

Cassington Parish Council: Response to Scoping Report for Botley West Solar Farm, June 2023

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Cassington Parish Council



View of the public right of way from Cassington to Purwell Farm known locally as “the track” or Purwell Lane. This right of way will be surrounded by solar arrays and fencing for much of its length should the Botley West Utility-Scale Solar Power Station be accepted for development in its current form.

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Introduction

This response to the Scoping Report for the Botley West Utility-Scale Solar Power Station was written by members of Cassington Parish Council with input from Parishioners where materially relevant. The response outlines some general concerns with respect to the Scoping Report and then addresses specific points related to individual Paragraphs and Sections. There is some repetition where points are relevant to multiple sections of the Scoping Report. Unfortunately time has not permitted a more refined document to be produced but we hope we have captured the majority of concerns that both the Parish Council and our Parishioners have with respect to the Scoping Report for this proposal.

General Points to be Addressed by the Impact Assessment

Consultation

Throughout the scoping report much is made of the consultative components of the plan-decision making process, in this case an EIA. We contend that despite the importance of consultation, the time frames involved are too restrictive. In the case of a development of this scale, large reports result from the process. This Scoping report is a good example. It is 169 pages long, yet the Parish Council had less than a month to both seek the views of the village residents and to formulate a report which reflects those views in a meaningful way. This we believe is unreasonable and we would urge that all future reports be made available as early as possible and not simply within the minimum guidelines indicated by defra. This observation we believe to be particularly pertinent when we consider the likely extent of the final ES for the proposal, which will amount to multiple volumes, with content contained in many hundreds (if not thousands) of pages.

Strategic Environmental Assessment (SEA)

This development proposal will fall under both the Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) Regulations. We note that “traditional” EIA, conducted at the individual project level, has proven unsatisfactory in dealing with the “bigger picture” impacts that developments of this scale generate. In particular, EIA has also failed to address cumulative impacts from multiple projects/developments and to protect the public interest. We therefore contend that the development should be considered at a more strategic higher-level, to guide policy-making and long-term planning by stakeholders in the renewable energy sector.

SEA is a tool for assessing the environmental and social risks and impacts of policies, plans and programmes (PPPs) and ensuring the integration of the implications of such impacts into the formulation and implementation of PPPs. The scope of application of SEA collectively encompasses PPPs and development-related strategies across a range of sectors (in this case energy provision), geographical areas (national, regional, or local) or issues (such as climate change or biodiversity). It is our understanding that the UK Government has policies and programmes relating to energy provision. As such these policies and programmes fall under the requirement for a SEA to be devised for the component parts of the energy sector (wind, solar, nuclear etc.) - for example see the “Offshore Energy Strategic Environmental Guidelines”.

We note that there is no reference to SEA within the scoping document. We contend that elements of the proposed development should be considered in relation to the requirements/criteria of a SEA for the sector. SEA is now a well-established procedure that supports such plan-decision making, by ensuring that relevant alternatives are assessed that all environmental and social effects are evaluated and that stakeholder interests are balanced. With that in mind, we ask that the development proposal engages fully with the guidance available surrounding SEA and that, more

importantly, it involves all relevant stakeholders (of which Parish Councils are one) in the consultation process as soon as it commences, rather than their views being “bolted-on” after key debates and the decisions that emanate from them have taken place.

We note that the scoping report makes some references to cumulative impact assessment (CEA). The EIA Regulations require a description of the likely significant effects of the Project on the environment, which should cover cumulative effects. The inter relationship of likely significant effects of the Project therefore needs to be assessed. The Overarching National Policy Statement for Energy states the following in relation to requirements for the assessment of cumulative effects:

“When considering cumulative effects, the Environmental Statement (ES) should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other developments (including projects for which consent has been sought or granted, as well as those already in existence).”

As a consequence, the Planning Inspectorate guidance indicates that *“The inter-relationship between aspects of the proposed development should be assessed and careful consideration should be given by the developer to explain how inter-relationships have been assessed in order to address the environmental impacts of the proposal as a whole.”*

Acknowledging the above and both the Institute of Environmental Management and Assessment (IEMA) and Planning Inspectorate advice surrounding CEA, we would have expected to see more detailed reference to how the scoping study intends to address both inter and intra project cumulative effects of the proposed development. We would ask that these potential effects be considered in tandem with a SEA (see above).

Objectivity of the Scoping Report

The purpose of the *Scoping Report* is set out in paragraphs 1.8.1–1.8.4. Its job is to:

- describe “the scope and methodology of the technical studies being undertaken to provide a comprehensive assessment of any likely significant effects”;
- determine “suitable mitigation measures for the construction and operational phases of the Project” (and decommissioning as well?); and
- “inform and facilitate the request to PINS . . . to issue a Scoping Opinion”.

These outline the need for an objective report that informs PINS so that it can issue an appropriate Scoping Opinion. We find in general terms that the scoping report is biased, misleading or manipulative in many areas. This includes the use of incorrect or unsubstantiated statements / language, omissions of materially significant information (e.g. why 76% of the proposed scheme is sited on Greenbelt land) and the scoping out of areas of impact assessment likely to be unfavourable to the proposed scheme (e.g. socioeconomic impacts on residents). We urge that a very clear requirement is made on the applicants to produce an objective impact assessment on which the Secretary of State can make an evidence-based decision on the application.

Specific Points to be Addressed by the Impact Assessment

Executive Summary

The Executive Summary states that an 840MWe solar power station will deliver clean power to the equivalent of 330,000 homes. As stated in the Cassington Parish Council Response to the informal

consultation (Rogers et al., 2022) we believe this is an overstatement of the benefits of the project because:

- 840 MW will generate sufficient electricity for 250,000 homes (based on an average annual consumption of 3,300 kWh of electricity per household according to Government Figures)
- Solar energy is the least efficient form of renewable energy widely deployed particularly in mid-latitudes where solar irradiance varies substantially across the seasons. Power demand in the UK is highest in winter as a result of use of electricity for heating. This is the period when solar irradiance is at its lowest and least energy will be generated by the Botley West site.

As a result of the discrepancy in figures we request that a detailed independent assessment is made of the likely energy production by the Botley West Solar Power Station, including the advantages and disadvantages of this form of renewable energy generation compared to other potential forms (e.g. wind or mixed energy sources such as a combination of wind, solar, hydro). We note in this respect that the Energy NPS, Draft EN-3 Paragraph 3.10.2 sets out that government is supportive of solar that is co-located with other functions (for example, agriculture, onshore wind generation, or storage) to maximise the efficiency of land use.

1 Introduction

1.3.1

The document states that:

“BWSF’s generation output will be vitally important if the Government’s commitments are to succeed, significantly helping to deliver the transition to net zero.”

This statement is made with no justification. It is very clear that an energy transition is required to prevent CO₂ emissions leading to damaging climate disruption. However, of the renewable energy sources available to the UK it is unclear what proportion of renewable energy should be provided by solar or whether it is appropriate to site solar power stations in rural areas traditionally used for food production with a high population as in West Oxfordshire.

We would expect an impact assessment of such as large-scale project to provide an evidence-based assessment of:

- The appropriate mix of renewable energy for the UK
- The most appropriate way to deliver the portion of that energy mix required by solar
- The most suitable locations in the UK to place such sites on the basis of least impact to both the environment and people not simply the willingness of landowners to rent their land for this purpose largely on the basis of financial gain. As stated in the NPS EN3 Paragraph 3.10.14 “applicants should, where possible, utilise previously developed land, brownfield land, contaminated land and industrial land”.
- The need to develop open rural land, including substantial areas of green belt as a solar farm. As stated in the NPS EN3 Paragraph 3.10.14 “Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land”

1.3.5

The term “revert” implies that a detailed baseline understanding of the abiotic and biotic condition of the proposed development site is known, as this sets the parameters which any reversion

“package” must employ. We are not aware of any such baseline condition assessments having been undertaken and none are indicated in the scoping document and so we challenge the efficacy of any reversion which has no prior understanding of site condition pre-development. We would therefore expect that such an assessment(s) would take place in advance of the construction phase of the proposed development, should it be given planning permission.

