Planning Application PL/2023/10332

Land South of Potterne Park Farm, Potterne, Devizes, Wilts, SN10 5QT

Objection

1. Introduction

1.1. Objection

I have studied the Planning Application PL/2023/10332, including all the documents that are attached to it, closely and carefully. Having balanced the arguments for and against the Potterne Park Solar project, I conclude that the project offers few benefits and many disadvantages. I therefore object to it.

1.2. Principal reasons for objection

The principal reasons for objection are my observations of the following:

- Failings and Defects with the Application
- Importance of the Stert Valley in the regional landscape
- Failings with the Proposer's assessments of the site
- Unconvincing arguments about the need for the proposed project
- Failure to demonstrate that the project meets the Policy Objectives of Wiltshire County Council.
- Failings to meet environmental, societal and economic sustainability criteria

1.3. Personal introduction

I have a background in construction and environmental service delivery, with a special emphasis on sustainable development. I am a strong supporter of sustainable development and the circular economy. I recognize the urgency and importance that renewable energy must play in the future. I am aware of the importance of achieving a balance between the three spheres of environmental, societal and economic considerations.

2. Failings and defects with the Application

There are fundamental issues with the Application and the documentation provided. A sample of these are outlined below. These failings and defects would seem to justify rejection of the Application without further consideration.

2.1. Process of the application

Contrary to the applicant's claims, the process followed has not been fully transparent. As stated at the public meetings of the Parish Councils of both Potterne and Easterton, the local population feels it has been ambushed by the proposals.

The so-called community consultation was not a true consultation and has attracted much criticism. It was done in a very last-minute and low visibility way. The process and conclusions are reported in a biased way in section 9 of the "Planning, Design and Access Statement" (PDAS) and in the "Statement of Community Involvement".

The Application has been constructed using reports from consultants. These reports contain errors, inaccuracies and contradictions. Based on this, the Application should be rejected out of hand.

The reports are also comprised largely of ‘boilerplate’ statements that have limited relevance to the site. Where they do contain site specific material, this is insensitive to attributes of the site, suggests that the consultants have spent little time in the area and have been commissioned solely to force the Application through to approval.

2.2. Clarification required of the content and scope of the Application

There are many points that are fundamental to the Application where there is a lack of information or where the documentation contains conflicting statements. I highlight a few of the more important ones below.

2.2.1. Critical Threshold of 44.99MW

Section 10.1 of the PDAS explains why the output is set at 49.99 MW. At this capacity the project escapes the 50 MW threshold that would require it to be submitted for approval under the Nationally Significant Infrastructure Projects (NSIPs) process.

This underlines how critical it is that this figure is properly and robustly calculated. No justification of this figure of 49.99 is given.

Because of its significance, and taking account of the multiple errors and misleading statements in the Application documentation, this figure, and the way it has been calculated, including the margin of error, should be required.

This calculation is needed to permit the public authorities and stakeholders to check that ‘upward scope creep’ does not occur during the construction and operation of the project. It is therefore essential that the calculation is provided and is validated by a competent third party.

2.2.2. Conflicting information about size and duration

Both the extent and the duration of the project are given with different values in different documents and even different parts of the same document. The area is given as both 88 and 79.75 hectares. This difference is significant and material for the determination.

The duration is stated to be both 50 and 40 years. There is a difference of 20% between these two figures, which again, is not acceptable.

2.2.3. Meaning of ‘temporary’

The wording of the ‘proposal’ section of the Application document is ambiguous about which parts of the works are ‘temporary’ and which are permanent. Is it only the grid connection that will be retained, or is it also all the other items listed thereafter (inverters, underground cabling, stock proof fence, CCTV, internal tracks, and associated infrastructure) that will remain?

This ambiguity is found in other parts of the submission and must be of material concern in determining planning approval.

The concept that an infrastructure installation can be considered ‘temporary’ when it is proposed to last 50 years is highly questionable. This is in contradiction with the statements in Tables A2-5 & A2-10 of Appendix 3 of the Landscape and Visual Appraisal (LVA) which say, in the cells for “*duration of change*”, “*Permanent, more than forty years*”.

2.2.4. Availability of Grid Connection Agreement

The reason this project exists is due to the potential for the developer to secure a grid connection to the National Grid. The proposals do not demonstrate that an agreement to do this has been obtained. If no agreement exists, the application is a speculative operation that risks wasting the time and resources of the local authorities and other interested parties.

2.2.5. Non removal of the Grid Connection

The infrastructure that is stated specifically to be permanent, is the grid connection. (Para 3.1.8 of the LVA).

There are few kinds of infrastructure installation that are more ugly or incompatible with a rural setting than electrical switchyards and transformer stations. The installation proposed is large (approx. 63.3m by 45m). It is not shown specifically on the site block plan. It is not clear if the WPD relay/control room, cesspool and communications tower are part of the grid connection that will be retained permanently.

The developer has not explained anywhere the justification for retaining this infrastructure. If retained, it will continue to be a significant eyesore.

