Submission ID: S693011B7

I welcome the expansion of 'green' energy within the Frodsham area but not at the detriment of our current spaces and our resident's enjoyment of these spaces. I believe that by collaborating a common ground can be found to achieve a winning solution for both parties.

Chair of Frodsham Town Council's response to Solar farm application.

Introduction

This is a personal response from Helen Hayes, Chair of Frodsham Town Council. The Council will be officially responding to the Solar Farm application via the Frodsham Neighbourhood Plan group.

Summary of response

This response is based on extensive engagement by Frodsham's Active Travel team members from the pre-consultation stage in June 2023 through to the Phase 2 consultation in Spring 2025 to the recent registration of 'Interested Parties'. It also captures the essential outcome of the meeting organised by Axis/Cubico in January 2025 for representatives of organisations supporting active travel, at which the following people attended:

Frodsham Active Travel team - Cllr Aidan Holman (Chair) & Ashley McCraight (Project leader)

Cycle North Chesire - Steve Pemberton (Chair)

Frodsham Festival of Walks - Glyn Morris (Chair)

North & Mid-Cheshire Ramblers - Malcolm Wilson (Footpaths officer)

It became clear to everyone who attended the pre-consultation stage that at 600 acres, the scale of the proposed solar farm was enormous and would encompass the majority of Frodsham marsh with panels that would be up to 4 m high. In conversation, residents found it hard to envisage the irreversible loss of so much green belt within sight & walking distance of their homes. This feedback to the Phase 2 consultation is recorded with the applicant's responses.

On the positive side, the applicant did accept mitigation in the form of:

1. **New interlinked permissive tracks** which would support more active travel for cyclists, walkers, wheelers and equestrians.

   The 4.5km of planned new tracks are potentially very welcome. However, it is very difficult for residents to visualise what it would be like to use them from the limited number of photo predictions provided and the applicant ignored a request (FS2_EF_006) in its' responses to create either a scale model or a 3D virtual tour.

   It is important that the applicant includes a wide variety of perennial shrubs & bushes alongside each track to break the monotony of what could otherwise be very monotonous corridors of steel work.

2. **Information displays** to engage people as they travelled round the site. This is a potentially welcome planned proposal which should help visitors appreciate not only the wildlife and flora but also the benefits of sustainable energy in its broadest context, noting that this area is destined to host four key systems. i.e. solar, wind and the hydrogen & carbon dioxide pipelines.

3. **Access for the disabled** would be provided on tarmacked routes closer to the town but routes further away from the town would not be tarmacked. This is a welcome planned proposal.

However, the applicant has dismissed several critical residual issues.

Each of these was raised energetically during the meeting between local Active Travel representatives and representatives of Cubico & Axis in January 2025. The current scenario is summarised below:

4. Effect on the Landscape.

It is widely recognised in the local community that if the proposed solar farm was built on what is greenbelt it would have a huge negative impact on what is currently a very attractive view from the top of Frodsham hill dramatically and irreversibly.

This is the predicted view from the top of Frodsham hill 10 years later. Essentially 600 acres of attractive green fields would be replaced by a monotonous dull black area that looks like a vast tarmacked car park. i.e. it looks industrial & totally unnatural.

Feedback was also expressed and recorded in written responses to the pre-application survey in 2025 before the application was submitted to the Planning Inspectorate in June 2025. The feedback is summarised in the section on 'Landscape and Visual; pp.16 -22. This shows that 37 responses, many of which relate directly to views from the hill.

The following extracts taken from the applicant 's responses are repeatedly dismissive of the views expressed by residents of Frodsham & Helsby with their combined population of over 15,000 people.

4.1 The applicant 's response on pp. 17, to feedback specific to views from high ground, i.e. No's, FS2-OFF -033, 032, 051, 056, 019, is dismissive when it states :

"*- assessment from elevated positions including at Frodsham Hill and Helsby Hill and concludes that visual effects would not be significant.*" and

"Mitigation measures such as planting for screening would not be effective given the change in elevation.

4.2 The applicant 's response on pp.16 to feedback expressing broader concern for the visual impact. i.e. No's FS2_OFF_007, 009, 012, 014, 017, 023, 032, 033 and 053 is again fixed and dismissive when it recognises:

"*Chapter 6: Landscape and Visual Amenity [EN010153/DR/6.1] does identify significant residual adverse visual effects, but only for the users of the PRoWs that pass through the Proposed Development. No significant effects are predicted for any residential properties. These effects cannot be further mitigated through the mitigation hierarchy. Paragraph 5.10.13 of National Policy Statement EN-1 acknowledges that major energy projects are "likely to have visual effects for many receptors around proposed sites".*

What the applicant 's response does **not** say is that EN-1 also states in clauses:

5.10.4 Landscape effects arise not only from the sensitivity of the landscape but also the nature and magnitude of change proposed by the development, whose specific siting and design make the assessment a case-by-case judgement - and in clause

5.10.6 Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.