The current agricultural land use is a consequence of the land being worked in such ways as to both elevate crop yield or to maximise the quality/quantity of grazing land available to livestock. These are achieved via a blended mix of agricultural practices including, crop rotation, leaving land fallow and managed grazing regimes. Given that the development will negate these happening for a period of 42 years, we fail to see how the land will be able to revert back to its previous use (and here we assume productivity) without a significant period of sympathetic agricultural management. For this latter point, we question as to whether the land will ever be put back to agriculture or whether it will more likely be given over to some other aspect of land-use management?

1.4 The Applicant

Following articles in the British Press (Private Eye, 2023a,b,c) we find the details of PVDP and Solar Five provided in the Scoping Report to be wholly inadequate. The US solar market had significant issues related to speculators developing projects and then selling them on with the result that many projects failed (Mulvaney, 2019). This appears to be the mode of operation of PVDP and the related company Solar Five. Both are allegedly linked to the wife of Dmitry Glukhov, Yulia Lezhen (aka Lejeune), both of whom have been implicated in financial malpractice. We would therefore like full disclosure on the structure, links and beneficial owners of both PVDP and Solar Five and clear details of their previous solar development projects as would be reasonably expected under due diligence.

1.4.2 Preservation of Amenity

As detailed in the Cassington Parish Council Response to the informal consultation (Rogers et al., 2022) the proposed Botley West Utility-Scale Solar Power Station will have a substantial and significant impact on amenity to the village of Cassington and surrounding villages. Exposure to green space and the opportunity to exercise on locally available land have been demonstrated multiple times to have both physical and mental health benefits (e.g. Bowler et al., 2010; Shanahan et al., 2016; Cox et al., 2017). The main public rights of way used by the residents of Cassington village will be severely degraded in terms of their visual aspect, from one of open farmland to one of a largely artificial landscape dominated by solar panels. As such we expect the Impact Assessment to thoroughly examine the impacts on amenity to local villages including the likely impacts on health and wellbeing of residents.

1.5.7

The Scoping Report States:

“The revisions proposed to draft EN-3 Renewable energy infrastructure emphasise the central role that solar will play in decarbonising the energy sector.”

We disagree with this statement. EN-3 states that solar forms “a key part of the government’s strategy for low-cost decarbonisation of the energy sector” (as stated in 5.3.9). A key part is not the central role, and indeed EN-3 covers a wide range of important renewable energy sources.

1.8.2

It is important that not only are the methods for technical studies towards the Environmental Impact Assessment are detailed but also the conditions on the ground when technical studies are being

undertaken. We have already heard of surveys of flora, for example, being undertaken on the proposed land to be subsumed by the Botley West Utility-Scale Solar Power Station, which has been mowed. Obviously, undertaking such a study following mowing will result in an underestimate of biodiversity. Such details should include:

- Qualifications and experience of the personnel undertaking technical studies
- Dates / times of year when technical studies are being undertaken
- Weather
- Factors which may influence results (such as mowing or other disturbance of the area, seasonal effects)
- Frequency of studies
- Representativeness of the areas being studied compared to both common and rare habitats in the entire study region

2.0 Existing Baseline

Northern Site (West Oxon and Cherwell)

2.1.3

The Scoping Report describes the land as: “The land is arable but low-grade agricultural land (see Figure 4) with multiple farm holdings scattered around the boundary edges.”

As far as we can see from Figure 4 much of the land appears to be unassessed with respect to land quality. However, given the land immediately adjacent to the proposed northern site is Grade 3A or 3B it is reasonable to assume it is similar in nature (as suggested in 2.1.4). The statement that the land is “low-grade” is therefore incorrect as according to Government classifications such land is Good (3A) or Moderate (3B) with moderate to high yields of certain crops (a narrower range of crops and more moderate yield is expected from 3B compared to 3A). We estimate that 1,400 ha of land produces approximately 7,000t of food each year adding up to a loss of nearly 300,000t over the 42 years. We have seen representatives of Blenheim Estates at public information meetings and Parish Council meetings also refer to the land as “poor” (Rogers et al., 2022). Local farmers in the area have also reported that the land in question (referring now to all three sites) can give high yields of crops irrespective of land classification.

Given the misrepresentation of the land by both the landowners and PVDP we believe the scoping report should include an independent assessment of land grade including information on actual crop yields from farmers who have cultivated this land over the last decade. This includes both the northern, central (2.1.13), and southern sections (2.1.22) of the Botley West proposal.

2.1.14

Although much of the land is in Flood Zone 1 the villages of Cassington and Yarnton have a history of flooding as a result of rapid movement of surface water running off the hills to the north (Cassington) and northeast (Yarnton). In Cassington flooding of properties on Elm’s Road occurred in 2007 (WODC, 2008). Foxwell Court, St Peter’s Close, Horsemere Lane, Foxwell End and Reynold’s Farm are also at risk of flooding from extreme surface water events (WODC, 2008). As recently as winter 2022/2023 properties on Elm’s Road came close to flooding likely because of a failure of the owners of adjacent land (Blenheim Estates) to maintain drainage ditches.

Studies of how utility-scale solar power stations impact hydrology are relatively few at present. However, the studies that do exist show changes in soil moisture content associated with solar panel arrays and also increases in surface water runoff (e.g. Pisinaras et al., 2014; Yavari et al., 2022).

Alterations in hydrology also have the potential to increase soil erosion in some circumstances (e.g. Yavari et al., 2022). One aspect of solar array design which influences runoff of rainwater is the tilt angle and orientation of the solar panels at a given site (Yavari et al., 2022).

We would therefore expect an impact assessment to thoroughly investigate the specific impacts on hydrology local to Cassington and Yarnton taking into account the design of the proposed solar arrays on the land to the north and northeast respectively of these villages. Surface water flooding does not seem to have been accounted for at all in the scoping report.

2.1.15

76% of the proposed solar farm would be on Oxford's green belt, taking up a larger percentage of land within 2kms of urban areas (6.9%) than all the green belt housing being built under current Local Plans (5.5%). Loss of greenbelt land in the central and southern sections of the proposed solar power station will mean the loss of a significant and substantial portion of Oxford's greenbelt lying to the west of the city. Greenbelt land is specifically designated to prevent urban sprawl and to safeguard the countryside from encroachment. According to the National Planning Policy Framework the Government attaches great importance to this designation and greenbelt boundaries should only be altered where exceptional circumstances are fully evidenced and justified. We also note that the entire village of Cassington is covered by greenbelt designation, the reason for which is to restrict development around it to maintain the openness of the greenbelt. We would therefore expect the impact assessment for this development to include a specific assessment of the loss of a large section of Oxfordshire's greenbelt land both on local communities but also on Oxford and its surrounding area which is already under significant development pressure for housing, industry, transport infrastructure and solar farms.

