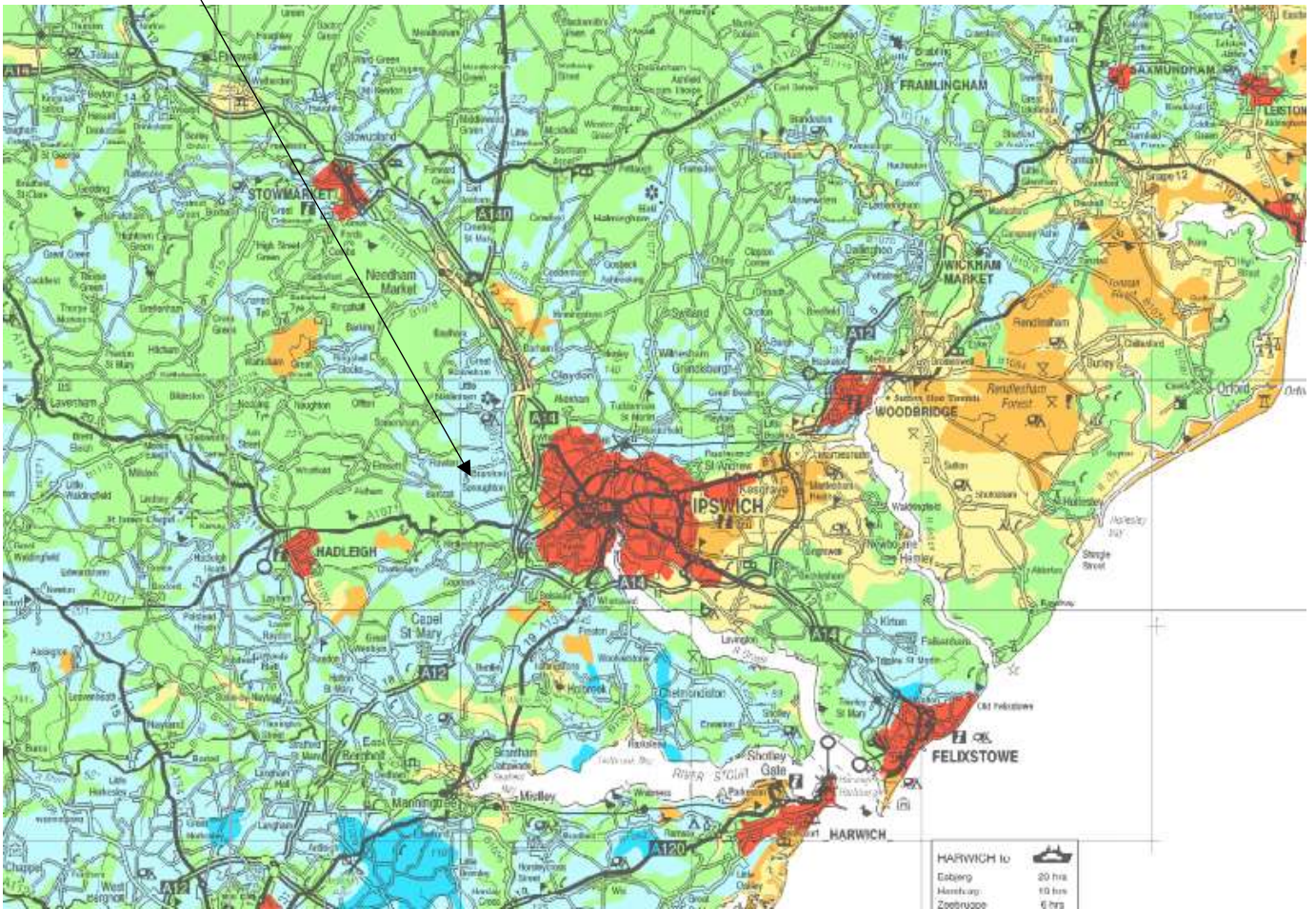
¹⁶ Planning Statement page 40

¹⁷ Energy White Paper 2020

¹⁸ Planning Statement page 40

¹⁹ Agricultural Land Classification map Eastern Region - ALC008 (naturalengland.org.uk)

Bramford Substation



Site distance from connection

Enso Energy go on to say *“The Applicant has searched for suitable and available sites of an equivalent scale within a 5km distance from the Bramford Substation, recognising that the viability of any energy project reduces the further away it gets from the grid connection point.”*

Enso Energy state that 5km is the distance for viability, but provide nothing to justify this. At the same time, in an application made by them in Fobbing, Essex, they state a distance of 10km for connection viability. The proposed connection is around 8.4km away and would appear significantly more costly having to pass through several built-up areas and road networks than the connection in this application. The distance for viability then appears to be an artificial argument with no substance.

Further the need for a site of an “equivalent scale” would not be applicable had they considered rooftops, for example. Here they would not need the space for footpaths and bridleways, internal roads, overhead line and gas main easements, PRoW and waterway buffer zones, hedging and tree mitigation space, spacer sections between the solar panel arrays, nor wildflower and tussocky grassland spaces. The equivalent generation could be possible from a smaller amount of space. Within 5km there are substantial areas of rooftops, including but not limited to the Energy From Waste Facility in Great Blakenham, and the Eastern Gateway warehouse development in Sproughton. If the area was expanded to 10km the possibility is even greater. All avoiding BMV land.

Current and historical agricultural use

The site has a consistent history of traditional arable farming, some of which is contract farmed. Contractors are typically not interested in poor quality land due to the potential for low returns. The landscape character of the area was built up around the success of the agricultural industry here, and suggests that historically the land has always been of a good quality for farming. Local knowledge has known these fields to historically grow fruit, vining vegetables, root vegetables, and cereal crops. Even sunflowers have grown in this area. The land is very versatile.

Poorer land in the area

Enso Energy continue to say the site was chosen due to *"the likely lack of availability of poorer quality agricultural land within the wider area."*

Enso Energy note that the land chosen is part of a larger agricultural estate owned by the landowner. Yet there appears to be no attempt to carry out soil analysis on other fields within that estate. This would not be unreasonable in looking for lower grade land, especially as it would not need other landowner permission.

Degradation of BMV land

Enso Energy state *"...whilst the Proposed Development affects BMV land it would not result in the permanent loss of BMV land..."* and in the Soil Survey it states the reason for not achieving a higher grade in some areas is because of limitations of dampness and droughtiness. The Cranfield University classifications for the area demonstrate this is highly fertile land. Enso Energy also state their development would improve the soil on many occasions throughout the application documents. Though they have submitted no scientific studies, case studies, or evidence to substantiate the claim that solar farms improve soil quality, and specifically the ALC grading which is how soil quality is officially measured in England.

The development proposed would do nothing to alleviate the limitations of dampness and droughtiness. It does not propose anything that would improve the subsurface drainage, and the construction phase and the compaction of this type of soil would seem actually to be damaging to the existing water drainage of the site. And it proposes nothing that would improve the droughtiness either. So the development would do nothing to improve the ALC grades of the soil, but quite the opposite.

Further the proposal seeks to cut the grass and wildflowers and collect them into piles for decomposing. This is in order to reduce the current fertility of the soil to help the successive seasons of grass and wildflowers successfully establish. This would further degrade the quality of the BMV soil.

Taking fertile BMV land and compacting it and reducing its fertility is not conducive to improving the soil.

Reinstatement of the soil at the end of the decommissioning would be a significant undertaking, and highly likely to fail given that the damage done would have been occurring over a period of 40 years.

Evidence of harm to ALC grading and agricultural productivity of BMV farmland

The applicant continually claims that the development would not harm the condition of the soil at any time. Yet provides no evidence or case studies to substantiate this claim.

The construction phase of the development would cause considerable harm to the soil quality. Vegetation on site would be cleared, including existing scrubland areas and wide field margins for wildlife that were implemented under a taxpayer funded agricultural stewardship scheme; the soil would be graded (i.e. levelled out) which would require significant movement and shunting about of the topsoil; areas would be compacted and filled with aggregate to create internal tracks for machinery; machinery would still need to travel across the open soil to install the mounted structures for the solar arrays, and deliver the parts across the fields; and the ground would be dug up and filled with cables. All of this would create considerable compaction of the soil. This would be further exacerbated during the decommissioning phase. Mole drilling is going to be required to even attempt to return the land to agricultural use. Mole drills go down to a depth of around 2m. Any equipment (cables, posts, concrete, gravel, etc) left in the ground would inhibit any realistic chances of starting to recover the land. The photo on the following page demonstrates the compaction that can occur on clay based soils like the proposed site during the construction phase.

When the cables for the EA1 and EA3 offshore windfarms were being laid nearby, considerable amounts of land were disturbed.

Where the cable route cross Tye Lane, and the trenches were carefully backfilled according to best practice, crops grown since remain patchy along the route. And significant drainage works were undertaken early 2021 to remediate unexpected drainage issues in the heavy clay soil that was caused by compaction of the heavy construction vehicles

traversing it on a regular basis. Much like heavy construction vehicles will be traversing the proposed development to oversail the land with solar panels.

The applicant appears to underestimate the damage that would be caused during the construction phase. Damage which cannot be ploughed out like tramlines for agricultural vehicles can be each year, because of course the panels and cables will be in the way.



However, the most obvious damage to the soil during the EA1 and EA3 construction is where the temporary site compounds were placed. There were areas of compacted soil covered in aggregate, to create temporary construction compounds for storage of vehicles, materials, and worker welfare.

EA1 & EA3 cable site compound



The agricultural land was “restored” back to its previous condition of course. It had wheat growing on it as per the following photo which was taken on 8th April 2022, which was it’s second year of planting.



But why are there some light patches and some dark patches? Well, the light patches are the footprint of the temporary site compound and access track and thus the “restored” land.

Here is another photo showing just how defined the difference is between the undisturbed land (dark green) and the restored land (light green) also taken on 8th April 2022. The crop on the restored land is 2-3 months behind in development compared the same crop in the same field but on land that is undisturbed.



Further evidence in how easy it is to damage the soil can be seen in part of the Enso Energy site as a result of the archaeological excavations. Top soil and sub soil was carefully removed and backfilled accordingly, yet light patches

of poorer crop behind in its growth can now be seen where the trenches were dug. In some areas the compaction caused by the excavator tracks, where no soil was even dug up, has caused damage, much like the equipment that will travel all over the fields during construction and decommissioning.



Soils in this area have developed slowly over hundreds of years of agricultural practice. Even with the best intentions, this process cannot be matched in 2 years of growing crops. Considering this, we would question the claim that the project is fully reversible and that the BMV land can even be restored.

Land Use Strategy and Protecting BMV Land

Since this application was submitted in December 2020 the UK Government has become much more active again in promoting the importance of protecting BMV land from development.

Whilst the UK Government continues to publish intentions to increase reliance on intermittent renewable energy, it is also publishing information that gives a very strong indication that Parliament and Cabinet do not want to see solar farms such as this one being built.

Debates in Westminster Hall on 9th March 2022²⁰ and 8th June 2022²¹ regarding solar farms like this one have had MP's highlighting the significant negative impacts of solar farms on communities, the landscape, our farmland, and our heritage, amongst other concerns. They feel that many policies in the NPPF 2021 are being side-lined and diminished in significance.

Furthermore, on 29th June 2022 the Minister Rt Hon George Eustice, at a hearing for the Environmental Audit Committee²², stated that...

"I looked at this issue in some depth in about 2015 when we had something of a solar rush at that time. We agreed with the then MHCLG that its chief planning officer would issue guidance to planning authorities that created a strong presumption against solar farms on the best and most versatile land..."

And...

²⁰ <https://hansard.parliament.uk/Commons/2022-03-09/debates/22030973000001/LargeSolarFarms>

²¹ <https://hansard.parliament.uk/commons/2022-06-08/debates/137D2865-E237-451F-8262-07923BD549/SolarFarmsAndBatteryStorage>

²² <https://committees.parliament.uk/event/14051/formal-meeting-oral-evidence-session/>

*"We issued this guidance, as I said, about six or seven years ago and this problem was resolved for some time. We are conscious that there have been a few quite big schemes in recent months or over the last 12 months where planning authorities seem to have either forgotten or started to disregard that advice."*²³

That guidance²⁴, which has never been revoked or superseded, states *"The National Planning Policy Framework includes strong protections for the natural and historic environment and is quite clear that local councils when considering development proposals should take into account the economic and other benefits of the best and most versatile agricultural land. Yet, some local communities have genuine concerns that when it comes to solar farms insufficient weight has been given to these protections and the benefits of high quality agricultural land. As the solar strategy noted, public acceptability for solar energy is being eroded by the public response to large-scale solar farms which have sometimes been sited insensitively. Meeting our energy goals should not be used to justify the wrong development in the wrong location and this includes the unnecessary use of high quality agricultural land. Protecting the global environment is not an excuse to trash the local environment."*

And, even more prominently, both final candidates for Prime Minister highlighted the need for solar farms to not be located on our country's best and most versatile land.

Liz Truss on 1st August 2022 in Exeter stated *"Our fields should be full of our fantastic produce.... It shouldn't be full of solar panels and I will change the rules. I will change the rules to make sure we are using our high value agricultural land for farming."*

Rishi Sunak, our current Prime Minister, on 18th August 2022 wrote in The Telegraph *"We must also protect our best agricultural land. On my watch, we will not lose swathes of our best farmland to solar farms."*²⁵

On 22nd December 2022 the House of Lords Land Use in England Committee, following a lengthy public consultation, published its report called *Making the most out of England's land*.²⁶ Within this report solar farms, such as this one, are given their own section on page 39-40 of which CARE Suffolk evidence contributes to the Committee's recommendation. This recommendation is paragraph 132 and states:

"Although there are provisions within the NPPF to dissuade the development of solar farms on Best and Most Versatile land, from the evidence received we are concerned that too many exceptions are being made. We believe that a consistent policy toward encouraging the installation of solar panels on industrial, commercial and domestic buildings is needed and would negate the need for largescale ground mounted solar farms. Alongside that, we would like to see stricter regulations put in place to prevent the development of solar farms on BMV land."

Existing planning policy CL11 from the Mid Suffolk Local Plan clearly states that developments such as this, and the other two solar applications (DC/21/04711 and DC/22/00683 & DC/22/01243) are not in accordance with the Local Plan. These policies are not only not in conflict with the NPPF 2021, but are supported by it at paragraph 174.

It is clear from these debates and statements from Parliament and Cabinet, that planning applications such as this one, which is on over 75% BMV land, should not be permitted.

And all of this political guidance is supported by existing planning policy. Many of these are the same policies that were referenced by MP's in the debates above, and in the local development plan policy CL11.

Brownfield and previously developed land

In his letter of 22 April 2014 to Local Authorities, Minister for Energy and Climate Change Greg Barker made it clear that *"...the main message from the Strategy is that we are keen to focus growth of solar PV in the UK on domestic and commercial roof space and on previously-used land."*

We could find no attempt by the applicant to look at brownfield or PDL areas. Further there appears to be no attempt to engage with any of the large building developments taking place nearby.

²³ We are aware that BMVL is actually 3a and above, and not the 3b and above stated in his answers, but this does not diminish the remainder of statement.

²⁴ <https://www.gov.uk/government/speeches/planning-update-march-2015>

²⁵ <https://www.telegraph.co.uk/politics/2022/08/18/rishi-sunak-wont-lose-best-farmland-solar-panels/>

²⁶ <https://committees.parliament.uk/committee/583/land-use-in-england-committee/>

Current and proposed business model

The land proposed to be used for solar PV is productive agricultural land producing chiefly grain for human and animal consumption.

DC/20/05895 R003 Planning Statement p 42 states *"Farming businesses play a vital role in the rural economy, particularly supporting the agricultural supply chain to include feed merchants, machinery sales, maintenance and repair businesses, local builders, delivery drivers and professional services, to name but a few. The Proposed Development would help to support the local agricultural supply chain via the income to the farming business."*

The landowner of this application runs his farming business entirely by contractors. Removing crop production and replacing it with PV panels will eliminate the work done by contractors resulting in a net employment loss to the area.

Similarly, as referred to above, agricultural trade with merchants, suppliers, machinery sales and maintenance used by the contractor will also be lost further, reducing expenditure in the agricultural industry.

The Mid Suffolk Local Plan 1998 states at p.2.4.3 *"The guiding principle in the countryside is that development should benefit the rural economy and maintain or enhance the environment."*

Aside from the possibility of some local employment during the construction phase, which is not guaranteed, there are no long term gains to local employment as the applicant claims the site will be visited by a man in a van once or twice per month. There is nothing to suggest this man or van is local.

Current Land Use and the DEFRA Countryside Stewardship Scheme

All the land of the application is farmed under the DEFRA Countrywide Stewardship Scheme (Middle Tier).²⁷ This is only briefly mentioned in a table.

Countryside Stewardship is a UK Government payment scheme administered by the Department of the Environment, Food and Rural Affairs, which pays enhanced support to farmers who manage their land to improve Biodiversity, Habitat and the Environment and includes proper care of soils.

Flowton Brook Farm is currently under a Countryside Stewardship Agreement and receives additional payments for undertaking certain additional land management operations.²⁸

Included are extra payments for managing wild bird habitat, cover crops, hedgerow management, provision of overgrown field corners for habitat improvement, stubble management for birds, and water management. There are a great many options to be taken in the scheme depending on the circumstances of each farm. Additional payments are received for the options. All these improvements can be seen in the site.

An article in the Journal of the Suffolk Naturalist Society from 2012²⁹ refers to Green Veins as hedges grown to connect arable fields to other hedges to allow the movement of wildlife along corridors. This is already established on site. The 'enhancements' proposed by the applicant are already in place and the other proposals for wild areas in field corners and cover crops etc. are also already established.

These areas are commensurate with the current use as productive farmland producing food for the population.

The DEFRA Payments Scheme also provides for protection of the soil and enhanced biodiversity whilst enabling food production.

The DEFRA Stewardship schemes are about to be replaced by the Environmental Land Management Scheme ELMS.³⁰ This new scheme will replace general farm subsidies with a payment system which will require farmers to manage their production in accordance with best practice to pay particular regard to soil health, biodiversity and habitat, water

²⁷ <https://magic.defra.gov.uk/MagicMap.aspx>

²⁸ [https://www.gov.uk/government/collections/countryside-stewardship-information-for-agreement-holders#mid-tier-\(including-water-capital-items\)-and-wildlife-offers](https://www.gov.uk/government/collections/countryside-stewardship-information-for-agreement-holders#mid-tier-(including-water-capital-items)-and-wildlife-offers)

²⁹ <https://issuu.com/suffolknaturalistsociety/docs/tsns48c?e=25146772/36157934>

³⁰ <https://www.gov.uk/government/publications/the-environmental-land-management-scheme-an-overview/the-environmental-land-management-scheme-public-money-for-public-goods>

quality, public engagement and the wider concerns of climate change. Note also that the biggest land reservoir of carbon is the land itself.

Therefore, the proposed new ELMS scheme will be an enhancement of DEFRA Countryside Stewardship. Every farmer will be required to enrol in ELMS to maximise income. Furthermore, since the Medium Tier Stewardship terms are more onerous (and are checked for compliance before payment, so are adhered to) and cover a wider range than the proposal's mitigation, the ELMS scheme will be more prescriptive and demanding. Therefore, adoption of the applicant's proposed LEMP will be retrograde. The ELMS scheme will also allow food production to continue.

Decommissioning

Decommissioning will be a repeat of the soil damage which will happen during construction except that:

There will be many more vehicle movements.

Materials will arrive on site for construction on neat pallets, maximising loads to save shipping costs. Steelwork will, for decommissioning, be grab-loaded into roll-on-offs for shredding probably at a local scrap merchant so loading will be done for speed, not to minimise shipping long-distances.

There will be very large quantities of roadstone, now contaminated with soil, which will all be classed as waste. All the batteries will be hazardous waste.

However, the biggest problem will be restoration of the land to a usable condition for farming, or if this is even possible or worthwhile.

Fertility and drainage will have to be re-established. These are natural processes which cannot be restored artificially.

The soil profile was last significantly altered during the Ipswichian interglacial period 120,000 to 11,500 years ago. Soil damage is so permanent and difficult to remediate that the aerial view of the route of a North Sea Gas Pipeline constructed in about 1970 can be clearly seen today running North East-South West alongside the South-Eastern corner of the Enso proposed BESS. That construction was very carefully undertaken with a simple trench and backfill. The job lasted a few weeks, yet the route is clear and the changes remain. Therefore, after 50 years the soil has not returned to normality.

Enso's claims, that the land they propose to develop will be remedied by ploughing and thus return to normality, are undeniable proof that they do not have even the most basic understanding of the impact of their proposals. Alternatively, they do know but don't care.

Conclusion

The agricultural land selected for this development falls under the ALC classification as the **best and most versatile** land that the country has. Current mapping as is used by the Agricultural Industry based on more recent surveying by Soil Survey, (Cranfield University), increases the classifications to 27 types. **More usefully than ALC, this suggests cropping ability.**

Consequently much of the selected land is potentially upgraded to Grade 1 land but for the shortfall of it being prone to damage by compaction.

Note: Land of the same Soil Survey Classification as much of the proposed site on a farm three miles from it at Great Bricett is, by local reputation, some of the best wheat land in Europe.

The proposal by the developer is to take this national asset which is vulnerable to compaction and spend 40 weeks compacting it. Furthermore, rather than attempt to remedy the damage, the proposal is to install permanent features which will exacerbate the damage caused for a 40 year period.

The loss of food production from the national larder is significant and may become even more so in the future. The Commission on Climate Change, a Government body, seem to believe so.

The application ignores current management practices of Food Production such as the Countryside Stewardship Scheme. This is in place on part of the site and which is superior to the paltry 'mitigation' measures proposed for this site. Furthermore it ignores totally the DEFRA ELMS schemes which will be financially, agronomically and nationally beneficial whilst allowing food production to continue.

If the plans are rejected wildlife will continue to exist without disturbance. The landscape will continue to enhance the life experience of the local population. And food can still be grown.

Greg Barker, to the solar panel industry at the Large Scale Solar Conference on 25 April 2013, also said "*Where solar farms are not on brownfield land, you must be looking at low grade agricultural land...*".

In the House of Commons oral statement of 29 January 2014 the Planning Minister, Nick Boles, stated that "*where significant development is necessary on agricultural land, the national planning policy framework is equally clear that local planning authorities should seek to use areas of poorer quality in preference to that of a higher quality. Where land is designated at a relatively high grade it should not be preferred for the siting of such developments.*"

The UK Solar PV Strategy: Part 2 of April 2014 sets out the Solar Trade Association's "Solar Farms: 10 Commitments", the first of which is that focus will be on non-agricultural land or land which is of lower agricultural quality.

Enso Energy provides no evidence to show they have attempted to avoid the use of BMV land, and they have not demonstrated that the use of agricultural land is necessary.

Further, even if the use of agricultural land is necessary, they have not demonstrated a preference for poorer quality land, dismissing lower grade land and retaining higher grade land based on earlier EIA submissions.

Additionally, no explanation has been put forward by Enso Energy as to why they have omitted to conduct soil surveying on other fields, even within the landowners estate. Based on the variability of the soil survey submitted, it is possible that some of this land could be 3b.

Simply surveying the proposed site is inadequate to demonstrate the need for using BMV land.

5. Heritage

The National Planning Policy Framework (NPPF para 200) requires clear and convincing justification for all levels of harm to heritage assets, including their setting. Substantial harm to assets of the highest significance, including Grade 1 listed buildings, should be wholly exceptional. And section S66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 requires special regard to be held to the desirability of preserving the settings of listed buildings.

The Planning Practice Guidance calls for great care to be exercised to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting. The NPPF and the PPG also recognise that the *“significance derives not only from a heritage asset’s physical presence, but also from its setting.”*

The need for robust interpretation and application of the NPPF has been explained in analysis of planning authority decisions carried out for the statutory consultee, Historic England:

“Many local planning authorities could take bolder action to protect heritage assets to achieve NPPF objectives... to avoid or minimize conflict between heritage assets’ conservation and any aspect of a proposal, local planning authorities should more vigorously consider the wider alternatives to the submitted scheme: this is supported in case law..”³¹

This is continued in local development plans.

The MSDC Local Plan 1998 policy HB1 states *“The district planning authority places a high priority on protecting the character and appearance of all buildings of architectural or historic interest. Particular attention will be given to protecting the settings of listed buildings.”* And the MSDC Core Strategy 2008 objective SO4 seeks *“To protect, manage, enhance and restore the historic heritage / environment and the unique character and identity of the towns and villages by ensuring that new developments are appropriate in terms of scale and location in the context of settlement form and character.”*

We agree that there would be no harm to the setting of the churches of Somersham and Burstall. We also agree there would be no harm to the setting of Lovetofts Farm since the removal of fields 1, 2, & 3. We also agree there would be no harm to the setting of Canes Farmhouse. We have no additional comments in relation to archaeological impact. However, we do not agree with the assessment for St Mary’s Church, Flowton, and we also raise the issue of harm to the setting of Flowton Hall which is a non-designated heritage asset that continues to be ignored by the applicant.

The harm created by this impact should be valued against the quality of the setting. As the applicant’s own research explains, the setting – taken over a wide area – has been largely preserved since the heritage assets were first built.

