

Planning Inspectorate Inquiry.

Application by Photovolt Development Partners (PVDP) on behalf of SolarFive Ltd for an Order Granting Development Consent for the Botley West Solar Farm project.

Submission for October 4th 2026 deadline.

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The planning balance of the costs and benefits of the proposed Botley West Solar Farm.

This report covers only the costs and benefits of the proposed Botley West Solar Farm (BWSF) in terms of the impact of installation size on the local environment and the amount of electricity it might produce, especially in light of the applicant's 16th July 2026 submissions. Other IPs deal with the broader social, environmental and other costs and benefits of the proposal.

Following the convention used by the applicant, the symbol MWp here refers to the installed capacity of BWSF, a fixed amount once a final decision is taken on how many solar panels to use, and the symbol MWe refers to the variable amount of electricity it produces.

The planning balance

Various statements have been made about the installed capacity of BWSF (covered in Stop Botley West's (SBW's) response in **C2-161** to the applicant's **C1-087**), with figures ranging from 935MWp to 1422MWp. This matters because the harm considered in the planning balance is a direct function of the total installed capacity, determining the total extent of habitats to be covered by solar panels.

The July 2026 version of the Explanatory Memorandum, Rev 11 (**C1-100**), avoids all mention of installed capacity but states that the project ...

"...aims to deliver approximately 840MWe of power to the National Electricity Transmission System ('NETS'),..."

This is equally unhelpful since it is obvious that no solar installation can deliver a continuous supply of electricity at any fixed level; 840MWe is the maximum amount that the National Grid has agreed to accept from BWSF, not the average amount of electricity BWSF is expected to produce. The question then becomes 'how often does the output reach this maximum level?' This goes onto the benefit side of the planning balance.

With no clear idea of either the harm caused (a function of MWp) or the benefit resulting (a function of MWe) from any solar installation, it is difficult for anyone to determine where the planning balance settles.

The present document tries to cut through the often-contradictory statements of the applicant, to determine what is involved (MWp) and what might be the resulting output of electricity (MWe).

The size of the proposed installation

Schedule 13 of the most recent draft Development Consent Order, Rev. 11 (**C1-097**) lists the set of documents on which any DCO would be based (in Part 1. DOCUMENTS FORMING THE ENVIRONMENTAL STATEMENT TO BE CERTIFIED). The only version listed there of the Non-Technical Summary (and the only version of this document anywhere in the application) is **APP-037**, dated November 2024, in which Table 5.1 lists an installation capacity of between 1200 and 1375 MWp.

Despite the Examination process and all the subsequent apparent changes proposed for the installed capacity, including those in the 16th July documents, this is the range of values that the SoS is expected to approve in granting the DCO; it hasn't changed in 11 versions of the dDCO.

One of the suggested changes in total capacity arose from an increase in the buffer size above the initially proposed value of 25 metres (from **APP-037**), as discussed in full in SBW's response to the applicant's 16th July submissions. In **C1-087**, dated June 2026, the applicant claimed that setting a buffer size for most properties of between 100 and 250 metres would result in a reduction of installed capacity to c. 935MWp, considered by the applicant to be the minimum economically viable size which, nevertheless, formed its final 'without prejudice offer' in **C1-087**, responding to the SoS's questions in "*Letter from the Secretary of State dated 14 April 2026*" (put on the PINS website on 20th April 2026).

Thus, in **C1-087**, the Conclusion to para. 68 in the applicant's responses to the SoS's request to "*consider where further reductions to the array layout can be made to address the impacts of the Proposed Development by maximising solar panel removal whilst maintaining a viable development*" begins with:

"The current position of 935 MWp represents the maximum extent of panel removal that is compatible with maintaining an economically viable development. Any further reduction in capacity to the array layout would no longer maintain the viability expressly presupposed in Para 68."

And the Conclusion to para. 69, requesting more information on viability constraints, begins

"The current planning position of 935 MWp, as submitted with this response to the Secretary of State, results from applying a maximum 250 m buffer to all residential dwellinghouses (save where a lesser buffer has been agreed, as set out in the draft Requirement) is just about economically viable, assuming availability of debt financing at favorable conditions."

As SBW and others (e.g. **C2-017**, **C2-002**) have pointed out, it is not clear if this 'without prejudice offer' of the applicant's 'current position' of 935MWp is the final installed capacity to which the applicant is committed, or if it is simply a minimum, with the final figure an unspecified amount higher.

The Applicant's 16th July submissions

The 16th July submissions change the proposal yet again. They do not mention the applicant's 935MWp 'without prejudice' offer of less than two months before but instead send mixed signals about the capacity (MWp), output (MWe) and the number of houses that might be supplied by BWSF's electricity.