2.1.16

Although there are no statutory ecological designations within the central site both within and surrounding Cassington there are several zones within the Natural England Habitat Network. These include areas of habitat restoration (e.g. Worton gravel pits), Network Enhancement Zone 1 (fields to the east of Cassington), Network Enhancement Zone 2 (south of A40) and a Network Expansion Zone (areas surrounding Cassington village especially to the north west and south). These are detailed in the Green Infrastructure Plan which is part of the Cassington Neighbourhood Plan which was accepted by Referendum in June 2023. These areas are included in the Cassington Neighbourhood Plan, Policy CAS1 Cassington Nature Recovery Network. We note that CAS1 Provision C states that "Proposals that will lead to the loss of land lying within the Network and that will undermine its integrity will be resisted." We note that the Scoping Report has failed to include any reference to the Cassington Neighbourhood Plan or Green Infrastructure Plan which applies to the entire Parish of Cassington. We expect the impact assessment to include a specific assessment of the impacts of the West Botley Utility Scale Solar Power Station on the Cassington Nature Recovery Network and wider Nature Recovery Network in West Oxfordshire since it clearly is likely to undermine the integrity of the land referred to in the Neighbourhood Plan.

2.1.17

We note that St Peter's Church in Cassington is Grade 1 listed as are likely other historic churches in the surrounding villages.

2.1.19

As indicated in the Cassington Neighbourhood Plan and accompanying Green Infrastructure Plan the most heavily used public rights of way from the village will be entirely surrounded in large parts by solar arrays or these will be visible from footpaths. There will be similar impacts to Public Rights of

Way in both the northern and southern sections of the Botley West proposal, including the Oxford Greenbelt Way. CPRE Oxfordshire have pointed out that 800MW of solar capacity are in place or planned for the county. Solar farms in the area already developed have impacted on public rights of way and the rural landscape (e.g. around Eynsham). We therefore suggest strongly that an assessment of Botley West Solar Farm includes an assessment of the cumulative effects of this development and others already in place or planned for the area. Omission of consideration of the cumulative impact on the total area of countryside and public rights of way being affected by such developments (as well as effects on the Oxford greenbelt) is inappropriate given the massive scale of the three sections of the Botley West Development. It should be noted that many of these public rights of way are not only enjoyed by people within the affected villages but also by citizens of the city of Oxford and visitors to the area.

2.2 Legislative Context

2.2.2

This section outlines that the Secretary of State must consider the following exceptions when considering whether to accept an application for development:

1. “that deciding the application in accordance with any relevant national policy statement would lead to the United Kingdom being in breach of any of its international obligations”
2. “that deciding the application in accordance with any relevant national policy statement would be unlawful by virtue of any enactment”

We urge the Secretary of State to assess whether this proposal undermines the status of the World Heritage Site of Blenheim Palace in respect of (1.) and in respect of (2.) the large and significant impact on Greenbelt to the west of Oxford which is contradictory to the National Planning Policy Framework. At the very least the impact assessment should specifically address these specific matters in relation to Section 104 (3) of the Planning Act.

3. Consenting and Consultation Process

Feedback So Far

3.2.6

Given that the applicants cannot be expected to deliver independent and fair assessment of community feedback we ask the Secretary of State to require that raw data in respect of completed feedback forms are provided for the public, and especially to Parish Councils and District Councils to examine. These feedback forms may be anonymised to protect personal data. Summary assessments of feedback by PVDP are insufficient for councillors to understand what their residents think of this proposal or indeed what suggestions they may have to improve it. Publicly there has been an overwhelming negative response to this proposal amongst local communities directly affected by it who have initiated vigorous and well-supported grassroots action protesting against the proposal (e.g. the Stop Botley West Campaign). This is reflected in the fact that 80% of respondents were opposed to the development according to PVDP’s own data (PVDP, 2023).

4. Approach to EIA

4.1.2

We note that West Oxfordshire includes within its population a number of people with considerable expertise and local knowledge on the natural history of the area including both professional scientists (employed and retired) and citizen scientists. These people are likely to have extensive knowledge of local environmental baselines and could provide valuable input to the Environmental Impact Assessment (EIA). There appears to be no provision for their input into the EIA process which

claims to be iterative. We believe the EIA process would be greatly improved through input by these local experts and provision should be made to develop workshops or contact groups to ensure this happens.

Baseline Conditions (Sections 4.2.4 to 4.2.8)

As noted above (1.8.2) it is important that not only are the methods for technical studies towards the Environmental Impact Assessment detailed but also the conditions on the ground when technical studies are being undertaken is recorded and accounted for in the EIA.

4.2.17 and 4.2.18

We note that the Scoping Report identifies the following levels of impact:

Substantial;

- Major;
- Moderate;
- Minor;
- Neutral.

There is no category for “unknown impact” or “uncertain impact”. Many aspects of the impacts of utility scale solar power stations are poorly studied, especially outside of the USA and specifically in the U.K.

The EIA should for all these categories give a measure or estimate of confidence in the reported conclusions on impact given the methodologies employed and also specific information on the impacts of conditions during technical studies (see 1.8.2 above). Otherwise it is impossible to assess the weight that should be given for the conclusions related to the level of impact. Following the precautionary principal conclusions on levels of impact should be conservative (i.e. assume a worse case on impacts of the proposed scheme).

Mitigation and Monitoring (4.2.19 – 4.2.23)

As with assessment of levels of environmental impact we would expect proposed mitigation measures to be evidence based and to include levels of confidence that the proposed measures will be effective. There is ample evidence within the UK that often-used mitigation measures, such as species translocations, are frequently ineffective and result in subsequent losses of the translocated populations (e.g. for reptiles). We would also expect monitoring of all significant mitigation measures to be included in the EIA plan including during both the construction and operational phases of the proposed project.

5. Need and Alternatives Considered

5.2 Need

5.2.2

As stated in response to 1.3.1 above the applicant makes a claim that expansion of solar capacity in the U.K. is not achievable through the use of rooftop and brownfield sites alone (a claim repeated but not substantiated in 5.2.4). No evidence is provided that this is the case nor is there any specific evidence that there is an overwhelming case for development of a utility-scale solar power station on greenbelt land in a rural and highly populated part of West Oxfordshire. There are 250,000 hectares of south-facing commercial roof space in the UK. If just a quarter of this was used for solar panels, it could generate 25 GW of electricity annually. That’s the equivalent of 30 solar farms the

size of the proposed Botley West Solar Farm and hence why the independent review of the UK's net zero prospects called for a 'solar rooftop revolution' and for the reform of planning rules to enable it. In fact, other than large landowners willing to lease large areas of land, there is no case for the development of a utility-scale solar power station in this area. Rather than high level, statements of need we would expect specific, evidence-based assessment of why a utility-scale solar power station should be developed on land around Oxfordshire especially given the huge impacts on greenbelt, local communities and the environment.

5.2.3

The claim is made that the Botley West Utility-Scale Solar Power Station will deliver renewable energy to Oxfordshire and power 300,000 homes. The former is clearly not correct as the power will be delivered to the National Grid and the latter is disputed (see Executive Summary above). Again, we expect the impact assessment to provide clear evidence of these claims and furthermore to present evidence of why alternative schemes are not viable (e.g. a mix of wind and solar) or whether the land to be subsumed under solar panels could not contribute to climate change mitigation in other ways.

5.3 National and International Legislation and Policy Context

This section outlines international and national policy aimed at promoting the development of renewable energy sources globally and within the UK. However, what is not mentioned here are the United Nations Sustainable Development Goals (SDGs). The SDGs specifically address the need for development, including for energy, that balances climate, nature and people. It is very clear that whilst Botley West is proposed as a scheme which addresses the need for renewable energy the area of land it covers, including greenbelt, the number of communities it effects do not meet the requirements for sustainable development. This is an important area of international policy that should be included in the impact assessment.