St Mary’s Church, Flowton – Grade I Listed

The adverse impact on Grade I listed St Mary’s Church, Flowton is of special concern for local communities. The applicant states *“Although visibility of the proposed solar panels is predicted by the ZTV in this area the ZVI does not extend this far, indicating that there would be little or no visibility of the panels.”* No one actually visited the site to check this, including statutory consultees. This should have been verified on a site visit, which would have proved otherwise, and is therefore a significant omission as established in case law.³²

The listing description of the church cites it as being an *“unusually complete”* medieval parish church. The setting – a river valley bounded by soft undulating hills - has a local classification as a Special Landscape Area and is of archaeological interest. There has been little recent development and ancient hedges and woodland remain intact. It is: used as an active place of worship; the only building in the village available for use to the public; an annual stopping place on the Suffolk Historic Churches Cycle Ride and part of the National Cycle Route 48; and it is the central point for the village’s annual Fete and Flower Show, and Open Garden Event hosted every four years. The success of these

³¹ *Heritage in Planning Decisions: the NPPF and Designated Heritage Assets* (Green Balance 2018)

³² *James Hall v Bradford MDC [2019] EWHC 2899*

events, for which the unspoilt beautiful rural countryside is often a key comment of regular attendees, are major fundraising events for the church's fabric fund and essential repairs.

The principal significance of the Grade I listed St Mary's Church in Flowton lies in its history and in its building fabric. We agree with the applicant that the architecture of the church is best experienced close up³³, but then isn't this the case for all architecture? The proposed installation would do nothing to alter the fabric nor would it affect the direct ability to appreciate the architecture and quality of the building. However, should funding from its key events above diminish, then repairs may go unattended to, impacting the upkeep of the building itself and ability to appreciate the architecture.

The assessment by the applicant regarding the church setting³⁴ though is wholly incorrect, mentioning views from Blood Hill and junctions that are elsewhere in the village.

The church sits in an elevated position within a very well preserved natural setting which is important to its character and history. Rural churches were often sited in areas that could be seen from a wide area, acting as a landmark to its congregation, and St Mary's Church in Flowton is no exception to this, as it can be seen from a wide distance south and west, including from the neighbouring parish of Burstall. The applicant agrees it is a landmark in the ES, paragraph 6.176, though we do not agree it is only in views to the southwest. It can also be seen from the south and southeast.

The immediate setting of the church is the churchyard, but the wider countryside is also part of the setting, given that the church serves a rural community, is the only public amenity building in the village, and is historically connected to its rural surroundings. The view from the churchyard south across the valley is part of that connection and remains largely preserved since the church was built; it includes views of and into the proposed site within the sweep of arable fields visible from several places in that location. In other words, the current views make a positive contribution to the setting of the church.

According to Historic England the setting is *"The surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape."* It must be noted that the setting is the surroundings in which a place is 'experienced' and makes no requirement that you can see the heritage asset in the same view. For example, it is not possible to see Stonehenge from all areas of the setting around it, but they are still a significant part of the setting and experience.

On 14th September 2016 BMSDC wrote to The Planning Inspectorate regarding the DCO for East Anglia Three³⁵. We note that page 7 references St Mary's Church, Flowton. Under *Contribution of Setting to Significance* it states: *"Village" location contributes greatly to setting as does the open land to S.* **This is Mid Suffolk's own assessment of the setting of the church. To ignore that assessment now would be illogical and unreasonable.**

Some of this land to the south is the same land that the applicant intends to build on. The slopes of the proposed land, in particular field 5, fall in a south-west direction and fall over 30m in height. The applicant has proposed mitigation in the form of hedges, but this would not be sufficient to hide a cascade of regimented rows of solar panels and would seriously intrude into the very attractive unspoilt rural scene which is in full view from the church grounds. This is evident from the existing mature hedgerows on the site. The scale of the industrial installation that would be introduced into this wholly rural setting, compounded by its visibility on such a dramatic slope, would be intrusive in views from the churchyard. The visual harm to the landscape would extend to the building's setting, and therefore to its significance.

There are 4 single track country roads into the "village" of Flowton where St Mary's Church is located. Somersham Road to the north, Tye Lane to the east, The Channel to the south, and Flowton Road to the west. The applicant's proposal would be visible from all four roads. This would lead to a first and last impression of this currently rural agricultural village, and the church that serves it, to that of an industrial site. The applicant itself states their development will change the area from a rural agricultural setting to an industrial development in a rural setting³⁶.

³³ Cultural Heritage Addendum paragraph 7.4.11

³⁴ Cultural Heritage Addendum paragraph 7.4.11

³⁵ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010056/EN010056-001538-Babergh%20and%20Mid%20Suffolk%20District%20Councils>

³⁶ ES paragraph 6.177

Current View of St Mary's Church, Flowton from a regularly used bench in the churchyard: Field 5



Photomontage with solar panels:



The applicant also attempts to imply that St Mary's Church, Flowton and the development will not be seen in the same view as each other. This is simply not true. If we refer back to the photo above, the far edge of field 5 has a public bridleway running the length of it. The first view of Flowton by walkers from Burstall is along this bridleway.

View of St Mary's Church, Flowton from bridleway south of Field 5



Further, the appreciation of a church and its setting is not a one directional snap shot view as the applicant tries to make out. The Historic England definition of setting³⁷ states that it is an 'experience'. An experience is a journey across a multitude of views leading up to, during, and away from a heritage asset. By looking only in one direction, the applicant has failed to appreciate the setting of St Mary's Church, Flowton, and the contribution that open land and a village feeling makes to that setting.

We note that in relation to appeal 3214324 (Poplar Hill, Stowmarket, August 2019) the Planning Inspector was concerned with the harm that would arise to features in the landscape surrounding the appeal site as a consequence of development on the appeal site, stating: *"the appeal proposal would compromise the appreciation of sufficiently impressive examples of other characteristic features of the landscape as to cause an unacceptable effect on the landscape character and appearance of the area. These characteristic features are Combs Wood and St Mary's Church both of which have statutory status and so would qualify the landscape to be regarded as valued, to be protected and enhanced in terms of NPPF paragraph 170(a)."*³⁸

We do not agree with the applicants' conclusion that there would be no harmful effects on St Mary's Church, Flowton. The valued landscape is the setting for the church, and the church adds to the landscape appeal. There would be an adverse effect on the setting and significance of the Grade I listed building, and this therefore must be considered in the balancing process.

³⁷ https://historicengland.org.uk/advice/hpg/hpr-definitions/#cat_S

³⁸ Landscape Institute Technical Guidance Note 02/21 Assessing landscape valued outside national designations

Flowton Hall – Non-Designated Heritage Asset

We note that the applicant discusses non-designated heritage assets briefly in their assessments, and claim to have searched the Suffolk HER records for all those within 1km of the proposed development area. However, one significant HER record has been completely omitted from even a passing mention.

Suffolk HER record FLW 025 is that of *Flowton Hall*. Since Flowton Hall is registered in the Suffolk HER database, but is not a listed building, it would be reasonable for this to be considered a non-designated heritage asset on this point alone, and the impact of the proposal on the heritage asset merits consideration in the planning decision.

Planning Policy Guidance on the Historic Environment states “*Non-designated heritage assets are buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets.*”

Further, Place Services for Heritage had the following to say regarding non-designated heritage assets on nearby application DC/21/04711:

Within the applicant's supporting documents, no non-designated built heritage assets have been identified. In the absence of a local list which covers this part of the district, it would have been beneficial if the applicant had extended their survey to include potential non-designated heritage assets, scoping these into their assessment. As part of this consultation, the following buildings have been identified as potential non-designated heritage assets:

- Little Blakenham Hall historic farmstead buildings (to the north of the site, off Somersham Road)
- Copenhagen Cottage (at the north eastern side of the site)

It is recommended that the special interest of these buildings is assessed, particularly as the proposed solar farm may have a large impact upon their settings. Both properties appear on the first edition Ordnance Survey map, and likely have a functional link with their countryside location. If the buildings do have sufficient interest to be considered non-designated heritage assets, it is anticipated that the proposed solar farm will result in harm to their settings.

It is bemusing, to say the least, that as the heritage consultant for this application too they were not consistent in their comments to the preceding DC/20/05895. At the time of writing this they have not responded to application DC/23/02118.

Using the same criteria in their response above, Flowton Hall appears on the first edition Ordnance Survey map, and had a functional link with the countryside location. The full description on the Suffolk HER database states:

Flowton Hall, Flowton. 19th century farmstead and farmhouse. Loose courtyard two-sided plan formed by working agricultural buildings. The farmstead is set away from the yard. Only the farmhouse survives. Located within an isolated position (S1-6).

Recorded as part of the Farmsteads in the Suffolk Countryside Project. This is a purely desk-based study and no site visits were undertaken. These records are not intended to be a definitive assessment of these buildings. Dating reflects their presence at a point in time on historic maps and there is potential for earlier origins to buildings and farmsteads. This project highlights a potential need for a more in depth field study of farmstead to gather more specific age data.

It is in a prominent and distinctive place within the landscape and the rural setting contributes greatly to the building. In fact the importance of the setting was recognised in a recent planning decision.

Application DC/19/05927, decided in March 2020, was for the conversion of existing office blocks at Flowton Hall, IP8 4LH to residential housing.

One of the conditions imposed is as follows:

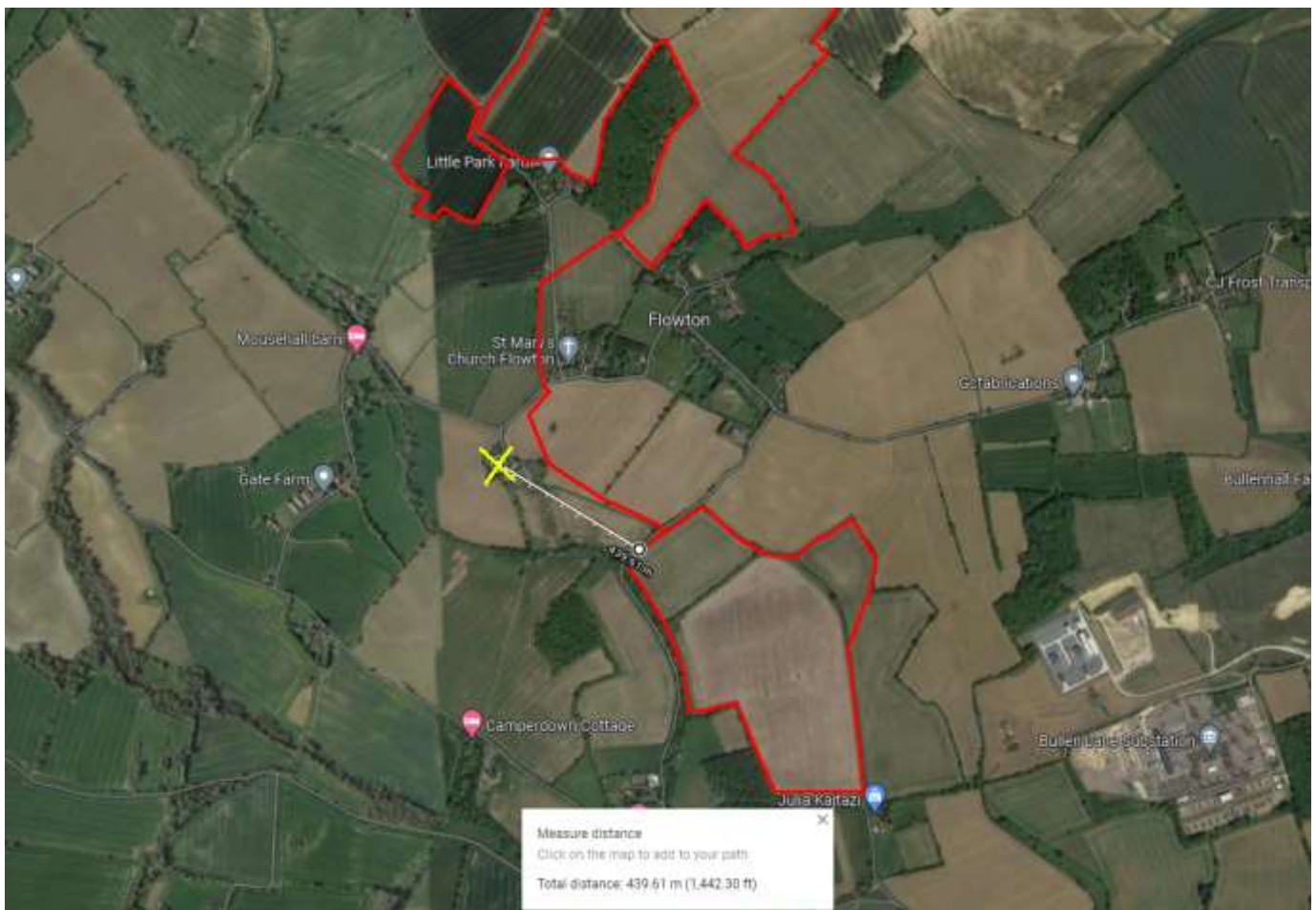
“2. SPECIFIC RESTRICTION ON DEVELOPMENT: REMOVAL OF PERMITTED DEVELOPMENT RIGHTS Notwithstanding Section 55 (2)(a)(ii) of the Town and Country Planning Act 1990 as amended and the provisions of Article 3, Schedule 2 Part 1 Classes A to E and H and Part 2 Class A of the Town and Country Planning (General Permitted Development) Order 2015, (or any Order revoking and re-enacting that Order with or

without modification):- - no enlargement, improvement, insertion of new openings or other alteration of the dwelling house(s) shall be carried out, - no garage, car port, fence, gate, wall or any other means of enclosure, building or structure shall be erected, except pursuant to the grant of planning permission on an application made in that regard.

Reason - To enable the Local Planning Authority to retain control over the development in the interests of the amenity of the locality and to safeguard local distinctiveness."

Flowton Hall is situated 440m from the proposed development (photo A), and fields 4 & 5 would appear prominently in the landscape (Visualisation 14 from the applicants LVIA). This field in particular has an elevation of over 30m in difference from top to bottom, which slopes facing towards Flowton Hall. This is confirmed within the applicant's own topography map³⁹. There are already numerous mature trees along The Channel which show that even a mature tree line would not be sufficient to screen the development from view, as shown in Visualisation 14 reproduced on the next page.

Photo A – Flowton Hall is marked by the yellow X. The proposed site is outlined in red.



³⁹ Appendix 6.7 Figure 6.3 Topography

The applicants own visualisation (Figure 5.8.4 – Viewpoint 14) showing buildings at Flowton Hall. The office blocks on the right were recently converted to dwellings, which had their permitted development rights removed due to concerns over the preservation of local distinctiveness against things such as fencing. The solar panels can be seen as a prominent feature in the landscape. Flowton Hall itself is only just out of shot on the right.



Heritage Conclusion

The proposed development would contribute to the Government's commitment to renewable energy generation. And the power generation and carbon dioxide emission savings would assist in the goals of tackling climate change. The contribution to low energy sources is a benefit of the proposal. Based on the current information provided in the application, this is the only clear public benefit.

Neither has the applicant provided a detailed sequential test analysis to show that other locations were not available. The scale of the project, and thus the area of land required, is based purely on financial considerations and not on any concern for public good.

Whilst the development is of a temporary nature, it is nonetheless for 40 years which is a very long time, during which the adverse impacts would be experienced by very many people. Given the potential for the applicant to reapply for the site to remain in place at the end of the 40 years, as indicated in the proposal, the possibility of it to remain a permanent development cannot be ruled out.

However, given the importance of St Mary's Church Flowton as a Grade I listed building, the public benefits of energy generation are not sufficient to overcome the scale of harm that would be caused to their significance, by the visually intrusive nature of the proposal into the rural setting of the buildings.⁴⁰

Revisiting the decision for application B/12/01132/FUL/NC to Babergh District Council, for the erection of three small wind turbines at Gate Farm, Flowton. The application was refused on the following grounds...

"The proposal site lies within the setting of several listed buildings including a Grade I listed church. The installation of three wind turbines would have an adverse impact on the setting of the listed buildings. The application documentation does not provide any details of any assessment of alternative solutions or justification that the proposal is the only solution to providing renewable energy on site. The proposal would cause substantial harm to the setting of several listed buildings and it has not been demonstrated within the application documents that any substantial public benefits can be achieved which would outweigh this harm."

The setting of the Grade I listed church mentioned in this refusal is the same setting (St Mary's Church, Flowton) that the proposal site lies within and would be in view of. If the erection of a garage, or even a fence, for a residential property can be considered to be detrimental to the local distinctiveness, then a 35+ hectare solar farm, with regimented industrial solar panels and security fencing with high voltage warning signs (such as photo B & C on the following page), would be disastrous.

In the recent Alfreton appeal⁴¹ the Planning Inspector dismissed the appeal stating *"In this case, the solar farm would be mounted largely on sloping land with a very significant zone of visual influence extending for several km across attractive and locally valued countryside in a transitional character area with long reaching views. Whilst I have found that the character and appearance of the Alfreton and South Wingfield Conservation Areas would be preserved, there would be a substantial level of harm to Alfreton Park, a non-designated asset, and a degree of 'less than substantial harm' caused to the settings of Wingfield Manor, St Martins Church and Alfreton Hall."*

This application is mounted largely on sloping land with a significant zone of visual influence across attractive and locally valued countryside in a designated Special Landscape Area. There would be a substantial level of harm to non-designated heritage asset Flowton Hall, and a degree of the 'less than substantial harm' caused to the setting of St Mary's Church Flowton.

The applicant has failed: to provide adequate justification for selection of the site; to present alternatives; or to demonstrate substantial public benefits that would outweigh the harm created. It therefore fails to comply with national and local planning policy.

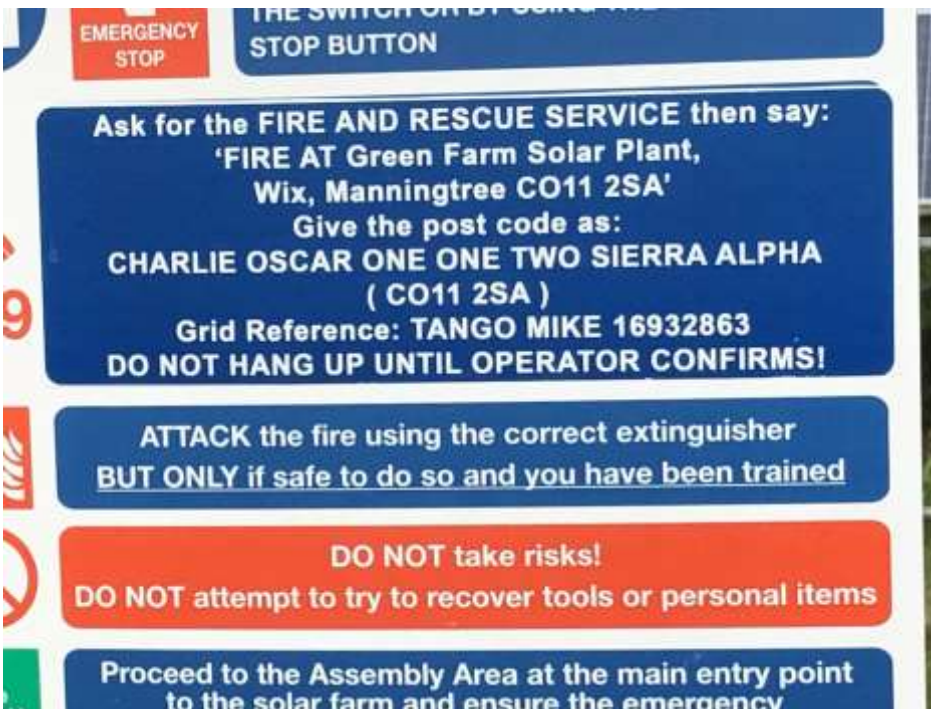
⁴⁰ Babergh District Council vs Sun & Soil Ltd dismissed appeal: APP/D3505/W/14/2218072 - <https://acp.planninginspectorate.gov.uk/ViewCase.aspx?Caseid=2218072&CoID=0>

⁴¹ Appeal APP/M1005/W/22/3299953

Photo B – cabins, fencing and hazard signs at Green Farm Solar Plant, Manningtree



Photo C – large emergency sign at Green Farm Solar Plant, Manningtree



6. Flood Risk & Water Management

There are a number of serious issues and omissions associated with the applicant's proposal that are likely to have a significant effect on the extent of flooding in the area. The likely impact of this will be to restrict road access to the surrounding villages as well as elevate the risk of flooding to a number of residential properties that are already at risk from increased rainfall associated with climate change.

The following sections detail the main issues that we have identified. However as the applicant's proposal has significant omissions associated with its Flood Risk Assessment and Drainage Strategy, it is simply not possible to provide a full analysis of the expected detail as it is absent from the applicant's submission. These omissions are also identified at a high level, and should updates or further submissions be provided by the applicant, we shall conduct a review of our findings below.

- 1. The applicant's Flood Risk Assessment is based on the flawed assumption that the "...development does not have the potential for significant effects on flood risk, water quality and drainage...". This assumption limits the scope of its assessment and is in conflict with the very research⁴² it cites in order to provide "...robust evidence that SuDS are not required to manage solar farm surface water runoff."⁴³**

The primary research cited in the FRA details empirical evidence that runoff volumes and peak discharge rates can be significantly affected by the installation of solar farms where suitable ground cover is not established and/or adequately maintained.

The paper states the following potential effects:

- "If maintenance vehicles used the spacer section regularly and the grass cover was not adequately maintained, the soil in the spacer section would be compacted and potentially the runoff volumes and rates would increase. Grass that is not maintained has the potential to become patchy and turn to bare ground. The grass under the panel may not get enough sunlight and die. Fig. 1 shows the result of the maintenance trucks frequently driving in the spacer section, which diminished the grass cover."*
- "The effect of the lack of solar farm maintenance on runoff characteristics was modelled by changing the Manning's n to a value of 0.02 for bare ground. In this scenario, the roughness coefficient for the ground under the panels, i.e., the dry section, as well as in the spacer cell was changed from grass covered to bare ground (n 1/4 0.02). The effects were nearly identical to that of the gravel. The runoff volume increased by 7% from the grass-covered to the bare-ground condition. The peak discharge increased by 72% when compared with the grass-covered condition. The runoff for the bare ground condition also resulted in an earlier time to peak by approximately 10 min."*
- "With the spacer section as bare ground, the peak discharge increased by 100%"*
- "If the grass cover of a solar farm is not maintained, it can deteriorate either because of a lack of sunlight or maintenance vehicle traffic. In this case, the runoff characteristics can change significantly with both runoff rates and volumes increasing by significant amounts."*
- "If bare ground is foreseen to be a problem or gravel is to be placed under the panels to prevent erosion, it is necessary to counteract the excess runoff using some form of storm-water management."*
- "Water draining from a solar panel can increase the potential for erosion of the spacer section. If the spacer section is bare ground, the high kinetic energy of water draining from the panel can cause soil detachment and transport (Garde and Raju 1977; Beuselinck et al. 2002)."*
- "The energy of the water draining from the panel onto the ground can be nearly 10 times greater than the rain itself falling onto the ground area. If the solar panel runoff falls onto an unsealed soil, considerable detachment can result (Motha et al. 2004). Thus, because of the increased kinetic energy, it is possible that the soil is much more prone to erosion with the panels than without. Where panels are installed, methods of erosion control should be included in the design."*
- "Bare ground beneath the panels and in the spacer section is a realistic possibility (see Figs. 1 and 5). Thus, a good, well-maintained grass cover beneath the panels and in the spacer section is highly recommended."*

After conducting a thorough review of the research cited, it is our assessment that each of the potential effects detailed is of concern to the proposed development. The application of these effects to specific factors associated

⁴² Hydrologic Response of Solar Farms, J. Hydrol. Eng., **2013**, 18(5): 536-541

⁴³ Section 4.4, FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY, RMA-RC2097

with the proposal is expanded in the next section.

2. There is a significant risk that the way the construction & management of the site is conducted will dramatically increase surface runoff rates.

As cited above, primary research provides evidence that there is potential for dramatic increase to:

- The surface runoff peak discharge rate (Approx. 100% increase)
- The total flood volume emanating from the site (Approx. 10% increase)
- The concentration of rainfall & kinetic energy available to produce soil erosion (Approx. 1000%, 10x increase)

It is our assessment that there are a number of risk factors associated with, and heightened by, the nature of the proposed development - some of which are in *addition* to those already identified in the primary research as having a significant effect on flood risk. These risk factors include:

A. Soil compaction

(Hydrologic impact = reduced loss rate, increased surface smoothness)

The soil classifications documented as part of the Soil Survey identify the site to be composed of soil prone to compaction due to the presence of clay and silt within the soil structure. These soil types are noted as being prone to “structural damage when wet” as well as having a “tendency to cause surface runoff and erosion”.

During the 40 week construction phase the applicant has indicated that there will be at least 1,740 HGV (of mass up-to 44 tonnes) vehicle movements accessing the site and each of these movements will be multiplied further internally within the site to facilitate the construction of the solar arrays and associated infrastructure.

Each of these movements will cause significant compaction of the soil and furthermore:

- The compaction will be across the entirety of the developed area of the site - far exceeding the surface area of compaction associated with traditional farming techniques (which post-drilling restrict vehicle movements to a single pair of “tramlines” within a given area)
- A significant proportion (approx. 20%) of the activity causing the compaction will occur during a period when the land is too wet to work on and when the land is normally left free of all farming activity (As detailed in the Land Use and Soil section above - a conservative estimate would assess that a least two months of construction activity will take place during this period)
- Following the construction phase there is expected to be regular maintenance activity conducted at the site which will continue to cause soil compaction throughout the run-phase of the development. Some of this activity (for instance grass cutting) will involve regular vehicle movement across land not accessible by the internal roads and is expected to cause further compaction.

