

# **Application by Mallard Pass Solar Farm Limited for an Order Granting Development Consent for the Mallard Pass Solar Project – project ref. EN010127**

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## **D2- Written Representation**

### **1. Introduction**

This Written Representation has been prepared following a considerable amount of investigation whilst working as a member of the Mallard Pass Action Group.

### **2. Personal Statement**

We moved to Essendine in 1984 when I started working for British Sugar in Peterborough. Having lived in a village in Dorset we wanted to continue our country lifestyle and the countryside around Essendine seemed ideal.

We have lived in Essendine for thirty nine years, in spite of me changing jobs; commuting long distances. We took the decision that commuting, sometimes for a total of four hours per day during the week, was worth the benefit of living in Essendine.

When we learned of the Application we were shocked. Our first thoughts were how it would impact on our daily lives. We could not understand why anyone would wish to spoil the area we love and has been so important to the family and our way of life.

I have gun dogs which I have trained and worked on local shoots. We exercise the dogs for at least one hour everyday, on walks that we can access from our house. The thought of doing that in what will be an “industrialised” landscape is depressing. We will have to take to dogs in the car to other areas that have not been spoiled.

My wife takes a keen interest in the bird life in the area, and my son and grandson have taken up my interest in country sports. My grandson has worked on a local farm during his holidays looking after sheep including lambing and has applied to University to become a vet.

The concerns about the impact on our lives have not gone away. They have increased the more I discovered about Mallard Pass Solar Farm (MPSF). I am now also concerned

about the viability of ground mounted solar power in the UK and the extent to which it is being included in the plans of the Government.

The area covered by solar panels will be huge and I simply cannot understand how anyone can consider this to be a good use of land especially when there are other better renewables solutions available.

I have a personal phobia with documents, such as those produced by the Applicant, which contain phrases such as “the Applicant will try” and so on. Such phrases are used to give the appearance of an undertaking when, of course, they are not. They allow the Applicant to say after the event that they attempted to comply with the undertaking but could not. By then it’s too late!

This is an example taken from the web-site of the Applicant. “We will seek to retain existing field boundaries, water features and wildlife and improve connectivity where possible. Our landscape strategy will deliver multiple benefits, including retaining Public Rights of Way (PRoWs), connecting habitats across the site, and providing new planting which could enhance wildlife or recreational routes.”

The Applicant also uses statistics and numbers in which they appear to be facts without showing the data and calculations. This calls into question the validity of the claims.

The above points, together with a liberal use of “The Rochdale Envelope” produces an Application that lacks the appropriate amount of specific information. Lots of words without enough substance.

All of the above, together with the following analysis of some of the specific elements of the Application and the comprehensive Written Representation made by the Mallard Pass Action Group, leads me to conclude that the Application has no merit and as such should be rejected.

### **3. Mallard Pass Solar Farm will change the character of the area from that of a rural agricultural landscape to that of an industrial generation plant**

**3.1** MPSF would be over four miles long with a perimeter fence of twenty five miles and an area of 852hectares. To put this into a local context, Rutland Water, the largest reservoir in England by area has a twenty two mile shoreline, including the peninsular.

**3.2** MPSF would, if approved be many times the size of the largest solar development in operation - Shotwick Solar Farm in Flintshire. It occupies 101 hectares and has a capacity of 72.2MW. It was built next to a paper mill to supply the mill with electricity.

**3.3** MPSF would virtually surround the village of Essendine. There are eight other villages that would be within a short distance and twenty that will be impacted in some manner.

**3.4** Only 62% of the land within the Order Limit will be used for solar panels and associated equipment. It is in the financial interest of the Applicant to lease as small an amount of land as possible, over and above that required for the solar area. Having to lease so much extra land for mitigation goes to demonstrate how unsuitable the site is for the construction of a solar farm.

**3.5** Of all the solar farms being currently proposed in Lincolnshire MPSF will use the second highest area of land per unit of capacity - 2.43hectares/MW (6acres/MW). Another demonstration that the topography around Essendine is not suitable for a solar farm.

**3.6** There is no proof that any information gained from smaller solar installations can be transferred to MPSF. For example, the micro-environment in the centre of a large block of solar panels could be impacted less by the surrounding countryside than would be the case for a smaller block. Keeping sheep on a small solar farm is completely different from doing the same on a solar farm the size of MPSF

**3.7** In the Statement of Need 3.3.16 the Applicant states that “BEIS suggest anticipated levels of land efficiency for solar generation, this recognises both the land take which schemes such as this one requires, but also that evolution in the technology is anticipated and this may bring about efficiency benefits through the life of the Proposed Development.”

**3.8** This is a misquote. It is the Applicant, and not BEIS, that comments about evolution in technology being anticipated. The Proposed Development would not be able to take advantage of any improvements in technology unless it is replaced.

**3.9** Point 7.6 in The Statement of Need states that large-scale solar is the most efficient use of land for energy purposes. This statement does not accord with given by the Applicant (Table 7.1) and shown below.

Technology	MW	Ha	Assumed load factor	Annual Output GWh/Yr/Ha
On-shore wind (High)	6	10.0	30%	1577
On-shore wind (Low)	6	16.0	30%	986
Solar (High)	1	0.8	11%	1205
Solar (Low)	1	1.6	11%	602
Biogas	1	450.0	100%	19

**3.10** Importantly the above Table does not take into account that productive arable farming can continue under wind turbines.

**3.11** The Applicant intends to surround the solar area with deer fencing. Whilst this may be effective with regard to wildlife it will not stop ingress by those wishing to steal equipment from within the site. It is understood that this is a growing problem. The length of the perimeter MPSF will make it more susceptible to the problem than existing solar farms.

**3.12** BRE Planning guidance for the development of large scale ground mounted solar systems KN5524 states “If perimeter fencing is to be used then it should be a proven security fence. The recommendation would be to install fencing which has been tested and approved to current UK Government standards. Fencing which meets the SEAP(Security Equipment Approval Panel) class 1-3 may be the most appropriate. Fencing which is not of a specialised security type is like to offer at best only token resistance to intruders.”

**3.13** There could be a change in the attitude of the police and insurance companies to the security requirements of solar farms and especially large solar farms. The use of higher security industrial fencing could be specified materially increasing the visual dominance of MPSF.

Photo of high security fencing surrounding a solar farm



**3.15** The proposed sub-station will be a dominant feature on the landscape. BRE Planning guidance for the development of large scale ground mounted solar systems KN552 states that “Any buildings required in order to house electrical switchgear, inverters etc should be designed and constructed in order to minimise their landscape and visual impact and construction materials should be selected to reflect the local landscape context. If a pre-fabricated building is used, consideration should be given to the need to screen the building with vegetation.” The sub-station will be highly visible from a number of receptors

**3.16** In The Statement of Need paragraph 7.6.1 contains the following “Draft NPS EN-3 [Ref 2] includes an anticipated range of 2 to 4 acres for each MW of output generally required for a solar farm along with its associated infrastructure. Using the most conservative value from the range, and assuming that all future solar capacity deployment is large-scale rather than micro-scale (another conservative assumption) implies that a further 167,000 to 300,000 acres of land (approximately 70,000 to 125,000 hectares) would need to be set aside for solar capacity by 2050 in order to meet the FES scenarios.”

The Applicant goes on to say that his represents at a maximum, 0.5% of total UK land area, or between 0.5% and 0.9% of the total pastures and non-irrigated arable land in the UK.”

**3.17** The Applicant, along with the solar industry in general, maintains that the area which would be taken up by solar is small by showing it as a percentage of UK land - 0.5%. This is nothing but a PR statement, which is used to avoid stating the actual area that would be required. The area of the UK is 60million acres, 0.5% being 300,000acres.

**3.18** The county of Bedfordshire has an area of 300,500acres. That, together with the area required having to be located in the southern half of England, must call into question the place of ground mounted solar power in the renewables strategy of the UK.

#### **4. The topography of the Order Limit is not suitable for a large solar farm**

**4.1** The Applicant agrees with the above when stating in PEIR Vol.1 Chapter 6 Para. 6.2.1 the “Potential landscape effects derived from the Proposed Development could include effects on the local landscape character where the character of agricultural fields would change to that of a Solar Farm. Potential visual effects derived from the Proposed Development could include effects on the visual resource experienced by people in and around the Solar PV Site and Mitigation and Enhancement Areas where views may change from open outlook across agricultural fields, to views Mallard Pass Solar Farm”

Photo of Canadian Solar panels



Note: Panels installed on uphill slope giving the appearance of a solid block.

**4.2** “Guidance on Planning for Renewable and Low Carbon Energy” Department for Communities and Local Government Paragraph 26 recognises that large-scale solar farms can have an impact on the rural environment, particularly on very undulating landscapes. This has to be taken into account by decision makers when deciding whether or not to approve individual planning applications.”

**4.3** According to the Applicant ES Vol. 1 Chapter 3 Para 3.2.1.” the Order limit's topography ranges between 16 - 67m Above Ordnance Datum (AOD), with the lowest elevation running along the route of the East Coast Mainline railway. The highest elevation is present in the north-western part of the Order limits.” Clearly, the land is undulating.