2.2.6. Battery installation

The Application form makes no reference to battery installation. None are shown on the site block plan. However, there is a section of the PDAS (para 4.3.3) where these are described as being housed in 40-foot containers. There is no mention of how many there will be, nor where they will be located, nor whether they will be removed at the end of the project.

Paragraph 4.3.3 also states "*it is sensible that the precise specification of the battery unit would be agreed at the point of installation*". When combined with its absence from the project description, this seems a very non-transparent way of dealing with such a significant component of the project. These items will add to the incompatibility of the project with its location. Therefore, their omission from the formal Application should be grounds for rejecting it.

2.2.7. No documentation justifying land classification

Another important planning consideration for solar farms is the quality of agricultural land they occupy. The application stresses this and claims to have completed an Agricultural Land Survey (e.g. Para 7.7.2 & 11.1.3 viii of the PDSA). No such document has been included in the Application. Surely it should be.

Irrespective of the land classification, this is productive agricultural land that contributes to national food security. The proposal to incorporate low intensity sheep grazing will not compensate for the loss of agricultural output.

3. Overview of Stert Valley

The valley of the Stert Brook is a particularly interesting and beautiful tract of countryside. Because of this, it is a very unsuitable site for such an extensive industrial facility.

In the wider landscape context, the valley is situated between the two downland areas of the Wiltshire Downs and the Salisbury Plain. It is an area of beautiful

countryside that extends uninterrupted from beyond Pewsey in the east to Bratton Camp in the south west and Roundway Down in the north west.

Between these uplands are the Pewsey Vale in the east and the tract of land extending to Bratton, Steeple Ashton and Seend to the west. While there are subtle differences throughout the area, the whole is very beautiful and unspoiled countryside.

At a more local scale, the upper part of the Stert valley is remarkable and is bounded to the north and south by the distinctive ridges of the greensand outcrops. These stand out and are accentuated by belts of ancient woodland and dissected by sunken lanes.

The valley is a zone of transition between two different landscapes. It is classified administratively as part of the National Character Area 117: Avon Vales, but, being at the extreme eastern end of NCA 117, it shows more of the attributes of the AONB to the east and only a very limited number of those of the more urbanized Avon Vales.

The site of the solar farm project in the upper Stert Valley is at the centre of this landscape. It is very close to the watershed between the Pewsey Vale, which is within the AONB, and the area to the west, which is not. From any vantage point, or when travelling through these areas, it is impossible to distinguish between the areas classified as AONBs and those that are not.

The line demarcating the AONBs appears to be largely arbitrary. It seems that the designation of AONB could, and should, be extended to embrace this valley and much of the landscape at the base of the Salisbury Plain. This should be a designated landscape.

One of the very few ‘eyesores’ that exists here, is the line of electricity pylons that runs for most of its length. The railway is better integrated and inoffensive.

This landscape is significant for more than its inherent beauty. It has other important attributes that include:

- Geological and geomorphological interest
- A wide range of natural environments
- Varied ecological domains
- Historic villages and notable buildings
- Many amenity benefits
- A wide range of productive agricultural activities.

The solar farm project is completely out of character with this area and the developer treats it with extraordinary insensitivity.

The precedence of the Article 4 Declaration of 10Th April 2018 issued in relation to Planning Application 17/10190/FUL reinforces the case against the solar farm project. That process, and the many constructive submissions to it, recognized the value of this location in the above landscape, the dangers of the access road and the need to protect a tranquil rural setting.

4. Failings with Proposer’s assessment of the site

The developer’s assessment of the site is based on consultants’ studies. As described above, these are almost entirely desk-based exercises that have been

conducted in offices far from the site. There is little evidence of serious effort to gain a real understanding of the location or the activities that occur there. The visits that have been made seem to have been mostly conducted in the worst periods of the year and were short (i.e. one day for the landscape architect in March to conduct the *"…landscape context study areas and inspection of views…*" (Para 1.3.3 of the LVA).

There appears to be an overreliance on computer simulations as opposed to observation and ground truthing. They contain many inaccuracies and contradictions. The results are therefore largely unsatisfactory and potentially misleading.

It is not practical for me to detail all the points where this leads to an unsatisfactory assessment of the site. A few samples should however illustrate the point.

4.1. Site Screening

The PDAS (Para 2.2.2) attempts to show that the adjacent railway is an important feature of the landscape by using a drone photograph. However, the railway is very hard to see from most viewpoints. The embankment section of the line, which comprises about one third of the south side of the site, is well vegetated and blends well into the valley. It offers virtually no screening to the site from the south (see photo LA 10-2 Viewpoint 02 in LVA). The remainder of the line is in cuttings and almost invisible from any distance.

4.2. Footpaths and Bridleways (PROWs)

The Public Rights of Way (PROWs) that cross or abut the site are all very high quality. They are well marked, well maintained, well used by walkers, runners, and in the case of the bridleways, by horses and cyclists. I have walked on all these on many occasions, both alone and with family and friends. They give great pleasure, afford excellent opportunities to observe animals, birds and plants and to enjoy varied views. They enable one to feel the spirit of the countryside and experience the varying elements and seasons.

I also regularly use the bridleway that abuts the site on the eastern side to cycle from my home in Potterne to the Salisbury Plain.