All of the activities detailed above will have the effect of increasing the density of the soil at the surface and directly below in the subsurface. This increased density will reduce the ability of water to be absorbed within the soil structure (reducing water storage) as well as reduce the ability of water to be transported within the soil (both down - to aquifers, and across - to other areas of soil or to ditches and other watercourses)

B. Increased proportion of impermeable surfaces due to the construction of access tracks, buildings and other infrastructure

(Hydrologic impact = reduced loss rate both vertically - from rainwater above and horizontally as a result of a subsurface “damming” effect preventing water transport laterally across the subsurface, increased surface smoothness)

The applicant’s plans detail the construction of approximately 4.2km of internal road surface varying in width from 3.5m-6.5m. This equates to replacement of approximately 21,000 square metres of the existing soil surface with a road surface constructed from 300mm road-stone and laid on top of a compacted soil subsurface.

In addition to the road surfaces constructed there are also a number of other impermeable surfaces that will be introduced to the site in the form of 16 shipping containers & other associated infrastructure.

- Increasing the proportion of the surface area of the site that has a reduced permeability relative to the current soil structure will reduce the amount of water that is able to be absorbed into the soil (the loss rate) as well as transferred and stored in other areas of soil or transferred to other established drainage.

- In addition, increasing the proportion of the surface area of the site that has an increased surface smoothness and decreased hydrophilicity will have the effect of increasing the rate at which water can travel across the surface of the site (the discharge rate associated with surface runoff).

C. Destruction of existing land drainage systems currently present

(Hydrologic impact = reduced loss rate)

As detailed in the applicant's Land Use and Soil section, the land currently has an established drainage system which makes use of channels present in the soil (created either naturally by root structures and invertebrate movement, or through techniques such as the construction of "mole-drains") to aid water transport laterally across the fields for evacuation via a network of ditches linking the fields to the surrounding watercourses.

One of the secondary effects of the activities which produce soil compaction (Section A, above) and are used in the creation of access and other infrastructure (Section B, above) will be destruction of existing drainage systems which make use of the current (un-compacted) soil subsurface.

The destruction of the land drainage systems currently present at the site will have the effect of reducing the ability of the land to safely and slowly transport and store water within its structure. This will in turn mean that the soil above the existing permeable layer will more quickly become saturated with flood water, rapidly decreasing the loss rate of the soil when subjected to rainwater.

D. Reduction in surface vegetation - in the period from the commencement of the construction phase to the point where planted vegetation has reached suitable maturity.

(Hydrologic impact = increased surface smoothness & reduced soil surface shear strength)

Initially there will be a significant reduction in the surface vegetation present across the site area. This will be as a result of:

- The cessation of activity to produce arable crops
- The clearance of vegetation to allow access to the site
- Increased soil compaction and water saturation of soil associated with vehicle movements and other construction activity

The presence of established and well maintained surface vegetation and the improved surface roughness that this provides has been identified (see Footnote 17) as the key factor that helps mitigate surface runoff by reducing the speed at which water is able to flow across the surface of the land. A pronounced decrease in vegetation will therefore increase the smoothness of the surface and enable rainwater to flow across the surface at significantly increased speeds. This in turn then means that other drainage infrastructure will be presented with a higher volume of water within a smaller time period, making it more likely that its drainage capacity will be breached and flooding will occur.

In addition, reducing the level of vegetation will reduce the sheer strength of the soil as this is usually enhanced by the root structures of the vegetation present. The reduction in this soil strength will make soil erosion more possible, which will have a secondary effect of reducing the efficacy of existing drainage systems downstream of the site (as these will now be presented with larger volumes of solid matter / silt in addition to the increased volumes of rainwater)

E. The topography of the land

(Hydrologic impact = acceleration of overground surface water flow)

There are three variables directly associated with the topography of the land that have a direct impact on the velocity of the surface runoff flow observed.⁴⁴

1. Slope length
2. Slope gradient
3. Flow path convergence

The site of the proposed development contains a range of topographical features that will cause acceleration of the surface water that flows across it.

These include:

- A range of slopes of significant lengths (Up-to approx. 700 m)
- Entire field slope gradients >7%

⁴⁴ Reaney, S.R. and Bracken, L.J. and Kirkby, M.J. (2014) 'The importance of surface controls on overland flow connectivity in semi-arid environments : results from a numerical experimental approach.', Hydrological processes., 28 (4). pp. 2116-2128.

- Converged flow paths on Fields 1, 2, 3, 4, 5, & 6⁴⁵

NB. A full topographical survey and associated flow analysis has not been conducted by the applicant therefore it is not possible to analyse the contribution of each topographical feature and quantify its effect on overground flow rates

F. The angle of the panels when in operation

(Hydrologic impact = acceleration of rainwater, increased rainwater kinetic energy per unit area, variation in uncovered ground surface area able to act as a rainwater buffer)

The applicant has proposed automating the adjustment of the solar panel array such that it can make more effective use of the sunlight available at the proposed site. The variation in panel angle will have the following effects on the rainwater presented to the surface of both the panels and the ground below.

Broadly this can be summarised by two contrasting effects:

Increasing panel acuteness - This would increase the accelerating effect of the panel, however it would also present a smaller panel surface area for the collection of rainwater (reducing the volume of water flowing across the panel) and present a larger ground surface area beneath the panel.

Decreasing panel acuteness - This would decrease the accelerating effect of the panel, however it would also present a larger panel surface area for the collection of rainwater (increasing the volume of water flowing across the panel) and present a smaller ground surface area beneath the panel.

In summary, variation between the two extremes in panel angle (NB. the specific angles or their likely utilisation throughout the day/year have not been specified by the applicant) will affect the volume of water accelerated across the panels and the amount of increased kinetic energy the water possesses when it is discharged from the edge of the panel and made available for further flow across the ground and erosion of the surface.

At each panel angle extreme (or indeed the optimum angle in between) the acceleration of water across the panel surface will be significantly above that of bare ground or vegetation, this being true even if the panel were to be completely flat as the panel surface has a significantly increased smoothness coefficient relative to bare ground or ground cover.

A separate effect of the proposed panel tracking automation will be to reorientate the lateral direction of the panel. This will have the effect of redirecting the rainwater as it leaves the surface of the panel. Depending on the orientation of the panel and how this interacts to the overland flow paths there is a risk of increased flow path convergence which (as discussed in Section E) can further accelerate the water as it crosses the ground surface.

G. The location & distribution of the panels when installed - specifically the surface area between the panel rows

(Hydrologic impact = reduced loss rate due to water saturation)

The importance of spacer sections between panel rows and “buffer” sections located at strategic points has been well documented⁴⁶ as a necessary mitigation for surface run-off emanating from landscapes incorporating solar arrays or those with high rates of overground pluvial flow.

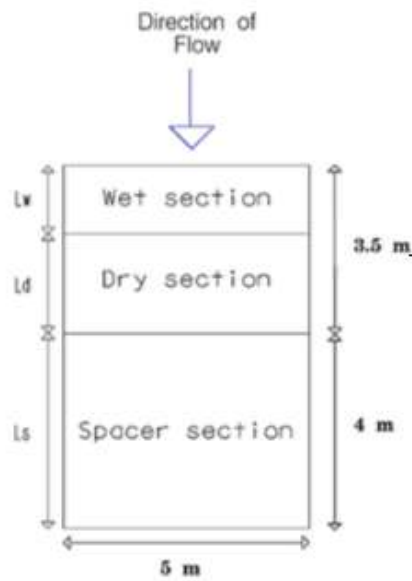
The action of spacers or buffers is to strategically present ground surfaces and subsurfaces at places where the velocity of overground flow needs to be attenuated or the total volume of the flow reduced. This is achieved by maintaining ground with increased surface roughness (relative to the ground beneath solar panels, or the surface of the panels themselves) and increased ability to “absorb and store” or “absorb and slowly transport” the water through vertical or lateral percolation in the subsurface.

The applicant’s plans do not identify the presence, location or size of buffer/spacer sections between the panels, and without the size and placement of buffers/spacers being correctly calculated and incorporated within the plan it is evident that the ground will be less able to absorb the increased volumes and velocity of water that it is presented with and therefore surface water flow rates and volumes emanating from the site are likely to increase significantly.

⁴⁵ EA’s Low Risk Surface Water Flood Depth Map

⁴⁶ . Dabney, S. M., Moore, M. T., and Locke, M. A. (2006). “Integrated management of in-field, edge-of-field, and after-field buffers.” J. Amer. Water Resour. Assoc., 42(1), 15–24; and Hydrologic Response of Solar Farms, loc. cit

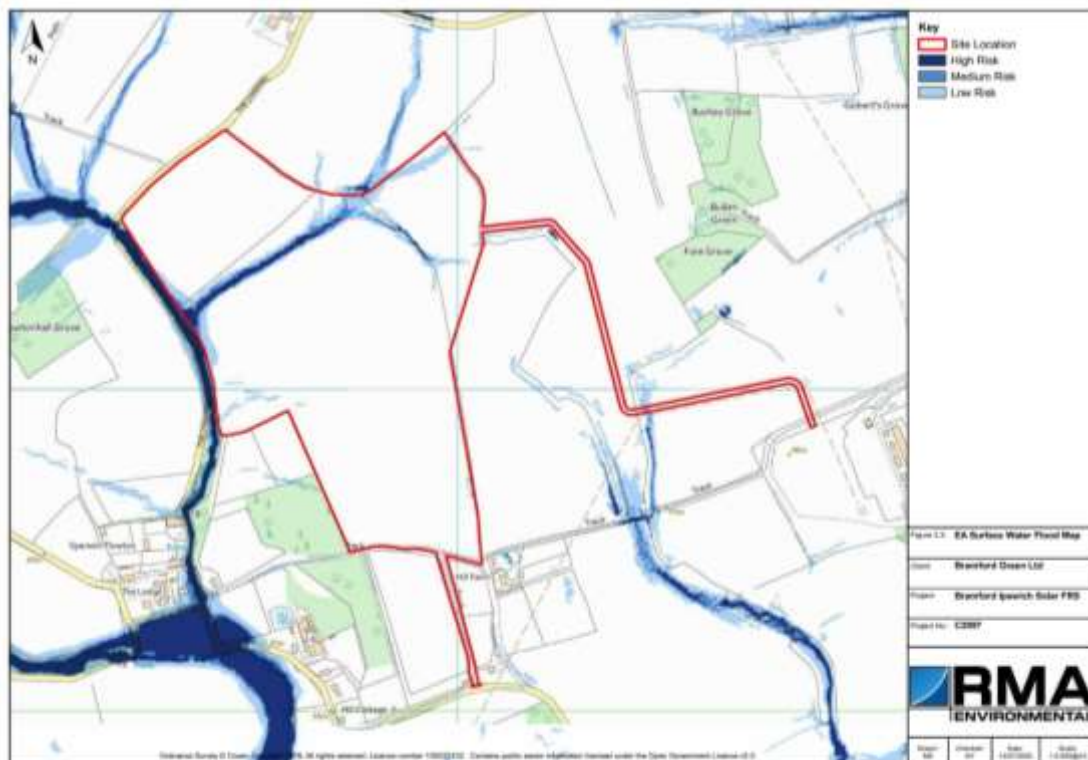
FIG. D1 - SCHEMA SHOWING A TYPICAL SPACER ARRANGEMENT BETWEEN SOLAR PANEL ROWS RELATIVE TO THE DIRECTION OF OVERGROUND FLOW PATHS.



3. The Environment Agency data already documents a high degree of flood risk associated with surface runoff emanating from flow paths crossing the location.

The Environment Agency's Surface Water Risk Map (Fig D2) details areas of high surface water flood risk associated with overland flow paths crossing Fields 4, 5 & 6. These flow paths are detailed as sources of flood risk for Flowton Brook & Belstead Brook.

FIG D2 - EA SURFACE WATER RISK MAP IDENTIFYING FIELDS 4-6 AS BEING DIRECTLY ASSOCIATED AS AREAS OF HIGH SURFACE WATER RISK FOR FLOWTON BROOK & BELSTEAD BROOK. (REF 4)



4. The applicant's Flood Risk Assessment lacks the necessary quantitative / hydraulic analysis that would enable determination of the worst case scenario flood risk (against which suitable mitigations could properly be determined & assessed)

The applicant's FRA states (3.10) *"..given that the flood extent associated with the Site is minor, a full-scale detailed hydraulic model would be beyond the scope of what is considered appropriate for the Proposed Development. Therefore, the JFLOW data is considered to be the best available data for the scale and scope of this application"*.

This is contrasted against the caveat provided by the Environment Agency alongside its own JFLOW data:

"The Flood Zone maps in this area are formed of national generalised modelling, which was used in 2004 to create fluvial floodplain maps on a national scale. This modelling is not a detailed local assessment, it is used to give an indication of areas at risk from flooding. JFLOW outputs are not suitable for detailed decision making."

As previously discussed there is clear potential for significantly elevated flood risk associated with pluvial flow crossing land impacted by the development. From our assessment of the FRA and wider literature there appear to be a number of factors that should be quantitatively assessed / modelled within the applicant's FRA such that the "worse case scenario" discharge rates and volumes could be calculated, and against which a suitable drainage strategy could be determined (and included as a condition within their proposal).

Their FRA should (and currently does not) include a consideration of:

- The current fluvial & pluvial flow volumes and rates for all areas impacted by the proposal (this would include ranges to include the 1/100 year storm events, and an allowance for the expected 35% increase in flow rates due to climate change etc.)
- The specific soil types present at the site and their associated loss rates
- The ground slope / topography of the site and its impact on specific overland flow paths (It is noted that the applicant's FRA currently includes a topographical survey - Appendix A - but that it excludes any evaluation of how the topography affects the current overland flow)
- The range of panel angles and orientations to be used and their hydrologic impact within the context of the site
- The distribution of the solar panels across the site and relative to these the distribution of any spacer/buffer areas should they be proposed
- Changes to the surfaces over-which flow occurs (specifically how the range of roughness coefficients and loss rates will be impacted & the distribution of these different surfaces across the site). This should separately consider the construction phase (when there will be expected to be significant soil compaction as discussed in Section 2A above), during the run phase (when the panels & access tracks will be installed & in use, and maintenance activity conducted) and during the decommissioning phase.
- Any changes to direction of expected flow paths as a result of the development.
- The current capacity for drainage at the site & how this is likely to be impacted by construction activity

It is our assessment that without a comprehensive quantitative analysis of the above factors it is simply not possible to determine the degree to which the flood risk will be elevated by the activity and construction proposed by the applicant.

And without this analysis it is also not possible to provide assurance to those likely to be impacted by flooding emanating from the site that any proposed mitigation would likely to be effective.

5. The applicant's Flood Risk Assessment lacks any assessment of the current impact of flooding associated with overground flow from the area

As has been pointed out in SCC's response to the applicant's FRA on 20th January 2021, there is currently no assessment of the current impact of flooding associated with overground flow from the site detailed within the FRA, nor has the applicant made any attempt to gather this data from the Local Lead Flood Authority. This is of some obvious concern to CARE Suffolk as the impact from flooding emanating from this site is well known to local residents – with regular road closures restricting access to the surrounding villages, and numerous properties at risk of flooding downstream of the site. This set to increase in line with increased rainfall expected as a result of climate change alongside increased residential development proposed within various local plans.

Paragraph 4.2 of the FRA states *"Surface water arising from a developed site should, as far as is practicable, be managed to mimic the surface water flows arising from the Site prior to the Proposed Development while reducing*

the flood risk to the Site itself and elsewhere.” This is supported by planning policy in both the local development plan and NPPF.

According to the FRA the current greenfield runoff rate is 0.58l/s⁴⁷.

However, in relation to the battery storage and substation areas the following paragraphs state:

“4.18 The possible use of infiltration as a means of disposal has been investigated by percolation testing being undertaken in April 2021, the results of which are included within Appendix A of Appendix E. Results of the tests indicate that there was negligible potential for the disposal of runoff by means of infiltration.

4.19 In view of this, a strategy has been developed that mimic greenfield runoff rates as far as practicable. Given the footprint and concentrated location of containers and equipment within the battery storage area and substation compound, it is proposed to provide a separate formal drainage system for this area of the site. Therefore, the surface water arising from the battery storage and substation compound will be discharged to a watercourse at a controlled rate.

4.20 For the battery storage area and sub-station compound, it is proposed to construct this area on a layer of aggregate retained in an impermeable geomembrane. Attenuation will be provided within the voids of the aggregate and outflow from the area will be limited to a maximum of 1.4 l/s for all events up to the 100 year including 20% climate change. This is considered to be lowest practicable rate that can be achieved without significantly increasing the risk of blockage in the system, and can be achieved using a Hydro-Brake with an orifice of 65 mm diameter.”

This increased run off rate would be drained via a pipe to a ditch that is in a flood risk 2 and 3 area, which also directly feeds the Flowton Brook area.

We agree with the conclusion that infiltration is not an option. However, we do not agree that the only solution is to keep the water in the battery storage area and drain it with a hydro brake at a rate that is more than double the current run off rate. A SuDS retention pond would enable the applicant to increase the water storage capacity so that it could be released at the current greenfield rate. Such ponds usually bring wildlife benefits too.

CARE Suffolk has conducted some open-source / community research relating to flood events observed in recent years, particularly in the Flowton Brook area, to demonstrate the current flood risk in the area and the importance of NOT increasing the surface water run off rate of the site. These are further evaluated in the following section.

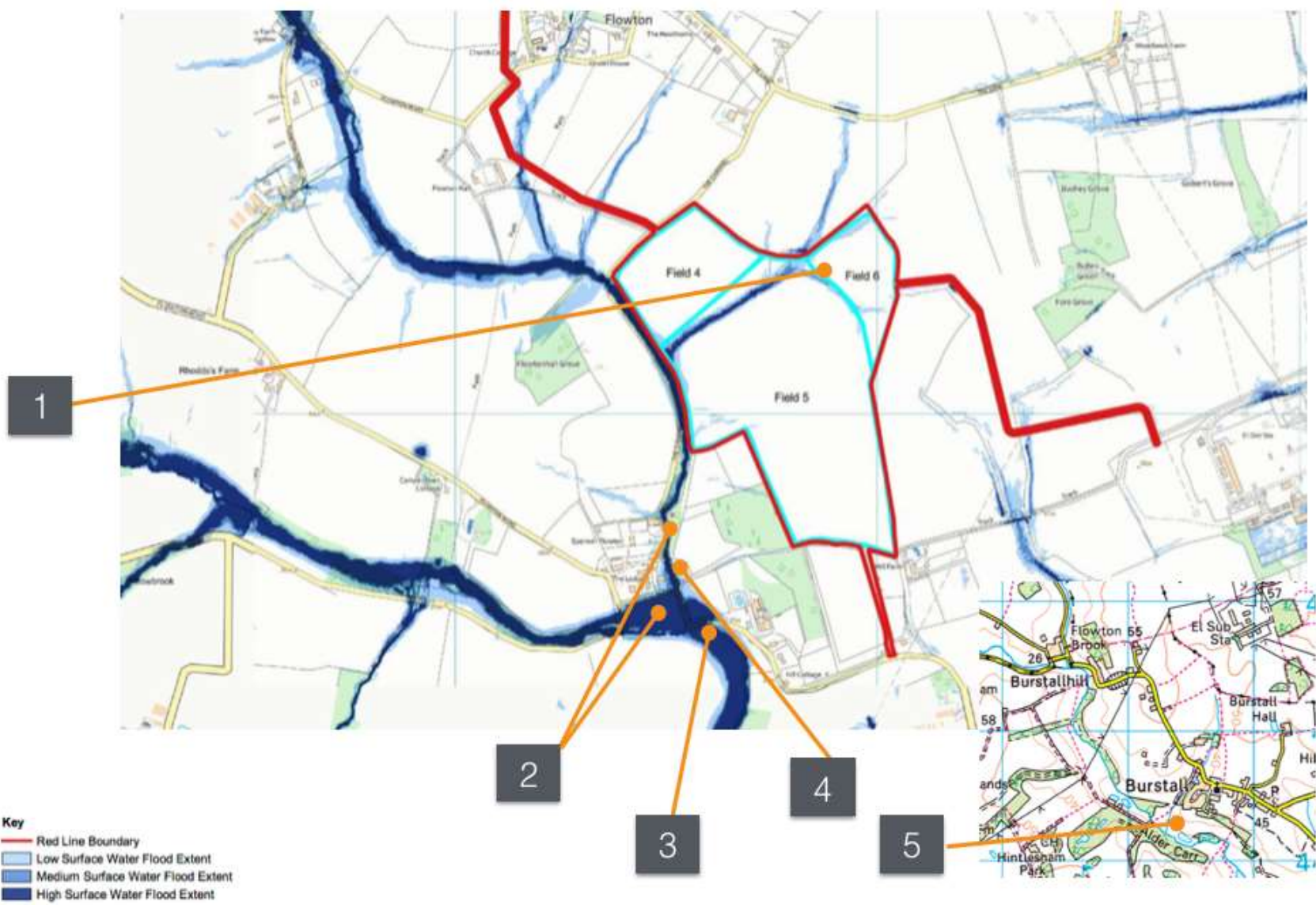
6. The impact of flooding on the local area is already severe

Recent research has been conducted which identified at least four serious flood events in recent years. The most significant of these occurred in December 2019 when the village of Offton, was completely cut off, and Flowton was left with only one road out of the village.

The significantly adverse impact of this flooding is clearly demonstrated by the evidence collated below. This catalogues photographic, print media and social media evidence to help provide a picture of the current impact of flooding emanating from the site in the year preceding the receipt of the applicant’s proposal.

⁴⁷ Appendix E section S2

Proposed development DC/20/05895 - EA Surface Water Flood Map with local photo evidence overlay (Fields 4-6)



Proposed development DC/20/05895 - Historic flood photographic evidence (Associated with Fields 4 - 6)

1



Standing water as a result compaction due to limited vehicle movements associated with standard farming practices in Field 6 31/01/21 observed by Angela & John Schwarz

2



Flooding of "Church Hill" and "The Channel" Roads adjacent to Fields 4 & 5 28/01/21 observed by Steve Packard

Proposed development DC/20/05895 - Historic flood photographic evidence (Associated with Fields 4 - 6)

3



Flooding of "Church Hill" and "The Channel" Roads adjacent to Fields 4 & 5 24/12/20 observed by Clare Limond

Proposed development DC/20/05895 - Historic flood photographic evidence (Associated with Fields 4 - 6)

4



*Flooding of "The Channel" Road adjacent to Fields 4 & 5
15/01/21 observed by Paul Boulton*



*Flooding of "Church Hill" Road below Fields 4 & 5 17/01/21
observed by Claire Boulton*

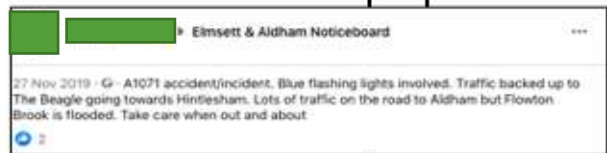
5



*Flooding in Burstall at footpath to Hintlesham,
adjacent to Flowton Brook < 1000m
downstream from the edge of Field 5,
24/12/20 observed by Ann Burchnell*



Proposed development DC/20/05895 - Social-media statements & media reporting relating to areas sensitive to flooding & likely to be impacted by an increase in surface water run-off associated with Fields 4- 6.



7. The applicant has not provided sufficient detail regarding the construction or management of necessary flood mitigations nor an adequate drainage strategy within their proposal

There are a number of mitigation measures detailed in the applicant's FRA (3.22-3.26). These only consider a range of mitigations to limit the impact of flooding to the site, not flooding emanating from the site to surrounding areas.

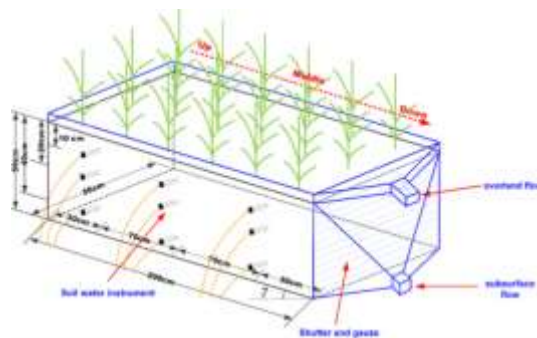
Further mitigations are briefly considered within the Drainage Strategy and these include the establishment of grassland (4.11) and other planting regimes (4.12), as well as statements regarding the maintenance of the grassland (4.14) and a suggestion of a potential response (4.15) to soil erosion should it be observed.

Whilst consideration of mitigations to the pluvial & fluvial flood risk are welcomed, there are a number of omissions from the FRA & LEMP Report that prevent a proper assessment of their suitability to be made. These include:

- The enhanced volumes & peak discharge rates that the drainage strategy needs to counter (as per the quantitative / hydraulic assessment noted in section 4 above)
- The expected net reductions to volumes & peak discharge rates as a result of changing the surface smoothness, absorption or other mitigatory transport (detailing the specific contribution in either direction from each changed surface)
- The effect of the proposed soil erosion mitigation (4.15) on peak discharge rates & volumes
- Detailed information regarding layout & distribution of the panels (in relation to each other and the direction of overground flow) & whether this layout reflects that proposed as a mitigation in published research⁴⁸.
- The sequence of the establishment of the mitigations within the applicant's installation plan or schedule of works and a statement regarding the point within this plan that the mitigations are expected to be effective. In particular where the mitigation proposed relates to the establishment of grassland or other vegetation, the applicant should evaluate at what point in maturity this vegetation should be considered able to mitigate the impact of the enhanced surface water flow paths it is designed to impede. The importance of this evaluation is highlighted by recent research⁴⁹ that demonstrates the significant impact the maturity of vegetation has upon the runoff coefficient observed.