The covering letter (**C1-094**) states 'landscape improvements' (= removing panels from certain areas) reduce the number of houses that might be supplied from 330,000 (the output of a c. 1307MWp installation) to 275,000, 'brought about by a reduction in installed DC capacity of 219MWp'. But the letter still claims BWSF is capable of '*delivering 840MW of electricity in Phase 1 of CP30*' (quite a feat if installed capacity has been reduced by c. 17%, from c. 1307MWp to c.1088MWp).

C1-095 the Guide to Application goes back to the original figures and talks, in 1.1.2, of seeking

"consent to install and operate approximately 840MWe of solar generation development in parts of WODC, CDC and VWHDC. By delivering approximately 1,307 MWp of power to the National Grid it aims to provide secure and clean energy to the equivalent of approximately 330,000 homes¹."

In 2.1.1, the document corrects itself with a revised number of houses figure, but without changing the capacity or electrical output...

"The Project aims to deliver approximately 840MWe of power to the National Electricity Transmission System (NETS), which would provide secure and clean energy of an equivalent level to meet the needs of approximately 275,000 homes."

Later, in 2.2.3 of the same document, the number is changed back again to 330,000 homes.

¹ Here the applicant seems to have confused the installation size (1307MWp) with its maximum power output (840MWe). It is not possible for the power output to be greater than the installation's capacity.

“The Project will be connected to a new National Grid Sub-station located at the southern end of the Project Botley West Solar Farm site, providing secure and clean energy of an equivalent level to meet the needs of approximately 330,000 homes.”

In the space of four pages the applicant has contradicted itself twice, starting with a number at variance with the applicant's own covering letter for the 16th July submissions.

C1-099, the Explanatory Memorandum, fails to specify any installed capacity or electricity produced (or number of houses supplied with electricity) at all, stating in 1.4.4:

“The description of the NSIP at Work No. 1 does not refer to an upper limit on the capacity of the generating station that development consent is being sought for. It is not considered that imposing an upper limit is desirable or necessary².”

....justifying this by referring in 1.5.1 to *PINS Advice Note 9: Rochdale Envelope (July 2018)*. That PINS document, however, advises that any uncertainty should be ironed out at the Pre-application stage and that any flexibility sought in the DCO

‘should be established within clearly defined parameters’,

warning that ...

‘the Rochdale Envelope assessment approach should only be used where it is necessary and should not be treated as a blanket opportunity to allow for insufficient detail in the assessment.’

In other words, the Rochdale envelope should not be set so wide that it renders meaningless the entire Examination process.

C1-111 from Icenl gives detailed maps and a Post-Examination Masterplan Changes Table showing that 219.8MWp of capacity has been removed, reducing the installation area by 130.23ha. The starting position, before these changes, is not specified.

The covering letter **C1-094** also makes the unsupported claim that *“The energy will be generated and consumed in an area of low renewables and high growth in demand for power and new connections.”*

As pointed out many times before, energy put into the national electricity Transmission system is not consumed locally. BWSF would not generate electricity for Oxford alone, or even for the Oxfordshire region.

At present Oxfordshire is contributing more than its fair share to the CP2030 Net Zero ambitions, as shown in the map in Annex A. If all viable, pipeline sub-NSIP and NSIP applications are approved, 1.5% of the County's entire area will be covered by ground mounted solar installations, with a total installed MWp of 4.16% of the UK's entire capacity (67.35GW) of ground-mounted solar. These are amongst the highest figures in the South of England (map, Annex A). Far from being an area of 'low renewables', Oxfordshire is leading the way in this part of the country.

Thus, the applicant's 16th July submissions continue to give confusing information about BWSF's installation size, electrical output, and the number of houses that might be supplied by it and makes false claims about Oxfordshire's contribution to the nation's Net Zero ambitions.

Finally, covering letter **C1-094** mentions an entirely new development – the possibility of supplying Exeter College's proposed Innovation quarter (EXOq) with significant amounts of electricity. This will affect all other aspects of this proposal and is examined at the end of the present document.

² There is of course an upper limit set in Schedule 13 of the dDCO, i.e. 1375MWp

Developments since 16th July

Events after the 16th July submissions by the applicant appear to confirm a lower capacity and even (for the first time) a lower output of MWe from BWSF.

- At a Parish Council meeting in Cumnor on 3rd August 2026, the BWSF Director stated that changes in the buffer size to a value of 150 metres “from any residential property” resulted in a new installed capacity of 1100MWp, a figure that could still (somehow) keep the output at 840MWe.
- Interviewed by the Oxford Clarion for its 15th September issue, (reporting the SoS’s announcement of a November 10th delayed decision date for BWSF) the BWSF Director stated that buffer changes and removing panels from certain areas will ...