The five routes that cross or border the site run roughly from north to south. Historically, they link the Potterne ridge and Potterne Wick across the valley to Easterton, Market Lavington and the Salisbury Plain. The character of these PROWs changes as they cross the valley, transit the site, pass over the railway and climb the greensand escarpment using historic sunken lanes. These routes are linked by east-west ones that enable circular excursions of varying length to be enjoyed.

One of these paths has been cut by the railway. As a result, it no longer enables a through route. However, it is very interesting and enjoyable to use, both the upper end of this path in the sunken lane and the lower end that crosses the field where the solar arrays will be sited.

All these benefits will be lost if the fields that surround these paths and bridleways are covered with unnatural solar panels. The paths will be 'canalized' within hard unnatural features. A rural location will be converted into an unsympathetic industrial one.

There is no conceivable way that a solar farm can enhance this site or preserve these valuable benefits. The developer's claims are therefore completely unfounded.

Para 2.4.2 of the PDAS says "*…development will provide opportunities for the enhancement of the existing routes, through for example improving signage, surfacing and replacing infrastructure,".* Paras11.9.2, 11.9.3 and the table of para 10.3.1 claim that planting and "green infrastructure" will mitigate the negative impacts. None of these actions would enhance or mitigate anything. They will change the existing rural experience into one akin to an industrial and urban context and thus destroy the value to users.

Para 3.4.1 Claims that the site has been well thought out. However, sub-para (6) states *"Is distanced from nearby Public Rights of Way and Historic Environment features*". How can the developer possibly justify this claim when there are 5 PROW's on the site, not to mention the historic moat?

Para 11.9.1 "*The existing public rights of way (PROW) have been identified on the site layout plan*" contradicts the previous statement (3.4.1).

Para 11.9.3 makes no sense because,

a) the PROWs exist and the development will degrade not enhance them

b) it is illegal to block or close a PROW

Table 4.2 of the Landscape and Visual Appraisal (LVA) includes a line *Recreational access along Public Rights of Way,* and in the corresponding cell for "*Magnitude of Change*" states "*small*" for all three project phases of "*construction, operation and decommissioning*". This assessment is plainly ridiculous and shows how little respect the consultants and developer show for the environment and the amenity of local people and visitors who enjoy these PROWs. For these people, the change will be catastrophic and should be recognised as such.

4.3. Landscape and Views

4.3.1. Landscape

The significance of this landscape has been described in the preceding part of this objection. The LVA document recognizes many of these attributes, but fails to acknowledge the full impact of the project on them. It also proposes mitigation measures that are illusory and will be ineffective in redressing the harms done by the installation of a large-scale solar farm in this landscape.

4.3.2. Views

For residents, visitors and users of any landscape, there are three aspects of views that matter: views **of**, views **from** and views **within**. All three are important, particularly in the context of the beautiful landscape described above.

The LVA does not do justice to these. It includes a series of photographs, all taken on a dull winter day (3Rd. March 2023), and not all from the most pertinent viewpoints. They show the site viewed from some external viewpoints (views of) and some from the site or site boundaries (views from or views within). I am conversant with all these viewpoints (except context photo B) and have my own photographs taken over several years and different seasons from similar positions.

The Application's photographs show that the computer visibility plots LA.08-1 and LA.08-2 correspond to what can be seen on the ground. Taken together, they demonstrate the very significant impact the proposals will have on the views of the locality. However, other important viewpoints are excluded because of the limitations of the 3 km radius from the site. The site is visible from key viewpoints along the

edge of the Salisbury Plain, from Strawberry Hill to Stoke Hill and discernible from Coulston Hill and Bratton Camp.

The LVA document (paras 1.3.1 & 2 and appendix 2) purports to follow various formal and recommended procedures, particularly GLVIA3, However, the resulting evaluation and conclusions (section 7 and appendix 3) seem to be weighted in favour of the developer and at variance with the objectives set out in the report (para 1.2.4). Equally important, they do not accord with the way most people view and experience the landscape when they are in it, or looking at it.

Views from, and views within, are important for the users of the PROWs. A significant part of the enjoyment of experiencing this landscape comes from the views that it offers of the surrounding countryside, and the attractive features and wildlife that can be seen when looking from one part of the site to another.

The presence of solar panels extending from 800mm to 3,200mm above the ground will create impenetrable obstructions that will completely cut out most of such views. This loss can not be alleviated by any kind of intervention by the designers or developer. None of the suggested mitigation measures listed in section 3.1.10 of the LVA will overcome this and they should be discounted by the Planning Authority.

4.3.3. Impact assessment of Landscape and Views

The LVA describes the landscape baseline and the key characteristics identified by the consultant in general terms (paras 4.1.3, 4.2.3 and 4.2.5) and in site specific terms (paras 4.3.3 to 5, and 4.3.11). However, it overlooks two important details that have real consequences for the way the landscape and views are appreciated and will be impacted. Firstly, the existence of the smaller fields on the sloping parts of the south east and south west sections of the site. Secondly, the importance of the slope and scarp to the north of the valley, from where the site is very visible.