Fig D3 provides an illustration of how this research was conducted, and **Fig D4** demonstrates the results which show how the growing stage of a particular crop (in this case Maize, NB for Maize vegetation density at ground level is inversely proportional to maturity) affects the vegetation density at the surface of the ground and how this in turn can alter the runoff coefficient by a factor of between 3.1 and 3.6x depending on the gradient of the ground.

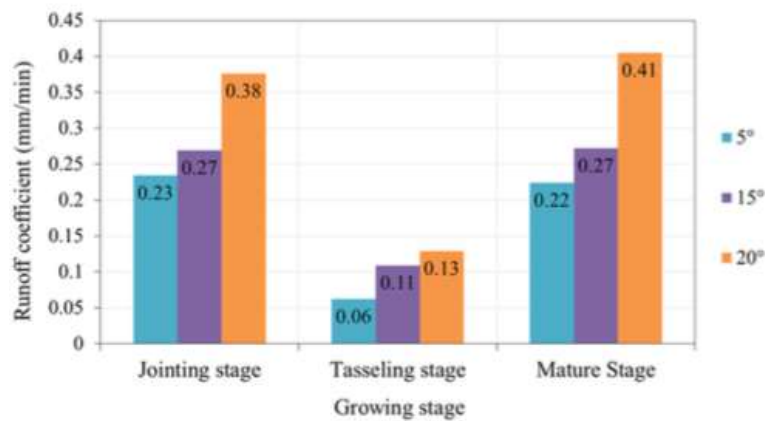
FIG D3 - THE STRUCTURE OF THE EXPERIMENTAL PLOTS USED IN RECENT RESEARCH TO ASSESS THE EFFECT OF VEGETATION MATURITY ON SURFACE RUNOFF COEFFICIENTS (SEE FOOTNOTE 29)



⁴⁸ Hydrologic Response of Solar Farms, J. Hydrol. Eng., **2013**, 18(5): 536-541

⁴⁹ Effects of Rainfall Intensity and Slope Gradient on Runoff and Soil Moisture Content on Different Growing Stages of Spring Maize, Water, **2015**, 7, 2990-3008

FIG D4 - RESULTS OF RECENT RESEARCH TO ASSESS THE EFFECT OF VEGETATION MATURITY) ON SURFACE RUNOFF COEFFICIENTS (SEE FOOTNOTE 29)



Currently the FRA & LEMP Report fail to state when the mitigations it proposes would be in place and when they would be considered effective (with the enhanced risk fully mitigated). Furthermore the clearest articulation of a schedule of installation for the suggested mitigations (found in Table 3: Management Programme, LEMP Report) seems to detail the grassland being sown in the year after the development starts, and the FRA seems to contain the expectation that bare ground may result from the construction activity; but it is not made clear whether the response (re-seeding) proposed would be successful in this scenario and over what time period this key mitigation would be absent.

In addition to this lack of detail there are also concerns regarding the presence of commercial incentives that would encourage the applicant to commence operation of the solar array before ground cover is established and to continue to neglect the management of this ground cover.

These incentives relate to:

1. The time-costs associated with rent of the land, grid connection, business rates & cost of finance
2. The potential use of bifacial solar panels that are able to increase the output of electricity produced by utilising light that is reflected from the ground surface (via a process called Albedo) onto the back of the solar panel. It should be noted that bare ground has a 40% higher ability to reflect light than grass.

Without commitment to an appropriate set of mitigation measures and management strategies, and adherence to these being enforceable, it is clear that these commercial incentives are likely to de-incentivise mitigation of flood risk, the reduction of which is of critical importance to the local community.

8. Conclusion

The NPPF makes it clear that “development should be made safe for its lifetime without increasing flood risk elsewhere”⁵⁰ and “should consider cumulative impacts in, or affecting, local areas susceptible to flooding.”⁵¹ Further the NPPF states development should be “using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management)”⁵² and “Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate.”⁵³

The NPPF continues in paragraph 167 “When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment⁵⁴. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

⁵⁰ Paragraph 159

⁵¹ Paragraph 160

⁵² Paragraph 161c

⁵³ Paragraph 169

⁵⁴ A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more.

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;
- d) any residual risk can be safely managed; and
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan."

The MSDC Core Strategy 2008 states at policy CS4 "The council will support development proposals that avoid areas of current and future flood risk, and which do not increase flooding elsewhere..."

The emerging Joint Local Plan states at policy LP29 that "Proposals for new development can be approved where...

- 2. In areas at medium or high risk from flooding, it has been soundly demonstrated that the new development or intensification of development, can be made safe for its lifetime without increasing flooding elsewhere.
- 3. Mitigation is provided against existing and potential flood risks throughout the life of the development (including fluvial, surface, coastal and sewer flooding) through application of a sequential approach to flood risk, the implementation of Sustainable Drainage Systems (SuDS), and risks to ground or surface water quality.
- 4. Above ground, appropriate SuDS are incorporated within new developments wherever possible, and take opportunities to provide multifunctional benefits, including biodiversity, landscape, amenity and water quality enhancement.
- 5. Proposals are submitted appropriate to the scale of development detailing how on-site surface water drainage will be managed so as to not cause, or increase flooding elsewhere. This includes the cumulative impact of minor developments.
- 6. Opportunities to provide betterment of greenfield runoff rates to reduce the overall risk of flooding, have been provided wherever possible."

In summary it is our assessment that the applicant's proposal is woefully deficient in its consideration of both the latent flood risks present at the site, as well as the likely contribution that the construction will make in further heightening this risk and how this escalation will impact those who live, work and access the environment within which the site is situated.

We agree that the development itself would not be at risk of flooding, but given the factors considered above, it is clear that the proposal contains activity that **will significantly elevate flood risk elsewhere** by increasing peak discharge rates, volumes and the kinetic energy associated with pluvial flow whilst removing existing mitigations associated with the land's current use and before planned mitigations are in place.

It therefore seems likely from the plans submitted that the worst case flood scenario is *likely* to occur should the proposal be approved. This would be represented by:

- i. Reduction of vegetation at the site
- ii. Soil compaction during construction
- iii. Destruction of existing drainage systems
- iv. Increased proportion of impermeable surfaces due to the construction of access tracks, buildings and other infrastructure
- v. Installation of solar panels concentrating & accelerating rainfall
- vi. The delayed establishment of mitigatory grassland & vegetation - this not being mature enough to sufficiently slow or absorb water flow at the point when the soil is most compacted
- vii. Insufficient application of spacing and buffer areas to retard the pluvial flow
- viii. Maintenance activity further compacting the soil
- ix. A storm event occurring within this time (Nb. The construction is likely to take >40 weeks, and, as over the last 13 months at least 4 storm events have been recorded, it is therefore reasonable to assume at least two storm events are likely to occur during the construction phase.)

The current proposal fails to address a number of key issues associated with flooding, in particular their impact elsewhere in known areas of high flood risk, and fails to even attempt to engage with SuDS. They have further missed an opportunity, using SuDS, to contribute to mitigation of existing flood problems in the area, although we understand that the combination of existing problems and future risks associated with the development mean that this would require extensive mitigation.

Given the assessment presented we ask that the local planning authority REFUSE the application on the grounds of the heightened flood risk it represents and the applicant's neglect to propose an acceptable mitigation strategy.

7. Biodiversity

1. A considerable range of legislation and planning and related guidance is relevant to the proposals in respect of wildlife and biodiversity. Much of this is summarised in two of the documents submitted with the planning application and is not repeated here.^{55,56} Further guidance is listed in MSDC's Scoping Opinion.⁵⁷ In essence, the requirement is for developers to protect and enhance biodiversity and not to damage irreplaceable habitats or vulnerable species. The applicant claims that they would follow this guidance, but their claims are based on limited and patchy data and take no account of the substantial length of time that any proposed new habitat would take to grow and be populated.

Research done by the applicant is patchy and inadequate

2. Relevant surveys were carried out by BSG Ecology as follows: habitat types and badgers (31/3/2020), breeding birds (visits on 7/5/2020, 22/5/2020 and 5/6/2020), Great Crested Newts (19/5/2020 with water sampling on 20/5/2020), and an additional survey of the cable and construction access route (29&30/10/2020). Very limited additional desk research was carried out – primarily a search of the necessarily limited Suffolk Biodiversity Information Database.⁵⁸ No account seems to have been taken of the advice from Natural England that "Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals" and that "... botanical and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present,"⁵⁹ despite MSDC's Scoping Opinion asking that this advice should be followed, and SCC Ecology's clear statement that "Field and desk-top survey results must be adequate and up to date in accordance with Natural England Standing Advice, [and] provide a summary of all species and habitats likely to be affected by the proposals."⁶⁰
3. As a result, the baseline data that have been used in the biodiversity net gain assessment and in the proposals are extremely limited. No attempt seems to have been made, for example, to have sought information from the Suffolk Naturalists' Society or Suffolk Bird Group, both of which publish comprehensive annual reports based on reports made to county recorders; or from Suffolk Butterflies, which lists many butterfly sightings and maps these;⁶¹ or from the Suffolk Moth Group, which records and maps moth sightings,⁶² with 130,000 records in 2020;⁶³ or indeed from any individuals, of which a number keep detailed records of sightings in the areas affected by the proposal.
4. A limited survey of these sources shows that many vulnerable species have been missed in the surveys carried out. The Appendix lists some of these. Records of species' presence do not, of course, necessarily indicate that they are breeding in the area - though there is evidence that many of them are - or would be directly damaged by the plans, but the scale of the applicants omissions casts serious doubts on what they say throughout their papers and suggests that the damage these plans would cause would be much greater than they claim. In this context, it should be noted that, as Natural England say, "consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area," something that ENSO have not done properly. It is difficult from the outset, therefore, to take the claims made about biodiversity improvements at all seriously, given the almost complete lack of understanding of the current situation shown by ENSO.

Unreliable conclusions in the planning application

5. The developers claim that their proposals would bring a "biodiversity net gain score of +159.35% for habitats and of +64.69% for hedgerows." Such spuriously accurate claims would ring alarm bells with any competent statistician.⁶⁴ Little or no information has been provided on a number of key variables, such as the rate of growth of new habitat to a condition that would be attractive to wildlife; the time that wildlife would take to colonise newly-planted habitat; the true biodiversity value of existing habitats before they are damaged during the planned

⁵⁵ ES Paragraph 7.164

⁵⁶ Landscape and Ecological Management Plan (LEMP) R009 pp 11-15

⁵⁷ MSDC Planning Reference DC/20/04125 (October 2020) Section 6

⁵⁸ BSG Ecology op cit, passim.

⁵⁹ Natural England's response to EIA Scoping Opinion, 12 October 2020, paras 2.4. 2.5

⁶⁰ SCC Ecology comments on ENSO plan, 19.1.21

⁶¹ www.suffolkbutterflies.org.uk

⁶² <https://suffolkmoths.co.uk/>

⁶³ Recording Moths in Suffolk Facebook page, 3.2.21

⁶⁴ The author of this section is a Fellow and former Vice-President of the Royal Statistical Society.

construction phase; and so on. There is considerable doubt whether some of the mitigation measures proposed would be successful, or to what timescale they would be effective, so it is impossible to tell when any possible gains (however calculated and however accurate) might be realised. It is quite possible – given the damage that would be caused during the lengthy construction period, and the inevitable displacement of many species - that there would be no real gains for many years, if ever.

6. As the Technical Supplement to the Defra Biodiversity Metric says, “Many factors influence how long a habitat takes to go from the point of creation or restoration to the desired end point condition. Factors are often site dependent but can include soil nutrient status, soil types and pH, site preparation, climate and the neighbouring habitats and species matrix available to colonise the new or restored habitat. The timeframe is also resource dependent ... For the purposes of biodiversity metric 2.0 average time estimates need to be used, accepting that there will be variation from this central estimation.”⁶⁵
7. The developers say that the proposed hedgerow, scrub and tree planting and landscape management would be effective within 15 years⁶⁶ 15 years is getting on for nearly half the proposed life of the project and, until that time, there be no effective screening of the panels and shipping containers, with ugly tree guards damaging the visual impact even further. This significant delay over the time that plants would take to grow casts considerable doubt both over the extent to which there would be any genuine biodiversity gains, and on the claim that new planting would mitigate the potential effects of glint and glare.⁶⁷
8. It is possible that even this lengthy timescale is an under-estimate. The developer’s drawings of new hedges show that they would be 2.5 times the height of the perimeter fences. These fences are to be 2.0 metres high which implies a hedge height of 5.0 metres – unlikely, but welcome from the point of view of screening. Estimates of the time hedges take to grow vary, depending on species and ground conditions, from 3 to 12 inches a year.⁶⁸ In other words, it could take as much as 40 years for the proposed hedges to grow. Furthermore, the height of a hedge is not the only important criterion – they need to be thick and dense, both to provide good habitat and for effective screening. Full density typically takes between 10 and 17 years but this requires regular annual maintenance.⁶⁹ It is not at all clear that the proposed hedgerow management plan, which simply says “periodic pruning” would achieve this. Based on the following evidence, it would seem the developers timescale is a hugely under-estimated.

Below photo taken 8th June 2023 of replacement hedgerow planting along Tye Lane where the EA1 & EA3 cables were laid. This is the third year of growth. There is more screening from the weeds and several of the plants have died.



⁶⁵ Natural England Joint Publication JP029 *The Biodiversity Metric 2.0 Technical Supplement Beta Edition* Paras 2.33, 2.34

⁶⁶ Design and Access Statement page 34

⁶⁷ LEMP p16

⁶⁸ Information from range of hedge growers’ websites.

⁶⁹ Leigh Hunt, Principal Horticultural Advisor to Royal Horticultural Society, email 4.12.20

Screenshot of a hedgerow at another solar PV installation. After 6 years this is barely 1m tall.

 **Grimley Solar Farm Action Group** ... X
(Birchall Green)
Jim Moffat · 35 m · 

If you read that panels will be screened by new hedges, this image was taken by me on April 10th 2021 at 12:15pm of the hedge planted on a solar installation 2km south south-east of Broadway tower (as the crow flies). It lies along the A44. It is one of the few around with a footpath going through part of it. It was built between November 2013 and June 2015. I'd know more if I could find the name of the installation. I got those dates by looking at google earth pro. By June 2015 it was fully built so the hedges are probably 6 years old. Note that the hedges for half the year are as useful as a screen door on a submarine.

 Like  Comment  Share



Substation at Bishops Waltham Solar Farm. Photo taken February 2023 6-7 years after planting.



9. Another element contributing to the gains claimed is the areas of “neutral grassland (within fenced solar fields).”⁷⁰ These are assessed as ‘fairly poor’ condition. This is questionable – as a specialist in the biodiversity metric has said, “I have also come across solar applications, and I am equally suspicious about the biodiversity merits of grassland beneath solar panels... They might meaningfully contribute to biodiversity if sown with wildflower or managed using low levels of roaming herbivores, but if they’re simply frequently mown, I am concerned they may be systematically overestimating their biodiversity value.”⁷¹ We do not know whether there would realistically be any grazing but this certainly casts doubt on the developers’ calculations. If this large area were assessed as ‘poor’ condition post-development, the overall habitat net gain claim reduces.
10. Furthermore, the net gain calculations do not give a full picture of what could be catastrophic habitat losses during the construction and early operating years of the solar installations, when some species could be driven out of the area for ever. The biodiversity spreadsheet shows that the current baseline situation has a substantial biodiversity value. These would be instantly lost once construction started and not recovered or enhanced for many years.
11. Any new planting of trees and hedges, and replacements for those that would be damaged, could easily be affected by the construction works proposed, with associated ground compaction, and by digging trenches for cables. If permission were to be granted, all planting and subsequent care of trees and hedges should be to British Standards 5837 (*Trees in relation to design, demolition and construction*) and 8545 (*Trees: from nursery to independence in the landscape*). Further it should be a condition of planning that any new planting that fails is replaced for the full duration of the development since the applicant appears to place a big emphasis on the mitigation created by the planting, including for public safety for glint and glare.
12. Some (possibly a substantial proportion) of the biodiversity gains claimed by the developers would result from the two proposed nature areas in Fields 3 and 5. It is unclear whether these would be retained after the decommissioning of the project or would revert to agricultural land. If permission were to be granted, there should be a condition that these, along with any other enhancements planned to improve biodiversity, should never be dismantled.

Impact of the construction period

13. The developers make much of their long-term plans but say very little about the damage – possibly permanent – that would be caused by the lengthy construction period that they propose. A minimum 40 week construction period (which experience shows is likely to over-run), during which there would be considerable noise,⁷² would do considerable harm to landscape, habitats and breeding wildlife which in some cases could be irreversible. The Suffolk Biodiversity Validation Requirements⁷³ show that the key seasons for the main species likely to be impacted by the development plan cover, between them, every month of the year. It is disappointing that no Construction Ecological Management Plan has been submitted which makes it impossible to know what is suggested to mitigate this damage. The developers suggest that there should be a pre-commencement planning condition that ground clearance should be conducted outside the bird nesting season, but this does not go far enough. Any condition should be much stronger and apply to all the vulnerable and protected species that this development would affect, and apply to hedge removal and any other impacts (including noise) as well as to ground clearance.⁷⁴

Wasted public money

14. The fields on which the southern part of the proposal is sited have been farmed with deliberate intent to encourage wildlife and biodiversity for more than 20 years.⁷⁵ This has included much new hedging, including along the edge of Field 7; the creation of wildlife areas; and the encouragement of field margins and scrubby corners which help wildlife, but which would be removed under the proposed plans. In recent years, the same fields have been farmed under the Defra Countryside Stewardship Scheme, for which public money has been used to promote significant habitat improvements alongside crop production.⁷⁶ The accumulated benefit of many years of publicly-funded work would be wasted if these fields were turned into a solar installation, with biodiversity losses rather than gains in the short- and medium terms at best.

⁷⁰ Biodiversity Net Gain Assessment Table 4.

⁷¹ Sophus zu Ermgassen, University of Kent email 10.2.21

⁷² And potentially artificial lighting, if there is any construction work during shorter daylight months.

⁷³ <https://www.midsuffolk.gov.uk/assets/DM-Planning-Uploads/Suffolk-Biodiversity-Validation-Requirements.pdf> p4

⁷⁴ See National Solar Centre *Biodiversity guidance for solar developments*

⁷⁵ See, for example, John Cousins *Linking landscapes – the farmer’s role* (<http://www.suffolkbis.org.uk/node/77>)

⁷⁶ <https://magic.defra.gov.uk/magicmap.aspx>

15. The Enhanced Land Management Scheme (ELMS) is the “cornerstone of the government’s new agricultural policy” which will, from 2022, mean that “farmers and other land managers may be paid for delivering the following public goods: clean air; clean and plentiful water; thriving plants and wildlife; protection from environmental hazards; beauty, heritage and engagement with the environment; and reduction of and adaptation to climate change.”⁷⁷ The results will be monitored and failure penalised. This scheme should be attractive to the owners of the land on which the applicant proposes to build. The applicant’s limited proposals on biodiversity would provide less, would not be monitored, and are designed to mitigate something which is unnecessary and would additionally take a large area out of valuable agricultural production. Leaving the fields as they are, and developing them under ELMS, would be considerably more effective.

Dangers of fencing

16. If approved, the site would be surrounded by visually intrusive deer fencing mesh fencing. We are aware that many solar farm insurers are even insisting on close-welded mesh fencing which is even more intrusive. Although some routes for smaller mammals would be provided by mammal gates, the evidence for the effectiveness of such gates and gaps is mixed.⁷⁸ Should close-welded mesh fencing be requested later on it must be noted that this type of fencing cannot include mammal gates. Furthermore, the creation of fenced areas and corridors (such as the footpaths across fields) would likely have a number of impacts on the wildlife that currently lives and breeds in the area, beyond the direct damage to their habitats. It would remove or reduce animals’ access to their natural areas for grazing and hunting, and also to important water sources available in the on-site ponds. And it would drive larger animals (in particular deer and badgers) onto the narrow lanes – where the development would inevitably make drivers’ sight lines worse – risking damage to both animals and to vehicles and their occupants, and into gardens, with resultant damage to plants, fruit and vegetable and lawns. There is also evidence that such fencing can act as a trap to deer and cause them injury.⁷⁹
17. Similarly the studies on biodiversity fail to assess and recognise the wider connection of the site to its surroundings as noted in NPPF 2021 p.179 “*To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and **wider ecological networks**, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁶¹; **wildlife corridors and stepping stones that connect them**; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation⁶²; and...*”
18. Nature needs space to thrive and to be able to move through the landscape. The introduction of miles of fencing would fragment this and cut off existing larger wildlife such as deer from large areas of land important to their network. Equally the applicant intends to force animals to use mammal gates instead of allowing the free passage as animals need. These animals are part of, and important to, the overall ecosystem.

Some individual species

19. Badgers. The application concludes that there would be no significant effect on badgers.⁸⁰ But it takes no account of the impact that badgers could have on the development. In 2018, Flowton Road collapsed due to badgers digging a sett underneath it, and was closed for several months as the County Council ruled that repairs could not proceed until the badger breeding season had finished and Natural England issued a licence.⁸¹ Badgers are determined to dig, but there is no mention in the planning documents of the potential impact of badgers digging under the anti-deer fencing and solar panels, or of the damage and pollution that could bring about.
20. Brown Hare. Hares breed in fields 4-6, but would be driven from their breeding sites by the plans. The noise and electrical equipment would hardly be conducive to their welfare; and sheep might be grazing there. None of this would be an enhancement – quite the opposite.
21. Great Crested Newt. No account has been taken of a breeding colony in a pond very close to the proposed construction route (see Appendix). At the very least, mitigation measures should be proposed.
22. Moths and butterflies, and other invertebrates. No attempt has been made to assess the impact of the proposals, although there are at least 42 vulnerable moth and two vulnerable butterfly species in the area (see Appendix).

⁷⁷ DEFRA [The Environmental Land Management Scheme: Public Money for Public Goods](#) 14.10.20

⁷⁸ See, for example, Huijser et al [Construction guidelines for wildlife fencing and associated escape and lateral access control measures](#) Western Transportation Institute – Montana State University, 2015

⁷⁹ Photographic evidence is available of the impact on Roe Deer from similar fencing at Bramford sub-station

⁸⁰ ES Paragraph 7.101

⁸¹ <https://www.eadt.co.uk/news/motorists-ignore-warning-signs-after-badger-family-set-up-camp-2437752>

Many of these are dependent on hedgerow trees, flower-rich margins and less-managed hedges⁸² that would, at best, be impacted by the construction period and, at worst, permanently displaced. Poplar is the larval food plant for a number of species⁸³ that have been recorded in Flowton, so their proposed felling would damage biodiversity rather than improve it.

23. Birds. Mitigation measures are proposed, but there is no guarantee that they will be effective during the lengthy construction period, when some species could be driven away from the area permanently, or in the longer term. No account whatsoever has been taken of a number of species nesting or otherwise present in the area (see Appendix). We discuss Skylark specifically in a dedicated chapter.
24. Bats. The only information on bats provided by the developers is from desk research which, as paragraph 3 above shows, is seriously limited, and from looking at trees. There has been no attempt to survey bats in the area, despite the recommendation for this in official responses to the scoping opinion.⁸⁴ While some welcome mitigation measures are proposed, it is impossible therefore to say whether they are adequate. The commitment to “where possible, minimise night-time working to minimise [artificial light] disturbance to bats”⁸⁵ is not consistent with the plan to build between 9.00 and 17.00, given that the construction period would inevitably include many days with shorter hours of daylight. No mention is made of the limited evidence that some bats are more prone to fatal collisions owing to mistaking solar panels for water to drink.⁸⁶ No evidence has been provided of the potential impact of noise from the moving panels or other parts of the installation on bats, which use ultrasonic sound for navigation and hunting. Evidence should be provided and mitigation measures proposed if necessary.