“result in a reduction in generating capacity of 220 MWp (= theoretical maximum), which pro rata would equate to reducing the 840 MWe typical output to 700 MWe.”

These figures suggest that the ‘original’ installed capacity was intended to be c. 1320MWp, now reduced by 220MWp to c. 1100MWp; and that the original output of 840MWe would consequently be reduced to 700MWe (the percentage reductions are the same in both MWp and MWe). (The 700MWe figure is rather meaningless and no more reflects the output of a reduced-size BWSF than does the original 840MWe figure).

The 1100 MWp installed capacity suggested in the July 16th submissions and apparently confirmed during the more recent public meeting and newspaper article is below the minimum in the draft DCO, Rev. 11, of 1200MWp (the lower figure in the range given in **C1-097**). Will any development consent specify an installed capacity of c. 1100MWp (or a range encompassing this figure), or will it opt for the range of values specified in all versions of the draft DCO, i.e. 1200 - 1375MWp?

It is frustrating to all concerned that the applicant seems to be developing its application ‘on the hoof’, outside of the formal PINS process, via post-Examination submissions and by presentations and interviews that relatively few people will have heard or seen.

The affected citizens of Oxfordshire have no idea what the installed capacity will be; and no guarantee that any number specified in any approved DCO will be followed. Retaining almost the complete original redline boundary of the scheme, despite a possible reduction in stated installed capacity (to 935MWp, 1100MWp, or some other value) raises the possibility of ‘panel creep’ (i.e. increasing installation size) during construction and a final figure of perhaps as much as 1375MWp, the upper bound of the range in the draft-DCO. This would of course mean a buffer size well below 250 metres in many places.

Electricity production by the proposed installation

Table 1 shows the amount of electricity produced by BWSF at a range of installation capacities, each of which has been mentioned somewhere in the applicant’s submissions, and the number of houses that might be supplied with their annual electricity demand.

Most of this information was presented in **C2-161** from Stop Botley West. A capacity of 1320MWp is added here, in light of the most recent information referred to above.

The total electricity output from installations of different sizes in Table 1 (in both kWh and MWh) was calculated by the European PV GIS system version 5.3, as referred to previously. These calculations for an installation size of 1307MWp are within 1% of the applicant’s own calculations for BWSF (that used the same MWp), and so can be used for comparison. The ‘Houses supplied’ figures assume a total per household consumption of electricity of 3,731kWh per annum, the DBEIS figure used by PVDP.

Installation capacity, MWp	Year total kWh	Year total MWh/a	Houses supplied
1422	1,355,797,015	1,355,797	363,387
1320	1,258,545,753	1,258,546	337,321
1307	1,246,150,984	1,246,151	333,999
1300	1,239,476,878	1,239,477	332,210
1200	1,144,132,502	1,144,133	306,656
1100	1,048,788,127	1,048,788	281,101
935	891,469,908	891,470	238,936
870	829,496,064	829,496	222,325
685	653,108,970	653,109	175,049

Table 1. Performance of BWSF at a variety of installation capacities (column 1). The yearly totals of electricity produced (in both kWh and MWh) could supply the number of households in the final column.

Here we concentrate on the two most recently mentioned capacities, 1320MWp and 1100MWp, and examine their hourly output, as determined by the EU PVGIS's long-term irradiance data set (for details see **C2-161**).

These are shown in Figures 1 to 4 below, as the frequency distribution of hourly outputs of electricity in MWe (Figs 1 and 3), and as the percentage of time the output exceeds values of 500 MWe or greater (Figs 2 and 4).

At both capacities, the output is less than 35MWe for more than half of the time. This is less than one twentieth of the applicant's claimed output of 840MWe, a value that is met or exceeded on average for only 2.3% of the time in a 1320MWp installation and for only 0.4% of the time in an 1100MWp installation (Figs 1 and 3 respectively).

Figs 2 and 4 show the seasonal variation at the higher levels of MWe, with values in a 1320 MWp system reaching 840MWe for only 4.5% or 0.3% of the time in Summer and Winter respectively (Fig. 2) or for only 0.87% or 0.00% of the time in an 1100MWp system (Fig. 4).

The applicant simply cannot claim that the output from BWSF will be 840MWe of electricity when this value is reached for less than 3% of the time on average in a 1320MWp installation or less than 1% of the time in an 1100MWp installation. In any other branch of industry or commerce such false advertising would be sanctioned³.