**4.4** As stated in EN3 - draft 2.49.3 “a flat topography is often favoured.”

**4.5** Solar Energy UK, the trade association for the industry to which both Windel and Canadian Solar belong, states “Land selected should aim to avoid affecting the visual amenity of landscapes, maintaining their natural beauty, and should be predominantly flat, well screened by hedges, tree lines, etc., and not unduly impact upon nearby domestic properties or roads.”

**4.6** In spite of all of the above the Applicant states in Planning Statement point 4.5.3 that the topography of the area is gently undulating and therefore makes it particularly suitable for solar. Given all of the above it is difficult to see how the Applicant came to this conclusion. The topography of the land does not make it suitable for MPSF and certainly not “particularly suitable.”



## **5. The Applicant's position on the life of MSPF is not logical and should not be accepted**

**5.1** In Paragraph 2.16.1 of the Non-Technical Summary the Applicant states "The operational life of the Proposed Development is not proposed to be specified in the application and the Applicant is not seeking a time limited consent."

**5.2** Yet in 2.17.1 of the Non-Technical Summary the Applicant states that "For the purposes of assessing decommissioning with the EIA, it has been assumed that the Proposed Development has a 40-year operational life span."

**5.3** This is not a logical position. As the Applicant is choosing not to specify the life of MSPF it cannot, at the same time, choose to pick a life span in order to make a claim.

**5.4** BRE Planning Guidance for the Development of Large Scale ground mounted solar PV systems Chapter 2 Item (c) states "When development is proposed on agricultural land it is desirable for the applicant to propose a project end date to demonstrate the temporary nature of the solar farm."

**5.5** EN-3 2.49.13 states that "the time-limited nature of solar farms, where time-limit is sought by an applicant as a condition of consent, is likely to be an important consideration for the Secretary of State when assessing impacts such as landscape and visual effects and potential effects on the settings of heritage assets. Such judgements should include consideration of the period of time sought by the applicants for the generation station to operate."

**5.6** As the Applicant has not sought to obtain a time-limited consent the above does not strictly apply to MSPF. However, as MSPF cannot be classed as "temporary" it follows therefore that it has to be defined as "permanent" with a permanent impact on landscape and visual effects.

**5.7** The Applicant has not explained how, in not stating that the life of MSPF will be 30 years, it complies with the 30 year period, specified by Natural England, during which any habitat created or enhanced for the the purpose of Bio-diversity Net Gain has to be managed and maintained.

**5.8** The Decommissioning Plan APP 7.8 paragraph 2.1.1. States that "the Applicant is not seeking a time limited consent. The operational life of the Proposed Development has not been specified within the DCO Application. However, it is recognised that the electrical infrastructure will have an operational lifespan, as such, for the purposes of assessing decommissioning with the ES, it has been assumed that the Proposed Development has a 40-year operational life span to enable an assessment of decommissioning to be carried

out. The assessment does not assume that the operational phase will be limited to 40 years as the solar infrastructure may continue to be operating successfully and safely beyond this period.”

**5.9** This is another confusing statement by the Applicant attempting to change its position In order to satisfy a number of different claims.

**5.10** In not to specifying the life of MPSF the Applicant evades the need to address the issue of the life of solar panels. EN - 3 24.9.9 states that the design life of solar panels is between 25 to 30 years. Thus all of the 530,000 panels used in the construction of MPSF will have to be replaced during its lifetime, as will equipment such as inverters.

**5.11** The Applicant omits to address this, even though replacement of the panels would have a major impact on GHG emissions, power output, traffic, cost and so on.

## **6. The generation of Solar electricity in the UK is not efficient**

**6.1** Paragraph 7.4.3 in the Statement of need states “Capacity utilisation is usually expressed as a quotient, calculated as {Total energy generated in a year [MWh]} divided by {Maximum power output [MW] x 8760 (hours in the year [h])}. Historical capacity utilisations have been high (>80%)”

**6.2** This statement is incorrect. The opposite is the case. Historical capacity utilisation has not been high. The Digest of UK Energy Statistics (DUKES) produced by BEIS, Table 6.3 shows that the load factor for 2022, when based on the average of beginning and year end capacity, was 10%.

**6.3** The low plant factor is a consequence of solar panels being unable to generate any electricity during the night and levels far below the maximum during the day. The low load factor is compensated for by the very high land areas used by solar farms.

**6.5** In paragraph 7.2.17 of the Statement of Need the Applicant says, “In both 2019 and 2020, Denmark sourced 50% of its electricity needs from renewable generation, demonstrating that high proportions of renewable generation can be accommodated within national electricity systems and GB can learn how to do this from other nations which are further ahead in this regard.”

**6.6** Whilst the statement is correct, it is nevertheless, within context, misleading. The Applicant should have been made clear that solar provides a small proportion of the total energy required. In 2021 48.6% of Denmark’s energy was provided by wind, 21.2% by bio-energy and only 4.2% by solar.

**6.7** In The Statement of Need paragraph 8.8.10 the author refers to an analytical model that has been developed by him to illustrate the mutual compatibility of solar and wind generation. The author states that “The model evaluates the contribution made by different types of GB generation to overall GB consumption needs throughout a year but does not take into account the requirement to balance supply and demand on a short-term basis.”

**6.8** It is the short-term basis that is critical. Whilst it may be generally more sunny in the summer than winter and more windy in the winter than summer, it is the variation minute by minute that is important not the average trend over a period on time. The authors model therefore has a fundamental flaw.

**6.9** All of the evidence points in one direction and one direction only. Solar farms such as MPSF are the least efficient of all of the sources of renewable energy generation and thus should not be allowed to cover large tracts of farm land.

## **7. Mallard Pass Solar Farm will not provide the output originally claimed by the Applicant**

**7.1** The Applicant has chosen not to provide a figure for the capacity of MPSF.

**7.2** This is a departure from the information provided during the Consultation. The Applicant highlighted a capacity of 350MW and used it to calculate the output of MPSF and the number of homes it would power.

**7.3** As the capacity of MPSF is no longer specified it follows that it is impossible for the Applicant to calculate any performance related attribute for MPSF. This includes, but is not limited to, the number of homes powered and contribution to Net-Zero.

**7.4** The Applicant has ignored guidance given by the BRE for commercial scale solar developments, namely, BRE Planning Guidance for the Development of Large Scale Ground mounted Solar PV Systems. Appendix 1. It states that applications should be accompanied by information on Installed Capacity (MW), capacity factor, estimated annual production (MWh/annum), and number of residential properties electricity equivalent.

**7.5** The Applicant does not give an upper limit on the capacity because “there are clear advantages in not imposing an upper limit. For example, the Applicant may take advantage of technological improvements and innovations that may emerge before construction.” Given that, if approved, construction would commence in the summer of 2026, it is unlikely that major improvements, if any, will occur in time for inclusion.

**7.6** In spite of not specifying the capacity of MPSF the Applicant makes claims using the 350MW capacity notified to residents during the consultation.

**7.7** In Chapter 13 paragraph 13.4.10 of the Statement of Need the Applicant has made an arithmetical mistake in the calculation, claiming an output of 350,000MWh. The correct calculation is  $350\text{MW} \times 10\% \times 8760\text{hrs/yr} = 306,600\text{MWh}$ . As a result the Applicant overstates the output of MPSF by 14%

**7.8** Additionally, the Applicant has failed to take into account the impact of inverter, distribution, maintenance and grid outage losses on the energy generated. These would equate to at least 8% of the output and further decrease the annual output of MPSF.

**7.9** Thus output of MPSF will be around 282,000MWh/yr before allowing for solar panel degradation. This is conservative figure as only 3% is used for inverter loss.

**7.10** The Environmental Statement Chapter 13 Para.13.4.16 says that the technical specification of solar panels indicates power degradation for the first year will be no more than 2% followed by no more than 0.45 % in subsequent years.

**7.11** EN - 3 and Section 10.3 of The Statement of Need states that on average panels degrade at a rate of up to 1% per annum.

**7.12** Whilst solar panel degradation has been referred to by the Applicant, its impact has been omitted from the output calculation. Using the Applicants' figures the panels would degrade by 12% after 25 years.

**7.13** The Statement of Reasons 6.1.2 claims that MPSF will provide a significant amount of electricity over its lifetime. The actual average annual output of MPSF, after allowing for solar panel degradation and distribution losses, would be 253,000MWh/yr for the first 25 years of MPSF, some 30% below the 350,000MWh/yr claimed by the Applicant in the consultation process and used in examples given in the Application.

**7.14** Given that in reality MPSF would produce an average of 253,000MWh per annum it would account only 0.082% of the total amount of electricity generated in the UK in 2021. Ref: BEIS UK Energy in Brief 2022.

**7.15** Thus, if MPSF is not constructed it will make hardly any difference to the total amount of electricity generated in the UK per annum.

