



SUNNICA ENERGY FARM

Examination

Written Representation by Mr AJ Munro, of
Chippenham, Cambridgeshire

Andrew Munro BSc CEng MICE MCIHT

INTRODUCTION

I am a resident of [REDACTED], Chippenham, and I am an Interested Party (ID 20030808) in the Examination.

I am a Chartered Civil Engineer working on major infrastructure projects since 1978, including planning inquiries and development consent orders. I have a bachelor's degree in Civil Engineering. I have been a member of the Institution of Civil Engineers since 1988, and a member of the Chartered Institution of Highways and Transportation since 1991. Most of my experience is as project manager or project director of major transport schemes.

I am also assisting the Say No to Sunnica Action Group Ltd (SNTS) in a professional capacity, but this representation is my personal representation. As I have been involved in drafting the SNTS Written Representation, I have seen no need to duplicate elements of that, and note only that I strongly support it. More detail of some of the points I raise can be found in the SNTS representation.

What I have presented here are the main points of concern to me about this development.

GENERAL

I support the need for the UK energy mix to pivot to low carbon generation and the UK strategy to reduce carbon emissions towards "Net Zero". In this context, I note that other forms of low-carbon generation can deliver that strategy and consider that the case for utility-scale solar in this location is not, in my opinion, proven. I further believe that there are significant deficiencies in the application.

LACK OF DETAIL IN THE APPLICATION

The application lacks detail and using the Rochdale Envelope to defer fundamental considerations after consent is unreasonable. While I understand the desire for flexibility in design, it is my experience that in my field significant flexibility is denied or at least a matter of concern. From the Planning Inspectorate's Advice Note 9:

2.3 To understand the implications arising from the comprehensive consideration of the issues by the Judge (Sullivan J. (as he then was)) in Milne (No. 2) ('the Judgment'), it is helpful to note some of the key propositions, as follows:

the assessment should be based on cautious 'worst case' approach:

"such an approach will then feed through into the mitigation measures envisaged [...] It is important that these should be adequate to deal with the worst case, in order to optimise the effects of the development on the environment" (para 122 of the Judgment);

the level of information required should be:

"sufficient information to enable 'the main,' or the 'likely significant' effects on the environment to be assessed [...] and the mitigation measures to be described" (para 104 of the Judgment);

the need for 'flexibility' should not be abused:

"This does not give developers an excuse to provide inadequate descriptions of their projects. It will be for the authority responsible for issuing the development consent to decide whether it is satisfied, given the nature of the project in question, that it has 'full knowledge' of its likely significant effects on the environment. If it considers that an unnecessary degree of flexibility, and hence uncertainty as to the likely significant environmental effects, has been incorporated into the description of the development, then it can require more detail, or refuse consent" (para 95 of the Judgment);

2.4 The Encyclopedia of Planning Law and Practice provides additional insight into the purpose and practical application of the Judgment and other relevant case law. (Encyclopedia of Planning Law and Practice ISBN: 9780421007406, General Editors: Christopher Lockhart- Mummery, QC; David Elvin, QC; Landmark Chambers Team. See in particular para 3B-949B.2373.2.10.) Key principles from this

analysis have been considered and summarised in context of the DCO application process below and should be taken into account:

the DCO application documents should explain the need for and the timescales associated with the flexibility sought and this should be established within clearly defined parameters;

the clearly defined parameters established for the Proposed Development must be sufficiently detailed to enable a proper assessment of the likely significant environmental effects and to allow for the identification of necessary mitigation, if necessary within a range of possibilities;

the assessments in the ES should be consistent with the clearly defined parameters and ensure a robust assessment of the likely significant effects;

the DCO must not permit the Proposed Development to extend beyond the 'clearly defined parameters' which have been requested and assessed. The Secretary of State may choose to impose requirements to ensure that the Proposed Development is constrained in this way;

the more detailed the DCO application is, the easier it will be to ensure compliance with the Regulations.

2.5 it is ultimately for the decision maker to determine what degree of flexibility can be permitted in the particular case having regard to the specific facts of an application. The Applicant should ensure they have assessed the range of possible effects implicit in the flexibility provided by the DCO. In some cases, this may well prove difficult.

I believe the Applicant has not disclosed the "clearly defined parameters....to enable a proper assessment", as few drawings are available. Such drawings as do exist are not clear as to location or details. A case in point is the battery storage element, upon which I expand below.

The Applicant's approach might be said to create a space within which a solar farm will be created while providing as few details as possible of what will fill the space. This is not reasonable for local people unfamiliar with the process, who are reasonably entitled to understand exactly how it might affect them. I would argue the Rochdale Envelope approach was not intended to confer this degree of freedom. Or, as in the guidance, "not be abused". A minimum amount of detail must be provided for the impacts to be understood, and not for local people to be told what the Applicant has decided those impacts are.