There are three consequences of this:

- because of the slopes, the small fields are very visible when viewed from the north;
- there are very important views of the site from the dwellings around Wick Farm, and heavily used footpaths above and below the scarp, including in winter, as far as Potterne Field;
- the installation of the horizontal hard surface of the flat field full of solar panels will accentuate the line of the railway embankment which currently blends into the landscape.

These defects are carried over into the subsequent assessments in sections 5, 6 and 7, tables 4-1, 4-2 and 4-3. and appendix 3.1, and from there into the PDSA.

This landscape and these views matter to visitors and the local community. Bearing in mind that the impacts will be very negative and last for two generations, the assessment needs to be more objective.

Paras 7.2.1 – 8 of the LVA ‘Landscape assessment’ seem to significantly downplay the negative impacts that a solar farm will have on this landscape. The impacts are rated between ‘moderate adverse’ and ‘negligible,’ thus presenting the proposals in an unduly favourable light. The statements in para 7.2.8 “*Construction and decommission activities could be perceived as activities associated with largescale farming*” and “*Once the decommissioning activities are completed, the landscape would be fully restored and effects on the landscape character and features would*

be negligible.," are not credible. The negative impact of the grid connection installations will be strong. This will continue to be the case if the installations are retained after decommissioning.

Paras 7.2.9 – 17 of the LVA 'Visual assessment' also downplay the negative impacts in a similar way. Paragraph 7.2.12 refers to the visual impacts on the footpath users, both within and overlooking the site. How can the total obstruction of views by 3m high panels be described as moderate? The value of views through trees and hedgerows '*filtered or oblique views'* is also very significant, especially in winter.

In the context of para 7.2.14 of the LVA, it should be noted that road users include walkers, cyclists and horse riders on the local roads, who move more slowly than motor vehicles, have ample opportunity to view the site and their views will be negatively impacted.

All the above issues completely negate paragraph 7.3.2 of the conclusions in the LVA: the adverse impacts will be considerable and the proposed mitigation ineffective.

4.4. Ecology and Biodiversity Net Gain

The Ecological Impact Assessment, (para 2.3) recognises that it may be incomplete as far as species recognition is concerned. It is, nevertheless, clear that "*The development of the Site has the potential to impact on a variety of protected species including great crested newt, foraging and commuting bats, breeding birds, and common species of reptile* (para 11.3.1 of the PDAS and para 9 of the EIA). Note the omission of mammals, particularly hares and small rodents. The hoped for return of the iconic lapwings (Symbol of the Wiltshire Wildlife Trust), that was reported by the landowner in a 2018 objection to Planning Application 17/10190/FUL, is not noted.

Solar voltaic developments have a short history, especially in the U.K. As a result, there is a lack of meaningful ecological impact studies. Many that do exist lack objectivity and the scientific rigour of comparison between like environments, with and without solar arrays, as well as between, before, during and after their installation.

In section 5.3.3, the EIA admits this. "*BSG [Ecology] in 2019 confirms that there has been no research that directly addresses the effect of PV solar facilities on bats. It concludes that bats can mistake horizontal surfaces for water bodies and vertical surfaces for open flight paths".* I have been able to find only a few ecological studies that seem to be scientifically robust. One of these finds that many species of bats suffer negative impacts from solar farms. (*Tinsley et al – Renewable energies and biodiversity: impact of ground-mounted solar photovoltaic sites on bat activity*)

The BSG Ecology study cited also examines aquatic invertebrates and birds, but ignores mammals and plants. It states "*Ground-mounted PV panels have the potential to cause the highest impact on nature as they are installed on land which may have at least some value to wildlife. …other forms of installation are all reliant on built infrastructure, and are likely to be limited in their ecological impacts for this reason*".

The very concept of Biodiversity Net Gain (BNG) is one that many people find hard to accept. The basis seems scientifically doubtful and, even applied to urban development, risks making exaggerated and unsupportable claims.

In this rural setting, assessment of biodiversity should also take account of current and potential improvements in agricultural practices over the duration of a project. Continuous improvements are being made with developments like direct drilling, new plant and seed varieties, regenerative agriculture and alternative fertilizers. The agricultural community, food producers, retailers and consumers are conscious of the need to secure biodiversity and active steps are being taken to develop and implement better techniques to this end. *(Regenerative agriculture sparks venture capital interest FT 25-01-2024 and Will no-till farming put paid to the plough? FT 25-01-2024)* It is likely that real biodiversity enhancements will be possible while retaining full agricultural output and, over time, these will surpass any one-off short-term benefits claimed for the solar farm project.

The Government has recognized that its Environmental Land Management schemes have not provided the incentives it aims for and has announced steps to improve this. *(UK government sets out bigger post-Brexit subsidies for farmers - FT 4/01/2024).* For these reasons, it is probable that continuous improvements in the ecology and sustainability will occur during the next 50 years and that these will surpass the very limited gains claimed by the developer.

The Application for this project relies almost entirely on retention and protection of existing landscape features to claim that it is achieving ecological and environmental improvements. Retention and protection of what already exists are not additional "ecological enhancements". Few of the proposals are 'enhancement'. The Application appears to be trying to benefit from what already exists, which the project will materially degrade.