³ [REDACTED] The Committees for Advertising Practice (CAP) Rule 3.11 states, "Marketing communications must not mislead consumers by exaggerating the capability or performance of a product". Advertisers obviously want to present their products in the best possible light, but they must be careful that they do not go so far as to mislead consumers."

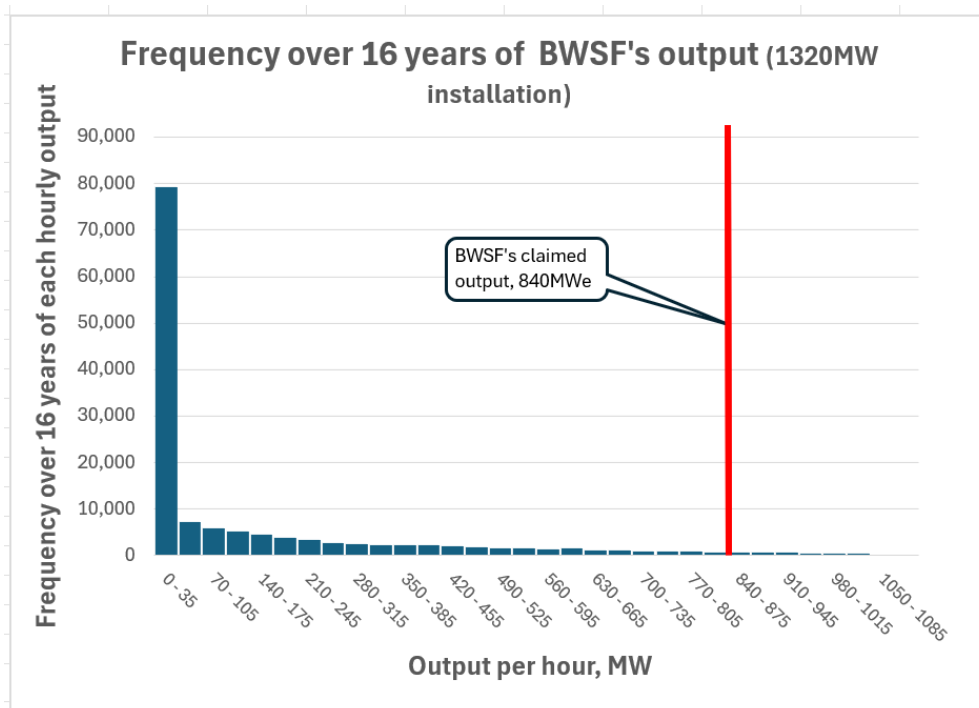


Figure 1. Hourly output from a 1320MWp capacity BWSF, based on a 16-year irradiance dataset. The hourly output is shown on the x-axis and the frequency of those hourly outputs on the y-axis (from a total of 140,160 values of hourly outputs). For more than half the total time (57%) the hourly output is less than 35MWe. It meets or exceeds the contracted capacity of 840MWe (the thick red line) for only 2.3% of the time.