### **Corrected calculation for Output of MPSF**

	Installed Capacity		Plant Utilisation Factor	
Output Capacity	350MW	X	10%	35MWh
	Output Capacity		Hours/annum	
Annual Output(panels)	35MWh	X	8,760	306,600MWh
	Annual Output(panels)		Facility Efficiency	
Annual Output (grid)	306,600MWh	X	92%	282,072MWh

*Note: After allowing for the degradation of panels, using the Applicants numbers, The output would fall to an average of 253,057MWh*

**7.16** The Applicant's Statement of Need 8.8.20 contains the following, "Proposed Development, as a leading large-scale solar scheme in GB, represents 1% – 3% of the additional solar generation capacity projected in National Grid's Future Energy Scenarios which are compatible with Net-Zero. In this context, the Proposed Development is

therefore an essential stepping stone towards the future of efficient decarbonisation through the deployment of large-scale, technologically and geographically diverse low-carbon generation assets.”

**7.17** Again, it is not mathematically possible for the Applicant to make such a claim without providing a figure for the capacity of MPSF.

**7.18** In any event the claim is incorrect when using the capacity 350MW figure given by the Applicant during the consultation. The additional solar generation capacity required by the Government is 56GW by 2035. Thus, at a capacity of 350MW MPSF would make a contribution of 0.625% and not 1% - 3%.

**7.19** In paragraph 11.5.1 of The statement of Need the Applicant states that the grid connection for MPSF does not provide enough input power capacity to justify the inclusion of electricity storage capacity, without significant cost to upgrade the point of connection with the Grid.

**7.20** In paragraph, 11.5.2, the Applicant recognises that the collocation of solar and storage provides efficiencies in relation to land used the maximum use of Grid capability.

**7.21** The lack of storage system is a significant weakness of the scheme and of its value to the National Grid. At the same time it is a relief to residents, given the health and safety risks associated with Lithium-ion batteries.

**7.22** The Applicant intends to overcome this weakness by “over-planting.” Using more panels and land than would otherwise be required. In periods when generation is limited by low light levels MPSF would be able to supply more power from the over-planted panels; power that might otherwise come from a battery system on other solar developments.

**7.23** During periods of high generation by MPSF and low demand from the Grid the generation of electricity from MPSF will be “curtailed,” effectively wasting energy that could have otherwise been saved by diverting it to a battery system.

**7.24** Depending on the amount of over-planting, curtailment could occur often as more solar power is generated during the summer when the power requirement is low.

**7.25** The lack of flexibility will diminish the value of MPSF to the grid.

**7.26** The Applicant has not defined the level of over-planting intended. However, in the Statement of Need, figure 7.5 an over-planting ratio of 1:1.3 is used which if applied to MPSF would mean that the percentage of over-planting would be 30% - 160,000 panels.

**7.27** The Applicant's case for MPSF has largely been based on the presence of the Ryhall sub-station and the Applicant has stressed its importance to the project. It is only now that the Applicant has been transparent enough to admit that it is less than ideal. Its value to the Grid will be less than anticipated in that its output will be impacted and it will lack flexibility. Because of the need for over-planting, even more land would be used than be the case on other solar farms.

## **8. The Applicant has over-stated the contribution of MPSF to low cost energy**

**8.1** The Applicant states the need for MPSF (Statement of Need - 1.1.3) is, in part, built upon the contribution of the development to “affordability.”

**8.2** The Applicant appears to restrict the test of “affordability” to a financial one. The test should be more holistic to include whether all of claimed benefits of MPSF can be afforded compared with the negatives. Many of the benefits given are overstated and negatives have been under-stated or omitted.

**8.3** In claiming low cost generation for MPSF, the Applicant does not quantify the difference in cost between the methods of generation.

**8.4** The Levellised Cost Of Energy (LCOE), is a measurement used by BEIS to assess and compare alternative methods of energy production.

**8.5** The LOCE of projects commissioning in 2030 in real 2018 prices are forecast as

Off-shore wind £47MWh

On-shore wind £45MWh

Large scale solar £39MWh

Ref: BEIS Electricity Generation Costs Table 4.7 August 2020

**8.6** The LOCE measurement does not include the cost of leasing land. In the case of MPSF, and other similar developments, it is said to be around £2,000 per hectare per annum.

**8.7** In Statement of Need Paragraph 7.6.5 the Applicant states that solar technology can produce more MW per hectare than any other electricity technology.

**8.8** Table 7.1, produced by the Applicant, and reproduced below, shows a comparison of annual energy yield per hectare for different technologies, including for solar and onshore wind the range from high to low generation density per technology.



Technology	MW	Ha	Assumed load factor	Annual Output GWh/Yr/Ha
On-shore wind (High)	6	10.0	30%	1577
On-shore wind (Low)	6	16.0	30%	986
Solar (High)	1	0.8	11%	1205
Solar (Low)	1	1.6	11%	602
Biogas	1	450.0	100%	19

**8.9** Thus, even the data used by the Applicants does not support the Applicant’s claim. It shows that, over the period of one year, on-shore wind generates more power per hectare than solar.

**8.10** In the literature provided by the Applicant to the local community there is a clear inference that MPSF will lead to a reduction in the price of electricity paid by consumers.

**8.11** Low cost power generation by MPSF is a regular claim made by the Applicant. No reference is made to the fact that consumers will not benefit from lower prices. Given the market structure for electricity in the UK any cost reduction will not be translated into lower prices for the consumer, it will increase the profit made by the Applicant.

**8.12** Statement of need 10.5.1 states that solar reduces the market price of electricity by displacing more expensive forms of generation from the cost stack and this delivers benefits for consumers. Solar does not reduce the price of electricity to the wholesale market and therefore not to the retail market.

**8.13** Statement of Need 2.2.5 includes the phrase “provides value for money for GB end-use consumers.” This would not be the case.

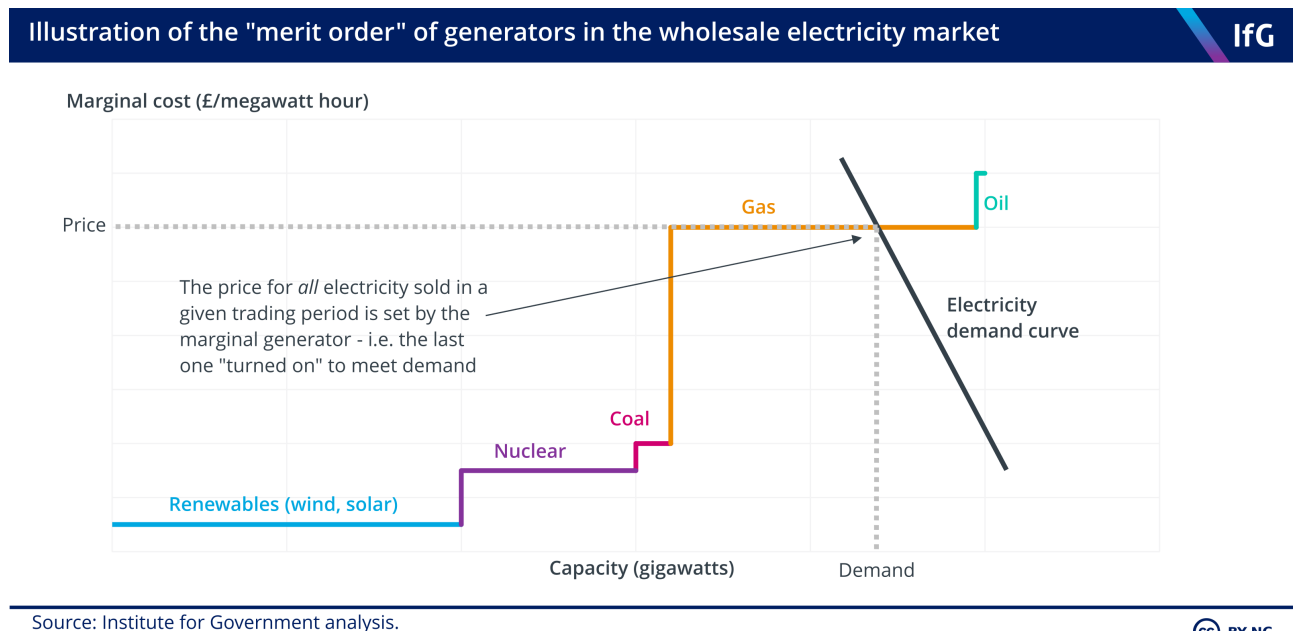
**8.14** The Institute for Government paper “Electricity” (15th September 2022) explains that it is the price of gas that largely sets the price the consumers pay for electricity.

**8.15** Wholesale prices of electricity are set by electricity generators bidding to contribute to the Grid. The power exchange (Nord Pool) accepts the bids in price order from lowest to highest until demand is met - ‘the merit order.’ Typically, as the author of The Statement of Need states renewables are the first bids to be accepted.

**8.16** In each half-hour trading period, the marginal cost of the last generating unit used to meet demand, sets the price that the energy suppliers or traders pay to the energy generators or traders. It is known as a ‘pay as you clear’ model.