5.4 Alternatives

Two alternatives are presented in the scoping report, develop the West Botley Utility-Scale Solar Power Station (5.4.2.) or "Do nothing" (5.2.3). We do not believe that the scoping report has assessed a range of different renewable options for the West Oxfordshire and Cherwell districts including wind and hydro (e.g. on the River Thames) or a combination of solar, wind and/or hydro. NPS Draft EN-3 Paragraph 3.10.17 states that: "Where sited on agricultural land, consideration may be given as to whether the proposal allows for continued agricultural use and/or can be co-located with other functions (for example, onshore wind generation, or storage) to maximise the efficiency of land use." The applicants have not given any consideration to co-location of other functions, and these must, in our opinion, form a part of the scoping report. Furthermore, as pointed out in Rogers et al. (2022) alternative uses (e.g. forest or grassland managed for carbon sequestration) of the land earmarked for this development could also be regarded as climate mitigation (around 35,000t of CO₂ sequestered by the land if managed for carbon sequestration) whilst having much greater benefits for people and biodiversity. These alternatives should also be investigated in the scoping report.

5.4.6

Solar irradiance, a main factor in selection of sites for solar power stations is not even referred to in the considerations for location of this scheme. This needs to be included in the impact assessment.

The statement that the scheme is located on "low-productivity arable land" is materially and demonstrably incorrect. The land identified for the Botley West Solar Power Station is generally Grade 3A or 3B, of good or moderate productivity (see response to 2.1.3 above).

The scheme is outside environmental designations but does lie very close to such sites and also covers substantial areas within the Nature Recovery Network in West Oxfordshire.

The statement that the West Botley Utility Scale Solar Power Station is away from main settlements is clearly false. 11,000 households lie within 1.5km of the proposed power station. It covers land adjoining a large number of villages and also impacts land enjoyed for amenity by people in the city of Oxford as well as visitors to the area. For people's homes, a buffer zone of only 20m is proposed for properties adjacent to this proposed scheme. Indeed, in comparison to Utility Scale Power Stations globally in the top 20 by size (of which this proposal is one) at least 18 of the others are located in desert or arid environments where impacts on population are small to negligible. We expect the impact assessment to ascertain the impact of this development on local communities and the wider communities in the area who use the land for leisure especially during summer months.

Flood risk is only assessed in respect of flood plains from the local rivers not in terms of surface runoff (see response to 2.1.14 above).

The statement that the land proposed for development is of low ecological value needs to be substantiated, particularly that there is strong evidence that those habitats and species strongly associated with lowland agricultural production are in serious decline (see <https://www.bto.org/our-science/publications/developing-bird-indicators> <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/habitats/hedgerows/#:~:text=Around%2018%2C000%20miles%20of%20hedgerows,largely%20to%20intensification%20of%20agriculture> <https://www.frontiersin.org/articles/10.3389/fsufs.2019.00118/full> <https://hedgelink.org.uk/guidance/hedgerow-biodiversity/>).

We also note that although its location is directly outside of any environmental designations, many of the designations are in place to conserve and enhance components which do not observe "hard" boundaries. SSSIs are a good example of this, particularly when some of the species contained within them are highly mobile, birds and bats for example.

5.4.8

This section indicates that "at an early stage of the feasibility of the development of the Project, the Applicant produced a "high-level constraints" plan to understand site sensitivities in planning and environmental terms. This provided a framework within which the Applicant could start to consider ways in which the site could be designed and laid out. It would seem reasonable that there be a consultative aspect to the production of a high-level constraints plan rather than be presented with the Applicants view as to what this should look like. This would potentially remove some of the concerns we identify in the constraints plan (see below).

5.4.9

Text indicates that the constraints plan has identified "areas for habitat enhancement, including planting of native species and opportunity to enhance existing habitat". Given that the vast majority of the proposal will be located on agricultural land which has an extensive network of hedgerows and watercourses, many of which will be removed to accommodate the development, it is difficult to see how this can actually be achieved? In tandem with this we note that this proposal will be subject to the Biodiversity Net Gain requirement which becomes mandatory in November of this year. It would be useful to see how this requirement aligns with the constraints plan (above) or perhaps NSIP's are exempt from this obligation?

5.4.10 and 5.4.11

5.4.10 states that constraining factors that affected the evolution of the Project layout and design included areas of ancient woodland, whilst 5.4.11 indicates that “buffer zones were then imposed on land adjacent to ancient woodland, within which it was decided that land would remain free from development” and that “further buffers were imposed to provide set back distances of a minimum 20m from residential properties”. Here we raise two points of concern – (i) if the applicants are able to identify a buffer width for residential properties, why have you not included the buffer distance for ancient woodland? and (ii) we contend that the presence of the development 20m away from residential properties in no way constitutes an appropriate buffer zone width and is therefore wholly inadequate. How was this arrived at? Certainly not via consultation. The question arises as to whether the buffer zone set around Ancient Woodland has taken any account of the foraging distances for wildlife resident in such areas and which use surrounding land to find food (e.g. owls or other birds of prey, mammals such as bats, badgers, foxes or deer). Such detail should be included in the impact assessment.

6. Project Description

6.2.17

We note here that the use of sheep grazing or manual cutting back of plants will be used to control the vegetation under the solar arrays. Given the massive scale of the proposed development we question the practicality of such arrangements to manage the land. 1,400 ha would require about 17,000 sheep for grazing. If these sheep are not moved seasonally, they will consume wildflowers and reduce the biodiversity of the proposed sites. We therefore request that the full details of such arrangements are presented in the impact assessment including the numbers of sheep, their management, and/or the manpower requirements for manual control of such growth. The use of herbicides should be detailed if it is anticipated that they will be required.

Table 6.1 and 6.2

Table 6.1 details the infrastructure that will be put in place on what is currently mainly arable land for the proposed scheme. This includes a very large number of solar arrays placed up to 2m above the ground as well as Converters and Substations adding to visual impact. Some of this infrastructure also produces noise. In addition, the entire scheme will be surrounded by fencing up to 2m high with security cameras placed on average every 365m and lighting (including PIR activated lighting) in some areas. It is important that the impact of this urban / industrial infrastructure on the surrounding landscape, public rights of way and settlements in the area are considered in the impact assessment as well as impacts on wildlife.

6.2.20

The applicant states that “landscape mitigation will be embedded in the overall project design and would be formulated to minimise potential landscape and visual impacts and maximise enhancement of landscape features, landscape character and biodiversity of the site”. Whilst this is a laudable claim, we look forward to consultation on a draft landscape master plan tasked with delivering these aims to a satisfactory standard for a solar farm comprising close on 2.7 million solar panels and associated infrastructure.

6.4.1

This states that “when the operational phase ends, the Project will be decommissioned. The anticipated period of operation and decommissioning is 42 years. All solar PV array infrastructure including solar PV modules, mounting structures, cabling, inverters and transformers will be removed from the site and recycled or disposed of in accordance with good practice and market

conditions at that time. This raises several areas of concern. (i) It is our understanding that solar panels have an expected lifespan of between 25 – 30 years. Does this mean that somewhere in the operational cycle of the development that all the panels will in effect have to be replaced? (ii) recent articles (<https://www.bbc.com/news/science-environment-65602519>) indicate that the expertise for the scrapping and recycling of solar panels in the UK does not exist. (iii) if panels need to be replaced during the operational cycle of the development (see (i) above,) then we calculate roughly 5.3 million panels will eventually require recycling. If, as recent articles indicate the UK has no capacity to recycle, then these will end up in landfill sites with a very significant local/regional impact as a consequence? Stating that disposal of infrastructure will partially depend on “market conditions at the time” is not good enough for a development of this size. In particular, the carbon impacts of construction, materials, machinery, operation and decommissioning should be evaluated against the benefits of the scheme in renewable energy production.