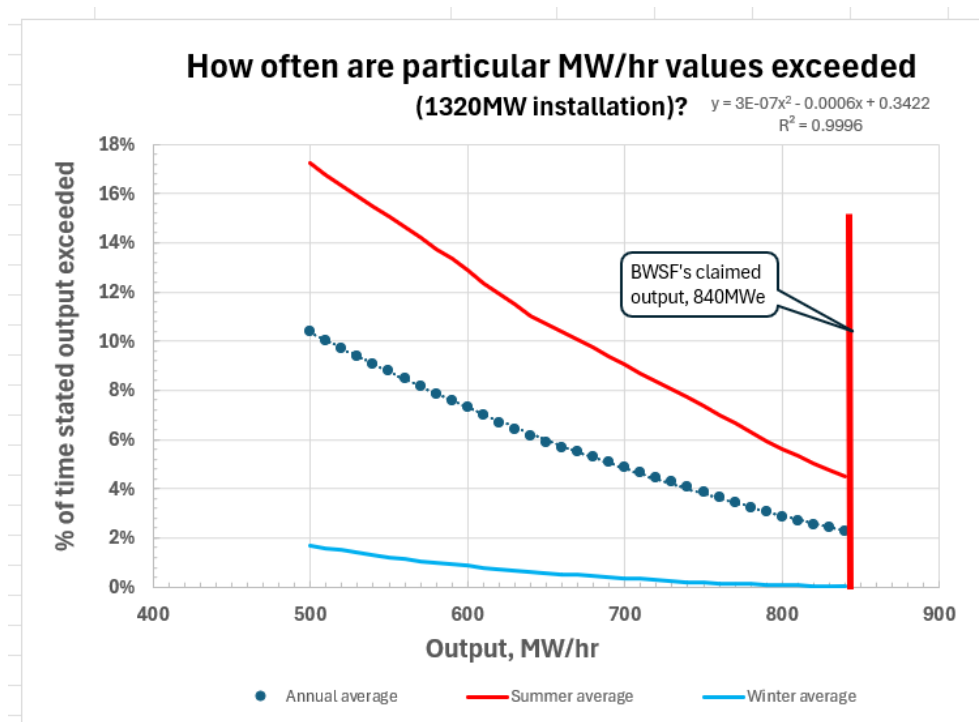


Figure 2. The percentage of time (y-axis) that particular values of the stated output of electricity (MWe, x-axis) is exceeded in a 1320MWp system. The dotted line is the annual average and the Summer and Winter values are shown in red and blue respectively. At this capacity, BWSF's output reaches or exceeds 500MWe for only 10.4% of the time (17.2% in Summer but only 1.7% in Winter). An output of 840MWe (thick, vertical red line) is reached or exceeded for less than 5% of the time, Summer or Winter.

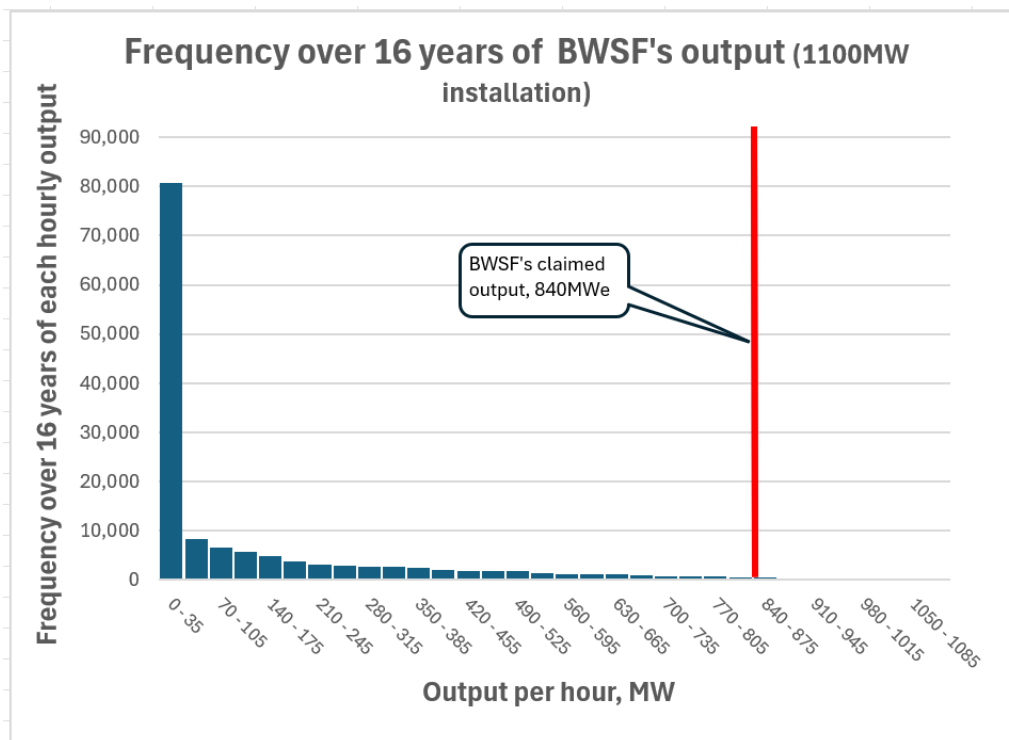


Figure 3. Hourly output from an 1100MWp capacity BWSF, based on a 16-year irradiance dataset. The hourly output is shown on the x-axis and the frequency of those hourly outputs on the y-axis (from a total of 140,160 values of hourly outputs). Again, for more than half the time, the hourly output is less than 35MWe. It meets or exceeds the contracted capacity of 840MWe (the thick red line) for only 0.4% of the time.