In the DCO Work 1 (Solar PV), Work 2 (BESS) and Work 3 (Substations) overlap. There are no general arrangement drawings of the BESS and no drawings that show how much of these areas will be allocated to each use. Clearly the Applicant has been able to carry out an Environmental Impact Assessment using a worst case following the Rochdale principle, however the assumptions made have not been disclosed.

Only in the Outline Battery Fire Safety Management Plan (OBFSMP – APP-267) is it disclosed that a total of 31 Ha of land is allocated to BESS. Such an area could contain over 1500 battery containers based on the footprint and separation quoted, yet the Applicant shows as a "typical" battery storage compound a facility considerably smaller (Plate 3-11 Scheme Description **APP-035**). This "typical" compound shows only 9 battery containers rated at 30MW, a facility far smaller than the "over 50MW" referred to in the Application (Explanatory Memorandum 2.4.4 APP-020). In fact, Table 2 BESS Design Parameters in the OBFSMP (**APP-267**) on page 4 shows two BESS compounds rated at 30MW and 29MW while detailing the areas for BESS enclosures and battery stations as being East A 66,000 sq.m, East B 162,000 sq.m and West A 83,000 sq.m a total of 311,000 sq.m or 31.1 Ha.

The lack of detail on the most significant industrialisation element of the proposals is unreasonable. At ISH1, which I attended, the Applicant suggested a capacity of the BESS at circa 500 MW giving with C4 batteries an energy of 2000 MWH. Even this might be too high to be lawful associated development. It certainly underlines the discrepancy between the information provided in the Application and the Applicant's intentions.

Considerable detail is left to be submitted post-consent. While the discharge of Requirements necessarily involves submission of more details, the gap between the application and these further submissions is such as

to raise the risk that it is not possible to define exactly what is being consented and the Applicant has considerable freedom, post consent, to interpret within the Rochdale Envelope, and the parameters set out, the final form of the development. This is not reasonable and is a degree of freedom I say is too great.

LOSS OF AGRICULTURAL LAND AND JOBS

There is loss of high quality productive agricultural land for a generation and lack of detail of how it will be restored. The impact of the scheme on UK food security is significant considering the number of solar schemes nationally and in this area. It will generate minimal local employment after construction, and construction employment will only be transient.

In the main construction employment is likely to be skilled work in the electrical and generating sectors. Construction is very itinerant in my experience, with skilled teams moving from job to job. This is likely to be the case here with the teams installing the PV, BESS, grid connection, and substations being brought from outside the local area and moving on to the next job. While an expanding sector creates demand for employment, any local jobs are likely to be transient.

The local area is not industrialised; it is almost entirely dependent on the racing and breeding industry. Unemployment is low, and the pool of local labour to work on the scheme would appear small. While there may be training opportunities, these may not lead to long-term jobs locally.

The Applicant has graded the land as poor when I understand it to be productive and of a higher grade in the main.

DECOMMISSIONING

There is a lack of detail on decommissioning and a risk that it will never be decommissioned. At the end of its useful life, it will be, in planning terms, “brownfield” (previously developed) land vulnerable to development unless it is restored.

The details in the application refer to a Framework Decommissioning Environmental Management Plan. This deals with the environmental effects of decommissioning but lacks detail on decommissioning itself.

I am 63; I will not see this land restored to agriculture in all probability. To me, the use of the land for over 44 years is, for all intents and purposes, permanent. The Examining Authority should give little weight to it being temporary. There must also be a clear and binding commitment to restore the land to agriculture, removing all traces of this development, except, of course, the environmental mitigation elements.

I have experience with PFI road schemes which have a hand back requirement at the end of a concession period in a defined condition. The concession period is some 30 years. It became clear to me that the people who had drafted the requirements would not be available to advise on what it was they meant when they wrote them. Even at an early stage, the potential difficulties of what was written were becoming apparent. I see the same problem with decommissioning Sunnica. Few of those who are now discussing decommissioning will be available to say what it was they meant when they said it. We owe it to the next generation to ensure there is a clear definition of what is meant by decommissioning and a clear intent to restore it to agriculture.

INDUSTRIALISATION

The industrialisation of an open rural area by PV panels, electricity substations and battery energy storage systems. The inefficient layout spread over an extended area requires multiple substations and multiple battery compounds. Industrialisation is compounded by the proposals for battery energy storage systems comprising numerous steel shipping containers.