I feel confident that all the forms of wildlife, that I share this place with, will feel as impacted and deprived as I will. They may well find it impossible to live and breed here in the future.

The statement "*The Biodiversity Gain Plan will be submitted in writing, no earlier than the day after planning permission has been granted*" is astonishing. It seems strange for this to happen after Approval. Who is responsible for seeing that it is adequate and implemented and what real power and resources do they have? (Section 7 of EIA)

4.5. Landscape and Ecology Management Plan (LEMP)

The LEMP contains a considerable number of onerous and potentially expensive requirements that will need to be followed during construction, operation and decommissioning. What assurances are there that adequate budgets will be set aside for these crucial aspects of site management?

These requirements are essential for the preservation of the existing landscape and ecology that is planned to be retained as well as the limited enhancements proposed. Heavy reliance is placed on grazing sheep to manage the grassland, but there is no recognition of the need for proper flock management that would be associated with this.

While monitoring is stressed in the report, it does not indicate who has the responsibility, power and resources to do this.

4.6. Glint & glare

The Glint and Glare Statement is limited and its conclusions are inadequate, particularly with regards to "Dwelling Receptors" and "Railway Receptors".

The Dwelling Receptors analysis is biased by the restriction to a 1km radius. This places only 34 dwellings in the area studied. The majority of these are not in line of sight of the proposed solar panels. This radius is clearly too limiting. I have easily observed, and have several photographs that show, glint off the railway line and from buildings above the woods beyond. These observations have been made from the paths both above and below the escarpment at Wick Farm. They show that, even if the face of the panels may not be visible, there is a real risk that glint emanating from the panel edges and support structures will be visible. The reflecting area will be many times greater than four narrow railway lines. This will have an impact on dwellings around Wick Farm, Potterne Wick, and footpath users. Parts of Blount's Court and even Stert could also be affected. The modelling recommended in Para 5.3.2 should be extended to a wider radius and a satisfactory outcome proved before Planning Approval is considered.

The Statement recognizes that the Railway Receptors need to be modelled. There are signals immediately in the vicinity that could be affected. There are also two unguarded level crossings on the PROWs that present a danger. The safety of these is very important to users of the paths that cross the site.

4.7. Construction, Transport and Decommissioning

4.7.1. Construction and traffic

Para 1.2.4 of the Construction Traffic Management Plan clearly suggests that it sets out to prove a particular outcome, but in many respects, it seems to be inadequate or unrealistic.

The option 2 route on figure 4.3 is impractical for large articulated vehicles, particularly the sharp and dangerous turn required into Potterne High Street. Option 1 is far from ideal, particularly the transit required through Devizes and the dangerous bends between Devizes and Potterne High Street and again along Wick Lane, where properties abut the carriageway.

The Statement highlights the fragile bridge in Potterne Park Farm Lane. It does not record that there are already longitudinal cracks and signs of ruts in other parts of this carriageway. These suggest that the road is already stressed by the farm traffic and starting to fail.

Heavy lorries turning into the site access road will inevitably have an impact on Potterne Wick Cottages. They will also be a danger to all other users of this PROW.

Section 4.12 is a very summary description of a typical construction compound. Fuel storage, the water supply and sanitation for the site toilets and canteen, and temporary electricity are important considerations. Adequate provisions for these, and related pollution risks, are required.

Table 5.1, *Construction Traffic Vehicle Movements,* contains at least one manifest mathematical error (para 5.1.9 puts 16 individual inverter loads into 10 deliveries). It appears to be a significant under-assessment of the likely traffic movements. There is no clear assessment of the transport of materials to construct the switchgear and control room (probably concrete, blocks and bricks, roofing, joinery, sanitary items etc.). Removal of a substantial number of loads of waste packaging (e.g. all the crates shown in the photograph, figure 9 in the PDSA) will be needed. It seems improbable that all the material distribution, site transport and excavation over such an extensive site will be achieved with a single JCB type front end loader. Mobile

cranes will probably be required to unload and place heavy items and access platforms or scaffolding to construct the grid connection, etc. There will also be transport of the storage cabins, the offices, canteen, drying room and toilets, the stores to service them and fuel for site equipment, etc.

The statement is silent on the volume of traffic that will be created when solar panels reach the end of their economic life and will need to be removed and replaced. This will occur during both operation and decommissioning.

4.7.2. Operation phase

The Application is almost totally silent on the way the installations will be operated and maintained. Will the solar arrays be cleaned and if so when and how? What will happen to replace damaged or defective solar panels and those that have reached the end of their economic life? These matters will have an impact on traffic and other issues such as pollution.

4.7.3. Decommissioning

There are several conflicting statements concerning decommissioning.

The Application form clearly refers to a "*permanent onsite grid connection hub*". However, the PDAS, para 4.1.4 claims "*The proposal is temporary and fully reversible. Once the planning permission has expired the proposals would be removed from the site and it would be returned to its current condition*." In practical terms this is impossible.