What the applicant's response also does **not** say is that Clause 5.11.30 states:

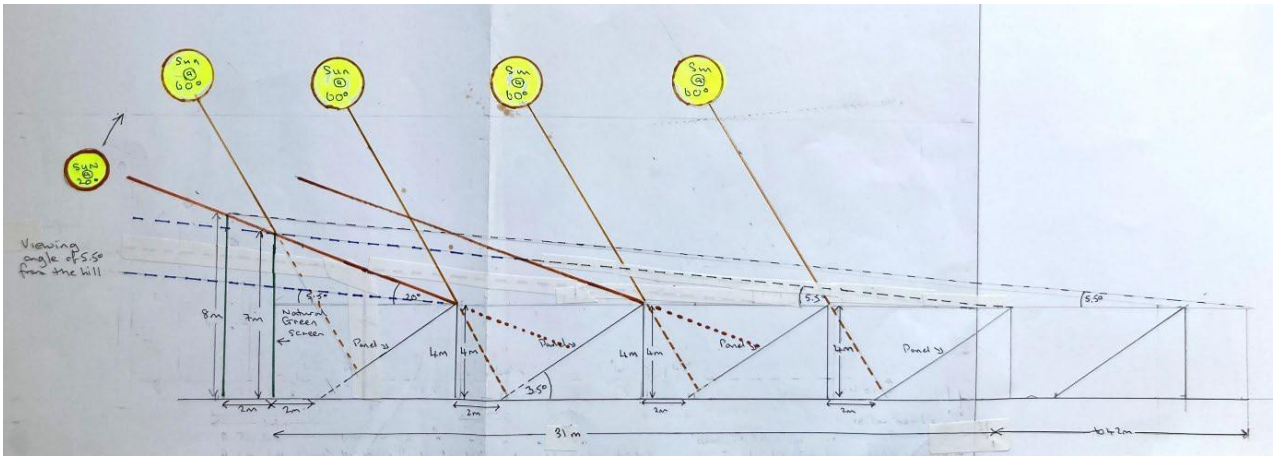
5.11.30 Public Rights of way, National Trails, and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The Secretary of State should expect applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails, other rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve or create new access.

Since then, the applicant submitted its application to the Planning Inspectorate in June 2025 which invited people/organisations to register as 'Interested Parties' to the examination process. Fifty one did so and registered their comments. Of these, 16 'Interested Parties' stated that they were very concerned about the impact on the landscape which indicates that this matter is the No. 1 priority to be addressed from the community's perspective.

Our contention is that :

1. The applicant has shown no consideration for the local community's views or needs by dismissing them when it concludes : *"that visual effects would not be significant."* This is disingenuous and untrue as residents consistently express the opposite view.
2. The applicant has dismissed proposals to screen the panels with planting when they state that "*planting for screening would not be effective given the change in elevation."*
3. The applicant has made no attempt in their design to soften what will change 600 acres of greenbelt to a brutally unnatural looking landscape on the marshes, as viewed from Frodsham & Helsby hills.

Recognising the importance of this to the community we reviewed Table 1 in the applicants Design Parameters statement and learned that the rows of panels are up to 4m high; can be as close as 2m and will be angled at between $10^0 – 35^0$ to the horizontal. The scale drawing below illustrates this for the highest, most upright and closest configuration and shows the viewing angle from the top of Frodsham hill is 5.5^0.



Evidence is available, with calculations, in Appendix 1, which shows that locally the sun barely generates any power at angles less than 20^0. Even at this angle the drawing shows that a large area of all panels behind the front row will be screened by the panels in front of them. i.e. the applicant's design includes a high level of screening which would prevent power generation even when the sun is less than 20^0.

Recognising this fact, placing a tree screen in front of each row, the top of which presented an angle of 20^0 to the front panel, would not affect the solar power generated for all but the front row. For illustration purposes, the diagram illustrates how 7 or 8m high screens can be as close as 2-4 m respectively, to the front row. As trees naturally have different sizes & shapes, suitably shaped trees would need to be placed in front of each block of arrays such that a 20^0 angle was maintained.