**8.17** The marginal producer of electricity in the UK is most often gas because it is one of the most expensive sources, so is chosen last in the 'merit order' on the spot market.

**8.18** The "merit order" is illustrated in the following diagram.



**8.20** Therefore whilst renewables may produce much of the electricity for the UK and, whilst they may be low cost, the price of electricity paid by wholesalers and retailers is set much higher, at the marginal cost of generating electricity with gas.

**8.21** The price of electricity will continue to be set by the gas price in a trading period unless no gas is used in that period.

**8.22** This is unlikely to occur often as the supply from renewables is variable from one minute to the next. Gas-fired power stations can be easily switched on and off so they play a vital role in balancing demand. As such, some gas generated electricity is always going to be required.

**8.23** Thus the Author of The Statement of Need is mistaken when stating in paragraph 10.2.10 increasing the renewable assets in GB reduces the traded price of power. Whilst gas continues to be the marginal generator in any trading period it will continue to set the price

**8.24** It would be the owners of MPSF that would benefit and not the consumer. Something that is often misunderstood and certainly something that is not made clear by the Applicant.

## **9. The Applicant has over-stated the impact of MPSF on carbon saving**

**9.1** Again, as the Applicant does not state the planned life-time of MPSF or specify its capacity, it cannot make any claims regarding the potential contribution of MPSF. Indeed the Applicant states that the contribution of MPSF to Net-Zero can only be calculated at the end of the project. However, the Applicant makes claims about the contribution MPSF will make.

**9.2** Data produced by the Intergovernmental Panel on Climate Change (IPCC) is used by the Applicant to provide evidence for the level carbon dioxide produced over the lifetime of MPSF. (ES Chapter 13 Climate Change paragraph 13.4.14)

**9.3** In quoting the IPCC the Applicant states “utility scale solar photovoltaic cells, it estimated a lifecycle emission of 48 kgCO<sub>2</sub>eq/MWh based on the median value from a range between 8 (this number has been transposed incorrectly and should be 18) and 180 kgCO<sub>2</sub>eq/MWh, from construction through to decommissioning. Ref: Technology-specific Cost and Performance Parameters Annex 111

**9.4** The use of the median value in calculating lifecycle emissions for an installation such as MPSF is highly questionable, due to its size and the origin of solar panels. The panels would be manufactured in China from power produced by ‘dirty coal.’ Articles discussing the life time emissions from solar panels indicate that 70% of life-cycle emissions comes from the manufacturing process. It is therefore expected that the lifetime emissions from solar panels used by MPSF would be higher In a range of 72 -96CO<sub>2</sub>eq/MWh.

**9.5** Paragraph 13.4.15 of ES Chapter 13:Climate Change correctly states that The Digest of UK Energy Statistics (DUKES) indicates across the mix of sources of electricity that contributed power to the grid in 2020 the average emission of CO<sub>2</sub> was estimated as 182 kg/MWh. Since 2020 the average emissions from the grid will have reduced and therefore the savings against grid emissions will have reduced.

**9.6** Taking the value for lifecycle emissions used by the Applicant of 48kgCO<sub>2</sub>eq/MWh and the corrected output of MPSF, including panel degradation, the savings would be 1.25m teCO<sub>2</sub>. Significantly lower the 1.9m teCO<sub>2</sub> claimed by the Applicant. A higher, more realistic lifecycle emission from MPSF of 72kgCO<sub>2</sub>eq/MWh would reduce the lifecycle saving 0.96m teCO<sub>2</sub>.

**9.7** As the grid becomes decarbonised emissions will become lower and therefore any savings made will become lower. Paragraph 13.4.17 examines this and concludes that Plate - 13.1 shows a total reduction of CO<sub>2</sub> of 423,580teCo<sub>2</sub> across the lifetime of MPSF lower than the lifetime emissions of the facility. Therefore if MPSF was not built and, if

more efficient methods of renewable energy were used, grid de-carbonisation the grid would occur sooner!

**Table showing revised Carbon Saving calculations based on Applicants capacity number of 350MW and using Applicants data for life cycle emissions from MPSF**

	Installed capacity		Capacity factor	
Output Capacity	350MW	X	10%	35MWh
	Output capacity		Hours/annum	
Annual Output (at panels)	35MWh	X	8,760h	306,600MWh
	Annual Output (panels)		Facility efficiency	
Annual Output (at grid)	306,600MWh	X	92%	282,072MWh
	AnnualOutput(panels)MWh		Lifecycle Carbon	
Annual Lifecycle Carbon	306,600MWh	X	0.048Te/MWh	14,717teCO2
	Annual output (grid)MWh		Lifecycle Carbon	
Annual Grid Equivalent Carbon	282,072 MWh	X	0.182Te/MWh	51,337teCO2
	Annual Lifecycle Carbon		Operating years	
Total Embodied Carbon	14,717teCO2	X	40y	588,672teCO2
	Total Embodied Carbon		Annual Grid Equivalent carbon	
Carbon Displacement Period	588,672teCO2	/	51,337teCO2	11.47years
	Operating Years		Carbon Displacement Period	
Post Displacement Period	40	-	11.47years	28.53years
	Annual Grid Equivalent Carbon		Post Displacement Period	
Total Carbon Saving	51,337teCO2	x	28.53years	<b>1,464,812teCO2</b>

*Notes: the table uses the lifecycle emission for MPSF of 48 kgCO2eq/MWh as used by the Applicant even though it is likely to be higher.*

*The output used 282,072MWh per annum is before taking into account losses from panel degradation.*

*If panel degradation is taken into account the lifecycle savings are reduced even further to 1,253,586teCO2 extending the displacement period*

**9.8** The Applicant states that the land used by MPSF would eventually, be returned to agriculture, arable farming.

**9.9** The British Society of soil Science ES Vol 2 Appendix 12.7 page 5 States “A change in land management can increase soil organic carbon but the rate of increase slows over time as the equilibrium is attained. Carbon sequestration is reversible and a change back to current land management practices will reverse it with the rate of loss of being faster than the rate at which it was accumulated.”

**9.10** Thus the carbon that has been sequestered over the life time of MPSF will be released on the return of the land to arable farming. The carbon benefit will therefore be a temporary one and this should have been taken into account by the Applicant.

## **10. Site Selection and Alternatives have not been evaluated with enough rigour**

**10.1** Paragraphs 4.2.1 to 4.2.9 of the Alternatives and Design Statement deals with the need for solar power generation in general, rather than the need for MPSF in particular. The Applicant is attempting to associate the two where no such association exist. It is perfectly possible to be supportive of the need for solar power without being supportive of this particular development.

**10.2** The Application is based solely on the existence of spare capacity in the Rhyall sub-station. There is nothing else about the site and its location that makes it suitable for a solar farm. As explained in Section 7 of this Written Representation the sub-station has a major weakness.

**10.3** In his decision on two applications by Sawston Solar Farm Limited (APP/W0530/W/15/3012014 and APP/W0530/W/15/3013863 The Secretary of State agreed with the Inspector that no weight attaches to the assertion that a connection to the National Grid is an essential site requirement.

**10.4** In selecting the site the Applicant first identified the Rhyall sub-station as having spare capacity. The Applicant then carried out a review “to identify which of the land in proximity to the National Grid Ryhall Sub Station may be appropriate for a solar farm.”

**10.5** Having identified that the land surrounding the sub-station was, in the opinion of the Applicant suitable for solar, the landowners were approach to seek agreement to lease the land.

**10.6** This was the reality of the considerations given to site selection. All subsequent work by the Applicant was carried out in an effort to “prove” the suitability of an unsuitable site.

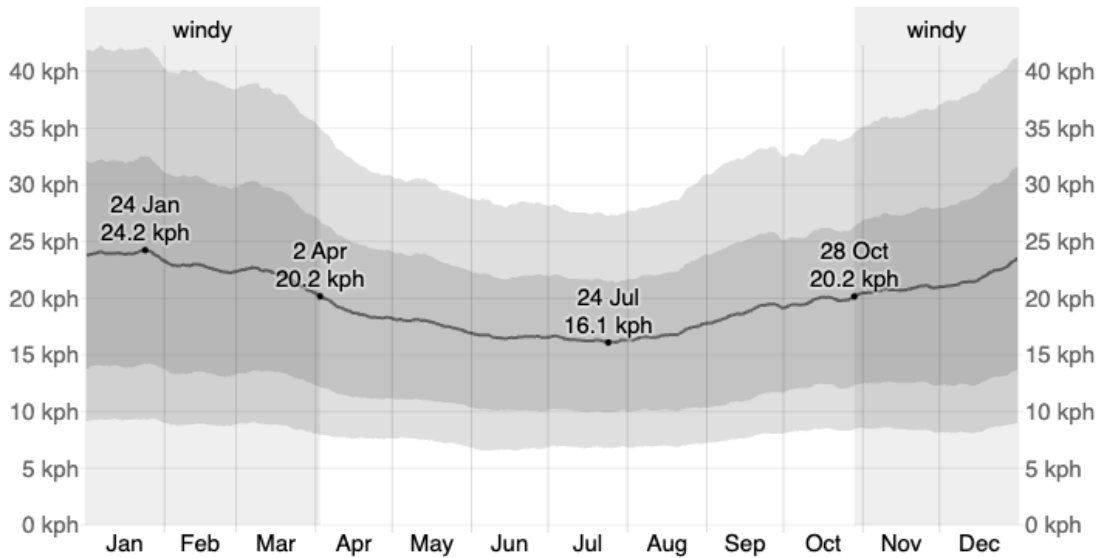
**10.7** The Applicant did not investigate alternative renewable alternatives in sufficient depth.