Trees and plants

25. No proper survey of the flora of the area has been carried out, so it is not possible properly to judge the impact of the proposals or the mitigation measures proposed. Some points can be made, however.
26. The proposals for creating new areas with wildflowers are welcome but are not fully thought through. Perennial wildflowers prefer soils that are low in nutrients, but the areas where they would be sown have been farmed for production and naturally have high nutrient levels.⁸⁷ It might be necessary to remove the nutrient-rich topsoil, though this would be counter-productive to protecting the BMV graded soil, if any wildflower planting is to be successful. Although the LEMP promises re-seeding in some areas, if necessary, it does not suggest this for the planned wildflower avenues. It should. If re-seeding is necessary, there may be a need for repeated ground preparation such as scarifying, which could bring more heavy traffic. This will need to be accounted for in any Traffic Management Plan.
27. It is disappointing that no suggestions have been made for planting climbers on the proposed security fencing.⁸⁸ Plants such as honeysuckle, clematis and blackberries are good nectar sources and would provide additional screening. Such planting could be a condition of planning approval.
28. The planning documents are very confused on the subject of sheep grazing. Various they say that new low intervention grassland habitats and wildflower areas will be planted for sheep grazing, and that there is the potential for low intensity sheep grazing amongst the solar arrays. Leaving aside that the applicant has provided no grazing management or animal welfare plan (there are no buildings or water provision supporting the welfare of sheep adjacent to the site nor on the site), nor are there any provisions in the transport plan (such as arrival and removal of sheep or visits to the site by a shepherd), no account has been taken of the need for grazing to be stopped for periods of the spring and summer – preferably from April to September – to allow the wildflowers to grow and set seed; or of the negative impact that sheep grazing has on moths, as the grass gets too short.⁸⁹ None of these factors have been taken into account.
29. It is unclear whether there would be any need to remove or control vegetation during the proposed construction period, for example for access roads. If any such work were to be needed, it should take place outside the bird nesting season, consistent with the rules for farmers which state that “*you must not do any work which might harm nesting birds or destroy their nests. You’ll usually find nesting birds during the main nesting and breeding season from 1 March to 31 August.*”⁹⁰

⁸² Butterfly Conservation webinar 17.11.20

⁸³ Pink-barred Sallow, Poplar Grey, Yellow-line Quaker, Sallow Kitten, Poplar Hawk-moth

⁸⁴ Place Services response to EIA scoping request, 4.11.20

⁸⁵ ES Paragraph 7.73

⁸⁶ <https://environment-analyst.com/global/76375/ecologists-review-impacts-and-opportunities-from-solar-farms>

⁸⁷ <http://www.landis.org.uk/soilscapes/>

⁸⁸ As recommended by the BRE National Solar Centre in their [Biodiversity Guidance for Solar Developments](#) p4

⁸⁹ Butterfly Conservation Webinar 17.11.20

⁹⁰ <https://www.gov.uk/guidance/countryside-hedgerows-regulation-and-management#check-if-you-can-work-on-a-hedgerow>

Skylark Nature Area

30. Whilst we welcome the intention of a skylark mitigation area, we must point out that the arable fields currently offer this to the protected species, and they do so on a much larger scale than what is proposed. According to the applicants Breeding Bird Survey there were 4 skylark nests recorded across the site. And for those who know the area well, it is obvious just from the map that these are away from the field boundaries and that of tall trees. This is in line with skylark breeding habits.
31. The single document for this area is simply a map called BD1-01-P20 Skylark Mitigation. No accompanying documentation or correspondence has been made available to the public with this map, so exact details are unclear, thus making it difficult for the public to be properly consulted.
32. Our response here is therefore based entirely on the presumption that the Applicant is attempting to address the holding objection made by Place Services on 22nd October 2022.⁹¹
33. The holding objection states...
34. *"Following the reduction of size of the development, we are still not satisfied that there is sufficient ecological information available for determination of this application. This is because we are not satisfied that an appropriate evidence-based solution has been provided to demonstrate that the loss of Skylark breeding habitat can be appropriately compensated on-site across the development..."*
35. *The Breeding Bird Surveys carried out by the applicant identified four skylark territories within the arable fields that are to be developed with solar arrays and battery storage. Therefore, based on the area covered by the built development it has been predicted that site could support a single skylark nesting territory, which would likely be located within the Ecology Enhancement Area / Nature Area to the south of the site....*
36. *...we request that further clarification should be provided to fully confirm the likely significance of effect of the development upon Skylark and an updated mitigation strategy provided. This should be undertaken in line with recent prototype methodology submitted in CIEEM In Practice."*
37. According to this, and supported by the results of the Breeding Bird Survey carried out in December 2020⁹², there are 3 Skylark nesting sites which would be lost as a result of this development, and for which the Applicant needs to provide for.
38. The map BD1-01-P20 Skylark Mitigation shows the proposed site and outside of this it shows several blue shaded areas. According to the key these blue areas are "Potential Skylark Area". It must be made clear here that the blue areas are OUTSIDE of the proposed site area. The potential of these sites already exists, and no work is being proposed to improve their nesting potential by the Applicant. Thus, they cannot be deemed as mitigation.
39. Perhaps then the Applicant is attempting to suggest that these areas could provide the new homes for the 3 displaced nests. If that is the case, then it would need to be demonstrated that these fields are vacant but also suitable for nesting Skylark. **Where is the Breeding Bird Survey for these fields to demonstrate they are even vacant and could hold any of the displaced Skylark nests? Where is the assessment to demonstrate the suitability of these Potential Skylark Areas? A field that is empty of Skylark may be empty for a very good reason.** Many of the suggested areas are edged by tall trees, making large areas of the proposed areas unsuitable for Skylark in the first place.
40. The below map shows the outline of the site (red) and the Potential Skylark Areas (blue) proposed by the Applicant. Many of the fields are lined with tall trees (yellow) and have overhead power lines or other tall energy infrastructure (pink) near them. These are well known deterrents for Skylark, and once any margins around these are taken out, there is very little space left for any of the 3 Skylark nests. Assuming those spaces are even vacant.

⁹¹ The actual objection is dated 21st October 2021 but we suspect this is a typo and should be 21st October 2022 to match the date it was published on the BMSDC Planning Portal

⁹² Figure 5 of Appendix 8.1 dated 14th December 2020



41. Based on the limited information made available to the public, the Applicant continues to fail in protecting this Priority species as listed under the NERC Act 2006.

Conclusion

42. The developers sugar-coat their proposals with some new planting of hedges, trees, a 'Green Corridor' and small 'wildlife areas.' These might be positive developments in some respects, but they would be hugely outweighed by the short- and long-term damage to the area. Any positive impact of the Green Corridor would be negatively balanced by the noisy low toned hum that would come from the four inverters proposed to be sited adjacent to, and along most of the length of, the corridor; this would be off-putting to both animals and people used to a quiet walk. The developers claim that *"the Proposed Development will have no direct adverse impacts on individual members of the local community or those in the wider area of the Parishes by virtue of noise pollution or other potentially adverse effects on the environment."*⁹³ This is simply untrue. Local residents and visitors alike currently enjoy the openness of the landscape, wide views, wildlife and trees and plants in the area as a coherent whole. That would be impossible if every footpath were surrounded by fencing, views dominated by huge solar panels and shipping containers that would not even be partially screened for many years, and any possibility of seeing wildlife in its natural context removed. There is great irony in the developers' plan that "interpretation boards, picnic benches and timber bridge will be provided in the Nature Area"⁹⁴ allowing local communities to engage and appreciate the natural environment."⁹⁵ They already do, but would not be able to do so properly if these plans went ahead as most of the local natural environment would be hemmed in by fences and dominated by steel and glass. The word 'corridor' is significant here: a narrow passageway, hemmed in by walls and the occasional door.
43. More generally, some new habitats would be created, but many existing habitats destroyed or damaged. There might, in time (possibly a very long time) be some increased populations of certain species – mostly common ones – but any enjoyment or indeed visibility of these would be limited at best. Wildlife and biodiversity in the area would far better be served by the current situation, in which both farmed and unfarmed areas support a wide range of animals, birds, invertebrates, plants and trees in their historic natural context.

⁹³ Design and Access Statement R004 para 6.2

⁹⁴ It is unclear which of the two proposed Nature Areas this applies to.

⁹⁵ LEMP R009 para 4.3.2

Appendix - Some species recorded in the immediate area affected by the plans, most of which are not mentioned in their documentation

Key: R - Red List; A - Amber List; V- Vulnerable; NT - Near Threatened; SP - Species of Principal Importance; SB - Suffolk Biodiversity Action Plan priority species.

Birds (records from residents in Burstall, close to Field 5, and Flowton, close to Field 3)

Cuckoo R SP	Spotted Flycatcher R SP
Skylark R SP SB	House Sparrow R SP
Nightingale R	Tree Sparrow R SP SB
Lesser Spotted Woodpecker R SP SB	Yellowhammer R SP SB
Marsh Tit R SP SB	Stock Dove A
Starling R SP	Tawny Owl A
Song Thrush R SP	Kestrel A
Mistle Thrush R	Duncock A SP SB
Nightingale R	Bullfinch A SP SB

Raven nest in the directly-affected areas. Although they are not threatened nationally, they are very uncommon in Suffolk.

Butterflies (recorded within 120 metres of Field 3)

White-letter Hairstreak SP SB
White Admiral SP SB

Moths (from a Flowton resident's moth trap, regularly set within 120 metres of Field 3; photos available of most of these)

Pale Brindled Beauty V	Brindled Beauty SP SB
Mottled Umber V	Dot Moth SP SB
Mouse Moth V SP SB	Pretty Chalk Carpet SP SB
Sprawler V	Large Wainscot SP SB
White-line Dart V SP SB	Shaded Broad-bar SP SB
Frosted Green NT	White Ermine SP SB
Dark-barred Twin-spot Carpet NT SP SB	Buff Ermine SP SB
Latticed Heath NT SP SB	Feathered Gothic SP SB
Dusky Thorn NT SP SB	Blood-vein SP SB
September Thorn NT SP SB	Cinnabar SP SB
Large Nutmeg NT SP SB	Oak Hook-tip SP SB
Sallow NT SP	Dark-barred Twin-spot Carpet SP SB
Beaded Chestnut NT SP SB	Knot-grass SB
Autumnal Rustic NT SP SB	
Grey Dagger SP SB	
Brown-spot Pinion SP SB	
Green-brindled Crescent SP SB	
Ear Moth SP SB	
Dusky Brocade SP SB	
Deep-brown Dart SP SB	
Sprawler SP SB	
Centre-barred Sallow SP SB	
Mottled Rustic SP SB	
Small Square-spot SP SB	
Small Phoenix SP SB	
Small Emerald SP SB	
Ghost Moth SP SB	
Rustic SP SB	
Rosy Rustic SP SB	

Amphibians

At least one pond within 500 metres of Field 5 and hard by the proposed southern construction access route, which has a population of Great Crested Newt (photographs available), has been completely missed by the BSG surveys.

Mammals

Water Vole have recently been recorded and filmed in a small water course within 2.5 km of the applicant's site, which suggests that they could well be present elsewhere closer to the site.

8. Transport and PRoWs

1. **BACKGROUND**

1.1 Bramford Green Ltd have applied for full planning permission to construct a solar farm in arable fields around the Bramford area. The company is owned by Enso Green Holdings Ltd, which is partly owned by Enso Energy Ltd, who are the company directing the application. They have contracted some of the research work out to a development company called Aardvark and to other specialist companies. In this report I have used "Enso" to signify "the applicant". An Outline Construction Traffic Management Plan (CTMP) has been produced for Enso by a company called Transport Planning Associates (TPA) and my references are to their report, unless otherwise stated.

2. **AREAS ADDRESSED**

2.1 This report looks at transport and access for both the construction and operational stages and also the impact on Public Rights of Way (PRoWs). Research has been hampered by Enso's failure to answer questions asked at the consultation stage and the vagueness of their reports when dealing with these specific issues. This means that there is insufficient evidence to show that they are meeting the Planning Authority's requirements of Policy T10 regarding Highways considerations. This policy states that, when considering planning applications for development, the District Planning Authority will have regard to the following highway matters :-

- The provision of safe access to and egress from the site;
- The suitability of existing roads giving access to the development, in terms of the safe and free flow of traffic and pedestrian safety;
- Whether the amount and type of traffic generated by the proposal will be acceptable in relation to the capacity of the road network in the locality of the site;
- The provision of adequate space for the parking and turning of cars and service vehicles within the curtilage of the site;
- Whether the needs of pedestrians and cyclists have been met, particularly in the design and layout of new housing and industrial areas.

3. **CONSTRUCTION**

3.1 THE NUMBERS

- 3.1.1** All their projects seem to have a similar methodology for the assessment of HGV traffic. The HGVs will be a mix of 16.5m long (maximum) articulated lorries weighing up to 44 tonnes and 10m long rigid lorries, weighing up to 26 tonnes. They will enter the site via a track off Church Hill, Burstall. In their report they estimate 480 deliveries total for the solar and main development, 76 deliveries total for the battery storage, plus 20 LGV deliveries per day. Over 200 days **this is 4,556 lorries and vans!** This is a substantial amount of traffic for the single track roads of Burstall village.
- 3.1.2** Further, Enso's figures do not allow for a 60-tonne crane to offload the battery containers. Regarding the crane, Enso's reply (Rob Styles email 11/11/20) was, *"As part of our planning application we are seeking permission to install battery energy storage units. The technology within them will only be selected prior to install and it is in our experience that this will need to be accepted by the Planning Authority via a condition. As the technology has not been selected, the required construction vehicles also have not been identified. It is, in our experience, highly likely that the Planning Authority will make it a requirement for us to submit details of vehicles and construction programme prior to the installation of the battery units."* Whatever the contents of the battery packs, they will be housed in 20 shipping containers, each measuring 12m X 2.4m and 2.9m high and weighing between 30 and 40 tonnes, so will need a crane to off-load them which is usually an abnormal load.
- 3.1.3** Even more concerning is that there will not be a steady flow of HGVs over the construction period. The early stages of construction will require the internal access tracks to be laid, which will require large amounts of bulk aggregate. This means that **at the start of the project, the peak movements could average out at 50 a day. This will significantly exceed the IEMA guideline of a 30% increase in HGV traffic and they are therefore required to conduct a further assessment under the guidelines. There is no evidence that they have conducted traffic surveys.** EDF Renewables, who are proposing to build locally, on a single smaller site with no battery facility, estimate a peak HGV figure of 36 HGVs a day (source: webinar 11/11/20). Transport plans need to be based on the maximum number of daily movements. I have repeatedly asked for these figures to assess the appropriateness of the proposals. Enso's reply (email Peter Elms 19 December 2020) was *"We don't have a peak number of HGVs figure at this moment in time"* and in their response to CARE Suffolk *"There may be a slight fluctuation on this number throughout the build, but not by a significant margin."* The potential for HGVs needed at the start of the construction to establish internal tracks would be a significant margin of difference due to the bulk nature of the gravel material. **Enso have ignored the request for "the estimated increase of HGV vehicles/day, especially during the peak hour" in the Council's Senior Development Management Engineer report dated 26 October 2020. There is also no evidence of the**

coordinated approach requested in that email. The planners could put a restriction on the number of HGV movements a day, as has happened in other applications.

3.2 IMPACT ON THE LOCAL (UNCLASSIFIED) ROADS

- 3.2.1 **HGVs** Once the numbers and patterns of extra traffic are known, an assessment can be made of the suitability of local roads and any additional works needed. **The simple fact is that Enso do not know how many extra vehicles will be using the local road network, especially peak numbers. They have not conducted traffic surveys to understand the current traffic flows, including whether their vehicles will be travelling against the usual flow (which causes more problems on local roads).** The local roads, which are all unclassified, are not suitable for heavy traffic loads – particularly during harvest time. They are narrow and undulating with tight bends and few passing spaces, even for cars. It is common to have to reverse some distance when faced with a vehicle coming the other way. The roads are often blocked because of repairs, badger digging, fallen trees, flooding etc.
- 3.2.2 Entrance to the site is via the A14/A12 junction and then via the A1214. Traffic then has to use the winding and undulating A1071, turning into Burstall Road and The Street for the remaining 3-mile round trip. The A1071 road is dangerous. Personal Injury Collision ref 16131444 states *"V1(Car) travelling towards Burstall around a nearside bend. V2(Car) travelling in opposing direction. V1 clipped nearside bank causing collision with front offside of V2."* With a causation of road layout being listed. The report states *"The road is very tight"* This incident involved two cars. How does this road layout and this collision look between an HGV and a car?
- 3.2.3 The junction on the A1071 towards Burstall is even more dangerous, especially in the morning. It is a right-hand turn at the foot of a hill just before a bend, turning across very heavy traffic coming from Hadleigh to Ipswich or to access the A12 or A14. It can back up to here from the A1214 access. The road to and through Burstall is also narrow place with few places to pass and pedestrian traffic – as in the picture below. **There are no laybys for HGVs to pass between the A1214 and the Burstall access.**



3.3 THE ACCESS/EGRESS.

- 3.3.1 The entrance to the site (the track on the right of the picture below) is also hazardous. It is a narrow derestricted road and both on a bend and a hill, with no provisions for pedestrians. In fact, because of landownership issues, the entrance will have to be moved even further round this bend, because the current proposal infringes on neighbouring property. This access is not a proper road. The extra traffic in the proposal (both during construction and operations) suggests that this access needs to be built to proper Highways standards. This road will be used to transport the substation and battery storage units, which require careful handling and are a safety issue.



3.4 PUBLIC SAFETY. Section 11 of Design & Access Statement states that “All existing PRoWs within the site will be retained and will remain open and in their present position for the duration of the construction and operational phases”. Map B2.0 shows a number of places where the internal roads cross PRoWs. These include footpaths and bridleways. Yet there appears to be no mention of safety measures for PRoW users who want to cross the access tracks.

4. OPERATIONAL PHASE TRANSPORT

4.1 It is recognised that the operational phase of this project will result in considerably lower number of vehicle movements. Enso expect to only have a maintenance vehicle visit once or twice a month. However, there are some issues that need addressing.

4.1.1 There is no mention of operational traffic for the management of sheep grazing. Enso make much of the sheep grazing but in their response to CARE Suffolk state that “*potential grazing regimes would be part of the ongoing agricultural operations and fall under the agricultural activities of the landowners.*” Since Enso have made several references to sheep grazing being part of their development, they should include details of how these will be moved on, off and around the site, including impacts on the temporary closures of PRoWs and public safety measures in their traffic movements during the operational stage. This will need to include the daily visits of a shepherd, and sheep-transport vehicles in their operational figures.

4.1.2 Due to the lifespan of some of the components, notably the solar panels and batteries, these will require replacing during the operational phase of the development. It is likely that at some point it will be more economical to replace components on a mass scale, rather than the odd one or two. **Enso have neglected to mention this requirement, and the large numbers of traffic associated with it.**

4.1.2.1 The solar panels will all need to be replaced at least once, maybe twice. This will require large numbers of HGVs to remove the old solar panels from site, as well as bring in new solar panels. In addition to this large numbers of construction workers will be needed again to carry out the swap, along with the appropriate welfare facilities.

4.1.2.2 The battery container units will not last the full 40 years, and current estimates in battery technology are a roughly 5-10 year lifespan for BESS. This would require HGVs to remove the old battery container units, as well as bring new ones in, a crane, and construction workers and welfare facilities.

5. PUBLIC RIGHTS of WAY (PRoWs)

5.1 Enso detail the PRoWs that cross the site. Concern has already been expressed that traffic, both during construction and operations, runs close to, and sometimes over, PRoWs – with little separation. These PRoWs are well used by both local walkers and those from farther afield. There is also a risk that the movement of these vehicles will churn up the footpaths (as they do at present) and make walking unsafe. Picture below is a footpath near Somersham Park that has been churned up by vehicles.



5.2 Enso propose to plant hedges over 3m high alongside the PRoWs contrary to the advice from the Council’s Senior Development Management Engineer dated 26 October 2020 “*Fences or hedging along the edge of any PRoWs should be at least 3m apart to ensure the footway is not within an “alley” – we would also recommend any hedging*

is not a species that will grow over 1.5m to ensure the footpath becomes dark and uninviting". Enso appear to be ignoring this.

- 5.3** Enso state that it will take 10 years for hedging to reach the height to screen them. They admit in the LVIA "Visual effects ... would be at their greatest for visual receptors (presumably people's eyes!) using the public footpath network ... in all durations". These would be "**Major-Moderate Significance and Adverse**". **We would claim that, during the construction stage and for the next 10-15 years at least, these will be a Major significance as mitigating planting will not screen the panels and inverters. To quote them: "these effects are likely to be important considerations ... and may become key factors in the decision-making process"**.
- 5.4** The provision of a permissive bridleway through the site might have been welcomed, but a few of our members are experienced horse owners, riders, and/or professional trainers even. And instead they are horrified. There are major concerns that the glint and glare from such a proposal would most certainly temporarily blind the horse and rider, which risks leading to serious injury to the rider/s and potentially the horses. This is particularly worrying because horses and riders are higher up than walkers, and with no screening along the length of the proposed bridleway the risk of a horse or rider being caught up in, or even on top of, the fencing is a serious risk. Horses and deer fencing don't mix and any serious damage to horses legs and/or feet can result in the animal being destroyed, with unnecessary suffering until a vet is on scene. This is true even of well trained horses for experienced riders.
- 5.5** We also note that the bridleway would be adjacent to the substation and Battery Energy Storage System (BESS), as well as one inverter station. These are due to be extremely noisy according to the Specific Sound Level Maps⁹⁶, and significantly overlap on the PRoW. The BESS, specifically the HVAC units, would also turn on and off without warning to the public and there is highly likely to spook a horse, leading to the aforementioned risks.

6. CONCLUSIONS

- 6.1** Enso have provided insufficient or unreliable information for realistic judgements to be made.
- 6.2** The local roads are not suitable for the increase in HGV and constructor traffic.
- 6.3** There are serious health and safety concerns for walkers on the PRoWs, particularly during the construction stage.
- 6.4** The long-term visual impact for users of the PRoWs, and permanent visual impact for the permitted bridleway users is unacceptable.

⁹⁶ Document R011 – Noise Impact Assessment Figures 5 & 6

9. Noise

Baseline

1. The development is located in three village parishes. Two of the villages would host the majority of the development (Flowton, and Burstall), and a fourth village (Bramford) would host part of the underground cable route connecting the site to Bramford Substation. As the underground cable will not create any operational noise, the village of Bramford will be excluded from any direct noise impacts in this report.
2. The villages of Flowton and Burstall are all rural countryside villages. They are particularly small villages with no village services (such as shops or pubs) and as such are typically very quiet. Any late night social noise would be very low and typically confined to the warm light nights of the summer months.
3. One part of the road through the main settlement of Burstall is wide enough for two way light vehicle traffic. All the other roads through the villages are all small narrow single track country roads. Many of the roads are sunken into deep verges and/or lined with hedges. There are no other A or B roads passing through or nearby, so what traffic there is, is very intermittent and even shielded by the deep verges and hedges.
4. The areas surrounding the villages are undeveloped rural countryside, which provide a very quiet and tranquil environment. Common noises you might hear outside of the main settlements, and within and near the site itself, are birdsong, vegetation in the wind, a twig falling from a tree, the wind, a scurry from a small animal in the undergrowth, and your own footsteps and thoughts.
5. The area is well supported by a number of well-connected PRowWs, including several footpaths and a bridleway. These PRowWs are well used by the local community for recreational purposes, as well as by tourists visiting from further afield.
6. The noise report submitted by Enso Energy conducted four noise surveys. MP1 near Hill Farm, Burstall. MP2 near Park Farm, Somersham. MP3 near Little Park Farm, Somersham. MP4 near Lovetoft's Farm, Flowton. All four surveys were unattended and conducted in an open field close to the four nearest residential properties to the development site. The survey was conducted over a 3 day period in July 2020.
7. Due to the removal of fields 1-3, the results for MP2, MP3, and MP4 are less relevant now.
8. The L_{A90} results for MP1 were between 32dB during the day, and between 22dB during the night.
9. No baseline has been established for the open areas of the countryside, such as along the footpath PRowWs. Since these areas are likely to produce consistently lower noise levels than those next to a dwelling, we will assume in the applicants' favour and consider the above ranges as applicable to these areas too.
10. The noise survey reports at all locations that "the sound environment was maintained by road traffic and wind induced vegetation sound." Although it says exactly the same thing for all of the four recordings there are some significant spikes shown in Figure 10 for MP2 and Figure 13 for MP3 above 80dB, and in some instances above 90dB, which do not appear to have been identified.

Proposal

11. The proposal seeks to install an industrial solar PV plant in the area for a minimum of 40 years, of which its nature will make noise. The noise survey assesses the noise of the PV Inverters (during the day and night), the PV Transformers, and the HVAC for Battery Storage. Table 9 states the "Sound power levels for all plant are based on manufacturer data."
12. The PV Inverters and Transformers are due to be stored inside large shipping containers, which are dotted around the site. There are a total of 6 inverters around the site.
13. The HVAC for Battery Storage will be mounted on the Battery Storage Units, which are large shipping containers. There will be 20 containers. The report assumes 4 HVAC units per container, so a total of 80 HVAC units.
14. The noise report uses the L_{A90} recordings taken at each of the 4 sites, and the manufacturer noise ratings for each piece of equipment, and then uses those as a baseline to predict the noise levels at other residential receptors.