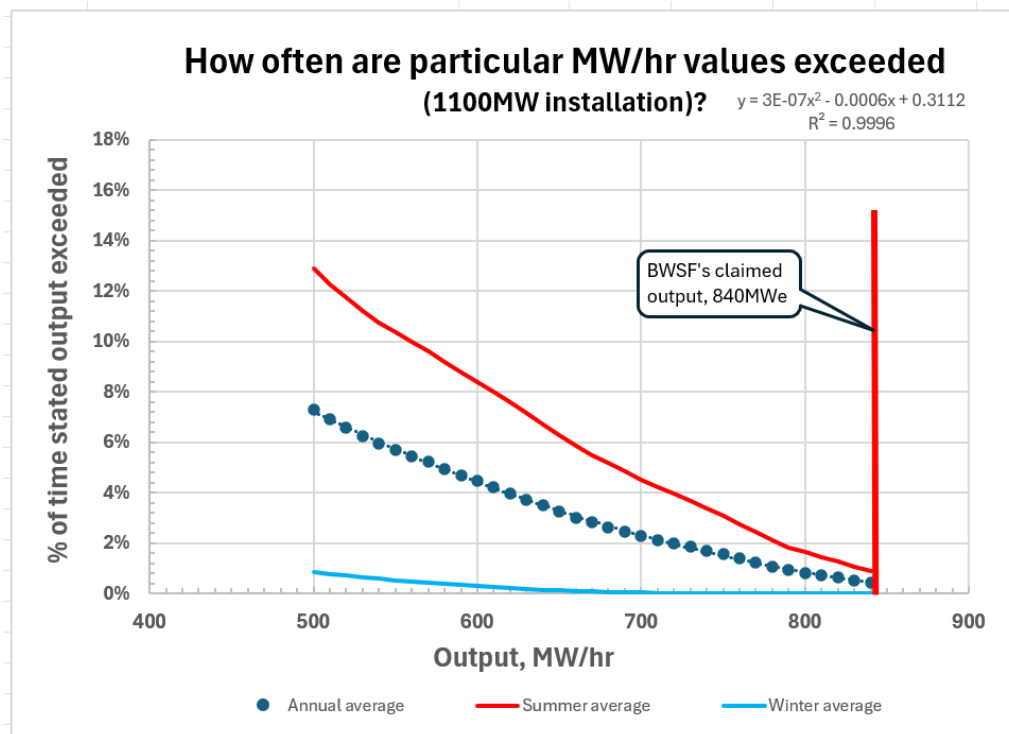


Figure 4. The percentage of time (y-axis) that particular values of the stated output of electricity (MWe, x-axis) is exceeded in an 1100MWp system. The dotted line is the annual average and the Summer and Winter values are shown in red and blue respectively. At this capacity, BWSF's output reaches or exceeds 500MWe for only 7.3% of the time (12.9% in Summer but only 0.9% in Winter). An output of 840MWe (thick, vertical red line) is reached or exceeded for less than 1% of the time, Summer or Winter.

New developments in the applicant's plan

At best mentioned only briefly in passing during the Examination phase of BWSF, it now appears that the applicant is negotiating with Exeter College Oxford to supply renewable electricity to the College's proposed innovation quarter (EXOq) based on a College-owned green belt site near Kidlington.

This was formally revealed for the very first time in the applicant's 16th July cover letter to PINS (C1-094) as follows:

*"PVDP is also in advanced negotiations with Exeter College, Oxford, to supply renewable energy to their 100MW Frieze Farm Data Centre development. The site is 2 km from the project boundary and will comprise a data centre, laboratories, offices and a district heating scheme for neighbouring Kidlington. Exeter College has submitted a planning application to Cherwell DC. The plan is for the project to use its solar generation and connection at Farmoor substation to supply all of Frieze Farm's electricity."*⁴

The implications of this proposal for BWSF are considerable, because data centres and High Performance Computers (HPCs) are notoriously 'energy-hungry'.

Documents on the Cherwell District Council (CDC) website⁵ reveal details of Exeter College's plans. The College's Statement of Community Involvement, dated March 2026, reveals that the proposal 'will deliver 50MW+ of sovereign, quantum-compatible data centre capacity.'

On the other hand, the Environmental Statement: Volume 1 Non-technical Summary, also dated March 2026, states that part of the site will 'be used for a 100MW High Performance Computer (HPC) Data Centre with a GEA (Gross External Area) of up to 34,000 sqm.', a building 'up to 20m high to ridgeline'.

Figure 5 shows the relationship between the power consumption (MWe, y-axis) and area (x-axis) of four of the UK's largest data centres⁶ (blue points) from which we can estimate the power consumption of EXOq, based on its area of 34,000 sqm (the red point in Fig. 5), as likely to be c. 61.2MWe – between the rather wide limits of 50MWe+ to 100MWe mentioned in the CDC planning documents.