**10.8** In Paragraph (4.3.6) the Applicant, although having a shareholder named Windel, did not consider other low-carbon forms of electricity such as wind as it is a “solar company.”,

**10.9** This is not acceptable. If the Applicant is unable to consider technical alternatives it should not have made the Application. The consideration of alternatives is an essential part of the NSIP planning process.

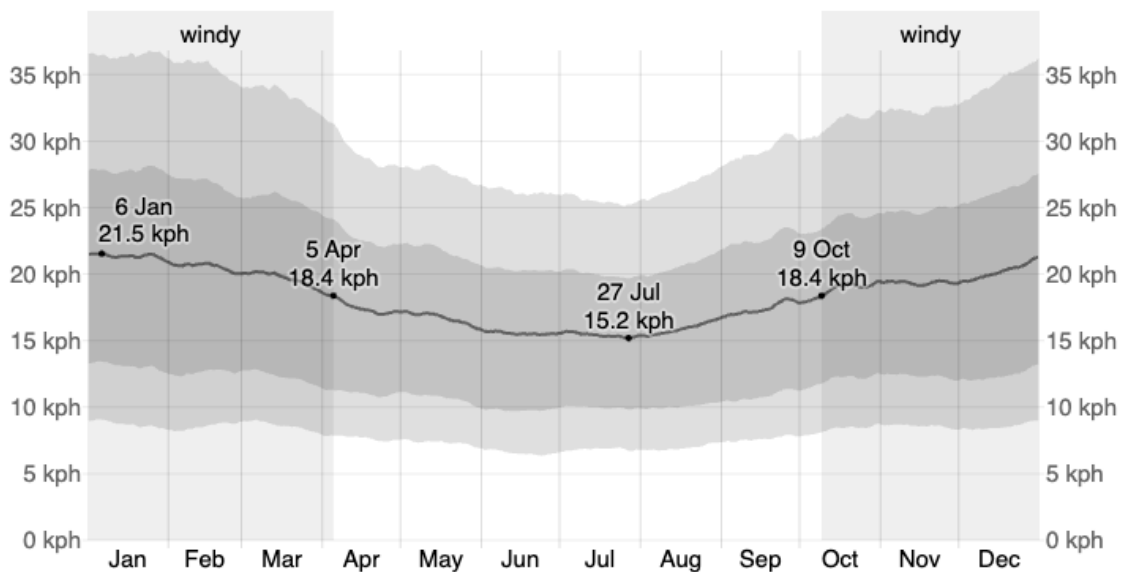
**10.10** The Applicant, in spite of stating that it did not consider alternatives and without any supporting evidence, went on to say that (4.3.8) the Order Limits were not suitable for onshore wind due to the low wind yield relative to other parts of the UK.

**10.11** This is incorrect. Biggar has the largest wind farm in the UK and has the following wind profile.



Source: Weatherspark web-site

**10.12** Stamford, at the same time, had the following wind profile



Source: Weatherspark web-site

**10.13** The Applicant goes on to claim (4.3.8) that it is not expected that the Order limits would be able to host an economically viable and successful onshore wind farm without causing greater environmental consequences than the proposed development.

**10.14** This “expectation” is arrived at with no justification. The following points confirm that the Applicant should have made a more detailed and credible analysis of the wind alternative

a) The LOCE of projects commissioning in 2030 in real 2018 prices are forecast as off-shore wind £47MWh, on-shore wind £45MWh and solar £39MWh. Ref: BEIS Electricity Generation Costs August 2020. This does not take into account the cost of land leased from land owners.

b) The Plant Load Factor of solar is 10% compared to onshore wind at around 25% plus.

c) The land occupied by wind is a fraction of that occupied by solar. Land under wind turbines can be farmed as present with virtually no impact on food production.

d) On-shore wind farms are compatible with the new ELMS farming scheme.

e) Wind turbine capacities are improving. For example, a turbine with a 5MW capacity could produce 11,000MWh/y. Thus, only 25 turbines with a capacity of 5MW would be required to equal the output of MPSF.

f) Each turbine would require 40 acres of land (Renewable Energy Hub UK) thus the total amount of land required would be less than the Order Limit.

g) Turbines with more capacity than 5MW are becoming available.

**10.15** The British Energy Security Strategy point 8.9.13 contains the following: “Consider all options including Onshore Wind through the improvement of national electricity network infrastructure and support of a number of new English projects with strong local backing, so prioritising putting local communities in control of local onshore solutions. Re-powering of existing onshore wind sites is also under consideration.”

**10.16** The Applicant states in paragraph 4.3.8 ES Chapter 4 Vol.1 Alternatives and Design Development. “Furthermore, it is noted that the policy context for onshore wind is currently not favourable.” This pre-dates the change in emphasis given in the British Energy Security Strategy as shown above.

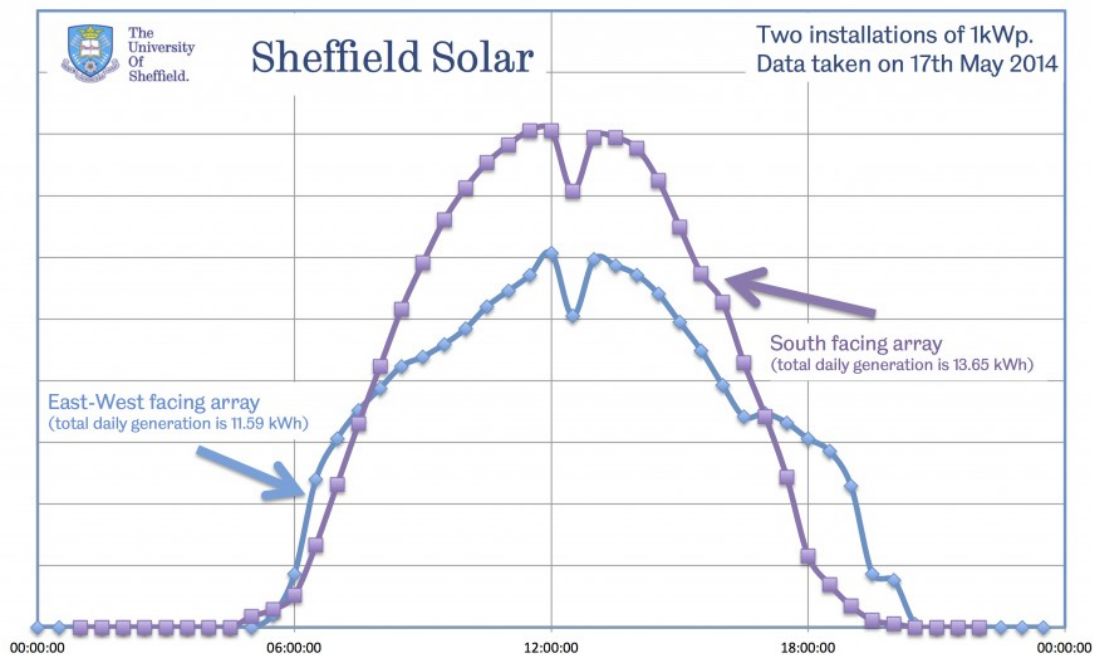


**10.17** The above points are put forward not as a detailed case for wind but as justification that the Applicant should not have dismissed this alternative without due regard.

**10.18** The Applicant has elected a not to consider an east/west solar panel configuration, Environmental Statement Vol. 1 Chapter 4: Alternatives and design, paragraph (4.3.11), based on the claim that it would not give the biodiversity gain or provide space between the panels for grazing. However, as is demonstrated elsewhere in this document commercial sheep production and solar panels are incompatible.

**10.19** The greater concentration of panels per area would reduce the amount of land required.

**10.20** Work carried out by Sheffield Solar (Sheffield University) found that panels facing east/west spread the peak generation associated with south facing panels more evenly throughout the day. Less at mid-day when demand is low and more early in the more and during the evening when demand is higher. The amount generated over that day was similar for both configurations.



Ref: University of Sheffield. Sheffield Solar Microgen Database

**10.21** As shown in the following photo east/west panels are mounted at a less acute angle and therefore are lower than south facing ones - an important consideration with regard to visual impact.



Example of East/West panel configuration

**10.22.** The Applicant should not have dismissed the east/west panel layout out of hand but should have investigated the option properly before ruling it out.

## **11. Bio-Diversity Net Gain of MPSF will not achieve the required 10%**

**11.1** In carrying out the Bio-diversity Net Gain assessment (BNG) the Applicant has not included the extent to which the total impact of MPSF will have on BNG.