Policy

15. The NPPF p.8 states "Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

- a. *an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;*
 - b. *a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and*
 - c. *an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”*
16. The NPPF p. 174 states “Planning policies and decisions should contribute to and enhance the natural and local environment by:
- d. *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
 - e. *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.*
17. The NPPF p. 185 further states “Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:
- a. *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
 - b. *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.”*
18. The Noise Policy Statement for England (NPSE) has a noise policy vision to “Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.” Further the NPSE policy works in a hierarchy format to “avoid significant adverse impacts on health and quality of life; mitigate and minimise adverse impacts on health and quality of life; and where possible, contribute to the improvement of health and quality of life.”
19. The NPSE states that it is not possible to set a definitive noise limit, but that in accordance with NPSE and National Planning Practice Guidance (NPPG) which for Noise states “Plan-making and decision making need to take account of the acoustic environment and in doing so consider: whether or not a significant adverse effect is occurring or likely to occur; whether or not an adverse effect is occurring or likely to occur; and whether or not a good standard of amenity can be achieved.”
20. The Joint Babergh and Mid Suffolk Landscape Guidance 2015 p. 2.2.1 states “Some areas within Babergh appear to be remote, tranquil and removed from the noise and activity of busy roads and places. These intangible qualities contribute to the character and local distinctiveness of those areas and should be retained by [...]: II. Or, even if visual impacts can be minimised, that would create new activity and associated noise/disturbance that would be uncharacteristic.”
21. The Mid Suffolk Core Strategy 2008 policy CS4 states “Pollution: To protect people and the environment from unsafe or unhealthy pollutants. Development that harms the quality of soil or air and/or causes noise, dust, odour or light pollution will be avoided wherever possible.”
22. Sound Assessment Criteria BS4142:2014+A1:2019 states: “The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs.” An estimation of the impact of the specific sound can be obtained by the difference of the rating sound level and the background sound level and considering the following:
- a. *“Typically, the greater this difference, the greater the magnitude of the impact.”*
 - b. *“A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.”*
 - c. *“A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.”*

Analysis

23. We note the following concerns, omissions, and inconsistencies with the calculation process that was undertaken, and conclude that the calculation in its present form is flawed and an adverse impact on residential amenity caused by noise cannot be ruled out:

- The proposal includes noise ratings for the HVAC on the Battery Storage Containers, however there is no noise rating for the Battery Storage Containers themselves. We understand that during discharge they will emit some noise, but this has not been accounted for in the assessment. The final cumulative noise level may therefore be higher than reported.
 - The proposal includes a substation, which is positioned next to the Battery Storage area. This will emit noise, but it has not been accounted for in the assessment. The final cumulative noise level in this area will therefore be higher than reported.
 - During the entire public consultation process, and even in the application documents, the applicant has stated that they do not know what technology they will be using as they wish to remain open to the latest technology. So it is therefore not possible for them to have submitted specific manufacturer data and the applicant confirmed they have not used specific manufacturer data in their response to CARE Suffolk's questions submitted 27th January 2021. Therefore the adjustments factors for uncertainty are inaccurate (Table 9).
24. We note that noise from the construction period of 40 weeks would only be temporary and of a short duration.
 25. We note that the applicant has positioned the noisiest components (Inverters, Transformers, Substation, and HVAC Units) away from residential properties, and we welcome this decision.
 26. However the consequence of this is that these same components are now next to PRowS that run through the site, and important wildlife habitat such hedges. The applicant attempts to claim support from p.8 of the NPPF which includes the objective for social and environmental benefit. Their documentation claims to want to improve the area for wildlife and PRow users, and so it is important to consider the impact of noise on these high sensitivity receptors too.
 27. PRow footpath W-174/007/0 runs north-west to south-east through Fields 5 and 6. This the main footpath that connects Flowton to Burstall on the Burstall side of road named The Channel. This footpath will be impacted on by one inverter/transformer unit, and the Battery Storage Unit. It is also likely to be impacted by the substation but this has been excluded by the applicant in the noise assessment. According to Figure 5 the current background noise during the day would become 30-35dB for most of the way, and 35-40dB closer to the inverter/transformer unit. This represents an adverse impact. According to Figure 6 the current background noise during the night time would become 30-35dB, representing a significant adverse impact.
 28. Bridleway W-174/005/0 runs east to west along the southern boundary of Field 5. There do not appear to be any particularly noisy pieces of equipment near these points which is welcomed for the safety of horse riders along this existing bridleway.
 29. However, the applicant proposed a new permitted bridleway through the site, which would be impacted in the same way the footpath assessed in paragraph 27. Such as increase in noise from the inverter/transformer and battery storage area is likely to cause an issue for horses who are known to have more sensitive hearing than humans, and the safety of both horse and rider. This is increased risk to public safety and harm to public amenity is a material planning consideration.
 30. The development proposed is for a minimum of 40 years. This is a long term development that will be subject to general wear and tear and to the outdoor elements. Equipment during such a long period will start to degrade and noise levels would increase. We would have expected to see a Noise Management Plan that details how noise levels would be monitored over the course of the development, and how any increases would be mitigated against.

Conclusion

31. The applicant claims to not know what technology they will use and the provision of "manufacturer data" within the noise assessment is in conflict with this. Thus the noise report is fundamentally misleading.
32. Furthermore, the applicant makes no attempt to assess the impact of the development on the public amenity of users of the PRow, nor on the wildlife which share this countryside. From my own assessment of the information presented by the applicant the impact would represent a significant adverse impact due to the locations of the inverter/transformer units. These high noise levels would run a significant length of important PRow networks in the countryside, and many current users are likely to avoid these and use the roads instead.
33. The significant adverse impacts, and significant observed adverse effect level, mean the applicant fails to meet national and local planning policy relating to impacts from noise.
34. Furthermore, the failure to satisfy the objectives for social and environmental benefit relating to p.8 of the NPPF for sustainable development, means it cannot draw support from the fundamental principles of planning policy, and therefore is not a sustainable development and should be refused permission.

10. Glint & Glare

The ENSO submission (*Prepared by Pager Power*) states that it is "solely desk-based and no site visit has taken place". This theoretical approach has given rise to some **errors and omissions**.

Summary

The report concludes that, of the three types of 'receptors' that it has identified for the possibility of harmful Solar reflection, all will be mitigated by existing and proposed vegetation, boundary enhancement and/or new woodland planting. **The report conclusion assumes** that the "proposed" screening has already reached an **effective condition** but does not indicate when this condition might be met.

The ENSO '**Design and Access Statement**' indicates it might be as long as **15 years**. The **Biodiversity Matrix** indicates:- **10 years** for hedgerows and trees and **32 years** for woodlands and forest. These timescales represent a significant proportion of the 40 year life of the project.

Comments

The Report identifies only three types of 'receptors' where there is a geometric possibility of 'G & G':-

- 1- RAF Wattisham and Elmsett airfields.
- 2- Road users
- 3- Dwellings

The submission does not however analyse the effect on 'receptors' :-

- 4- **using the PRoWs that cross or are adjacent to the proposed panels.**
- 5- **on riders or their horses using the bridleways or roads.**

Airfields

Whilst Wattisham and Elmsett airfields have been identified the report makes no mention of the airstrips at **Somersham Road or at Hitcham**.

The Report acknowledges use of guidelines set out by the Civil Aviation Authority (CAA) in the UK and the Federal Aviation Authority FAA in the USA when determining impacts on aviation activity. The UK Civil Aviation Authority (CAA) issued interim guidance relating to Solar Photovoltaic Systems (SPV) on 17 December 2010 which was subject to a CAA information alert 2010/53. The formal policy was cancelled on September 7th, 2012 but it remains the most recent and comprehensive CAA guidance produced to date.

The guidance states:-

*Section 6: For all planned SPV installations it is **best practice for the developer to consult with the operators** of nearby aerodromes before any construction is initiated.*

*Section 8: It is recommended that, as part of a planning application, **the SPV developer provide safety assurance documentation** (including risk assessment) regarding the full potential impact of the SPV installation on aviation interests.*

Elmsett Airfield

The report concludes that whilst solar reflections are predicted towards pilots approaching Elmsett runway, this will be of 'low impact'. **There is no confirmation that this is accepted by Elmsett Airfield.**

Wattisham Airfield

The conclusion concerning Wattisham Flying Station states that, although solar reflections are predicted towards the Control Tower, existing vegetation will screen this. **It is unclear how this was confirmed as no site visit was made.**

It also states that solar reflections are not predicted towards either of the 2 mile approaches towards runways 05 and 23. There is no mention that Wattisham is now a base for **helicopters, including the Air Ambulance, and as such pilots are not constrained in their direction of approach.**

This appears to be an oversight as Pager Power's own web site advises that in these cases its own '**Guidance for Helipads**' 9.24, 9.25 and 9.26 **should be followed**. **This does not seem to have been undertaken** in the report, rather it has been assumed the airfield is for fixed wing aircraft only.

In response to a question from CARE Suffolk ENSO have effectively confirmed the above is the case and have further 'extrapolated' the data to suggest that it would also be relevant for helicopters where solar reflection could be from

any angle (including ahead) instead of well off to the side as in the fixed runways already studied. **This does not seem a logical assumption to make.**

The Report should surely have utilised PagerPower's own '**Guidance for Helipads**' in order to assess the predicted situation here.

There is again no confirmation from ENSO that Wattisham Flying Station has been consulted on the proposals.

Dwellings

The report identifies that **4** (of the 8) dwellings assessed have a geometric possibility of solar reflection.

It goes on to say that the predicted reflections will not be experienced in practice as the are "predicted to be significantly obstructed by existing screening, proposed hedgerow, and intervening terrain."

ENSO's Design and Access Statement (R004 P34 -10) states that 'hedgerows, scrub, tree planting and land management **would be effective within 15 years**. It follows then that the proposed screening offered as mitigation for the G and G will **not be effective to some of these dwellings for the first 15 years of the scheme!**

There seems to be some difference within the submitted information on time scales for the mitigation to become effective, but whichever figures are taken:-**This cannot be construed as acceptable mitigation!**

PRoWs

There are several PRoWs (footpaths and bridleways) that traverse or are adjacent to the proposed site. They are well used by both locals and visitors who will be **closely affected** by any solar reflections that occur. Therefore, it would seem important that these rights of way and their users be investigated and included in ENSO's submission.

Conclusion

The National Planning Policy Framework under the Planning Practice Guidance specifically regarding the consideration of solar farms, Paragraph: 013 Reference ID: 5-013-20150327 states:-

"The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. However, the visual impact of a well-planned and well-screened solar farm can be properly addressed within the landscape if planned sensitively.

Particular factors a local planning authority will need to consider include (inter alia) the proposal's visual impact, the effect on landscape of glint and glare (see guidance on landscape assessment) and on neighbouring uses and aircraft safety."

The undulating nature of this rural landscape comprising a site woven through three villages makes it impossible to effectively screen the visual impact and all solar reflection from the panels within a reasonable time scale.

This proposed solar farm cannot be considered as meeting the spirit of the National Planning Policy.

11. Climate Change and Energy Policy

The application is for a solar PV generating facility and associated equipment, and is therefore a renewable energy development. The NPPF is supportive of renewable energy projects, and as such states that developments do not need to demonstrate the overall need for renewable or low carbon energy. Local policy is also supportive of renewable energy projects. This is mutually accepted by all parties. The need to transition to low carbon and renewable energy is widely accepted and well publicised by local and national authorities.

However this support comes with the caveat that authorities should only *“approve the application if its impacts are (or can be made) acceptable.”* This is also supported by conditions in local policy, specifically regarding landscape and heritage impacts. Both of these topics have been assessed in the previous chapters of Landscape and Heritage, so I will not repeat them here.

The application is for 30MW of solar PV energy to be fed directly into the National Grid transmission system. We could find no updated information on the expected CO₂ savings since the capacity was reduced from 49.9MW to 30MW.

The previous 49.9MW stated that *“anticipated CO₂ displacement is around 21,500 tonnes per annum.”*⁹⁷

The applicant omitted the details behind those calculations from their application, but later advised CARE Suffolk that they anticipate producing around 60,000MWh per year, or 60,000,000kWh. This represents a roughly 13.7% efficiency, since solar plants can only generate electricity when they have sunlight to work with.

If we adjust the predicted figures to the 49.9MW site to the 30MW site, then the claim might be 13,000 tonnes of CO₂ and 36,300MWh per year.

Our understanding for this calculation, which appears to be an industry standard, is to multiply the average CO₂ emissions per kWh for the UK’s energy mix in a given previous year, and multiply that by the number of kWh expected from the installation.

However, just because it appears to be the industry standard, it does not make it correct or even slightly accurate. In fact, it is far from it.

The EIA Scoping Decision asked the applicant to *“address the carbon footprint of the development during construction, lifetime and decommissioning phases and a ‘cost-benefit’ type analysis of the proposed development in the context of regional and national targets, relative to its carbon footprint... with details of a timeframe for the achievement of carbon payback/ neutrality where appropriate.”*

The applicant’s response to this request is *“Under the EU Green Taxonomy Framework which has been developed by the EU as a standard against which renewable/low carbon projects will need to be assessed in future, solar PV is currently considered to be exempt from having to undergo a Life Cycle of Emissions.”*

So we’ve had a go at it for them.

The solar PV facility will connect into Bramford Substation, which is already a low carbon substation by serving nuclear and offshore wind plants. Over their full lifecycle these sources are accepted to emit less CO₂ per kWh than solar.⁹⁸

The applicant stated (in relation to the 49.9MW capacity) that *“anticipated CO₂ displacement is around 21,500 tonnes per annum.”*⁹⁹ This figure is based on the 2019 UK Energy Mix figure of 358g e CO₂/kWh. A snapshot in time. This would be accurate if the solar farm were generating electricity in only 2019. However, as the UK moves towards a renewable and low carbon energy future, the amount of CO₂ produced by the UK’s Energy Mix would decrease. So the solar facility CO₂ savings would decrease along with it. This is evident with the figure falling from 358g e CO₂/kWh in 2019 to 347g in 2020.

⁹⁷ Design and Access Statement Chapter 1 Introduction

⁹⁸ https://www.parliament.uk/globalassets/documents/post/postpn_383-carbon-footprint-electricity-generation.pdf

⁹⁹ Design and Access Statement Chapter 1 Introduction

In 2011 the UK Government commissioned a study into the lifecycle CO₂ cost of different types of energy production.¹⁰⁰ This is how much CO₂ would be produced in the creation of the solar proposal. Based on the amount of energy anticipated to be generated by the 30MW solar development (36,600,000kWh), and a median CO₂ cost per kWh of 75g, this would result in a CO₂ cost of 108,900 tonnes over the 40 years proposed. This CO₂ cost would be front loaded to the process (since manufacturing and transport etc. is all completed before the facility starts generating energy), so any annual savings would be deducted over time, much like a mortgage statement deducts payments from the initial lump sum.

The facility was contracted to connect with National Grid in 2023, but that is now impossible, so we would assume a connection of 2024 now, so that is when the payback would start.¹⁰¹ Assuming a steady annual decrease from 265g in 2021 (the latest figure available¹⁰²) down to zero in 2050, the solar facility would start to payback its initial CO₂ investment in 2043 – 19 years after the site starts generating energy. At 2050 it is assumed the energy mix would be at the targeted net zero and no further savings would take place. Continuing forward to 2064 (40 years after the site started generating electricity and when decommissioning would be due to take place) the total amount of CO₂ saved would be 7,645 tonnes. Averaged out over the operational period, this represents an annual saving of 191 tonnes. Significantly less than the applicant’s claim of 13,000 tonnes per year. Though, we agree it is a saving nonetheless.

However, there are some caveats to this saving. Firstly the figure of 75g from the UK Government study does not include the CO₂ cost of decommissioning, as sufficient data was not available to be incorporated into the figure at the time of calculation. So there would be additional CO₂ costs of decommissioning. Secondly the figure is based on a shorter operating life where only one set of panels is used. The proposed development is for 40 years, and solar panels are only known to work for around 20-25 years. The panels would need to be replaced at least once during the lifetime of the development and this would represent further CO₂ costs. Thirdly, the site selected would replace a large area of efficient and productive arable land. The displaced food production would need to be imported and there would be CO₂ costs associated with this. Overall the total amount saved, if there is still a saving, would be lower still.

Year	Enso Solar CO2 Year Start Balance	UK Energy Mix gCO2/kWh	Tonnes Saved of Energy Mix	Enso Solar CO2 Year End Balance
2021	0	265	0	0
2022	0	255.87	0	0
2023	0	246.74	0	0
2024	108900	237.61	8625.243	100274.757
2025	100274.757	228.48	8293.824	91980.933
2026	91980.933	219.35	7962.405	84018.528
2027	84018.528	210.22	7630.986	76387.542
2028	76387.542	201.09	7299.567	69087.975
2029	69087.975	191.96	6968.148	62119.827
2030	62119.827	182.83	6636.729	55483.098
2031	55483.098	173.7	6305.31	49177.788
2032	49177.788	164.57	5973.891	43203.897
2033	43203.897	155.44	5642.472	37561.425
2034	37561.425	146.31	5311.053	32250.372
2035	32250.372	137.18	4979.634	27270.738
2036	27270.738	128.05	4648.215	22622.523
2037	22622.523	118.92	4316.796	18305.727
2038	18305.727	109.79	3985.377	14320.35
2039	14320.35	100.66	3653.958	10666.392
2040	10666.392	91.53	3322.539	7343.853
2041	7343.853	82.4	2991.12	4352.733

MW	30
Hours/yr	8760
MWh	262800
Efficiency	13.81%
Expected MWh Generated	36300
Expected kWh Generated	36300000
gCO2/kWh Solar Lifetime	75
Tonnes CO2 made /year	2722.5
Total CO2 made/40years	108900

Based on Enso figures	60000 MWh/49.9MW
Year of Connection	2024
Net Zero	2050
Decommission Date	2064
Known Figures. Remaining years are assumed on an	

¹⁰⁰ https://www.parliament.uk/globalassets/documents/post/postpn_383-carbon-footprint-electricity-generation.pdf

¹⁰¹ National Grid TEC Register

¹⁰² <https://www.aquaswitch.co.uk/blog/carbon-intensity/>

2042	4352.733	73.27	2659.701	1693.032
2043	1693.032	64.14	2328.282	-635.25
2044	-635.25	55.01	1996.863	-2632.113
2045	-2632.113	45.88	1665.444	-4297.557
2046	-4297.557	36.75	1334.025	-5631.582
2047	-5631.582	27.62	1002.606	-6634.188
2048	-6634.188	18.49	671.187	-7305.375
2049	-7305.375	9.36	339.768	-7645.143
2050	-7645.143	0	0	-7645.143
2051	-7645.143	0	0	-7645.143
2052	-7645.143	0	0	-7645.143
2053	-7645.143	0	0	-7645.143
2054	-7645.143	0	0	-7645.143
2055	-7645.143	0	0	-7645.143
2056	-7645.143	0	0	-7645.143
2057	-7645.143	0	0	-7645.143
2058	-7645.143	0	0	-7645.143
2059	-7645.143	0	0	-7645.143
2060	-7645.143	0	0	-7645.143
2061	-7645.143	0	0	-7645.143
2062	-7645.143	0	0	-7645.143
2063	-7645.143	0	0	-7645.143
2064	-7645.143	0	0	-7645.143

even decrease year on year.

Potential New Panels 2044-2048

Overall Average Tonnes of CO2 SAVED per year	191
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Savings only start in 2043 - 19 years after connection

In 2044-2048 the panels will need replacing and will incur additional unknown CO2 costs

In 2064 the site is due to be decommissioned and will incur additional unknown CO2 costs

In the UK Government study it should also be noted that, of the renewable energies, solar PV was the highest polluter compared to other forms of electricity generation. Bramford Substation is supplied by wind and nuclear, which had figures of 13g and 26g respectively. This is significantly less than solar PV. Using the same calculation method as above, but replacing the UK Energy Mix figures with a worst case scenario of 100% nuclear for Bramford Substation – 26g - the facility would **INCREASE** CO₂ emissions by an average of 2,085 tonnes per year. Whilst the above CO₂ saving is possible at other locations, by placing solar PV at Bramford Substation this would **INCREASE the CO₂ levels associated at this location.**

12. Waste & Decommissioning

Waste Obligations

Within the EIA Scoping Decision the applicant was asked to include “an assessment of expected waste generation from the construction and lifetime phases of the development together with a waste management strategy incorporating details of the location and capacity of waste management facilities, both on and off-site, and the associated noise and traffic impacts arising from the arrangements.”

The Design and Access Statement covers the applicant’s Waste and Decommissioning topic. It is covered in one page, and does not address the request above.

A definition of waste is “(of a material, substance, or by-product) eliminated or discarded as no longer useful or required after the completion of a process.”

The application lists all of the ways in which the various waste components of the solar facility COULD be recycled or reused based on current available facilities in the UK and EU. The amount of waste that could be recycled is impressive. However the applicant makes no indication or commitment that this is in fact what they would do, and therefore does not demonstrate that they would be in compliance with the Waste Hierarchy of the National Planning Policy for Waste 2015.

Whilst it is understandable that in 40 years the options may be different to what they are now, waste will be a matter to deal with from the outset of the construction process. Considering the distance that various components will be travelling – Enso stated in their public webinar on 8th October 2020 that the solar panels would be from China – it is reasonable to plan for the possibility of damage occurring during transit. These damaged components will need to be stored and ultimately disposed of correctly. There will also be waste created from the packaging material that the components come in such as pallets and protective plastic sheeting. And so a waste management plan, as requested, is a reasonable request from the outset.

On Site Waste Storage Facilities

We note that the applicant makes no provision for any waste storage on site, let alone safe and secure storage. There is no mention of waste facilities for the workers during the construction and deconstruction phase either. Many of the development’s components, even though considered waste to the applicant, are still valuable to metal thieves and may provide a hazard to public health and safety.

- Metal frames used to support the solar panels are widely recycled, even locally. This makes them attractive to metal thieves, so a secure storage area is needed on site until such time that the material can be collected for recycling.
- Solar panels are required to be recycled in the UK under WEEE Regulations 2006, but there is only one place in the UK¹⁰³ that currently recycles them because it is not economically viable. The process to recycle the panels is so energy intensive and time consuming that there is little commercial value left in the raw materials that are recovered.
 - Environmental journalist Emily Folk suggests that, when it comes to renewable energy, the topic of waste does not often come up. She says that the pressures of climate change and the alleged urgency to find renewable energy sources means that people are “hesitant to discuss possible negative impacts of renewable energy.” She goes on to say that solar in particular presents a real problem, “there is growing evidence that broken panels release toxic pollutants ... [and] increasing concern regarding what happens with these materials when they are no longer viable, especially since they are difficult to recycle.”
 - In a 2018 article for Forbes, solar industry insiders and researchers said “that solar panel waste contains toxic elements that can leak into the ground if the panels are disposed of in landfills. What’s more, it is because of these toxic elements—including cadmium, lead, and antimony—that the recycling of solar panels presents a challenge. The challenge lies in the fact that although 90 percent of a panel is glass, it cannot simply be recycled like any other glass because of the impurities.”
 - Solar panels are also attractive to thieves, who are unlikely to dispose of them correctly should they discover they are broken.

¹⁰³ In Scunthorpe

- Due to the theft and contamination risk, broken and faulty solar panels need to be kept in a secure waste storage area that is also protected to prevent leeching into the soil and water system.
- Security fencing that becomes damaged will again be attractive to metal thieves and will need secure storage similar to the metal frames above.
- The batteries in the BESS are subject to specific recycling regulations.
 - The specific obligations depend on their type, but all require registration with the appropriate environmental regulator via the National Waste Packaging Database. In the United Kingdom (UK) batteries and accumulators are regulated to help protect the environment through the Waste Batteries and Accumulators Regulations 2009 (as amended) – the underpinning legislation:
 - making it compulsory to collect/take back and recycle batteries and accumulators
 - preventing batteries and accumulators from being incinerated or dumped in landfill sites
 - When lithium ion batteries catch fire, they produce a highly toxic gas (EUH029). However we note that, currently, planning applications are able to be made without declaring that there are toxic materials on site. When lithium ion batteries become damaged, worn out or are surplus to requirements, they become the responsibility of the Environment Agency. This is all fairly ironic because li-ion batteries are subject to strict hazard regulations during transportation, are assigned a hazardous waste code, can produce an extremely toxic gas, can leech toxic materials into the soil and water, and are classed as hazardous waste when they are at the end of their life.
 - They are also attractive to thieves who, as with the solar panels, are not likely to dispose of them correctly.
 - Due to the theft, contamination and fire risk, broken and faulty batteries need to be kept in a safe and secure storage area that is also protected from leeching into the soil and water system.
- Inverter/transformer Units and the substation are mostly metal and will be attractive to metal thieves, so will need a secure storage area. However damaged units also have the potential to leak toxic substances so the area will need to be protected to prevent leeching into the soil and water systems.

National Planning Policy for Waste 2015 states *“Positive planning plays a pivotal role in delivering this country’s waste ambitions through: - helping to secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment; and - ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements sustainable waste management, including the provision of appropriate storage and segregation facilities to facilitate high quality collections of waste.”*

The applicant has confirmed that waste facilities will be located on site, however the site plan does not include any provision for a location of this. With so many waste components of the development at risk or a risk themselves, details of sorted, safe, and secure on-site storage facilities, along with suitable access for waste collection vehicles, need to be provided by the applicant in order to confirm compliance with policy.

Tom Hilton, senior energy specialist at Carter Jonas, discussed the issue of decommissioning a solar facility at the end of the lease in an article for Farmers Weekly last year. He said: *“There have not, to date, been enough decommissioned solar farm projects to make it possible to predict the extent of reinstatement and the quality (and therefore scrap value) of the materials left on site.”* This suggests that, whilst the materials could be recycled, this is dependent on the condition they are in. 40 years is a long time to be outside in the open British weather.

It is further understood that storage batteries are not advanced enough to last the full 40 years and neither are the solar panels, so these would all need replacing during the operational phase of the development, and thus will create waste. Enso have stated in their response to us that *“Details of the safe disposal of such material from the Site will be included in the Decommissioning Plan”*¹⁰⁴ but this plan would be far too late when it is possible that batteries could arrive on site damaged during construction. Further it is understood that most solar panels have a life expectancy of 20-25 years.¹⁰⁵ This is why most solar facilities are proposed for a duration of 25 years. However Enso are applying for 40 years. This means, if the panels are all replaced at 25 years, the second set will only be used for 60% of their potential. The current lifespan of lithium-ion batteries (the most common used in these types of installations) is around 5 years. Enso Energy provide no details as to how the replacement of these components (solar panels and batteries) will be undertaken. Presumably this will require large numbers of HGVs and construction workers again,

¹⁰⁴ Response to CARE Suffolk’s questions submitted 27th January 2021

¹⁰⁵ Some solar panels are less than this.

which is not mentioned. The replacing of the BESS containers would seem to require an abnormal load for a crane as well.

The NPPF at paragraph 8 states that part of the environmental objective of development should be, inter alia, to *“minimise waste and pollution.”*

Having looked at the various options for recycling and seeing the applicant’s non-committal approach to waste and recycling, it is hard to find support in the application for national policy regarding waste. Reducing the operational period from 40 years down to 25 years would make a significant contribution to reducing waste, in particular with the solar panels. Should the applicant submit a more detailed section in regards to waste, and provide a commitment to recycle all their components we believe that the current concerns regarding waste might be made acceptable. We would also like to suggest that the applicant makes the commitment to source some of their products – such as aggregate for example – from recycled sources.