The local area is not industrialised; commercial activity is limited and mostly connected with agriculture, racing, breeding or supporting those activities.

My village Chippenham is tranquil and dominated by the historic Chippenham Park. It is unfortunate that the old lodges and gateway from Newmarket are no longer easily accessible. Even more unfortunate is that in the future, they are likely to be seen from among an expanse of solar panels.

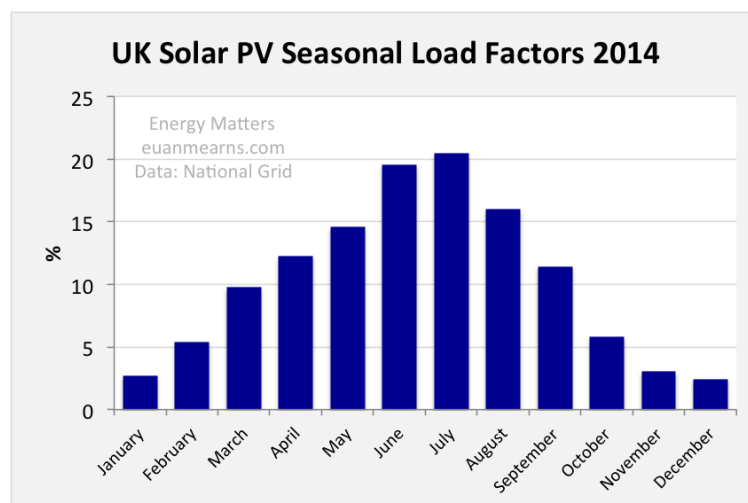
Referring to the expert report obtained by Say No to Sunnica, it is apparent that the Applicant has underestimated the heritage impact of the scheme, including upon Chippenham Park. The magnitude of the effect is High, and the significance of the effect is Major. In contrast, the Applicant has assessed them as Medium and Moderate, respectively. As a project manager, I would be concerned if, on one of my projects, there was a level of discrepancy between experts that appears to exist here, with similar differences of opinion on scheduled monuments.

THE POOR LAND USE EFFICIENCY OF SOLAR PV AND THE EFFICIENCY OF PV ITSELF

Only 11% of the rated maximum output will reach the National Grid on average over a year. There is no local benefit; once power is in the grid, it can be used anywhere in the UK. The inefficiency of PV means that larger areas of land are needed than for any other generation technology.

I am not opposed to solar PV as part of the UK energy mix, and not that in this area, there are already several solar farms. If I am concerned about solar energy, it is that the capacity factor of 11% in the UK is so low compared to other forms of generation it represents a poor use of land. The capacity factor is derived from the total annual power generated over the maximum possible generation in a year at full output. Compared to almost any other form of renewable energy generation, solar is restricted by both times of day and time of year. Peak output is in the summer, while peak demand is in the winter. Peak output is during the day, but peak demand is in the evening. These issues can be addressed by energy storage, but this brings its own issues.

The issue of the capacity factor or load factor in solar energy is demonstrated by the following chart.



This is based on data from National Grid. Seasonal nature can be seen in the fact that in the winter months, little energy is generated. A great deal of land is consumed for a maximum load factor of 21% in summer and 2.5% in winter. By comparison, a conventional fossil-fuelled power station would be running at about 40% and nuclear at 80%. Solar energy at UK latitudes can contribute to the UK energy mix, but it is not an efficient use of land as, by definition, more land has to be used to generate useful power and for a period each year and

part of each day, it is hardly contributing. An electricity generation plant that fails to produce significant output for a great period of time but with “permanent” impact should not be consented.

BATTERY ENERGY STORAGE SYSTEMS

There is an acute lack of information in the application on proposals for Battery Energy Storage Systems (BESS). The Applicant has identified 31 Ha of land for BESS, far more than that required to support PV generation, in my opinion. These batteries are likely to be used for purposes outside the scope of NSIP associated development. The safety and regulation of BESS are in doubt following numerous thermal runaway incidents. If consented, Sunnica could become, within the DCO limits, the largest BESS system in the world.

World's Largest Utility-Scale Battery Energy Storage System Now Online



The Moss Landing Energy Storage Facility, the world's largest utility-scale battery energy storage system, is now online. The 300 megawatts/1,200 megawatt-hours lithium-ion battery storage system is located on-site at Vistra's Moss Landing Power Plant in Monterey County, California. Construction is already underway on Phase II, which will add an additional 100 MW/400 MWh to the facility by August 2021, bringing its total capacity to 400 MW/1,600 MWh.

I have seen the report prepared by Pebben Limited for Say No To Sunnica, and I note that they have set out a potential capacity of 1555 MW (3110 MWh). The Applicant at ISH1 hinted at 2000 MWh. I believe the Moss Landing scheme has been overtaken by a scheme in China, but that is still only rated at 510MW/3005MWh.