Importantly the illustration shows that, as the viewing angle from Frodsham hill is only 5.5^0 for the nearest array of panels, a row of 7-8m high trees would screen from view approx. 31-42 m of the panels behind the front row of panels. This screening benefit would increase to approx. 70-93m for the most distant panels and the extent of screening would be approximately doubled when viewed from Helsby hill.

Note 1: the trigonometry (Appendix 1) shows that for every 1m that a screen is above 4 m there is ten-fold increase in the screening benefits for the closest blocks of arrays.

Note 2: a 1: 50 scale cardboard model was made to help the team visualise each of these properties.

We contend that the monotonous unnatural views presented from the hills by huge blocks of industrial looking black/grey arrays should be mitigated as suggested in feedback. See FS2_OFF 066: *"Respondent suggested hiring a specialist in aesthetics to make the solar farm look more appealing."* The applicant deflected this comment and submitted a design in the application which appears unchanged and still monotonously dull.

We contend that major changes are required and could be achieved by:

1. Use of natural screens of trees, bushes and shrubs in front of each section of panels.
2. Varying the heights of the natural screens over a range of 7- 8m and also varying the distances from the front of the panels and the width of the screens.
3. Frequently softening the straight lines and edges of the rows of panels.
4. Leave open areas within the largest sections of panels and create small copses of trees and bushes.

There would of course be supplementary benefits of making the changes proposed as not only would more greenery encourage and maintain or increase active travel but the necessary increase in shrubs and trees used would support a significantly higher level of biodiversity.

5. Impact on access

Currently many sections of these Byways which link the site to the town are very badly degraded due to frequent use by heavy agricultural vehicles and are worse in winter with deep flooded potholes. Note: photographic evidence is available. This has a serious adverse impact for not only leisure, commuters and service vehicles but potentially for access by emergency services. We believe that these byways should be improved as part of the scheme and that two national and Cheshire West policies are applicable. i.e.

1. National Planning Policy Document Policy Paragraph NPS EN-1

Para. 104 Planning 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 networks like National Trails. Note NCN 5 crosses the marshes.

Para 108 Planning should identify and pursue opportunities to promote walking, cycling and public transport.

2. Cheshire West and Chester Local Plan (Part One) Strategic Policies (January 2015)
12.2.13 With specific reference to DM37 (recreational routeways). Opportunities to improve the quality, accessibility and connectivity of the network of recreational routeways should be maximised. Measures to enhance existing routes might include: upgrades to facilitate shared use and accommodate the needs of different users. There is specific reference to improving the cycle route across Frodsham Marshes in DM37.

6. Impact on residents

I would welcome more dialogue and a positive response to providing a substantial Community Benefit Fund for Frodsham. The Marshes Community Benefit Fund is a very good example of what we would expect to see from the Frodsham Solar Farm. The Fund was created in 2016 as an independent entity by the Frodsham Windfarm Limited partners, the Fund is managed by a Panel of independent volunteers and is governed by its Constitution. The Fund receives an annual grant from Frodsham Windfarm Limited of up to £120,000. This annual payment will be provided every year the wind farm operates and is expected to amount to some £3 million.

I believe that the Frodsham Solar Farm would have the necessary resources to provide a Community Benefit Fund of a minimum of £3m over 25 years.

I would also like to see some additional benefit directly going to local residents in the form of discounted energy charges. Obviously, this is not as easily achieved via the variable number of providers in use by residents but I would expect some discussion on how residents can benefit from this ‘green’ energy directly.

Appendix 1. Evidence and calculations to mitigate the negative impact of siting 600 acres of solar panels on the visual impact from Frodsham & Helsby hills.

Introduction: This paper explores the extent to which the inclusion of natural screening could mitigate this negative visual impact of the solar farm with minimal impact on PV generating capacity.

Objectives and approach to method of mitigation.