Decommissioning

We understand that the site could be decommissioned after 40 years of exporting electricity, in line with the temporary permission it is seeking in this application, or after 12 months of consecutively not exporting energy. However we also note that they say *“at the end of the useful life of the Project, the Applicant may decommission, replace or refit the modules...”* so decommissioning is not guaranteed.

In an article in Solar Power World, Billy Lundt explains why a decommissioning plan is so important. He says solar systems are long lasting under the right conditions, but all too often today’s arrays are regularly put out of commission. Owner/operators are finding manufacturing problems in panels from companies that no longer exist, and technology becomes outdated. Considering that solar panels will probably need replacing at least twice over a 40 year period, companies going out of business is a problem in this respect also.

Whilst we appreciate that a detailed decommissioning plan is potentially a long way off, considering the application period of 40 years, it is clear that it could be sooner than that if the site did not export electricity consecutively for 12 months. However the temporary nature of the application necessitates that something is put in place to guarantee the decommissioning of the site. The current application does not propose any guarantees to ensure this.

At a minimum we would expect to see commitments to ensure the following would be actioned as part of any planning permission:

- To remove all infrastructure, including but not limited to all underground cabling and ground supports;
- To return the site to its former state, including but not limited to soil grade and quality;
- A S106 agreement for a financial fund provided by the applicant or landowner prior to commencement, that would not disappear even if the company did, to cover the cost of decommissioning in full and taking into account inflation;
- That all aspects of the planning application, including decommissioning and waste, apply not only to the applicant, but to all entities that take on ownership (either in part or in full) during the lifetime.

There is no doubt that the management of components at the end of their life and other hazardous waste associated with decommissioning requires careful planning. From the current details it appears that nothing has been planned in relation to waste or decommissioning at all though, and we would hope to see some more details come forward before a decision is made.

13. Population and Human Health

The NPPF at paragraph 130f states *“Planning policies and decisions should ensure that developments create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users...”*

The NPPF at paragraph 185 states: *“Planning policies and decisions should ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life:

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;...”

The key considerations in terms of air quality are the emissions associated with the construction phase traffic of the development.¹⁰⁶ The construction works have the potential to generate additional vehicles on the local road network, which in turn create more pollution on the network.

The Planning Practice Guidance (PPG) for Renewable and Low Carbon Energy states: *“it is important to be clear that:*

- the need for renewable or low carbon energy does not automatically override environmental protections;*
- cumulative impacts require particular attention, especially the increasing impact that wind turbines and large scale solar farms can have on landscape and local amenity as the number of turbines and solar arrays in an area increases;*
- local topography is an important factor in assessing whether wind turbines and large scale solar farms could have a damaging effect on landscape and recognise that the impact can be as great in predominately flat landscapes as in hilly or mountainous areas;*
- great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting;*
- proposals in National Parks and Areas of Outstanding Natural Beauty, and in areas close to them where there could be an adverse impact on the protected area, will need careful consideration;*
- protecting local amenity is an important consideration which should be given proper weight in planning decisions.”*

At the same time, the PPG also sets out particular factors that a local council should focus on when assessing planning applications for large scale solar farms. These include, inter alia:

- siting them on “previously developed and non-agricultural land”, and if using greenfield land that it is “poorer quality land”;*
- minimising “the proposal’s visual impact”;*
- “the effect on landscape of glint and glare and on neighbouring uses and aircraft safety”;*
- “the extent to which there may be additional impacts if solar arrays follow the daily movement of the sun”;*
- and that “great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting.”*

It also states *“The deployment of large-scale solar farms can have a negative impact on the rural environment, particularly in undulating landscapes. ”*

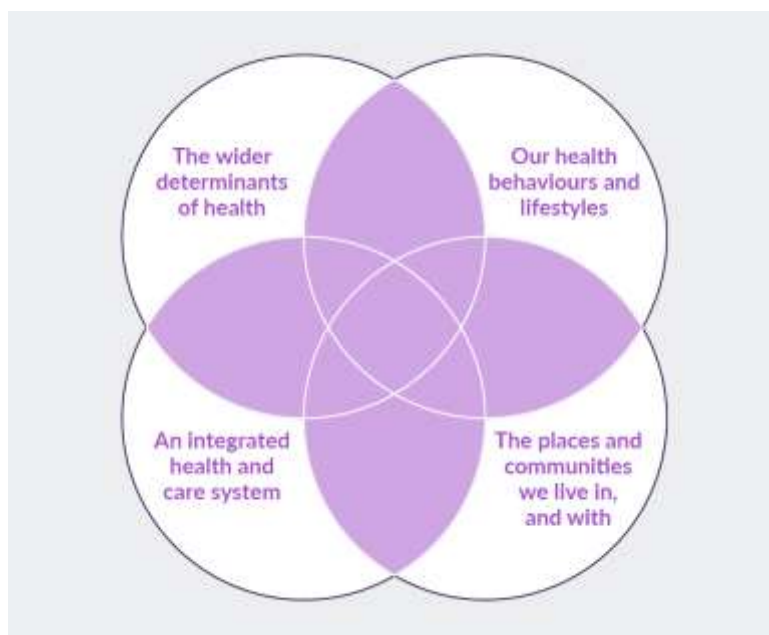
There are several definitions of population health in use. The King’s Fund defines it as:

“An approach aimed at improving the health of an entire population. It is about improving the physical and mental health outcomes and wellbeing of people within and across a defined local, regional or national population, while reducing

¹⁰⁶ Noise also has an impact on air quality and this has been covered in the Noise chapter and further below.

health inequalities. It includes action to reduce the occurrence of ill health, action to deliver appropriate health and care services and action on the wider determinants of health. It requires working with communities and partner agencies.”

A population health system - Four pillars of population health:



The diagram above shows the significance of Community and Environment in overall Wellbeing. It also shows the significant inter-reaction between Environment and Health Care Providers, such as the NHS.

The Landscape and Wellbeing Study 2009 stated “An appealing landscape contributes to people’s health.” The study looked at the landscape on three aspects of human health: physical, mental, and social. All three are closely linked to each other.

Physical Health

The Landscape and Wellbeing Study 2009 reported “In order to be perceived as an option for physical activity, rural green landscapes must be aesthetically appealing to their users.”¹⁰⁷

Walking and being outdoors leads to the benefits of the natural wonders that are fresh air & sunlight.

- Vitamin D is essential for your immune system, bones and blood cells, and helps the body to absorb important minerals.
- Helps to build relationships.
- Being outside can help to improve your self-esteem, even more so if you are near greenery or running water.
- Being outside could help to heal you from illness and injury more quickly.
- Concentration is improved; generally outside helps to improve focus, and generate new ideas.
- Being outside is linked with being generally happier and healthier.

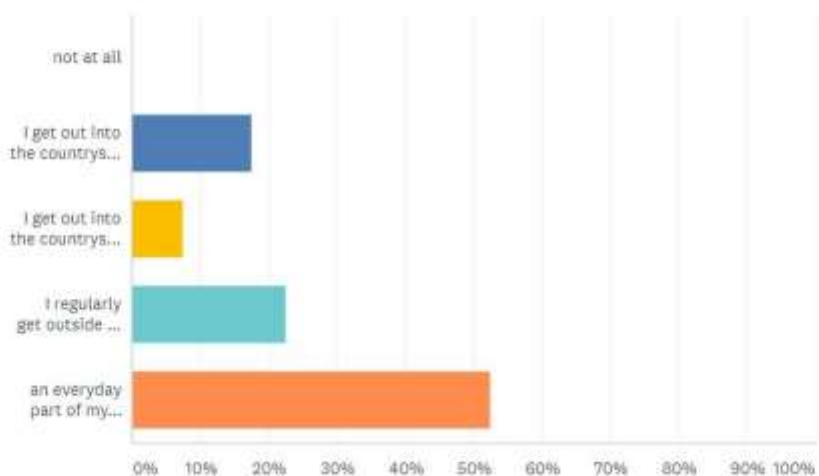
“Green exercise” is physical activity while simultaneously being exposed to nature. It comprises three physical components: the individual, the exercise and the environment, which become one process component encompassing a range of psychological and physiological processes.

CARE Suffolk conducted a voluntary survey in the area where questions were designed by a local Psychologist, which saw 40 respondents. One question asked was “How big a part of your life is walking/exercising in the open countryside around or near to where you live?” More than 50% of respondents said this is “an everyday part of my existence.”

¹⁰⁷ Pretty J, Griffin M, Peacock J, Hine R, Sellens M, South NA (2005a) Countryside for health and wellbeing: the physical and mental health benefits of green exercise. Sheffield Hallam University, Countryside Recreation Network, Sheffield

How big a part of your life is walking/exercising in the open countryside around or near to where you live?

Answered: 40 Skipped: 0



ANSWER CHOICES	RESPONSES
not at all	0.00% 0
I get out into the countryside only occasionally	17.50% 7
I get out into the countryside quite often	7.50% 3
I regularly get outside in the countryside	22.50% 9
an everyday part of my existence	52.50% 21
TOTAL	40

Exercise in the open countryside is an important aspect of people's physical health. But to encourage people to go out into the open countryside requires them to have a pleasant experience doing so.

Mental Health

"The NHS in England planned to spend £12.2 billion on mental health in 2018/19. That's roughly one in every ten pounds spent by the Department of Health and Social Care."¹⁰⁸

"Mental ill health is the single largest cause of disability in the UK, contributing up to 22.8% of the total burden, compared to 15.9% for cancer and 16.2% for cardiovascular disease. The wider economic costs of mental illness in England have been estimated at £105.2 billion each year."¹⁰⁹

The Landscape and Wellbeing Study noticed that *"a natural landscape is more restorative than an urban one. Hartig et al. (2003)¹¹⁰ showed that walks in natural landscapes have a stronger effect on the ability to concentrate than urban walks. This goes with other studies that emphasised that people prefer natural landscape such as beaches, waters, forests, parks, and mountains for recovery from mental fatigue."*

The large scale of the development in this area, and the number of views it would cover up from existing footpath routes, would have a significant visual impact on the PRoW users. Existing panoramic views of open countryside would be replaced with 10ft high rows of metal and glass, 7ft high metal fencing, and 36 large metal shipping

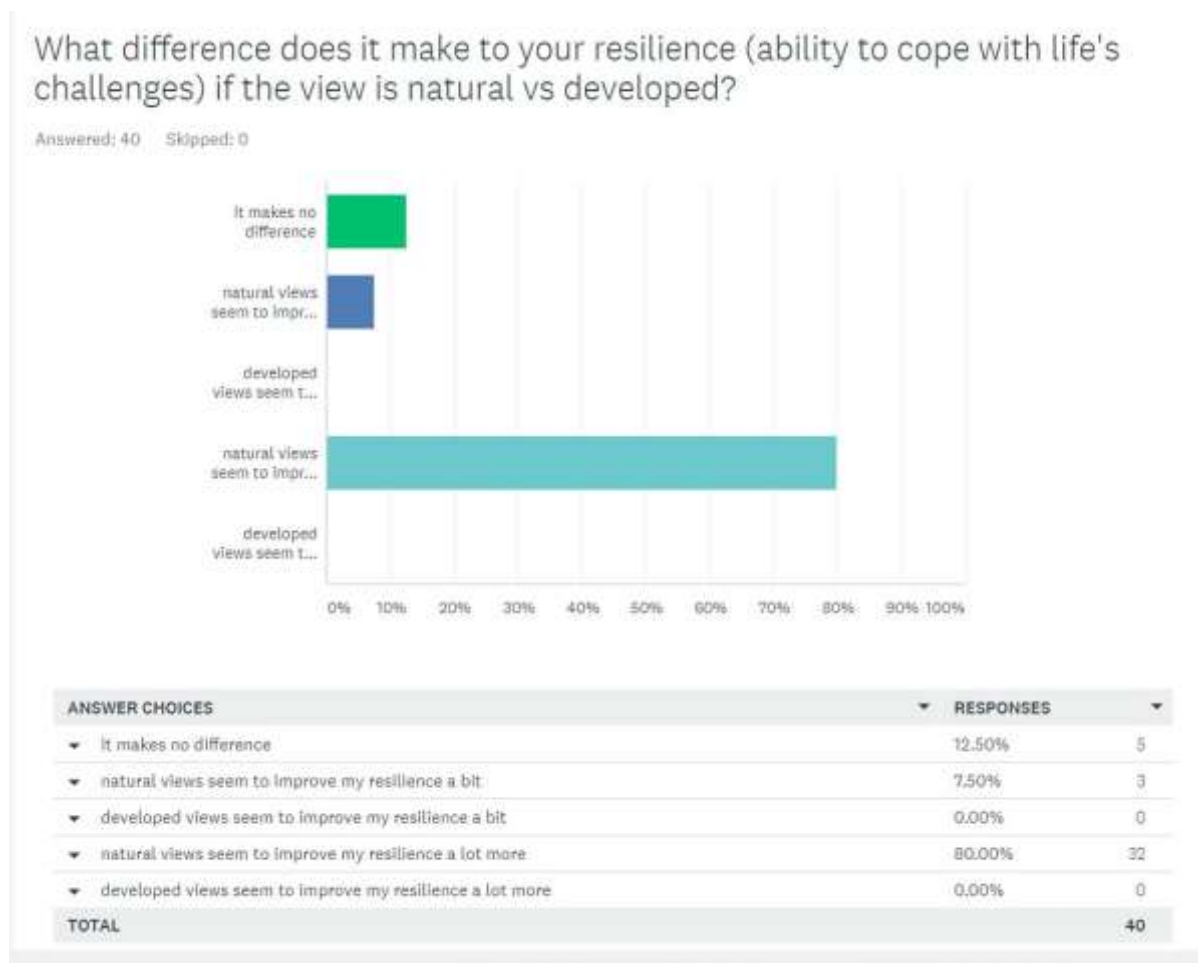
¹⁰⁸ <https://fullfact.org/health/mental-health-spending-england/#:~:text=The%20NHS%20in%20England%20planned,of%20Health%20and%20Social%20Care.>

¹⁰⁹

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/215808/dh_123_993.pdf

¹¹⁰ Hartig T, Evans GW, Jamner LD, Davis DS, Garling T (2003) Tracking restoration in natural and urban field settings. *J Environ Psychol* 23:109–123

containers in the short to medium term. Moving to corridors of hedging after around 15 years. It would be a transition from open countryside, to an industrial site, to an enclosed (albeit green) corridor.



Further the study noted “the importance of low sound levels for rest and relaxation: Gidlöf-Gunnarsson and Öhrström (2007)¹¹¹ point out that people who have easy access to green areas, can reduce noise annoyances and thus become more relaxed.”

The noise survey conducted by the applicant demonstrates an existing tranquil natural environment, with a low background noise level of 29-33dB during the day. However the applicants’ predicted noise levels along footpaths would increase to over 40dB. Considering the large scale of the development and the significant number of public footpaths it affects, the ability of residents and walkers visiting the area to escape from noise annoyances would be eliminated by this development.

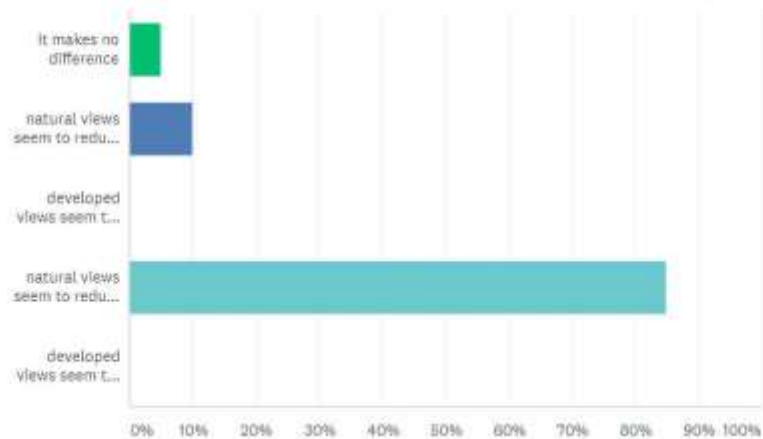
The study further noted “when people look at a natural landscape, immediate, unconsciously released emotional reactions significantly affect their stress recovery. These effects concern their attention, conscious mental processing, behaviour and physiological reactions. While looking at a landscape that is perceived as pleasant, negative feelings and thoughts—which were previously induced by negative stress exposure—are replaced by positive feelings such as interest, cheerfulness and calmness (Hartig et al. 1996)¹¹². As the literature shows, this reaction takes place when the landscape contains particular visual stimuli such as a moderate complexity and richness of natural elements like waters or vegetation.”

¹¹¹ Gidlöf-Gunnarsson A, Öhrström E (2007) Noise and well-being in urban residential environments: the potential role of perceived availability to nearby green areas. *Landsc Urban Plan* 83:115– 126

¹¹² Hartig T, Book A, Garvill J, Olsson T, Garling T (1996) Environmental influences on psychological restoration. *Scand J Psychol* 37:378–393

What difference does it make to your stress levels and worries if the view is natural vs developed?

Answered: 40 Skipped: 0



ANSWER CHOICES	RESPONSES	
▼ It makes no difference	5.00%	2
▼ natural views seem to reduce my stress a bit	10.00%	4
▼ developed views seem to reduce my stress a bit	0.00%	0
▼ natural views seem to reduce my stress a lot more	85.00%	34
▼ developed views seem to reduce my stress a lot more	0.00%	0
TOTAL		40

The result of fencing the footpaths would not be limited to a visual impact. High fencing can give a perception of being contained, which is not conducive to the enjoyment of the open countryside. Also, with no “escape” route available, this can be daunting for lone walkers, making the use of the footpath a potentially uncomfortable and unpleasant experience, one to be hurried. This could possibly lead to an alternative route being chosen, if such is available considering the numerous number of routes affected by the large scale of this development, or result in people being deterred from walking at all. The loss of an “escape” option will also be detrimental to wildlife who may get startled and nervous using the route, and in an attempt to escape could cause themselves harm by getting trapped by the fencing.



Social Health

Walking is also a social activity, which has been so appreciated during the recent pandemic when we could walk at a safe distance and still speak to each other. Or at the very least see a friendly face and say hello as you pass by.

On my daily walk the weekly total of people enjoying the footpaths and bridleway in the area recently has been about 30. This is social contact and a way to make friends, which is such an important part of our lives. And these walkers are not all from my village. Some have walked from as far as Ipswich to enjoy the fresh air and views, with cyclists who stopped for a rest coming from even further afield.

More people have discovered what this lovely area has to offer as they have had free time to get out and about. Children have benefited from parents feeling less stressed as, together they enjoy the freedom of exploring where our food comes from and what nature has to offer. This is quality family time, making memories to take forward for the next generation.

Open Spaces and Wellbeing

On 25th March 2021 Mid Suffolk District Councillors gathered to discuss a motion to a *“review of green space to ensure that it was optimising the biodiversity and well being aspects of natural and amenity green space in Mid Suffolk.”*¹¹³

Councillor Eburne highlighted *“the importance of green space to our communities had been highlighted more than ever with people taking advantage of local outdoor space. Green space was important for many reasons. For both physical and mental health, we know that social prescribing works, that people who can access green space have healthier lives, exercise is beneficial, and time spent outdoors improves our mental health... Ultimately, we need to value our green spaces more. Our communities have shown that they both need and value them.”*

Councillor Fleming said *“that they clearly agreed that accessible natural green space was important to our communities for all of the reasons that Councillor Eburne had mentioned. Open space conveyed a sense of wellbeing and permanency which was very reassuring in a world that was becoming increasingly stressful and hurried.”* And that it *“needed to be linked in with the emerging health and well being strategy.”*

Councillor Flatman felt that *“Mid Suffolk was very lucky to have access to an abundant number of footpaths and bridleways and stressed that it was really important that these areas were kept and maintained for the next generation.”*

Councillor Passmore *“welcomed the approach being taken and supported the Motion.”*

Councillor Warboys spoke in *“support of the Motion and made reference to the Dasgupta review and the natural capital approach.”*

Councillor Mellon commented that *“whilst it was important to have green spaces in our towns, it was also important to have useable green space in the countryside.”*

The Motion was **PUT** to Council and **CARRIED** unanimously.

The villages of Flowton and Burstall have no officially designated open spaces as defined in the Open Space Study May 2019. However, the residents of these villages greatly appreciate the open views of the agricultural countryside that the PRoW network provides access to. As do those of neighbouring villages who do have some designated open space. And whilst not officially a designated “open space” as defined in the study, the wide open views of the ancient clay plateau and rolling valley landscapes provide a valuable alternative in lieu of them to the community.

In the Landscape and Visual Impact Assessment Addendum the applicant attempts to assess the impact to views from PRoW such as footpaths and bridleways.

We support the comments by the SCC PRoW team to the original DC/20/05895 application that *“the report suggests that existing pylons on the skyline reduce the quality of views. We find this comment misleading as views of open countryside will generally be of quality than enclosed paths.”* Though they have not commented on this free-go application yet.

¹¹³ <https://babergmidsuffolk.moderngov.co.uk/mgAi.aspx?ID=14689>

Whilst it is obvious that the public would prefer those pylons and overhead cables to be buried underground, as they were for the EA1 development, the applicant's attempt to compare an open lattice style pylon on the skyline to their impenetrable wall of solar panels up close is weak. The pylons on the distant skyline have not reduced the amenity and wellbeing value of the publicly available open landscape on the proposed site in the same way that the solar panels would.

Further within the Landscape and Visual Impact Assessment the applicant states at paragraph 5.301 that *"Visual effects arising as a result of the Proposed Development would be at their greatest for visual receptors using the PRoW network within the Site and its immediate context in all durations.... would be Major – Moderate Significance and Adverse."*

This statement supports the SCC PRoW teams comment that *"There remains concern that the amenity value of users experiencing open countryside and having views of open countryside replaced with hedged paths that restrict views over the landscape and may adversely impact the user experience."*

We have already shown photos of the open views available in other sections such as Heritage, but here is another one of the PRoW footpath open views that the applicant plans to enclose with fencing and hedging...

Footpath between fields 5 (left of grass path) & 6 (right foreground) looking across Statkraft proposed field (background field) towards Flowton



The number of planning applications for large scale ground mounted solar facilities is becoming increasingly worrying for local residents. There are currently three of such solar facilities proposed to be packed into the same three villages in very close proximity to each other around Bramford substation. This application being one of them. With another application known to be in the Burstall and Hintlesham area.

Bramford substation currently handles 20% of the UK's electricity¹¹⁴, and there are plans coming forward to expand the substation and add additional overhead transmission lines into this small pocket of Suffolk countryside. The cumulative impact on this beautiful area of the countryside is turning a rural area into an industrial wasteland.

These applications wouldn't just affect a small number of PRoW, but a large proportion of them in Flowton, and Bramford Tye, and a string of them across Burstall and Bramford. There would be little escape. For those living in Bramford Tye there would be no escape.

This Enso Energy application triggered an out of the ordinary response from the community. Nine Parish Councils in the area submitted an objection to the application, with no parish in support, which is unprecedented for one planning application. It was also opposed by MP Dr Dan Poulter and the Suffolk Preservation Society.

With the increasing demand on the countryside from National Grid, residents are desperate to protect what is left. The applicants attempt to say that the landscape is already degraded by pylons is a good enough reason to destroy the rest of it is callous. Local communities were pleased when the cables for EA1 and EA3 went underground. But what is left is now proposed to be blighted on a scale out of proportion to the local communities by these solar facilities.

As Chair of CARE Suffolk I have had many concerns shared with me about the impact of these proposals. People who found solace and balance in their health in the open countryside are now relapsing, or experiencing for the first time, anxiety and depression over the proposals to industrialise what is left of this beautiful countryside. I know this because they and loved ones are telling me. Even those I speak to regularly who don't realise it are showing classic symptoms of these mental health conditions.

People are in dismay and despair at how weak the planning system and planning officers appear to be at protecting the democracy of local communities. People feel lost and unheard. I know this because they are telling me. One resident even came to my home and broke down into tears on my doorstep. And in recent months our villages have increasingly lost several cherished and long serving members of the community who have moved away, citing the solar farms as their reason why.

In the June 2021 edition of The Link Newsletter, Dr Dan Poulter MP for Central Suffolk and North Ipswich wrote:

"...these large scale energy projects cannot continue to be brought about in a piecemeal fashion without proper consideration for the potential consequences to some of our local communities... Whilst we should support appropriately sited solar parks (preferably on brownfield sites), there is also an imperative for our council planners to balance green energy production against the need to protect the countryside which makes Suffolk such an attractive place to live and work. Undoubtedly Suffolk will continue to grow as an energy hub, so it is essential that future energy development is sited in the right locations, so as not to blight our communities or damage our natural environment... Recently, we have seen proposals coming forward for a number of new solar parks near Bramford and concerning plans to install new overhead power pylons between Bramford and Twinstead, which would be a blight to our beautiful Suffolk landscape."

Paragraph 7 of the NPPF Revised 2021 states:

"The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs."

This statement further refers to resolution 42/187 of the UN General Assembly. In reassessing progress on this resolution¹¹⁵ at point 10 it was noted that the goals should include "satisfying human needs by raising the standard of living and improving the quality of life".

This proposal by Enso Energy, and that similarly of EDF Renewables and Statkraft, are failing to meet the needs of wellbeing for the present community, and so far appear to have done nothing other than reduce the quality of life for the community.