There have been numerous thermal runaway events involving BESS. An intrinsic feature of Li-Ion batteries is if they get damaged. This is a chemical reaction, not a fire and can only be “extinguished” by cooling with water. Similar incidents have involved electric buses and electric cars. I know Dr Edmund Fordham and defer to his much greater knowledge than mine of the risks and effects of these events.

ALTERNATIVES

The exploration of alternatives is specious. It is clear, in my professional opinion, reverse engineering a pre-determined outcome. I would have expected a sequential assessment of funnelling down multiple options until a final few emerged and these then to be subject to more detailed comparison.

There is a lack of evidence on the search for alternative locations and the use made of criteria for search that only this project could satisfy. There is no evidence that alternative locations were properly considered in a structured manner.

The starting point is proximity to Burwell, not that Burwell was, as claimed, the only point of connection to the national grid. Historically power stations are located where there is fuel (eg coal) or some other need, such as cooling water (nuclear). They are then connected to the grid by transmission lines. The whole point of the National Grid is that power can be transmitted from where it is generated to where it is needed.

When I asked Sunnica about the grid connection, they responded to me by saying.

5. The Scheme has secured a Bilateral Connection Agreement (BCA) with the NGESO (National Grid) at Burwell. The BCA enables the Scheme to connect to the transmission network and thereby directly assist the transmission network in the supply of low-carbon power over the widest possible geography. A connection to the distribution network through a Distribution Network Operator (DNO) brings with it additional technical design constraints and potential system charges.

Kind regards,

Scott
(For and on behalf of Sunnica)

It is not the case that there is any advantage in the location for supplying London or Cambridge, nor would it appear that there is any significant consideration of the possibility of connection to the distribution network.

Nor is there anything particularly significant about East Anglia when solar energy farms are spread across the southern part of the UK, and the only two currently comparable to Sunnica are in Kent (Cleve Hill) or Lincolnshire (Little Crow) indicating that other areas are also suitable for utility-scale solar.

A proper options assessment should have been made with comparisons of different sizes of plant with cost-benefit analysis, and an environmental assessment to show that the option selected was the best performing against the criteria with the lowest environmental, as this is the quality of evidence in my field I am accustomed to providing.

CARBON NEUTRALITY

The Say No To Sunnica group has obtained from Cranfield University an assessment of the carbon neutrality of the project. This shows that the scheme is not carbon neutral or carbon negative. It will, in fact, be carbon-positive, creating more carbon over its life than it saves.

This is not a low-carbon project. More than 1 million PV panels are highly likely to be shipped halfway around the world. The project itself is carbon intensive, with multiple substations and extended cable routes. The design is undoubtedly due to the unusual strung-out design, driven by land availability rather than a cohesive design process. By necessity, as a result, the scheme requires three substations, three BESS compounds and a 24km long cable from Sunnica East A to Burwell. A different design located elsewhere might be more efficient.

I am not saying this out of NIMBYism; I just find the facts of the development of this proposal not convincing, given my training and experience.

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The construction traffic management is misleading and, in my opinion, unrealistic. I fear that a comprehensive system of ANPR, as proposed, is likely to require a significant resource to manage, and this may not be provided. By a similar token, the proposed permit system to limit driving to the site is likely to result in a fly parking problem in the local area as people without a permit park to be picked up by a mate who has. Being familiar with construction sites and the construction process, I can see the mini-bus system proposed lacking flexibility, especially for senior staff and engineers who will need to be in multiple locations throughout the day.

THE PERSONAL IMPACT OF THIS PROPOSAL

I have given my professional opinions above. I now turn to the personal impact. Chippenham, where I have lived for the last 23 years, is flanked on three sides by Sunnica. I am in the near centre of Chippenham, which is shown in Figure 1. Nearly all routes out of the village will take me past some element of Sunnica.

I am particularly disappointed to see the historic Chippenham Park dominated by solar PV and for much of the green space around here to be covered by solar panels. This is a personal viewpoint. I feel it will reduce the quality of life in the retirement I will soon enjoy. It certainly spoils a loved area that I was looking to live out my life in.

My route to Snailwell, which I take often, will take me between two areas of Sunnica (West A and West B). Another route via the B1085 to Kennett will give me a view of the panels on the east side of the A11 at Danes Hill. A trip to La Hogue Farm Shop will take me past West A and the substation there. A trip to Mildenhall will take me past Worlington. A trip to Isleham will take me past more of Sunnica. It is overbearing and a detriment to the local area.