**11.2** The Applicant maintains that when decommissioned the land used for MPSF will be returned to arable farming.

**11.3** Schedule 14 of the Environment act 2001 includes the following statement  
“The biodiversity gain objective is met in relation to development for which planning permission is granted if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least the relevant percentage.

(2) The biodiversity value attributable to the development is the total of—

(a) the post-development biodiversity value of the onsite habitat,

(b) the biodiversity value, in relation to the development, of any registered offsite biodiversity gain allocated to the development, and

(c) the biodiversity value of any biodiversity credits purchased for the development.

**11.4** In the The Biodiversity Metric 4.0 User Guide JP039 published by Natural England states in the process should be comprised of Data collection • collect habitat and other data from the sites to inform habitat baseline • undertake a desk study determine strategic significance • identify the planned actions or interventions that will change habitats, such as development or changes to land management.

**11.5** Solar Energy UK states Biodiversity Net Gain (BNG) applies to all new developments - including solar farms - and is designed so that a project 'leaves biodiversity in a better state than before'. Under Part 6 of the Environment Act (2021)

**11.6** After decommissioning the post-development bio-diversity value of MPSF will decrease towards that of the pre-development value leaving a final BNG of only 4%, well below the required 10%.

The values used for calculating the corrected Bio-Diversity Gain are highlighted in the table below

### Bio Diversity Net Gain-1-1

<b><u>Broad Habitat type</u></b>	<b>Base line Habitat units</b>	<b>Post intervention habitat units</b>	<b>Change Units</b>	<b>After decommissioning</b>
Cropland	1566.93	465.30	-1101.63	1566.93
Grassland	296.63	2769.99	2473.36	296.63
Urban	8.80	6.88	-1.91	6.88
Woodland & Forest	15.74	33.98	18.25	33.98
<b>Total broad Habitat Type</b>	<b>1922.69</b>		<b>1388.00</b>	<b>1904.42</b>
<b><u>Hedgerows &amp; Lines of Trees</u></b>				
Native Species Rich Hedgerows	93.19	186.13	92.94	186.13
Native Species Hedgerows & Trees	46.85	46.85	0	46.85
Native Hedgerows & Trees	14.46	14.46	0	14.46
Native Hedgerows	109.50	109.50	0	109.50
Line of Trees	0	14.86	14.86	14.86
<b>Total Hedgerows &amp; Line of Trees</b>	<b>264</b>	<b>371.81</b>	<b>107.80</b>	<b>371.8</b>
<b>Total River</b>	<b>88.01</b>	<b>88.01</b>	<b>0</b>	<b>88.01</b>
<b>Total Units</b>	<b>2274.7</b>	<b>459.82</b>	<b>1495.8</b>	<b>2364.23</b>
				<b>4%</b>

## **12. Farming support in the UK is changing with the emphasis on sustainable farming, landscape and nature recovery**

**12.1** Farm support is changing following the exit of the UK from the EU. Under the EU's Common Agricultural Policy most of the support was paid to farmers under the Basic Payment Scheme, broadly, on how much land was farmed. A further amount was spent on rural and environment programmes such as England's Countryside Stewardship scheme.

**12.2** This is being phased out with new schemes being introduced. The main element of this new approach is the Environmental Land Management (ELM) scheme. This will have three elements a Sustainable Farming Incentive, a Local Nature Recovery scheme and a Landscape Recovery scheme.

**12.3** The changes are being made in a seven year transition period which commenced in 2021. Thus by the time MPSF would be completed the new schemes will be in place.

**12.4** Large elements of the schemes are aimed at ecological improvement and it raises three points with regard to this application

- 1) Should not the claimed environmental benefits of the MPSF project be assessed against the new schemes rather than the existing ones.
- 2) The new schemes will lead to lower yields than the current scheme. It is vital therefore that as much agricultural land is retained in order to minimise the decrease in the total UK production of arable crops.
- 3) How does the construction of what is in essence an industrial electricity generating plant aid the landscape recovery objective? Surely, at the very least in terms of direction, it goes against the objective?

## 13. Soil and Land use

**13.1** The surveys made to determine the Agricultural Land Classification of the site were not carried out in accordance with the method specified by Natural England.

**13.2** In the first survey carried out in 2021 the sampling frequency was too low to be valid and the number of trial trenches dug did not meet the specified amount. Those carrying out the survey should have been aware of this basic error.

**13.3** Accordingly the Applicant repeated the work in 2022. However, on this occasion the correct auger sampling frequency was carried out on only part of the site.

**13.4** There was no creditable explanation as to why the correct sampling frequency was used on just part of the site. Perhaps the most obvious reason was an attempt to obtain a result showing less Best and Most Versatile (BMV) land. If so, the objective was achieved as the BMV percentage of the total area moved from 53% to 41%.

**13.5** Areas with ALC 3a and 3b values are inter-mixed across the site. The Applicant should not place solar panels on 3b land if this involves using any 3a land.

**13.6** Given the sampling carried out by the Applicant did not meet the specified method the results cannot be relied on and, as such, it is not appropriate to comment further.

**13.7** The land included with the Order Limit is farmed in order to produce arable crops, notably, wheat, barley, oilseed rape and beans for animal feed.



Photo showing uncultivated field margins

**13.8** The Applicant states that field margins will be left uncultivated. This already the case on Manor Farm and Lodge Farm where a “Countryside Stewardship” scheme includes the requirement to leave field margins uncultivated.



Photo of species sown in game crop covers

**13.9** There are significant areas reserved for game cover. These areas are drilled in May/ June and “topped” in the following February. They provide cover for wild birds and mammals during the winter and because they are sown in the same areas every year improve soil structure and levels of organic matter. Many of these areas are destined to be in the solar panel area, causing a negative impact on the ecology and biodiversity.

**13.10** There are also areas of land of Manor Farm and Lodge Farm left uncultivated to provide shelter for game birds. Consequently, they also provide shelter for wild birds and mammals.

**13.11** The Applicant maintains that agriculture can co-exist with solar panels and claims that the solar panel area will be used for grazing sheep or producing fodder. By definition, there are no examples of commercial sheep production large solar farms because, as yet, there are none. All examples of sheep grazing under solar panels are on small solar farms and are not viable commercial flocks.

**13.12** The Applicant proposes a low stocking rate similar to that achieved when producing sheep for organic meat. Sheep raised on MPSF would not be organic, would not command the associated premium and would not be commercially viable.

**13.13** Commercial sheep production would require the appropriate swards and therefore would not be consistent with increased bio-diversity.

**13.14** None of the infrastructure required to keep sheep are referred to or shown on the plans. These normally include but are not limited to buildings, handling pens, lambing sheds if the Applicant is proposing a breeding flock, and access to feed/water supplies. The large fields would also need to be divided into blocks for rotational grazing.

**13.15** A sheep flock has to be inspected frequently to ensure the welfare of the individuals. This would be impossible under solar panels.

**13.16** The BRE document Agricultural Good Practice for Solar written with the National Farmers Union states

The most common practice is likely to be the use of solar farms as part of a grazing plan for fattening/finishing of young hill-bred 'store' lambs for sale to market.

Avoiding grazing in either the spring or summer will favour early or late flowering species, respectively, allowing the development of nectar and seeds while benefiting invertebrates, ground nesting birds and small mammals.

Some hardier breeds of sheep may be able to produce and rear lambs successfully under the shelter of solar farms, but there is little experience of this yet.

Opportunities for cutting hay or silage, or strip cropping of high-value vegetables or non-food crops such as lavender, are thought to be fairly limited and would need careful layout with regard to the proposed size of machinery and its required turning space.

**13.17** In ESS Vol 1 Chapter 5:Project Description 5.4 Works No.1. 5.4.5. the Applicant states that the gap between the rows of PV Tables will vary responding to local topography, but will have a minimum separation distance of 2m, which is a parameter, to minimise effects of shadowing and to ensure optimal efficiency.

**13.18** This is a very low minimum distance if the Applicant is serious about the possibility of grazing sheep and fodder production.

**13.19** To my knowledge the only farm having had a sheep enterprise is Manor Farm. There was a breeding herd on the farm some thirty years ago until the full-time shepherd retired. The buildings used for lambing have subsequently been converted into dwellings.



**13.20** In any event, whether sheep farming is or is not possible is largely irrelevant. The current arable crop production would be lost and which is the subject of concerns about food security.

**13.21** The UK is broadly self sufficient in sheep meat production although some is imported to meet seasonal demands. Given that the Government's ambition on solar will require hundreds of thousands of acres of solar panels where will be the market for all of the sheep meat that can supposedly be produced? If in the unlikely event it is produced prices will decrease sharply as will profitability.

Photo of tractor cutting grass between solar panel arrays.



*Note: Non standard narrow wheel base small tractor. Grass is being simply mowed not being saved for fodder.*

## 14. There will be no community benefits

**14.1** This is a short section! Although the Applicant claims that MPSF will bring benefits the reality would be the opposite.