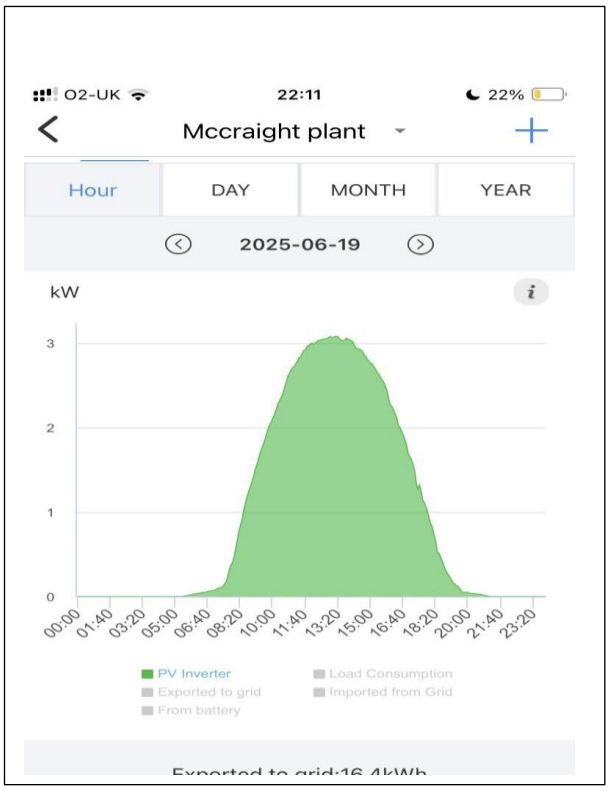
Objectives:

i) to place natural screening in front of the panels to a high proportion of the panels.

ii) to place this screening in such a way that it breaks up what is visible from the hill of what is a vast array into irregular areas which look less unnatural.

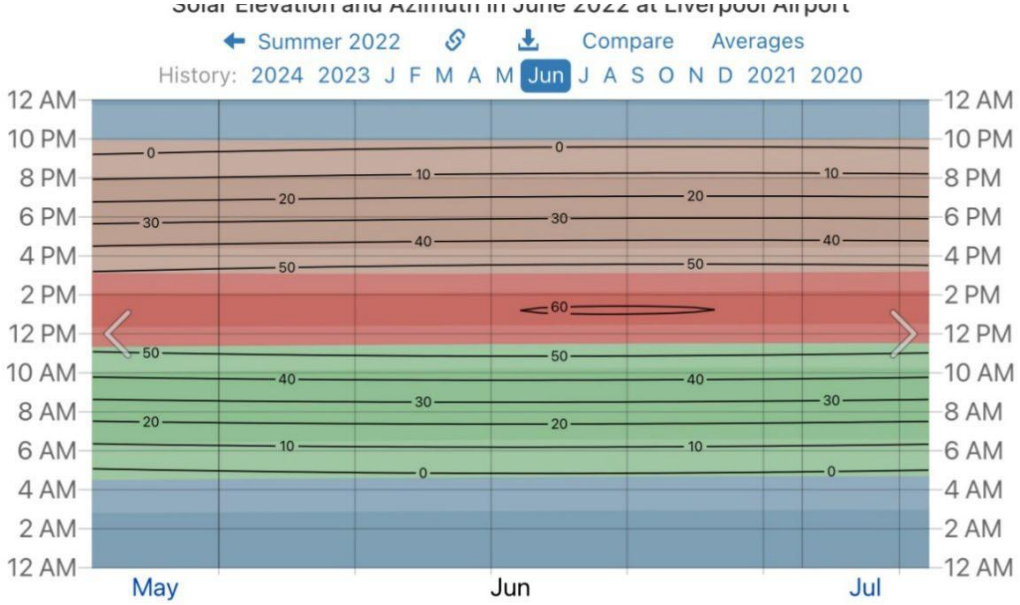
Approach:

The PV output from fixed solar panels is very sensitive to the power & direction of incoming solar energy. The maximum output is achieved when the sun's rays strike a panel at exactly 90° and there is no local interference or cloud cover. The team's project leader has a 3.8Kw solar array on their roof which faces due South and has an angle of approximately 40° with no local interference. This image is taken from the Shine App which monitors the system and shows the output for a very sunny day: 19th June 2025.
We contend that this fairly represents the nature of the power curve the proposed solar farm will experience in June.



Implications:

Examination of the power output curve shows that virtually no electricity was generated before 07:30 am. This is to be expected as the sun will be at low elevation and in the east, at right angles to the panels and will be approaching the panels at very low intensity. At about this time however power begins to be generated at an increasing rate as the sun moves both southwards and in front of the panels and its elevation increases. Comparison of this time with the published data for the sun's elevation (June 2022) at Liverpool airport shows it to be approx. 20° at 07:30.



Conclusion:

Screening could be sited in front of solar panels, without significant loss of PV output, so long as they do not block out sunlight approaching the panels at an elevation of 20^0 or higher.