Paragraph 4.13.1 of the Construction Traffic Management Plan refers to the removal and recycling of all PV solar panels, removal, dismantling and recycling of the steel PV Framework supports, and the removal of temporary fencing, compounds and combined inverter housings and transformers. There is no clear reference to the removal or reinstatement of underground items, battery installations or site roads.

The PDAS refers to stone tracks (para 4.4.4) which it claims *'are easily reversible'.* Site roads of this kind are notoriously difficult to remove satisfactorily.

Para 3.1.8 of the LVA says that the decommissioning phase would only apply to the areas where solar arrays are to be installed. It refers to the dismantling and removal from site of ground installations including solar arrays and CCTV cameras. It is unclear, given all the above, what will be removed and what will be retained.

This means that, with infrastructure being left behind, the claims that the impacts of the project are fully reversible are not true.

4.8. Flood Risk Assessment

The Flood Risk Assessment (FRA) contains a statement that needs clarification "*4.1 …with the exception of the far north for the purposes of underground cable connection (and do not form part of the development site)".*

The generic assertion in the FRA that runoff from the solar panels will permeate the soil and therefore not increase the risk of aggravating downstream flooding is inadequate.

Several recent studies emphasise the need for site specific assessment of hydrological and related environmental impacts of utility scale solar installations to be made. There is no evidence in the FRA that this has been done for this Application. Both runoff rates and erosion need more careful consideration.

The complex interplay between hydrology and factors including climate, soil type, slope orientation, panel orientation, vegetation, construction and operation methods all need to be examined in the context of each specific site. Runoff rates, soil erosion and modified permeability can be much higher than previously thought.

This site has relatively impermeable soil that becomes saturated in winter, giving rise to the risk that 'flash' runoff from impermeable glass will be significantly greater than current rates.

The potential for this runoff to be made worse by soil modification and gullying in the drip zone below the panels is an additional danger. This would be exacerbated if the soil is laid bare by sheep grazing as shown in Figure 17 of the PDAS.

Combined with the increase in very heavy rainstorms observed in recent winters, the risks of aggravating downstream flooding need more attention. This and the negative impacts of increased sediment loading on water quality are likely to be detrimental to the environment and possibly to human activities.

A water related issue not covered, is the concern about pollution from the panel cleaning process and breakdown over 50 years of the panel and support structure coatings.

4.9. Other problems with the choice of this site

Table 1: section 3.3 of the PDAS refers to the key attributes required to make a site suitable.

It notes the need for "*higher levels of solar irradiation*". Part of the site is on northward facing slopes and is shaded by trees on the escarpment. It is also in a valley that is observed to be prone to fog and temperature inversions that will further reduce the energy potential. This is confirmed in para 7.2.17 of the LVA "*There are on average 44.6 days when air frost occurs, which can produce hazy conditions limiting visibility, about 12.2% of the year*." These figures are from RAF Lyneham not from site data and are probably underestimates since these inversions are observed throughout the year.

It states: "*Importantly where potential sites contain physical obstructions that cannot be removed (such as public footpaths, historical field boundaries, woodland, rivers, streams, highways etc.) the site area requirements can be significantly increased. Additionally, a site positioned on a north-facing slope would require a greater development footprint*." This implies that the land take of this project is bigger than it needs to be if a more appropriate site were to be chosen.

5. Failings to meet Sustainability and Other Considerations

A sustainable approach to the challenges posed by the urgent global problems facing the environment (including, but not limited to, the climate), human societies, settlements and economies, requires careful analysis, planning and action at many levels. These include the local, regional, national and international dimensions.

Renewable energy policy and implementation need to be integrated carefully and balanced with other issues such as food production, urban development, public health and wellbeing, national security, and many others. There needs to be fair balance and trade-offs between individual, business and state-owned actors.

These challenges will need to be considered carefully by the Planning Authority, which means its consideration must not be limited to renewable energy issues and policies alone.

5.1. Complementary Business Models

Solar energy has two different business models. Utility scale solar is commercial energy **production**, while rooftop solar is a **consumption reduction** pathway. For a sustainable future, reducing consumption is as important as increasing production. *(Energy supply is critical but business must also reduce energy demand – FT 7/1/2024)*

The utility scale solar business model has evolved into a speculative and finance driven one. It depends on finding land that has grid connection potential and where the landowner can be persuaded to allow solar panels to be installed. Usually a Special Purpose Vehicle (SPV) is set up to raise finance using the site as an asset. A revenue stream is predicted from the expected output and the price at which electricity can be sold. Combining solar panels with batteries gives the additional opportunity for arbitrage in the energy output, including buying low-cost off-peak electricity, storing it, and selling energy back to the grid at higher prices. This can have large benefits for the solar farm and some for the grid operator.

The rooftop solar model offers individual houses, commercial and industrial business a way to reduce their consumption of grid electricity to zero. The most effective way to do this is to combine panels with batteries. The sale of surplus energy produced is mostly incidental. In addition, rooftop solar does not require additional land.

Theoretically, these two models are complementary. However, in practice there are some difficulties. Competition for grid connections can lead to rooftop solar being ‘crowded out’. The availability of panels, inverters, batteries, and people with the required skills to install and maintain them, are also issues.