**14.2** “We will seek to retain existing field boundaries, water features and wildlife and improve connectivity where possible. Our landscape strategy will deliver multiple benefits, including retaining Public Rights of Way (PRoWs), connecting habitats across the site, and providing new planting which could enhance wildlife or recreational routes.”

**14.3** As with many of the claims made by the Applicant, these are highly qualified. Also, retention of PRoW’s can hardly be claimed as a “benefit” especially as the value to the community will be diminished as a consequence of views across the landscape being blocked.

Photo showing security fence surrounding solar panels



**14.4** The “recreational routes” are presumably the “permissive pathways.” Many are bordered on one or two sides by solar panels. Describing these as recreational routes underlines that the Applicant has no understanding of country life. The permissive paths will not be used.

**14.5** Information boards not be a benefit to residents. They would be another “blot on the landscape.”

## **15.The Applicant does not have the appropriate credentials for a NSIP**

**15.1** It is appreciated that, under normal circumstances, comments regarding the background of the Applicant, or any other such matter, are not relevant to the planning process.

**15.2** However, the Application is for a NSIP concerning a part of the UK infrastructure. Therefore the background of the Applicant should surely be taken into account by the Secretary of State in coming to the final decision regarding the proposed development.

**15.3** The Applicant last filed unaudited accounts on 30 April 2021. They showed negative shareholders funds.

**15.4** Although the actual shareholding is not given, the share structure of the Applicant gives control of the company to CS UK II Limited with Windel Energy Limited being a minority shareholder.

**15.5** On 31st October 2020 Mallard Pass had shareholders funds of £2,140 increasing to £579,512 on 31st October 2021. The increase can be explained by the figure for Other Debtors which was nil on 31st October 2020 and 3878,150 in the 2021 accounts.

**15.6** As Canadian Solar is funding the project through Windel Energy Limited it is assumed that the increase in other debtors relates to that funding.

**15.7** CS UK III Limited is an affiliate of Canadian Solar. Using affiliates is a known way to enter foreign markets, as is the case in this instance. It relies on the financial support of Canadian Solar Inc. to maintain it as a going concern

**15.8** If the project reaches the ready-to-build stage all of the shares held by Windel Energy Limited will be transferred to Canadian Solar. Therefore Canadian Solar, frequently referred to as a de facto Chinese company, will be responsible for all aspects of construction, operation and decommissioning.

**15.9** Canadian Solar is widely considered to be involved in unacceptable labour practices. These are described in the written statement supplied to the Environmental Audit Committee by Alicia Kerns MP - Chair of Foreign Relations Committee. Appendix 1

**15.11** This is supported by an article in the Globe & Mail newspaper. Appendix 2

**15.12** On 12th April 2023 Canadian Solar announced the rebranding of its wholly owned Global Energy subsidiary as Recurrent Energy. This brand name had previously been used in the USA. Dr. Shawn Qu, Chairman and CEO, Canadian Solar said “we are

pleased to streamline our development and operations and maintenance services under the Recurrent Energy umbrella.” Perhaps the name change was a means of distancing its global business from the Canadian Solar name and the associated negative comments?

**15.13** A Company such as Canadian Solar should not be involved in the development and operation of a National Significant Infrastructure Project, particularly one that, would if approved, supplying power to the National Grid.

**15.14** In an interview on BBCTV (19/03/23) regarding the banning of the Government of TikTok on Government phones Oliver Downing, the then Secretary of State - Cabinet Office, said that there was a risk as the ultimate ownership of TikTok is in China and companies in China are subject to Chinese National Security laws, which means that information gained has to be shared with the Chinese Government.

**15.15** If The Government is concerned about an “app” on phones it must be even more concerned about the ownership of MPSF by Canadian Solar and the possible security risk posed.

**15.16** To date, Windel Energy Limited has not completed any renewable projects.

**15.17** The Managing Director of Windel Energy Limited is Gary Leigh Toomey. According to Companies House Mr Toomey has held over 70 directorships with many having ceased trading as a result of insolvency.

**15.18** The Directors of Windel Energy Limited do not appear to have the appropriate career record to be involved with a National Significant Infrastructure Project.

## **16. Decommissioning**

**16.1** Once again The Applicant, whilst not seeking a time limited consent, is assuming that the electrical infrastructure has an operational life-span of 40 years for the purposes of assessing decommissioning.

**16.2** The Applicant states that the assessment does not assume that the operational phase will be limited to 40 years as the solar infrastructure may continue to be operating successfully and safely beyond this period. The Electrical infrastructure will not have a life of 40 years.

**16.3** Either MPSF is permanent and will not be decommissioned or it is temporary and will be decommissioned after a specified period of time. The life of MPSF, decommissioning, and assumptions relating to it have to be based on one or the other, not both.

**16.4** Given the above it is difficult to make any comment on the plans for Decommissioning.

**16.5** The Applicant cannot state that decommissioning will return the site to its prior nature and use. It can only undertake to carry out the work in compliance with the Environmental Management Plan. The Applicant is unsure about its ability to do that - 2.17.3” re-instated as far as possible”

**16.6** To not secure such a return is to fail to meet the aims of the Government's Food Strategy (published 13 June 2022).

**16.7** There are very real risks of operator failure. It is possible, probable, that MPSF will sold to other operators and investors. These businesses or indeed MP itself may suffer a business failure and be unable to carry out any decommissioning. Thus a “decommissioning bond” should be provided by The Applicant.

## **17. Outline Employment, Skills, and Supply Chain Plan**

**17.1** Construction on this type of site normally involves the use of itinerant workers. It is more likely that itinerant workers will be used. The number of skilled permanent jobs created will be insignificant.

**17.2** The local area is not one of high unemployment. The unemployment rate in 2022 was 3% in Rutland and 2.9% in SKDC compared to a national average of 3.8%

**17.3** The Applicant says that it “wishes to ensure the construction, operation and decommissioning of the Proposed Development is undertaken pursuant to an ethical procurement policy and that this is a legal obligation on anyone who has the powers under the DCO.”

**17.4** As a legal requirement The Applicant cannot use the word “wish.” It has to give a firm undertaking that it “would” ensure that the legal requirement to enact an ethical procurement policy takes place.

**17.5** Ethical procurement is a particular issue in this Application, different from all other similar Applications. The widely held belief that Canadian Solar is a de facto Chinese company means that the Applicant can claim to have an ethical procurement, however, it is not possible the Applicant to deliver it.

**17.6** Paragraph 6.1.2 contains a list of the “proposed” ethical procurement policy. Note that is only proposed.

**17.7** The list includes the right to audit its suppliers. However, Canadian Solar has continually resisted allowing an independent audit of their operations.

**17.8** In April 2022, Canadian Solar executives rejected a request from a group of shareholders calling for an independent and transparent assessment into whether forced labour exists in the company’s operations, supply chains and business relationships.

**17.9** In any event the reality is that it is not possible to carry out a creditable independent audit of anything in China. Believing otherwise flies against all the evidence of those who are experts on matters concerned with China and of those who have attempted audits.

## Appendix 1

### **BRE Planning guidance for the development of large scale ground mounted solar PV systems**

#### **Appendix B:Electricity Generating Capacity**

Planning applications for commercial scale solar development should be accompanied by the following information.

Whilst it is acknowledged that the National Planning Policy Framework states that local authorities should not require applicants for energy developments to demonstrate their overall need for renewable or low carbon energy and also recognise that small-scale projects provide a valuable contribution to cutting greenhouse gas emissions, it is considered that this is useful background information.

**Installed capacity (MW) <sup>1</sup>**

**Capacity factor <sup>2</sup>**

**Estimated annual production (MWh p.a.) <sup>3</sup>**

**Number of residential properties electricity equivalent <sup>4</sup>**

Notes:

1. Installed capacity is the full-load continuous rating of generating equipment under specific conditions as designated by the manufacturer. In other words, this is the power generated when the equipment is working at full capacity.
2. Capacity factor is the calculated factor which compares the plant's actual production over a given period of time with the amount of power the plant would have produced if it had run at full capacity for the same amount of time. The capacity factor should take account of the specific equipment and the specific location. It is expressed as a percentage.
3. Estimated annual production of electricity based upon the installed capacity and the capacity factor.
4. Number of residential properties that would be powered by the estimated annual production based upon the Great Britain average domestic consumption of 3,300 kWh / year (Ofgem factsheet 96, 2011).



# Canadian Solar vows probe into allegations it used forced labour in Xinjiang plant

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A Canadian solar company that built a photovoltaic plant in China's Xinjiang region is promising an independent investigation of whether any workers in its supply chain are there against their will, after telling a shareholder activist firm it was impossible to do such an assessment and accusing those raising forced labour concerns of [REDACTED]

Canadian Solar Inc., with headquarters in Guelph, Ont., has partnered in China with GCL-Poly Energy Holdings Ltd., whose network of companies in that country has employed people from a Chinese government program to transfer people, many of [REDACTED], to industrial workplaces. Treatment of the largely [REDACTED]

Canadian Solar also built a solar generating project in Tumxuk, Xinjiang.