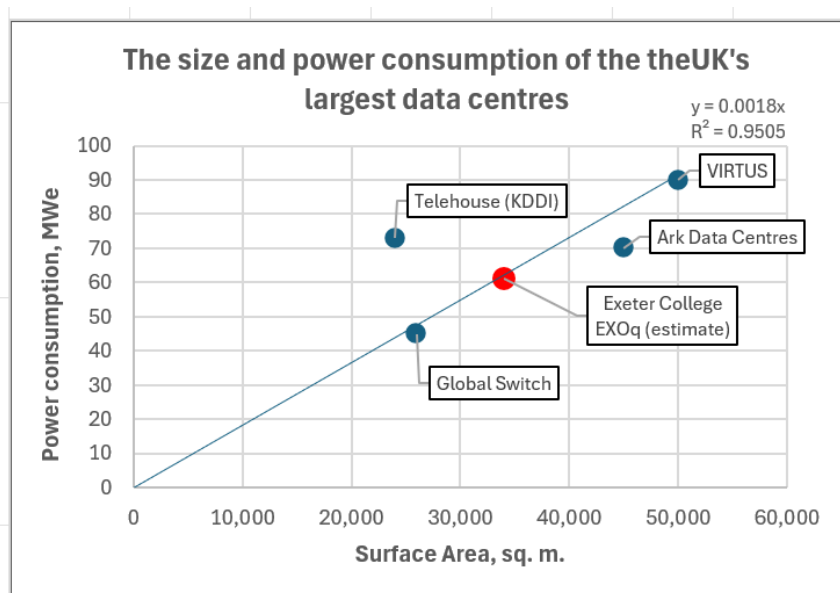


Figure 5. The power consumption (y-axis) and size (x-axis) of four of the UK's largest data centre (blue points, regression line) from which we can estimate the likely power consumption of EXOq – i.e. 61.2MWe, the red dot in this Figure.

⁴ Frieze Farm is less 3kms away from the Middle section of BWSF's redline boundary, more than 5kms away from any 400kV overhead line, and more than 7 crow-fly kms away from the proposed substation site at Farmoor. A direct connection to Farmoor would involve crossing Port Meadow (an SSSI, SAC and with Natural England's Scheduled Monument Consent, SMC) and the River Thames. It would also run straight through Oxford University's Wytham Woods SSSI, one of the most intensively studied temperate woodlands world-wide.

⁵ Planning Application number 26/00720/OUT on the Cherwell District Council site. The relevant documents can be found here: <https://planningregister.cherwell.gov.uk/Planning/Display/26/00720/OUT#undefined>

⁶ From

Data centres need power all the time, although it is not clear they will need full power all the time.

Taking the worst-case scenario of 100% continuous power consumption, a 61.2MWe data centre will require 536,112MWh of electricity each year ($= 61.2 \times 24 \times 365 \text{MWh p.a.}$).

If an 1100MWp capacity BWSF provided all of this electricity it would amount to more than half (51.1%) of its entire annual output of 1,048,788 MWh (from the third column in Table 1, above) and would reduce the number of homes supplied by BWSF's power from 281,101 to 137,410. That is, EXOq would take up all the electricity required to power 143,691 homes each year, equal to about half of Oxfordshire's entire household number (288,108 in the ONS 2021 census⁷).

Figure 6 extends Figure 4's output characteristics of an 1100MWp installation to the 60MWe power requirements of a data centre. The 60MWe requirement is shown by the vertical dashed line. The Figure shows that even if EXOq had 'first call' on BWSF's power output, the latter could supply 60MWe (or more) for only 38% of the time on average; 49% in Summer but only 12% in Winter. Without considerable battery storage facilities (not proposed for BWSF and mentioned only in the form of presumably shorter-term UPSs in the Exeter College application), it is unclear how EXOq could be powered entirely by renewable energy (a gas-powered generator is proposed for the EXOq Energy Centre next door to, but quite separate from, the HPC centre).

Regardless of the considerable problems of running a large data centre on renewable energy, the recently announced link-up between the BWSF applicant and Exeter College calls into question many of the documents and proposals submitted by the applicant to PINS. The 'pain' to the community of large areas of landscapes covered by solar panels for the next 40 years remains but any public 'gains' are severely diminished if half the output is dedicated to a single private enterprise, however otherwise desirable it might be. Surely all the landscape, heritage, UNESCO, ancient woodland, aviation and flood risk problems posed by BWSF count for much more than the supply of electricity to one data centre that could be situated anywhere on the Transmission Network and sited much closer to areas of current over-production of renewable electricity (e.g. offshore Scottish wind-farms)?

In addition, the need for a new 480kV substation might be diminished if half of BWSF's supply goes to EXOq. Regardless of whether EXOq connects directly to BWSF (i.e. taps into the solar installation directly) or connects to the new substation at Farmoor, it would be pointless to raise BWSF's output to 400kV at the substation only to reduce it immediately to the lower voltage required by EXOq (UK underground cabling is limited to a maximum voltage of 132kV). A direct 132kV 'tap' from BWSF's input to the substation would suffice.