In the context of the above, paras 7.6.13 – 16 of the PDAS are misleading.

5.2. Global Supply Chain Challenges

To meet the objective of a dependable energy future requires the development of a wide range of technologies. These include energy production, consumption reduction, industrial processes, domestic heating and transport etc.. Policy makers are faced with the challenge of stimulating the uptake of appropriate technologies as well as innovation to find alternatives and more efficient ones. They must also balance other issues that may compete for materials and resources, or present security and other considerations.

Solar panels, inverters, batteries, turbines and electric motors require, and must compete (both nationally and internationally) for, rare earths and other special minerals. These materials are in short supply globally and the Chinese have managed to secure a stranglehold on most of them. This now poses very serious geopolitical and national security risks. These risks have only been recognized recently by the British Government. *(UK left vulnerable by government inaction on critical minerals, MPs warn – FT15/12/2023)*

Worldwide, solar panel production is dominated by Chinese companies. China manufactures 80 per cent of all the solar panels produced globally. Its dominance is even more pronounced when one examines the entire supply chain. It produces 85 per cent of the global supply of solar cells, 88 per cent of solar-grade polysilicon, and

97 per cent of the silicon ingots and wafers that form the core of solar cells. (*China's dominance of solar poses difficult choices for the west – FT 22-06-2023)* There is very little production in Britain or Europe.

For wind turbines, the situation is better, with proportionately more production in the U.K. and Europe.

Both globally and nationally, decisions need to aim to make the most effective use of scarce resources. This means that the best option for one place is not the same in others. For instance, the solar capacity of Spain (Av 4.6 kwh) & Morocco (5.6 kwh) is twice what the UK or Germany have. Both Spain & Morocco have large territories and low population densities. The wind capacity of the UK is about 8 - 10 times that of Spain & Morocco. (The UK has a small area and high population density). Thus, in the UK wind is more efficient and solar is less. In Spain & Morocco it is the reverse. *(Can the Mediterranean become Europe's energy powerhouse? Economist 2023-11-13)* The best use of global resources is therefore wind where that is most efficient and solar where it is.

In aiming for "Net Zero" within the U.K., consideration should be given to the allocation of the scarce materials to those technologies that are needed most or are most effective. Proportionally more benefit will come from wind than utility based solar. Rare earths are needed for batteries for cars and domestic storage and land is needed for food production.

5.3. Circular economy

In the overstressed global environment, renewable energy technologies must be tested against alternatives throughout their life cycles. This extends from extraction of the raw materials needed for all their components, their manufacture, delivery, installation, maintenance and eventual decommissioning, removal, disposal, or recycling.

The life-cycle emissions of different options for electricity generation have been calculated by the UNECE and the IPCC. The Average life-cycle CO2 equivalent emissions range from the lowest, 5.1-12 (nuclear), through 11-14 (wind), 37-48 (utility scale solar), 430-450 (gas) to 850-1000 for (coal). These facts alone make utility solar a less than optimal option.

There is very little experience worldwide for recycling solar panels and recovering the materials they are made from. While the glass, aluminium, steel and copper elements can be recovered without too much difficulty, the other chemical compounds are very difficult to recycle. *(UNECE Carbon Neutrality in the UNECE Region: Integrated Life-cycle Assessment of Electricity Sources – 2022)*

Para 8.1.3 of the PDAS claims "*The environmental benefits of the scheme far outweigh the impacts resulting from the carbon footprint of the panels themselves".* This paragraph muddles several items together and quotes no sources. The environmental benefit claims are unsubstantiated.

5.4. National Security

In addition to the supply chain dominance of China described, there are other security issues that are causing growing concern.

Cyber security and potential sabotage in relation to energy infrastructure have also been recognized. The national grid operator has cancelled contracts with Chinese

equipment suppliers and started to remove Chinese made items from the grid. (*National Grid drops Beijing-backed supplier over UK power network fears – FT 12/12/2023)*

5.5. Need for Utility Scale Solar

The information above casts significant doubt on the arguments put forward in section 6 of the PDAS that attempt to justify the need for the Potterne Park Project.

Growing experience is bringing to light the fact that utility scale solar is not as efficient or sustainable as was originally thought, especially in a country and location like this, where solar insolation is weak. It does not provide an efficient use of scarce resources, notably productive land and minerals. It has a higher carbon footprint and shorter productive life than claimed. In addition, there are security and supply chain risks.

All these points must be evaluated in the context of Wiltshire's Strategic Objective 2.

The need for this project is further undermined by the extent of existing solar generation in the County and its many other successful measures to reduce the carbon footprint as outlined in the recent press release of 11Th October 2023 "*Wiltshire Council on track to be carbon neutral by 2030".*

5.6. Economic considerations

The short to medium term economic and financial sustainability of utility scale solar photovoltaic infrastructure is a concern at the level of both national and county policy. The viability of individual projects like the Potterne Park project is also of concern to the developer, investors and landowners involved in the project as well as the local communities.