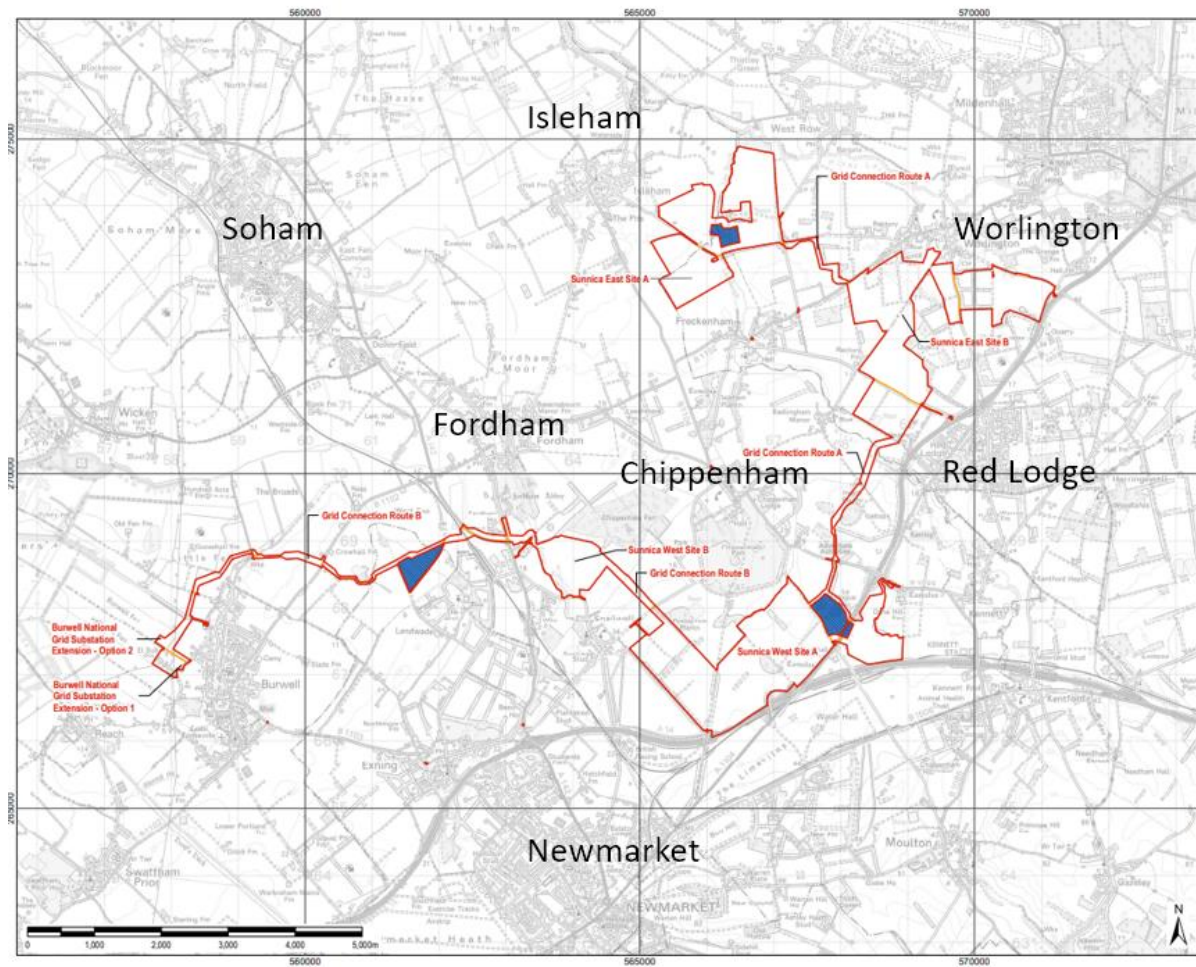
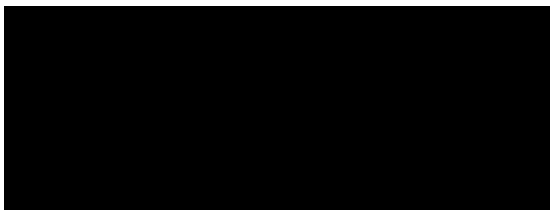


Figure 1

I have no objection to the solar panels on the A11 towards Mildenhall, nor those on the A11 towards London. It is the size of Sunnica I object to. A much smaller scheme would be far more acceptable, provided it fits in with the landscape.

Both local MPs are opposed to this development; all four local authorities are opposed. The receipt of 1370 Relevant Representations, nearly all opposed, by the ExA is extraordinary in my experience and indicative of the extent of concerns locally about this scheme.



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