On the other hand, the gain to the applicant is obvious. A Power Purchase Agreement (PPA) with Exeter College would provide a guaranteed income for 40 years for up to half of BWSF's entire output, completely independent of any renewable energy subsidy (e.g. Contracts for Difference) that applies only to electricity used (or, in some situations, curtailed), or of any variation in the market price outside of subsidy schemes.

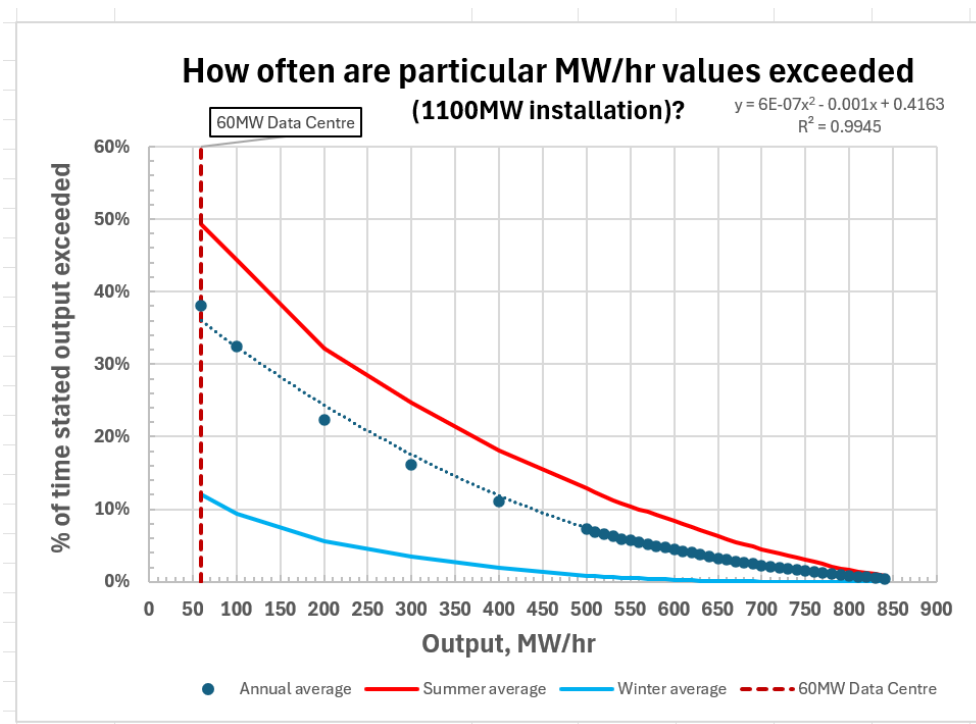


Figure 6. As Figure 4 but with the x-axis extended to lower outputs of electricity. The graph shows the percentage of time (y-axis) that particular values of the stated output of electricity (MWe, x-axis) are exceeded in an 1100MWp system. The dotted line is the annual average and the Summer and Winter values are shown in red and blue respectively. The dashed vertical line is at a value of 60MWe, the possible electricity demands of the High-Performance Computer centre in the proposed EXOq from Exeter College (see text). Even with 'first call' on BWSF's output, the solar installation could provide enough electricity for the immediate needs of the data centre only 38% of the time (49% in Summer and 12% in Winter). Any excess production would therefore have to be stored for use at other times. It is unlikely that batteries of sufficient capacity could be installed on EXOq.

Taking such a large proportion of the supply of renewable electricity from the nation's largest solar farm (BWSF) must alter the planning balance. The balance is now clearly tipped in favour of the private sphere (the applicant, Exeter College) to the detriment of the public sphere (household renewable electricity).

The applicant has failed in its duty to provide all relevant information in a timely manner to the Planning Inspectorate.

I ask the Secretary of State to refuse this application in its ill-formed and currently evolving present state.

Professor David Rogers, MA, D.Phil. Oxon

29/09/26

Annex A. The map shows the percentage land-cover by ground-mounted solar installations either already operational or in the viable development pipeline (%figures in green, also background colours – see Legend) and the % of the total ground-mounted UK MWp capacity within each administrative area (bracketed %figures in red). Oxfordshire's 1.5% percentage cover by solar and its 4.16% share of the total UK capacity of ground-mounted solar are high compared with most surrounding areas of a similar size (smaller areas tend to be more variable). It is incorrect for the applicant to claim that Oxfordshire is 'an area of low renewables.' Sub- NSIP data come from the Renewable Energy Planning Database (REPD, Q1 2026 edition). NSIP data come from the SolarQ citizen science group. See [redacted] for more information.