7. Proposed Scope Of Assessment: ES Chapters

Legislative and Policy Context

7.1.2

We note that the Cassington Neighbourhood Plan and Green Infrastructure Plan are not included in the list of policy documents on planning for consideration in the impact assessment. They should be included along with any other relevant Neighbourhood Plans as they comprise information on the history, environment, and communities located within or adjacent to the proposed area of development. They also include local policies of relevance to the impacts of the proposed development.

7.1.5

Although the Blenheim Palace World Heritage Site is just outside the utility-scale solar power station, both the site and its setting within rural Oxfordshire, including nearby greenbelt should be assessed with respect to impact on World Heritage Status. Landscape is an important aspect of granting of World Heritage Status and this proposal has a major impact on the surrounding landscape which is the setting of the site.

7.1.9

We note that whilst the West Botley Utility-Scale Solar Power Station has been set outside of the Conservation Area of Cassington Significant Views from the Conservation Area, mainly pointing to the northwest will be strongly adversely affected by the development (WODC, 2007). Views from all the mentioned designated Conservation Areas should be assessed for visual impact from the West Botley proposal. We note in 7.1.24 that the Zone of Theoretical Visibility set at 2km from the boundary of heritage assets.

7.1.12

We also note the presence of Frogwelldown Lane on the western edge of Yarnton which has been in use at least since the Middle Ages. This lane was part of the old Oxford to Witney road and is notable as the historic route of retreat of the army of Charles I from Oxford during the English Civil War. The lane currently runs from the edge of Yarnton to the Burleigh Road.

7.2 Landscape and Visual Resources

Legislative and Policy Context

7.2.3

The Cassington Local Neighbourhood Plan and Green Infrastructure Plans are now accepted by Referendum and should be considered as local planning policy documents for the Impact Assessment.

7.2.14

We note that the West Botley Utility-Scale Solar Power Station would be unique globally in the number of houses within a 1.5 kms radius of it, a total of almost 11,000. This includes in settlements such as Wootton, Shipton-on-Cherwell, Woodstock, Bladon, Freeland, the Hanboroughs, Begbroke, Yarnton, Kidlington, Worton, Cassington, Eynsham, Farmoor, Cumnor and Botley. The comparable average number for the USA's largest solar farms is fewer than 10 ($n=27$). Even equally populous Netherlands has only a thirtieth of the number of houses within the same distance of its largest solar farms. It is inconceivable that a portion of these households will not suffer substantial adverse or worse impacts in terms of their views of the surrounding landscape as well as the landscapes of some of these villages in their entirety. In the case of Cassington, houses along the northern edge of the village as well as in the settlement of Jericho Farm will have current views of farmland replaced by solar arrays and additional infrastructure. This transformation of the landscape will be visible from the central areas of the village and also from public rights of way running to the north and northeast of the village. In our view it is essential that the impacts on landscape and visual resources of all of these villages and their residents are carefully assessed by independent experts.

We also note that the proposed change in land use has already had significant impacts on landscape in the area. An example is the establishment of a dog walking facility in fields along the Cassington – Yarnton Road, west of Yarnton. The farmer leasing this and other land has had his holdings reduced as a result of the West Botley proposal by the landowners. This rendered it unprofitable to continue to farm the land remaining meaning that other alternative uses for the land have had to be developed. The facility is surrounded by high metal fences which we believe detracts from the surrounding landscape including public rights of way. It is therefore important to assess not only how the West Botley Solar Power Station itself will influence landscape and visual resources but also how the scheme itself may influence the use of the land around it (see Potential Cumulative Impacts, 7.2.34).

Table 7.3

We note that "Residential Visual Amenity Assessment" is to be scope out of the project assessment for landscape and visual resources. The grounds given for this are that:

"No significant effects expected that would overwhelm existing properties nor render properties an unattractive place to live."

We wholly reject this scoping out of impacts on residential visual amenity as:

(i) The proposed solar power station includes more households within 1.5km than any other we have been able to find.

(ii) Residents of the Parish of Cassington (and no doubt other villages / parishes) will suffer major impacts on their enjoyment of visual resources including views from their homes, common areas in their villages and views from public rights of way. In some cases, solar arrays will dominate views

from properties. By any measure these are visual receptors (people) who will be affected by the visual impacts of the proposed development (see also 7.2.27, 7.2.28)

(iii) We already have had reports of house sales falling through in Cassington because of the perceived threat of the West Botley Solar Power Station to quality of life in the village for which visual impact is a major consideration. This materially contradicts the reasoning for scoping out of residential visual amenity impacts.

(iv) An increasing number of studies show impacts of solar farms on house values. The nearer you are to one, and the bigger the solar farm is, the greater the impact. These impacts appear to be particularly marked where solar farms are built on rural land (Gaur and Lang, 2023).

We add that not only do we fully expect Residential Visual Amenity Assessment to be included in the impact assessment of the proposed solar power station on landscape and visual resources but that this assessment should include the views of residents of households who will be affected by the visual impacts of the scheme both in their homes and through use of nearby public rights of way. This is clearly an area which requires interviews and direct assessment of impacts on residents.

We also reject that there is no need for a night-time assessment when there may be substantial numbers of PIR-activated security and other lighting within the development.

Potential Cumulative Impacts

7.2.34

The countryside west of Oxford is subject to increasing development of solar farms on agricultural land including areas to the east / southeast of Yarnton and to the west of Eynsham. Along with the significant urban industrial and residential development along the Yarnton – Woodstock corridor and around Eynsham, including on Greenbelt land, it is essential to consider the accumulated impact of these and the West Botley Solar Power station proposal.

We also note, as above (7.2.14) that this proposed development is already having an impact on use of agricultural land in the area.

7.3 Ecology and Nature Conservation

Relevant Policy, Legislation and Guidance

7.3.2

Relevant local policy documents should include the Cassington Local Neighbourhood Plan and Green Infrastructure Plan. The former includes Policy CAS1 on the Cassington Nature Recovery Network and the latter much information on local nature assets.

7.3.9

As noted for 2.1.16 although there are no statutory ecological designations within the central site both within and surrounding Cassington there are several zones within the Natural England Habitat Network. These include areas of habitat restoration (e.g. Worton gravel pits), Network Enhancement Zone 1 (fields to the east of Cassington), Network Enhancement Zone 2 (south of A40) and a Network Expansion Zone (areas surrounding Cassington village especially to the north west and south). These are detailed in the Green Infrastructure Plan which is part of the Cassington Neighbourhood Plan which was accepted by Referendum in June 2023. These areas are included in the Cassington Neighbourhood Plan, Policy CAS1 Cassington Nature Recovery Network. We note that CAS1 Provision C states that “Proposals that will lead to the loss of land lying within the Network and that will undermine its integrity will be resisted.”

We also note that the latest version of maps released by the Developer reveal plans to dig a trench through Long Mead meadow to enable their cables to cross the Thames near Eynsham. Long Mead is part of only 4 square miles of original floodplain hay meadow left in the UK and must be protected. 97% of this type of habitat was lost between 1930 and 1984 (Wildlife Trusts, 2012) so it is nationally scarce community of plants and animals. It featured in a film produced for Cop26 and it would be a huge embarrassment for the government if part of this important floodplain was disrupted on their watch.

7.3.12

A major component of the landscape appeal of the proposed development site is the patchwork of lowland agricultural land, bounded by a hedgerow matrix, interspersed with copses and woodlands, some of which are classified as ancient semi-natural woodlands (ASNW). Given the nature of the proposal we envisage large-scale removal of the hedgerow matrix (whether temporarily or permanently) and either the removal of the woodland component or their isolation as a consequence of their connectivity with the hedgerow matrix being removed and fencing erected. We take this opportunity to indicate that the UK has lost over 50% of its hedgerow matrix post world-war II and that of the remaining hedgerows, 60% are classified as being in a poor condition. As a consequence, the Hedgerow Regulations (1997) were introduced to halt the removal/ degradation of what remains of the resource. Here we also note the recommendation of the UK Climate Change Committee who indicate that hedgerow cover will need to be increased by 40% by 2050 to help deliver our net zero target – in essence this requires the planting of 200,000 km of new hedgerows. We therefore contest any development which proposes to remove hedges, even temporarily, because of the high negative landscape impacts of this activity and the counter-intuitive nature of their removal in line with net zero aspirations.