¹¹⁴ Equinor OTNR Virtual Information Session Recording <https://vimeo.com/593280649>

¹¹⁵ [Refworld | Implementation of General Assembly resolutions 42/186 and 42/187 : resolution / adopted by the General Assembly](#)

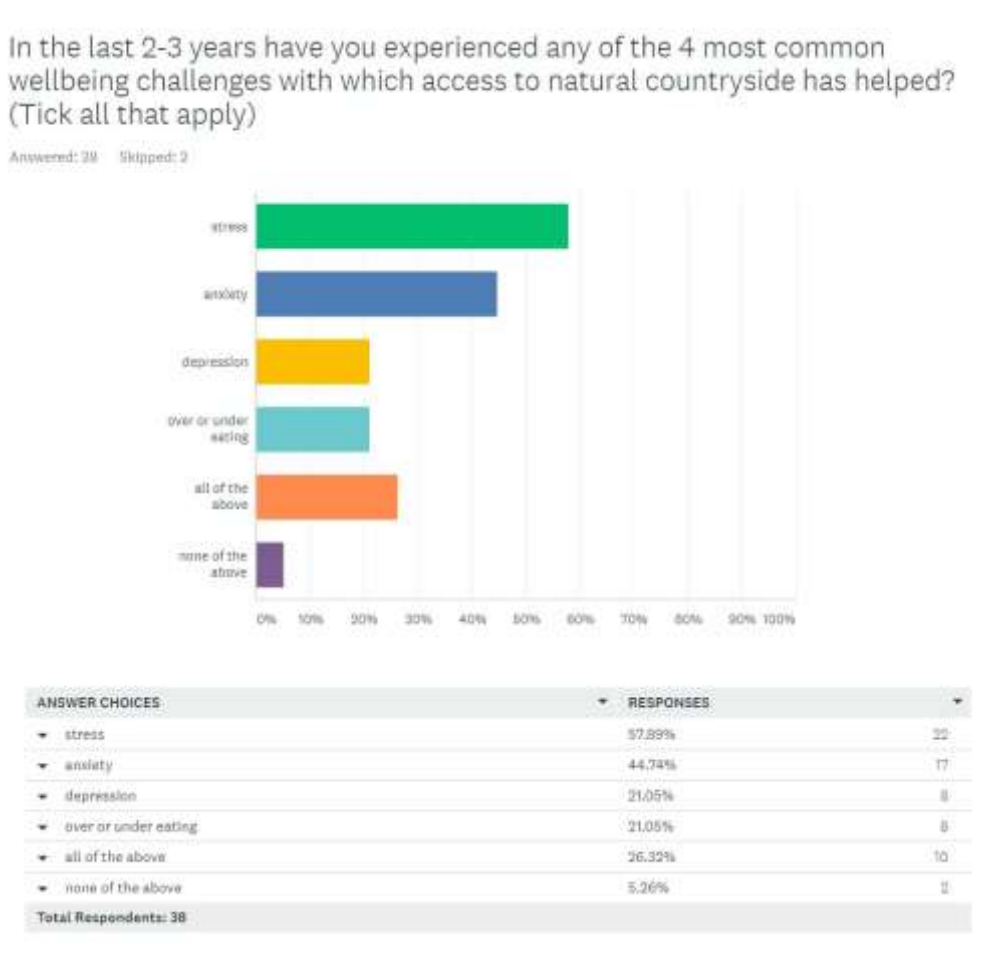
They say that it is *“better to have loved and lost, than to never have loved at all.”* So what that of the wellbeing of our future generations who, if this application were to be approved, would have never had this beautiful countryside to have loved in the first place?

Fear of using PRowS at night

It is well known that solar PV facilities attract metal thieves to the area. This was stated by the Designing Out Crime Officer of Suffolk Police. We appreciate the focus of the metal thieves will be on the solar site itself, and so not a significant risk of theft to nearby properties. However, as evidenced elsewhere the PRowS are well used, and continue to be used during the twilight and night time hours. There is therefore an increased risk of the public disturbing an intruder and the consequences and risk of harm in doing so. And the corridors within the facility would provide very few escape routes. This fear would be sufficient to deter people from using the PRowS and would be even more unfortunate were someone to be harmed as a result of the attraction to metal thieves.

Conclusion

This is all evidence indeed that we need to preserve our beautiful and productive land for the future. Not only for the health of the countryside and the wildlife that reside there, but for our own health benefits too.



The transfer of public health from the NHS to local government and Public Health England (PHE) is one of the most significant extensions of local government powers and duties in a generation. It represents a unique opportunity to change the focus, from a reactive society focused on treating sickness, to a proactive society actively promoting health and wellbeing as a method of prevention.

The recent Open Space Study of May 2019 conducted jointly by the Babergh and Mid Suffolk Districts noted that Burstall and Flowton have zero open accessible space. Well below the recommended levels. However, the wide views and openness of the landscape available from the footpath network here gives a perception of open accessible space.

The NPPF at paragraph 98 states *“Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails.”*

The applicant’s proposal does nothing to protect or enhance the public rights of way. The loss of the wide open views, the containment from creating corridors, and the significant increase of noise along them, will have a significant adverse impact on health and wellbeing at a cost to the NHS, UK Government, and also the local County and District Councils.

“In order to promote health, landscapes need to have certain characteristics that influence human well-being directly or indirectly, and which turn them into “good places” for health. Most important among these are easy access to natural landscapes and the availability of nearby (green) public open spaces. Landscapes need to be perceived as pleasant and attractive for all senses...”¹¹⁶

Changes in Government policy will shift the responsibility for physical, mental, and social health and wellbeing to local Councils. Any negative effect on local facilities for improving these conditions will fall, in future, directly on Local Authorities.

The applicant fails to recognise the value of tranquil open views of the natural landscape from the public rights of way on local health and wellbeing, the proposal fails to meet planning policy, and this needs to be taken into consideration by the Planning Committee before deciding to turn beautiful open and tranquil landscapes, with miles of integrated footpaths, into an industrial site.

“Most of our paths have remained unchanged for years and link up with neighbouring villages so good circular walks can be planned. Every year rambling groups from Ipswich, Stowmarket and other local towns come out to Somersham just to walk our paths. A walk, short or long, benefits health in all age groups.”¹¹⁷

The Babergh Core Strategy 2014 policy CS13 is generally supportive of renewable energy, however its note 1 states that the *“impact of proposals on landscape, heritage assets and human health and well-being will also be relevant to assessing the suitability of proposals for renewable energy schemes”*.

For residents of the villages surrounding these solar panels, as well as tourists from further afield, walking and enjoyment of this countryside will change fundamentally if this development were to be built.

¹¹⁶ Landscape and Wellbeing Study 2009

¹¹⁷ <http://somersham.onesuffolk.net/home/footpaths/>

14. Major Accidents and Disasters

In the NPPF under paragraph 97 it states *“Planning policies and decisions should promote public safety and take into account wider security and defence requirements by:*

a) anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate. Policies for relevant areas (such as town centre and regeneration frameworks), and the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security; and

b) recognising and supporting development required for operational defence and security purposes, and ensuring that operational sites are not affected adversely by the impact of other development proposed in the area.”

Applicant's Assessment

As part of the EIA Scoping Decision the applicant was asked to “provide an assessment of the significant effects on the proposed development on, inter alia, risks of major accidents and disasters.” The applicant has covered this in the ES paragraphs 8.6 – 8.10, and the Outline Battery Management Plan.

At paragraph 8.8 discusses the health and safety to workers and public during the construction phase. We have covered this in our transport section in more detail.

At paragraph 8.9 they discuss the equipment during the operational life and how it *“is not considered to pose a significant risk of creating an accident or disaster.”* This one is very interesting since throughout the consultation phase and even in the application¹¹⁸ they state that they do not know what technology they will be using. Making such a broad statement without knowing what technology will be used is inappropriate as the risks cannot yet be assessed. In order to make this statement you would need to know the equipment that will be used, as it varies by manufacturer.

At paragraph 8.10 they state *“Overall, no potential has been identified for the Proposed Development to lead to increased risk of a major accident or disaster in isolation or in combination with cumulative developments.”*

Identified Potential Risks that need Assessing

We understand that there are more potential risks than those the applicant has identified, and we understand that through mitigation some of these could be made acceptable. The risks identified are as follows:

- Drinking water contamination: the site is in a known flood risk area and drinking water protection zone, and the equipment – primarily the solar panels – will contain known toxic and carcinogenic materials. We accept the applicant's statement that when intact the solar panels are considered inert, and understand that equipment will be subject to a maintenance regime. However broken solar panels can leech those toxic components into the water network and the applicant states the site will only be visited once or twice a month. The site is located on an aquifer which supplies drinking water to Ipswich and the surrounding areas. According to the FRA submitted by the applicant, they propose no water drainage protection measures for the wider site. Bunding is proposed around the major equipment, such as inverters, BESS, and substation, and this would at least slow down any contamination from these sources. Drainage storage areas in optimised locations around the site could slow down contamination from the panels across the wider site, though are unlikely to prevent it entirely.
- Fire from Inverter Containers: whilst rare, there is a risk of fire in the inverter/transformer units. Routine maintenance would mitigate this. However it appears no provision for emergency vehicle access and turning has been provided at these locations in the event of an incident.
- Flood Risk to nearby properties and access route: this has been covered in the Flood Risk & Water Management section above.
- Gas Pipeline Damage/ Explosion: a major high pressure gas pipeline crosses through the site. This pipeline connects the Bacton Terminal in Norfolk to London. Whilst chances are (hopefully) low of workers hitting this, the applicant will need to dig deep trenches for their cabling at various points across the pipeline, including

¹¹⁸ Chapter 9.4 of document R007.

their major cable which connects the site to Bramford Substation. The applicant makes no indication how deep the trenches will be, but they will need to be at minimum 5-6ft deep to go through neighbouring fields because mole trenching works at around 4ft deep. Without confirmation it is hard to tell if the cabling will be deep enough to allow neighbouring fields to continue to be farmed, taking more good farmland out of production, or if there is a risk of hitting the pipeline.

- Battery Energy Storage System (BESS): we cover this in more detail in the next section.

Battery Energy Storage System Risk

Battery safety, or more aptly lack of, remains a significant concern of CARE Suffolk. The recent publications of the Significant Incident Report by Merseryside Fire and Rescue Services (MFRS) only serves to reinforce the concerns we have previously written about.

The application indicates the location of the BESS, the approximate number and size of the containers on the site, a guess at the number of HVAC units per container¹¹⁹, that there will be some sort of fire suppression in the containers, and the perimeter fencing. Nothing else is known about them.

Whilst there are numerous issues regarding the safety of lithium-ion batteries which are the most commonly used, the applicant deliberately avoids specifying the type of batteries to be used. In response to our enquiries, the applicant has stated that the type of battery will not be known until a much later stage. We therefore find it curious that they can categorically say there will be no hazardous substances on site.¹²⁰

Lithium ion batteries are notoriously unstable. Their increasingly popular counterpart – Lithium Iron Phosphate (LFP) are slightly more stable, but more hazardous if they do become unstable.

To date, there remains no standard UK safety regulations on large-scale BESS, such as the one included in this proposal. In the absence of this, it would be pertinent to refer to the experience and recommendations of those who have dealt with an incident on such a site, like that by MFRS.

Paragraph 97(a) of the NPPF 2021 supports this by stating *“Planning policies and decisions should promote public safety and take into account wider security and defence requirements by: (a) anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate. Policies for relevant areas (such as town centre and regeneration frameworks), and the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security;”* (our emphasis).

In September 2020 a BESS fire and explosion occurred in Merseyside, and MFRS were first responders on site. Whilst we understand an initial report of findings was distributed to other Fire Departments around the country, the report for that significant incident was only published to the public in March 2022. The report highlights a number of recommendations and lessons learned.

Many of the measures recommended would be appropriate to be included in a Risk Management Strategy, developed with the Suffolk Fire and Rescue Service (SFRS) that could be secured as part of any condition, and those do not need mention here.

One of the significant measures from the report – upwind access – is already a feature of the development, though we are not sure if this is by design or coincidence.

However, there are other aspects of the significant incident report that stand out in particular in relation to this application.

¹¹⁹ Noise Assessment by Inacoustic

¹²⁰ Box 21 of the Planning Application Form

Hazardous Materials on Site

The current application form declares that there are no hazardous materials proposed on site. However, evidence from the MFRS IIT report suggests otherwise.

*"After an external examination of the container and reviewing data from CCTV footage, there is evidence of a deflagration due to the ignition of gases that had been given off from the lithium battery cells. This would have been a mix of toxic and explosive fumes. When LiBs (Lithium ion Batteries) go into thermal runaway they generate a dense, white vapour containing hydrogen, hydrogen cyanide, hydrogen chloride, a large range of flammable/explosive hydrocarbons, carbon monoxide, carbon dioxide and droplets of the organic solvents used in the cells"*¹²¹

*"The explosion was a result of a failure within Battery Zone 3-Rack 7 Module 6 (BZ3-R7M6) which led to a thermal runaway, which, in turn produced gases within the container culminating in a deflagration."*¹²²

The consistent expansion of the affected container at Merseyside clearly suggests that the chemical reactions as part of the battery failure caused the container to fill with gases. A mix of toxic and flammable gases. The ignition of these gases caused the explosion and subsequent fire.

The Planning (Hazardous Substances) Regulations 2015 Schedule 1 Part 3 includes the listing *"Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")."* Referring back to Part 1 of the same Schedule, it lists *"P2 FLAMMABLE GASES Flammable gases, Category 1 or 2"*.

The MFRS IIT Report paragraph 8.6.3 states *"Based on my investigations, the evidence is consistent with the initial cell having suffered an exothermic reaction which then lead to a thermal runaway which resulted in flammable and toxic vapours being produced."*

The same paragraph states *"The internal CCTV shows the vapours (vented gases-droplets of organic solvent from the cells building up at low level filling the container as to started to reach their flammable limits, before coming into contact with an ignition source, the exact ignition source within the container is not known. The vapours ignited causing a deflagration which blew off both doors and caused the HVACs to come detached from the roof as well as deforming the container."*

It is widely understood that battery failure is a loss of control of the normal process. Sadly a subsequent product of that failure is a mix of gases including flammable gases as evidenced at the Merseyside incident, where *"Due to the nature of the contents, the incident was declared as a fire containing hazardous materials and a Hazardous Materials Environmental Protection Officer (HMEPO) was requested."*¹²³

Trident Energy Limited has modelled the potential dispersal zone of these gases for the Enso Energy BESS system, which is shown in diagram 1 below. Red circles represent the area based on 10mph, 20mph, and 30mph winds. The final dispersion zone and direction would further be affected by relative humidity, temperature, atmospheric stability, and the mixing height.

¹²¹ MFRS Significant Incident Report page 25

¹²² IIT Report Final p 1.2

¹²³ MFRS Significant Incident Report page 6

Diagram 1 – Gas dispersal zones for BESS proposed by Enso Energy



We therefore contend that there would be hazardous substances on site as defined under Schedule 3 of The Planning (Hazardous Substances) Regulations 2015 and this must be taken into consideration by the relevant bodies for consulting on this application.

Mains Water Provision

The applicant has provided almost no information on the battery storage area of the development. We know it will be comprised of 20 x 40ft green-coloured containers, and we know a rough layout of these containers from DR-002 of the FRA. We also know that *"Fire suppression systems are integrated to each battery container."*¹²⁴

In the Merseyside incident all preventative measures failed. The early warning alarms failed. The operational cooling system failed. And the aerosol fire suppression system failed (at least until it was too late to be of any use). The pace at which the incident progressed was very rapid.

Reliance on preventative measures is what led to the significant incident in Merseyside. Defensive safety measures can no longer be overlooked.

It is abundantly clear from the MFRS reports that the pivotal measure used in dealing with the significant incident was the nearby access to mains water and water hydrants. The MFRS started with 2 pumps as per standard protocol, however a request to "make pumps 5"¹²⁵ was made early on.

However, even this was insufficient. *"As near-by hydrant fed water supplies were inadequate to meet the needs of the ongoing firefighting, a High Volume Pump (HVP) was requested via National Resilience Fire Control for the purposes of augmenting water supplies, this was mobilised at 02:19 hours."*¹²⁶

*"Defensive firefighting continued on site for a total of 59 hours..."*¹²⁷

*"The fire was brought under control by 06:30 hours; however, the energy dissipated by the fire and continual recycling of heat from the Li-Ion store was to prove an issue during the latter stages of the incident as it continued to burn. This incident type required a continual and prolonged cycle of cooling and temperature monitoring."*¹²⁸

¹²⁴ ES Chapter 9 paragraph 9.3.3

¹²⁵ MFRS Significant Incident Report page 5

¹²⁶ MFRS Significant Incident Report page 7

¹²⁷ MFRS Significant Incident Report page 8

¹²⁸ MFRS Significant Incident Report page 14

Whilst we do not know if the nearby access to mains water and water hydrants was a determining factor in the choice of location for the Merseyside BESS, it is clear from the reports that this access was fundamental to a positive outcome to the incident. *"The tactic of applying water is correct and necessary to resolve the incident type."*¹²⁹

Further, current insurance guidelines for BESS sites are to water cool for a minimum of 24 to 48 hours. This varies by insurer. This raises two issues. The source of this water. And the disposal of the water in an environmentally safe way.

There are no mains water connections or water hydrants on or near the proposed site here. Nor any proposed as part of the development.

The applicant states that fire suppression is included in the battery containers. As there is no water provision, it concludes that a gas fire suppression will be used. Gas fire suppression does not have the ability to cool the batteries as water does.

Further, there is no planned containment of any possible run-off from the site which will flow directly into the water system via the ditch and Burstall Brook area, and subsequently the River Gipping and nearby drinking water protection zone. If there is no separate containment, how would the contaminated water would be separated from the storm water for testing and safe disposal?

We wish to share the words of the Deputy Fire Safety Commissioner of the London Fire Brigade on 2nd March 2021 and the Energy Storage Summit 2021:

*"If we know some things could fail catastrophically or it could have those effects, it's going to be a difficult day if one of us is standing there in court saying we knew about it but we didn't do anything."*¹³⁰

The Planning (Hazardous Substances) Regulations 2015

The Planning (Hazardous Substances) Regulations 2015 to this application, and in particular Schedule 1 Part 3 is very relevant to this application.

The Planning (Hazardous Substances) Regulations 2015 includes under Schedule 1 three Parts, or lists, of substances and minimum quantities that are regulated under the Act. Parts 1 and 2 list various products, with minimum quantities required before the Act applies. Part 3 is a catch-all in the event of an incident as follows *"Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")."*

We contacted the Department for Levelling Up, Housing and Communities (DLUHC) for clarification on Part 3 of the Act. Our original enquiry is as follows:

"I have been pointed in your direction regarding hazardous substances. I am trying to understand part of The Planning (Hazardous Substances) Regulations 2015. The bit I am particularly stuck on is Schedule 1, Part 3. It says "Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")." Does this mean that if an abnormal operating process occurs, and a hazardous substance in part 1 or 2 is generated as a result, that the development is subject to the regulations?"

The response received on 6th October 2022 is attached in Appendix 1. It confirms that our interpretation is correct, but also that it goes further than that, by stating that a loss of control does not need to happen for Part 3 to come into effect either... *"also brings into scope circumstances where hazardous substances could be present on land"*

It is important to note that this clarification from the DLUHC simply says could be present. There is no reference to magnitude or probability of an event occurring. If hazardous substances could be present in the required quantities, then the Act applies.

¹²⁹ MFRS Significant Incident Report page 15

¹³⁰ <https://www.energy-storage.news/news/retrofitting-could-be-essential-for-battery-storage-system-safety>

So then, only two questions remain. Could hazardous substances be present on the land? And would it be in sufficient quantities to trigger the Act?

The current application form declares that there are no hazardous materials proposed on site. However, evidence from the Merseyside Fire and Rescue Services (MFRS) IIT report published early 2021 into a BESS explosion and fire incident suggests otherwise.

*"After an external examination of the container and reviewing data from CCTV footage, there is evidence of a deflagration due to the ignition of gases that had been given off from the lithium battery cells. This would have been a mix of toxic and explosive fumes. When LiBs (Lithium ion Batteries) go into thermal runaway they generate a dense, white vapour containing hydrogen, hydrogen cyanide, hydrogen chloride, a large range of flammable/explosive hydrocarbons, carbon monoxide, carbon dioxide and droplets of the organic solvents used in the cells"*¹³¹

*"The explosion was a result of a failure within Battery Zone 3-Rack 7 Module 6 (BZ3-R7M6) which led to a thermal runaway, which, in turn produced gases within the container culminating in a deflagration."*¹³²

The consistent expansion of the affected container at Merseyside clearly suggests that the chemical reactions as part of the battery failure caused the container to fill with gases. A mix of toxic and flammable gases. The ignition of these gases caused the explosion and subsequent fire.

The Planning (Hazardous Substances) Regulations 2015 Schedule 1 Part 3 includes the listing "Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that process ("S")." Referring back to Part 1 of the same Schedule, it lists "P2 FLAMMABLE GASES Flammable gases, Category 1 or 2".

Some of the gases produced during a thermal runaway chemical reaction can include carbon monoxide, hydrogen, nitrogen, carbon dioxide, methane, oxygen, ethyne, ethylene, ethane, and other hydrocarbons. In addition diethyl carbonate, methyl ethyl carbonate, dimethyl carbonate, hydrogen chloride, ethylene carbonate, hydrogen fluoride may also be present. The substances underlined are all highly flammable.

The MFRS IIT Report paragraph 8.6.3 states "Based on my investigations, the evidence is consistent with the initial cell having suffered an exothermic reaction which then lead to a thermal runaway which resulted in flammable and toxic vapours being produced."

The same paragraph states "The internal CCTV shows the vapours (vented gases-droplets of organic solvent from the cells building up at low level filling the container as to started to reach their flammable limits, before coming into contact with an ignition source, the exact ignition source within the container is not known. The vapours ignited causing a deflagration which blew off both doors and caused the HVACs to come detached from the roof as well as deforming the container."

Although the DLUHC reply states a loss of control incident is not required for Part 3 to come into effect, it is widely understood that battery failure is a loss of control of the normal process. Sadly a subsequent product of that failure is a mix of gases including flammable gases as evidenced at the Merseyside incident, where "Due to the nature of the contents, the incident was declared as a fire containing hazardous materials and a Hazardous Materials Environmental Protection Officer (HMEPO) was requested."¹³³

Furthermore, we understand that the HSE does not classify the batteries themselves as hazardous substances because they are defined as "articles" and not substances. We are not suggesting the batteries themselves are the hazardous substance. It is the toxic and flammable gas by-products of an incident that are substances in their own right.

It is therefore reasonable to foresee that there could be hazardous substances on site as defined under Schedule 1 Part 3 of The Planning (Hazardous Substances) Regulations 2015 and confirmed by DLUHC. But would these hazardous substances be in quantities sufficient enough as listed in Part 2?

¹³¹ MFRS Significant Incident Report page 25

¹³² IIT Report Final p 1.2

¹³³ MFRS Significant Incident Report page 6

Parliamentary evidence¹³⁴ from Northern Ireland points out:

"To date the chemicals inside the batteries of a BESS (and in a 50MWh BESS these number around 185,000) have not been included in any calculation for hazardous substances release under COMAH and therefore the subsequent dangers to human health and environmental damage have not been assessed. We have made these calculations and any such lithium-ion based BESS over 17.5MWh would be brought into the scope of COMAH and separately require Hazardous Substances Consent under Planning. All five BESS's in NI would reach the thresholds for COMAH and HSC. Yet, to date, no direction has been issued by DfI or HSENI that any chemicals inside the batteries of a BESS will be assessed going forward."

Around the same time that that evidence was submitted a world leading scientist on BESS, Edmund John Fordham, published a scientific paper calculating the Hazardous Substances potential of the leading types of BESS. He found that the majority of BESS trigger Hazardous Substances potential in the mid-20MWh range.

The Applicant has so far refused to state any details about the BESS except that there would be 20 large shipping containers of them. Instead they are attempting to rely on the Rochdale Envelope Principle which is preventing the public from being fully informed during the consultation phase. The Council should note that the Rochdale Envelope Principle applies to outline planning applications¹³⁵, and not suitable for a full planning application such as this one.

Looking at various leading industry manufacturers for BESS, a large shipping container seems to have between 1.5-2MWh of capacity. For 20 of these that would put the total range somewhere between 30-40MWh. This range exceeds the thresholds for Hazardous Substances potential calculated by Dr Edmund Fordham, and advocates that this application would require Hazardous Substances Consent.

Conclusion

How long would it take to deal with an incident like the Merseyside event at the proposed location with zero water provision?

We know about the potential of battery storage containers. We have the opportunity to prevent it AND put in defensive measures to reduce the catastrophic potential should the worst happen.

It is clear, that without sufficient mains water and water hydrants on site, this location is unsuitable for the safe and sustainable installation of a BESS.

Whilst we recognise that a nearby BESS received permission in 2019 (DC/19/01601) without this requirement, this application is not being reviewed in 2019. So any claims of "precedent" cannot overrule the duty to properly assess the proposed development with today's known safety risks and recommendations.

In view of the risks outlined above we find this lack of transparency regarding the batteries extraordinary and note that it is in stark contrast to a previous planning application by Pivot Power (DC/19/03008). It is, in our opinion, one of the most blatant omissions in an application characterised by lack of detail. Should the Council be minded to grant the application, full details of all the technology, not just the BESS, should be provided prior to the commencement of construction and include full Risk Assessments regarding safety, fire protection and protection of the groundwater, with the full involvement of relevant statutory and non-statutory consultees.

¹³⁴ <https://committees.parliament.uk/writtenevidence/23583/html/>

¹³⁵ <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/>