## Canadian Solar denies use of forced labour at its solar farm in western China

But the company now says it sold that project last year and is promising to request board approval in the next two weeks to hire a third party "with the qualification and willingness to implement a due diligence audit on human rights and forced labour issues in our operations and supply chain," director of investor relations Isabel Zhang said Monday in a written response to questions from The Globe and Mail.

Ms. Zhang provided no further information on what might be involved in such an assessment, or whether it might be made public.

Anthony Schein, director of shareholder advocacy at Share, a Toronto-based research and advisory firm that works with large investors to promote sustainability and inclusivity,

said it's unclear how much the company can accomplish if it does not make clear what it intends to do.

“Without knowing the details of what they’re actually proposing to do here, it is hard to feel satisfied that the review planned is going to be sufficiently in-depth and transparent and have the right kinds of safeguards and design in place to make sure that it’s adequate,” he said.

The promise nonetheless marks a shift from Canadian Solar in the face of growing investor pressure – led in part by Share – over its reliance on companies in China with links to Xinjiang, where authorities have been accused by Western governments and human-rights groups of widespread use of forced labour.

In April, Canadian Solar executives rejected Share’s request for a shareholder proposal calling for an independent and transparent assessment into whether forced labour exists in the company’s operations, supply chains and business relationships.

“This work is not capable of being completed,” Canadian Solar general counsel Jianyi Zhang wrote in an April 20 e-mail to Share provided to The Globe.

“We have tried the approach but couldn’t find one consultant,” Hui Feng Chang, the company’s chief financial officer, said in a separate April 19 e-mail. Mr. Chang faulted Western advocacy groups, saying they [REDACTED]

[REDACTED]

[REDACTED]

Researchers have raised concern about Canadian Solar’s long-standing partnership with GCL-Poly Energy Holdings Ltd., which has “employed coerced surplus labourers” in Xinjiang, according to *In Broad Daylight: Uyghur Forced Labour and Global Solar Supply Chains*, a report published last year by Sheffield Hallam University.

Canadian Solar maintains a solar cell production joint venture with GCL-Poly “which may be affected if that facility is importing polysilicon from the GCL subsidiary in Xinjiang,”

said the report, published in May, 2021. Canadian Solar says it has terminated its joint venture with GCL.

Chinese authorities have designated many Uyghurs as “surplus labour.” Such workers have been sent to work in factories away from home, some thousands of kilometres away, as part of a sweeping campaign in Xinjiang that has included incarcerating large numbers of people [REDACTED]

[REDACTED] China has been widely condemned by Western governments and human-rights groups for its actions.

Canadian Solar has strengthened its policies against forced labour and “is committed to ensuring that modern slavery does not take place anywhere in our business, including our supply chain,” Shawn Qu, the company’s chief executive, said in March.

But for industry claims of eliminating forced labour to be credible, they need to be buttressed with more information, said Laura Murphy, a professor of human rights at Sheffield Hallam University and one of the authors of the In Broad Daylight report.

Across the sector, “there is very little in the way of details regarding how sourcing has changed and who the new suppliers are,” she said. “Without transparency, consumers and stakeholders should not simply trust that the work is done.”

## Appendix 3

**Environmental Audit Committee 11th. January 2023**

### **Technological innovations and climate change: On-shore Solar Energy**

Written evidence submitted by Alicia Kearns MP Forced Labour in Supply Chains Brief

This evidence is relevant to the Committee's Question:

Does the concentrated global distribution of solar panel supply chains (80% manufacture in China) pose a risk to solar technology expansion in the UK? If so, how could this be mitigated?

By looking at solar supply chains the Committee will be able to discern how they remain vulnerable to forced labour, particularly in Xinjiang. The Government should take action to make UK markets more resilient to forced labour exposure and ensure that UK solar projects do not inadvertently contribute to human rights abuses overseas. This evidence focuses on one developer, Canadian Solar, but the issues identified are common across the solar industry.

The Committee should be aware that Canadian Solar have applied for planning permission to construct a solar plant, part of which will be in Alicia Kearns MP's constituency of Rutland and Melton.

Canadian Solar Background:

Canadian Solar is a global solar producer and developer nominally headquartered in Guelph, Canada. Canadian solar has a Chinese founder operating from Suzhou, a majority Chinese board and the majority of its production capacity in China. (Sheffield Hallam Report, p.42)

Canadian Solar has begun to 'carve out' their Chinese production arm 'CSI Solar c. ltd' to be listed on the Shanghai stock exchange as a Chinese company. This listing received approval in December 2021. It has been delayed by the COVID-19 lockdowns but remains 'on track' according to founder Shawn Qu.

Forced Labour in Solar Supply Chains:

The solar industry is particularly vulnerable to forced labour in the Uyghur region because:

According to the 2021 Sheffield Hallam report In Broad Daylight: [REDACTED]  
[REDACTED] Many indigenous workers are unable to refuse or walk away from these jobs, and thus the programmes are tantamount to forcible transfer of populations and enslavement.'

- 95% of solar modules rely on one primary material – solar-grade polysilicon.

- Polysilicon manufacturers in the [REDACTED] account for approximately 45% of the world's solar-grade polysilicon supply.

- All polysilicon manufacturers in the Uyghur Region have reported their participation in labour transfer programmes and / or are supplied by raw material companies have.
- The Chinese Communist Party have made it extremely difficult for independent auditors to operate in Xinjiang.

#### Canadian Solar's Exposure:

Canadian Solar is mentioned numerous times in the Sheffield Hallam Report which states that 'Canadian Solar's primary exposure to forced labour in the Uyghur Region is through supplier GCL- Poly.'

'Canadian Solar also has a joint venture with GCL-Poly on a solar cell production facility in Jiangsu, which may be affected if that facility is importing polysilicon from the GCL subsidiary in Xinjiang.'

GCL-Poly has been one of Canadian Solar's largest suppliers since 2008. Canadian Solar has not publicly listed their suppliers since 2019, when they signed another contract with GCL-Poly – their largest supplier at the time. Their decision not to publish their suppliers publicly could be due to revelations over forced labour in their supply chains via GCL-Poly, which have been widely published in the Canadian press.

Canadian Solar also operated a solar power generation facility in the Xinjiang Production and Construction Corps (XPCC) 3rd division city of Tumxuk, Xinjiang. (Sheffield Hallam Report, p.43) Canadian Solar have been unable to explain who staffed this solar plant.

The XPCC is the Chinese Communist Party's paramilitary organisation in Xinjiang and has been heavily implicated in the Uyghur genocide. The XPCC was sanctioned by the United States in 2020.

Canadian Solar 'likely benefits from that relationship with the XPCC. In December of 2013, the XPCC approved a plan to fix high prices for electricity provided by 29 new photovoltaic plants, and Canadian Solar may have benefited from the plan.' (Sheffield Hallam Report, p.43)

Horizon Advisory, which has investigated this issue, stated that the four largest companies producing polysilicon 'appear actively to participate in the resettlement of ethnic Uyghurs from poor areas of Xinjiang' and 'contribute to and implement re-education programmes that impose political and military training on resettled populations.'

In a meeting with Alicia Kearns MP's researcher on 19.7.22 researchers from Horizon Advisory stated that it was highly likely Canadian Solar had a working relationship with the XPCC paramilitary.

In 2021 four shipments from Canadian Solar were seized by the US authorities in a crackdown on goods with links to the genocide and forced labour of the Uyghurs.

In June 2021 a subsidiary of Canadian Solar's supplier GCL-Poly, GCL-New Energy Material Technology Co., Ltd. was sanctioned by the US Commerce Department. This was also reported in the Canadian Press.

GCL-New Energy Material Technology Co., Ltd are sanctioned in the United States 'for participating in the practice of, accepting, or utilizing forced labor in Xinjiang and contributing to human rights abuses against Uyghurs and other minority groups in Xinjiang.' (US Commerce Department).

It is likely that Canadian Solar's supply chains used materials sourced by GCL-New Energy in Xinjiang. (Sheffield Hallam Report, p.43)

In June 2022 concerned shareholders in Canadian Solar worked with an ethical advocacy group (SHARE) to try to have several Canadian Solar board members deselected due to their failure to address forced labour in the company's supply chains. The story was also published in the Canadian Press.

One of Canadian Solar's directors, Lap Tat Arthur Wong, also chairs the audit committee for Daqo New Energy Corp, a Xinjiang based subsidiary of Daqo which was sanctioned by the US Commerce Department at the same time as GCL's Xinjiang subsidiary, also over forced labour and genocide allegations.

Recommendations:

The US recently introduced the Uyghur Forced Labour Prevention Act, meaning 'The UFLPA requires CBP to presume that goods manufactured wholly or in part in the Xinjiang or made by entities on the UFLPA Entity List violate 19 U.S.C. § 1307. The UFLPA's rebuttable presumption thus applies to goods manufactured in or shipped from other countries if any part or input of those goods was manufactured in Xinjiang.'

The UK Government could adopt a similar model, where manufacturers are required to prove that goods produced in or made with materials from Xinjiang are free from forced labour.

December 2022