In tandem with the loss of hedgerows we note the large-scale loss of ancient woodland in the UK, with current estimates suggesting we have c. 2% of its former distribution remaining. ASNWs are renowned for their high amenity and landscape, along with their importance as biodiversity hotspots. We expect that the scoping report will look to leave the majority of ASNWs intact, but question their landscape and amenity appeal as a consequence of being surrounded by a sea of solar panels.

Construction of solar farms and their associated infrastructure requires large-scale removal of vegetation and surface grading. This results in habitat loss, degradation and fragmentation, leading to a reduction in species richness and density. These impacts are exacerbated as the solar farm proposed will be situated on agricultural land which provides the landscape and habitat for an ever-dwindling group of plants and animals. Today in the UK the loss of “agri-wildlife” is well documented, with the majority of species and habitats associated with low-intensity agriculture showing catastrophic declines post World War 2. As a result, many of those species associated with agricultural habitats are afforded protection at the very highest levels.

A very large amount of fencing (over 100km) is indicated as required in this report. This will mean that access to a very large amount suitable foraging and breeding territory will be lost. Many agri-bird and mammal species require large, uninterrupted tracts of suitable breeding and feeding habitat with which to complete their life cycle. Solar farms result in large-scale losses of these vital components and as a consequence, species already demonstrated to be in significant decline (brown hare, harvest mice and several species of passerine birds including linnet, yellowhammer, corn bunting and tree sparrow for example) will be further negatively impacted. It is also useful to note that if the land between the solar arrays is to be sheep-grazed, then the surrounding field perimeter

will require stock-proof fencing in order to contain the grazing livestock. This fencing will function as a barrier to movement (resulting in an inability to access/maintain breeding and feeding territory) for several mammal species, notably badger and those species of deer typically found in agricultural settings.

An examination of records on i-Naturalist may also be appropriate for the area to detect presence of species.

7.3.14 and 7.3.15

We note that there is no mention of aquatic birds which we view as a significant omission for several reasons. First of all, the presence of reservoirs and rivers within and around the Botley West Utility-Scale Solar Power Station proposal means that aquatic birds are a feature of the area. Solar panels present a significant strike risk to bird species, especially if the surfaces are vertically oriented and/or reflecting light (e.g. Visser et al 2019; Smallwood, 2020). Water birds have been demonstrated to collide with the panels as they mistake them for waterbodies and effectively try to land on them (Jenkins et al., 2015; Mulvaney, 2019). We also note that some aquatic birds such as mute swans and geese also feed in fields proposed to be covered in solar arrays around the village of Cassington particularly in winter. Bird mortality at solar arrays in the US caused a mortality of 11.61 birds per MW/year (Smallwood, 2020). Translating such a figure to the West Botley utility-scale solar power station would cause a mortality of more than 390,000 birds over a 40-year operating time. Obviously impacts on US bird fauna are likely to be different to those in Oxfordshire but this gives an idea of the potential scale of impact of an 840 MW power station on birds in the area.

We also note that solar panels present a significant strike risk to insectivorous bird and bat species, especially if the surfaces are vertically oriented and/or reflecting light. Birds and bats are attracted to the panels for a variety of reasons. The panels themselves attract the principal prey items of insectivorous animals, which the birds/bats seek to consume, thus colliding with the structures in doing so. Aquatic insects are also attracted to the polarised light reflected by solar panels, again displaying maladaptive behaviour, mistaking the panels for water surfaces.

We note with concern the use of the term “survey season” in 7.3.15. As pointed out above behaviour of animals such as birds varies seasonally so surveys of fauna should take place throughout the year.

7.3.21 and 7.3.22

The scoping report indicates that the majority of ecological surveys will be conducted within the site boundary, with the exception of those mobile species, great crested newts (GCNs) and bats specifically, for whom buffer zones of 500m and 10km will be in place for these respectively.

We raise three issues which we consider of concern. (i) great crested newts have been documented as travelling as far as 1.3km (<https://www.keyenv.co.uk/wp-content/uploads/2011/06/GNGCNV2.pdf>) so why is only a 500m buffer proposed ?, (ii) the report specifically indicates that surveys will take place in waterbodies i.e GCN *breeding* habitat – no mention is made of terrestrial surveys in those habitats which they need for dispersal, feeding and hibernation (of which hedgerows are key) after they leave the breeding ponds and (iii) no mention is made of bird surveys – most farmland bird species are highly mobile and will access of a matrix of habitat types as part of their life cycle. In particular, we stress the importance of agricultural land for migratory species which rely heavily upon large tracts of agricultural land and their associate hedgerows, particularly in the late autumn/winter period. Species of note here are winter thrushes (redwing and fieldfare), starling, and several species of geese and swans. In addition, passerine birds

such as wheatear, yellow wagtails and redstart, “stop-off” on agricultural land in order to re-fuel on passage to their nesting grounds. As such, loss of these sites, accompanied by a reduction/removal of their ability to provide food sources, constitutes a significant concern to the overall impact to bird diversity. We therefore contend that a much wider survey area, spanning the breeding, migration and over-wintering seasons should be in place.

7.3.35 – 7.3.37

7.3.35 notes that “Replacement habitat for that lost where such habitat is either of conservation significance in its own right or supports a protected or otherwise notable species”. Whilst much is made of reinstating elements of the habitat lost post solar farm construction, most notably hedgerow systems, emphasis must be placed upon the fact that we are losing a long-established, biodiverse habitat in exchange for a brand new one. This new creation will take many decades to come anywhere close to the biodiversity of its predecessor, this at a time when agri-biodiversity continues to be lost apace.

Further to the point above, 7.3.36 states that the provision of new commuting routes for bats might form part of an ecological mitigation package. Bats use woodland edges, hedgerows, and other linear features to echolocate their way between their various feeding, breeding and roosting sites. Removal of these, even if temporary, will have a significant detrimental effect upon their survival, noting here that all species of bat in the UK are protected under the Wildlife & Countryside Act. Given that these planted features will take several years to reach a size against which the bats can successfully navigate, then we draw into question their efficacy as mitigation for these protected species.

7.3.37 indicates that the biodiversity net gain metric will be used to calculate the before and after biodiversity value of the site, the calculation subsequently used to deliver Biodiversity Net Gain (BNG). Given the large scale of the proposal, which will significantly impact a matrix of lowland agricultural land interspersed with habitats known to be of high biodiversity value, we look forward to being consulted over the proposals contained in the BNG strategy, in particular the scale, site selection and “like for like” elements which need to be made evident.

7.4 Hydrology and Flood Risk (59)

7.4.2

Relevant local policy documents should include the Cassington Local Neighbourhood Plan and Green Infrastructure Plan. The Green Infrastructure Plan contains details of past flooding and current flood risk to the village of Cassington.

7.4.3

This indicates, in keeping with previous sections, a likely zone of influence for hydrological impacts, specifically 250m for hydrology and 1km for flood risk. Again, we observe that there is no justification presented for the arrival of these figures, noting (again) that there has been no stakeholder consultation as part of the process.