Questions we asked

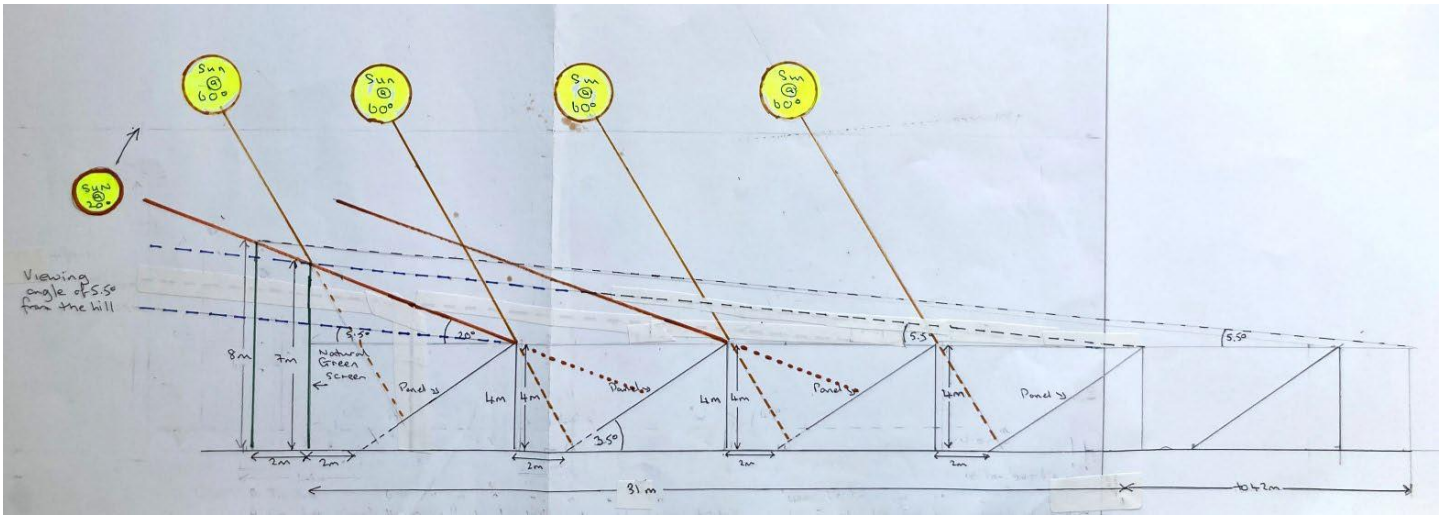
1. What is the relationship between the height of natural screening which could be sited in front of the panels and its ability to hide a high proportion of the panels from view from the top of Frodsham hill? This will depend on:
   - The viewing angle of the hill from the panels.
   - The height of the natural green screening relative to the height of the panels. Note : Table 1 in the applicant's Design Parameters Statements states the panels will be up to 4m high.
   - The distance of the screening from the front row of panels and the angle of the sun in the early morning when it's rays first strike the panels. i.e. 20^O

1. **The viewing angle** is calculated from the tangent (opposite/adjacent) of the height of the hill (130m) and the distance between the top of the hill and the nearest panels (1.35 km). The ratio of o/a is 0.096 so the angle is 5.5^0. Similarly, the ratio of o/a of 0.043 for the most distant panels at 3.0 km, results in a viewing angle of 2.5^0.

2. **The height of the natural screen relative to the panels.** This calculation is the inverse of the viewing angle. See attached diagram. For the panels closest to the hill, if for example, the natural screen is 3m higher than the top of the panels the extent of the visually hidden shadow is 3/0.096 = 31m. For an 8m tree the screening effect would be 4/0.096. = 42m. i.e. there is a tenfold gain in the ability of screening for every metre of tree height. For the most distant panels, sited 3.0 km from the top of the hill the visually hidden shadows are 3/0.043 = 70m and 4/0.043 = 93m respectively.

3. **The distance of the screening from the front row of panels.** All panels apart from those in the front rows are screened to a great extent by panels in front of them, as they can be as close as 2m to each other (See Table 1 in Design Parameters & diagram). As the viewing angle shadow is only 5.5^0 they will still all receive low power early morning sunlight at 20^O to the horizon if the screening is sited at an angle of no more than 20^0 relative to the front row. The power will gradually increase for all panels as the sun rises.

Illustration of impact of 7m & 8m tree screens on sun's access to solar panels in mid-June.



Proposed siting plan

Change history : 17.12.25 - Hyperlinks to third party websites removed and introduction included.

Ref : Frodsham's Active Travel team's response to Solar farm app v17.12.25