The economic viability of utility scale solar in recent years has been adversely impacted by several factors: change in pricing/subsidy arrangements, rising cost of finance, increased costs of raw materials and supply chain difficulties. It is reported that "The price of polysilicon rose from $10 per kilogram in 2020 to as much as $35 in 2022 and the cost of steel, copper and aluminium have also risen significantly." (*The renewables business faces a make-or-break moment – 4/12/2023 The Economist)*

As more experience becomes available from the actual performance of the sector over time, some of the economic assumptions of the business model are challenged. A study made in 2023 examined the balance sheets of over 1,100 solar farms from 2011-2022. It examined the CAPEX and OPEX costs of sites 1MW and over. It also studied the performance of these plants as they age. (*G. Hughes – The economics of utility-scale solar generation)*

The CAPEX costs were analysed before the rising prices hit the industry, but nevertheless predicted that costs would rise. The analysis of OPEX found that these costs per MW capacity may be 3 – 4 times official assumptions and increase as the plants age. The output of solar panels was recorded to fall at a rate of 1% to 2% per year.

These adverse trends were leading the SPVs owning and operating the plants to change their accounting assumptions by extending the expected duration of their projects. This should send danger signals to investors, landowners, planners and policy makers.

The author also finds other worrying tendencies including, lack of provisions for maintenance and replacement, questionable levels of provision for decommissioning and developers selling down the share in SPVs to convert future cash flows into immediate capital gains.

All these economic considerations would suggest that the change of use from productive agriculture to solar farms is a dangerous gamble. Will solar farms be viable for the nation, the community, the landowners and the investors? Will the SPV survive and have the means to pay for the decommissioning?

All this casts further doubt on the justification for utility-scale solar on this site and the viability of the proposals themselves. The County and Parish Councils as well as the local communities need assurance that, if the project proceeds, it will produce the economic benefits claimed and the company will remain in business and have the funds to decommission and clear the site at the end of its life.

This section 5 of my objection clearly demonstrates the weakness of the arguments advanced by the developer in sections 6, 7, and 8 of the PDAS. Many of those justifications are outdated or specious.

6. Failure to demonstrate that the project meets the Policy Objectives of Wiltshire County Council

The table below para 10.3.1 of the PDAS defines 7 “Planning Considerations” that the developer states are “pertinent” to obtaining planning approval. They select only a limited number, and in most cases limited parts, of the Strategic Objectives and Core Policies from the Wiltshire Core Strategy of 2015. However, it seems that several key Strategic Objectives and Core Policies, or parts of them, that should be considered in relation to this site and the proposals to build a solar farm have not been applied.

From my reading of the Wiltshire Core Strategy of 2015, all, or parts, of Strategic Objectives 4, 5 and 6 and Core Policies 39 and 57 are relevant. These should be taken account of in addition to those selected by the developer.

Core Policy 50: Biodiversity and geodiversity, is ‘skated over’ in para 10.3.7 of the PDAS. This policy is extremely important in the context of an industrial development project on this site. Paras 6.72 to 6.75 of the Wiltshire Core Strategy are especially relevant. I highlight part of para; 6.73,

“Core Policy 50 seeks to ensure protection and enhancement of these sites and features, and is necessary to help halt and reverse current negative trends and meet new challenges….. It is vital that all stages of sustainable development are informed by relevant ecological information, from site selection and design to planning decisions and longterm management. All effects should be considered, including positive and negative, direct and indirect, cumulative, and on and offsite impacts over the lifetime of the development (including construction, operational and restoration phases), also giving consideration to disturbance effects such as noise, lighting, recreational pressures, trampling, traffic, domestic pets, vandalism etc.”

Sections 10, 11 and 12 of the PDAS attempt to show how the constraints of the “pertinent” issues of their table 10.3.1 have been satisfied in their proposals.

Many of the conclusions in the PDAS and related documents appear to be more akin to affirmation (telling what they want people to hear) rather than demonstration

(proving the realities backed by hard data and analysis). The examination of the proposals set out above clearly underlines that most of these claims are not satisfactory.

7. Conclusion

From the above analysis, it is clear that the proposed solar farm on this site is inappropriate. The main reasons are summarized as:

i. The Application itself is inaccurate and incomplete. For this reason alone, it should be rejected.
ii. The rural location in the Stert Valley is not adapted to this industrial use for a wide range of reasons.
iii. Converting a site from productive agriculture to low efficiency industrial use would be a waste of national resources.
iv. This project would also cause a serious loss of many real amenities for no long-term gain.
v. The negative impact on the wider landscape would represent a long-term loss of an asset of great local value and significance.
vi. The proposal relies on retention of existing environmental features to claim BNG. It proposes few demonstrable additions or genuine enhancements.
vii. Wiltshire is well on track to meet its carbon neutral targets without this scheme.
viii. The claims that the project is well conceived and meets the relevant Policy Objectives of Wiltshire County Council are not convincing.
ix. Reliance on solar voltaic installations could pose risks to national security.
x. The environmental, social and economic cases for large-scale photovoltaic installation both here, and in the U.K. generally, are weak.

For all these reasons, planning approval for this proposal should be refused.

J. Moss – February 2024