Baseline Environment

Hydrological Setting

7.4.6 – 7.4.21

The scoping document focuses largely on flood risk associated with the water courses in the area of the proposed solar power station. However, for Cassington, Jericho Farm, Worten and Yarnton surface water flooding is the significant issue which needs to be considered in the impact

assessment. Elm's Road in the village of Cassington appears to be particularly vulnerable to surface water flooding events which result from surface water draining off the high ground of the fields to the north of Cassington. This is consistent with flooding of properties on Elm's Road in 2007 (WODC, 2008). Foxwell Court, St Peter's Close, Horsemere Lane, Foxwell End and Reynold's Farm are also at risk of flooding from extreme surface water events (WODC, 2008). Outside the village Jericho Farm and Worten are also vulnerable to flooding and the road junction to Worten Farm was flooded over the winter of 2020/2021. Following the 2007 flood events action was taken to mitigate future surface-water flooding including the clearing of previously blocked drains and the building of a drainage pond behind the southwest corner of the playing fields. Since this time there have been no further property flooding events in Cassington village although the threat remains as demonstrated by near flooding in the winter of 2022-2023.

Studies of how utility-scale solar power stations impact hydrology are relatively few at present. However, the studies that do exist show changes in soil moisture content associated with solar panel arrays and also increases in surface water runoff (e.g. Pisinaras et al., 2014; Yavari et al., 2022). Alterations in hydrology also have the potential to increase soil erosion in some circumstances (e.g. Yavari et al., 2022). One aspect of solar array design which influences runoff of rainwater is the tilt angle and orientation of the solar panels at a given site (Yavari et al., 2022).

Given the flooding issues already experienced at Cassington, Worton and Jericho Farm resulting from surface water runoff alteration of hydrology on the hills to the north of Cassington which will be near completely covered by solar arrays is a significant concern for residents of the Parish. Any increase in surface water runoff would increase flood risks to properties particularly in Elm's Road, but also in Foxwell Court, St Peter's Close, Horsemere Lane, Foxwell End, Reynold's Farm, Jericho Farm and Worton. We are not reassured by the statement by PVDP in their Phase 1 Consultation Summary Report (PVDP, 2023) that "Well designed solar farms do not cause an increase in the risk of flooding." In a situation where there is a continued risk to our villages from surface water flooding framed by an apparent increase in extreme rainfall events resulting from climate change (see UKCP18 statements on frequency and severity of surface water flooding in summer and autumn) this is a major concern to our residents.

Table 7.6 indicates a variety of potential hydrological and flood risk impacts which might arise as a consequence of the proposed development, with the vast majority to be subjected to a modelling approach to inform the assessment. A concern here is that many of the models will assume optimum condition infrastructure is in place (field drainage ditches, storm drains etc.), which they are not. We are therefore enquiring how these sub-standard infrastructures will be captured in the models (if at all)?

7.4.19 indicates that cumulative impacts from hydrology and flood risk will likely occur, whilst 7.4.20 suggests that these impacts will be contained within the footprint of each of the 3 sites. This, given the nature of the risks identified i.e. all linked to water movement, we challenge, particularly given our observation above that sections of the water movement mechanisms across the landscape are in poor repair and the history of surface water flooding.

We expect these concerns to be reflected in a thorough assessment of flood risk to the villages including modelling, taking account of conditions on the ground of drainage infrastructure of the effects of the Central Section of the Botley West Scheme on local hydrology and if necessary trials undertaken with solar arrays of different design undertaken over an appropriate time period to understand impacts on soil hydrology and runoff.

We also note that a high-pressure water supply pipe runs underground across the fields to the north of Cassington and this also must be considered during construction and operation of the solar power station.

7.5 Ground Conditions

7.5 addresses those elements relating specifically with ground conditions, notably in terms of potential impacts arising from the construction, operation and maintenance, and decommissioning phases of the Project.

7.5.5

This section indicates that the study area proposed for an assessment of ground conditions is the footprint of the development and a data search buffer of *up to* 100m. Again, we question the parsimonious nature of the buffer zones proposed, noting that in this instance there will only be a data (desktop) search within the buffer area.

7.5.12

This section suggests that the Project *may* impact on ground conditions during, construction, operation and/or decommissioning phases. We contend that all these phases *will* impact ground conditions and we would urge that all future communications dispense with the incorporation of this speculative narrative because of its inaccuracy.

Table 7.7

As is indicated the majority of the land parcels have the potential to have impacts relating to land contamination, ground instability or mineral resources, with the need for further assessment indicated as necessary. However, the nature of that assessment is not indicated i.e. will it be primary surveys or will it be a reliance upon historical data? If it is the latter, then we consider this to be particular cause for concern as we draw into question the reliability of historic data collection and reporting mechanisms, especially as they will be used to both predict the magnitude of the impacts likely encountered and guide the sensitivity categories of the receptor sites.

7.6 Traffic and Transport

7.6.18

We note that there are 11,000 households within 1.5km of the West Botley Utility-Scale Solar Power Station. Settlements such as Cassington with a narrow through road, residential properties, a school and a church are highly vulnerable to disturbance from construction traffic. Also, because of the dense population of the area in general operations such as trenching or cable laying which disrupt road routes (Table 7.11) have the potential to significantly redirect traffic also causing disturbance and disruption to surrounding villages. We therefore expect each settlement along / within routes for traffic associated with construction and operation to be specifically assessed for impacts, not a overall general analysis.

7.7 Noise and Vibration

Baseline Acoustic Environment

7.7.5 and 7.7.7

The village of Cassington and Jericho Farm also lie on the southern edge of the Central Section of the West Botley Utility-Scale Solar Power Station.

7.8 Climate Change

7.8.1, 7.8.19, 7.8.29, 7.8.31

The impact assessment states that it will only consider changes in cloud cover in respect of climate change. We point to two other factors that should be included in the impact assessment:

(i) Extreme rainfall events. Predicted changes in patterns of rainfall resulting from climate change must be assessed with respect to hydrology and flood risk especially to villages located at the bottom of hills or slopes to be covered in solar arrays (such as Cassington).

(ii) Extreme wind / storm events. Land around Cassington and Eynsham has been subject to two extreme wind events in the last 11 years (May, 2012 and October, 2021). The latest event, which occurred on the 31st October, 2021 was associated with a small low pressure system (mesolow). This caused a tornado of estimated strength T3 (Strong Tornado) to move through Cassington Village causing substantial damage to buildings, walls and trees (Horton, 2021). An even stronger tornado (T4 – Severe Tornado) tore through Burleigh Wood on the same day felling over 100 trees (a location enclosed by the Central Section of the solar power station). An assessment needs to be made of the likelihood of such events occurring, whether the frequency will change with climate change and the potential for damage to the solar power station (especially the Central Section). This is both a matter of operational risk for the solar power station and public safety. We view the statement in 7.8.31 that “extreme weather events are not considered to cause significant environmental effects to the Project” as evidently incorrect.

7.8.15, 7.8.16, 7.8.34

We expect any life-cycle assessment of the Botley West Utility-Scale Solar Power Station to not just include manufacturing-stage emissions but also emissions associated with mining and production of materials for solar arrays and other infrastructure, construction, including transport and traffic, operations and also, importantly, decommissioning and recycling of materials used for solar arrays and associated infrastructure (proposed to be scoped out). Infrastructure should be built with principles of the circular economy which means that the very large number of solar arrays and associated infrastructure should be recycled following decommissioning.

7.9 Socioeconomics

We note the Cassington Local Neighbourhood Plan is not included within the documents related to the socioeconomic assessment. This document includes much information which is relevant to the assessment related to the parish of Cassington.

Table 7.18

Employment

Significant impact on employment will be mainly associated with construction and will be temporary.

Need for temporary accommodation for workers

Temporary accommodation for workers not required because of good road linkages in the region. We point out that many of the roads in the area are already severely congested, hence current work to improve provision of Park and Ride facilities and road improvements. This, therefore, requires assessment at the EIA stage.

Economic output

Improvements will be temporary (i.e. during construction).

Recreation activities and Land Use

Rapid development of rural centres and villages in the West Oxfordshire area is putting great pressure both on land, infrastructure and residents of the area. Without doubt this is already eroding the quality of life of residents through increased disturbance from traffic, pollution, access to amenities, availability of public transport and opportunity for exercise and experiencing the outdoors.

Exposure to green space and the opportunity to exercise on locally available land have been demonstrated multiple times to have both physical and mental health benefits (e.g. Bowler et al., 2010; Shanahan et al., 2016; Cox et al., 2017). The main public rights of way used by the residents of Cassington village will be severely degraded in terms of their visual aspect, from one of open farmland to one of a largely artificial landscape dominated by solar panels. Schemes to enhance use of land through provision of a footpath along the Evenlode River (as suggested during the public consultation) will not compensate for these losses and have issues in and of themselves.

The aspect of open countryside currently enjoyed by residents of Cassington living on the north side of the village as well as residents of Jericho Farm will also be dominated by solar arrays, likely harming wellbeing in terms of mental and physical health. Jericho Farm, in particular, will be almost completely surrounded by solar arrays running up closely to the boundaries of the properties there.

The setting of Cassington, one of the few small villages in West Oxfordshire close to Oxford will turn from a largely rural aspect to one of being surrounded by industrialised land to the north (Mulvaney, 2019). This will have negative impacts on well-being for the majority of village residents.

We also note that in its pursuit of change in land use Blenheim Estates have, where they have been able, terminated the tenure of farmers on the land subject to the current proposal. This has caused great stress to some of the families involved and in one case has been suggested to have contributed to the death of one of the Parish's farmers (Cassington Parish Council Meeting, 1st December, 2022).

We therefore view an assessment of the socioeconomic impacts of the proposed scheme on recreational activities and land use to be essential.

Housing

11,000 households lie within 1.5km of the Botley West Utility-Scale Solar Power Station. Already we have had reports that house sales have fallen through in the village of Cassington because of the perceived threat of the impact posed by the solar power station. An increasing number of studies show impacts of solar farms on house values. The nearer you are to one, and the bigger the solar farm is, the greater the impact. We therefore challenge leaving this out of the EIA Assessment. Evidence material indicates that there will be a significant financial impact on households through both affecting the value and saleability of properties. Furthermore, we challenge the contention that this development is "temporary" for many people in our village and others this development will be in place for the rest of their lives. Temporary is therefore a relevant term, for many residents it will be to all practical purposes permanent. We note that one of the grounds for rejection of another large-scale solar power station was that a 40-year lifespan for practical purposes may be regarded as permanent (Planning Inspectorate Application Reference s62A/2022/0011 Land East of Pelham Substation, Maggots End, Manuden).

Crime and Safety

We do not believe that the assumption that “a workforce management plan”, including the operation of “modern slavery policies”, is going to ensure that the behaviour of both the highly skilled and less skilled workers is sound. Even if most workers, as claimed, will [arguably] be reasonably local, they may not feel a particular kinship with the immediate locality, which may be reflected in their driving and other behaviour as well as their spending preferences.

With respect to crime there are two aspects to this: (1) crime centred on the proposed site itself; and (2) crime committed in the surrounding area. The first has been scoped out and the second is not even considered for scoping in or out. Site-related crime has been scoped out for the construction phase on the (“assumed”) grounds that the site security arrangements will be adequate. This rather overconfidently passes over the attraction that large construction sites have for both opportunistic crime and, more seriously, for organised crime groups, who might have the wherewithal to circumvent security measures. For the operation phase, crime is again scoped out because the “proposed scheme is unlikely to affect the crime profile of the area . . . No impacts considered likely.” Table 7.19 goes even further: “widespread actual and *perceived* crime that could affect population health” is scoped out; likewise “changes in crime or fear of crime”. The latter assertion is based on “the rural context of the Project”.

Crime does not have to be particularly widespread to be perceived as such, and to induce fear of crime. The arrival of a population of, say, 1,200 workers probably changing in personnel from time to time, is bound to have an impact on the crime profile of the area *outside* the site. One or two burglaries from homes or businesses, thefts of farm equipment, driving offences, petty vandalism, accumulations of litter – no doubt the responsibility of a small minority of workers – will swiftly alter the local atmosphere and begin to affect local residents’ wellbeing. Opportunistic strangers or organised groups, some turning up in high viz jackets and hard hats, will almost certainly target the area. And as for the “rural context”, RPS seems to have no idea about current concerns about levels of rural crime. Scoping out crime is in our view inappropriate.

7.11 Agricultural Lands and Soils

We note the Cassington Local Neighbourhood Plan and Green Infrastructure Plan are not included within the documents related to the Agricultural Lands and Soils. These documents are relevant as they include policies on nature recovery and also use of the land surrounding the village for recreational purposes.

As part of the assessment, we would like to see an estimation in the loss of agricultural productivity for the land subsumed by the solar power station over its lifetime.

8.3 Glint and Glare

8.3.14

We note that RAF Brize Norton is not included in the likely receptors for glint and glare. However, some of the approaches to the airport, for example, over the village of Cassington, may be affected by glare from the solar arrays located north of the village and therefore should be considered as potential receptors for the purposes of the Glint and Glare analyses.

9 Topics Proposed To Be Scoped Out Of The EIA Process

9.2 Daylight, Sunlight and Microclimate

Soil microbial biodiversity is vital to the well-being of the above ground vegetation and all that depends upon it. Solar panels result in a large proportion of the overall footprint of the solar farm effectively being put in the shade with reduced exposure to rain, severely diminishing soil microbial

activity as a consequence of alteration to the immediate microclimate. This will result in an inert growth medium for plant life with a cascading effect upon the wildlife that directly or indirectly depends upon it. Solar panels also alter the temperature and evapotranspiration of soils, tending to keep them warmer during winter and cooler during the summer (e.g. Armstrong et al., 2016).

Large solar power stations such as the one proposed here have the potential to increase local temperatures in a similar way to the urban heat island affect. Measurements over a solar power station, nearby urban environments and surrounding wildlands have indicated a warming effect of up to 3-4°C depending on the season and time of day (Barron-Gafford et al., 2016). Such heat retention could have significant impacts on residents in villages surrounding the proposed solar power station which is a particular concern given temperature rise resulting from climate change.

We conclude that both from the point of views of impacts on biodiversity and on people effects of this proposed very large-scale power station on microclimate should be within the scope of the EIA.

9.4 Electromagnetic Fields (EMF)

The scoping report restricts consideration of this issue to cables that exceed 132kV, and to human health only. However, the effect on non-humans should be scoped in, not least because power converter stations and transformers, of which there will be 156 + 6 + 2, are generators of EMFs. According to the US National Library of Medicine's National Center for Biotechnology Information:

“Numerous studies across all frequencies and taxa indicate that current low-level anthropogenic EMF can have myriad and synergistic effects, including on orientation and migration, food finding, reproduction, mating, nest and den building, territorial maintenance and defense, and on vitality, longevity and survivorship itself. Effects have been observed in mammals such as bats, cervids, cetaceans and pinnipeds among others, and on birds, insects, amphibians, reptiles, microbes and many species of flora.”

Not surprisingly, the paper goes on to say, “It is time to recognize ambient EMF as a novel form of pollution and develop rules at regulatory agencies that designate air as 'habitat' so EMF can be regulated like other pollutants. Long-term chronic low-level EMF exposure standards, which do not now exist, should be set accordingly for wildlife, and environmental laws should be strictly enforced”.

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