

From: [REDACTED]
To: [East Pye Solar](#)
Subject: East Pye Solar - hyperlink to DESNZ website with energy capacity statistics and pdf summary
Date: 23 September 2026 08:46:52
Attachments: [East Pye Solar Capacity Analysis.pdf](#)

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Dear Sir,

Further to my presentation at the planning event at Dunston Hall, please see below the hyperlink requested and pdf summary. The summary contains further suggested questions for the East Pye Solar engineering team.

www.gov.uk/government/statistics/energy-trends-section-6-renewables

Yours Faithfully,

M Williams

Objector's Technical Briefing Note: East Pye Solar Farm

Subject: Mathematical Refutation of Generation Claims and Local Spatial Inefficiency
Framework: Planning Act 2008 – Nationally Significant Infrastructure Project (NSIP)
Data Authority: UK Department for Energy Security and Net Zero (DESNZ) DUKES Table 6.3

1. Purpose of this Submission

This briefing note provides the Planning Inspector with a localized, climate-accurate calculation of the true generation potential of the proposed **East Pye Solar** facility. It explicitly corrects standard industry marketing models by replacing abstract theoretical baselines with the specific meteorological constraints of **South Norfolk** and the audited historical performance data published by **DESNZ**.

2. The Local Sunlight Constraint (South Norfolk)

The developer's promotional narrative implies an asset capable of continuous, significant grid contribution based on a **500 MW peak nameplate capacity**. However, solar generation is fundamentally governed by regional astronomical and climate limits:

- **Absolute Annual Sunlight Limits:** South Norfolk receives an average of only **1,530 to 1,620 hours of sunshine per year**. Out of 8,760 total hours in a calendar year, the sun is entirely absent for over 81% of the time (nighttime and heavy cloud cover).
- **The Low-Angle Inefficiency Threshold:** Early morning and late evening sunshine hours do not contribute to practical electricity generation. When the sun is low on the horizon, solar radiation passes through a thicker atmospheric layer (high air mass index), drastically reducing irradiance. Furthermore, the angle of incidence prevents the panels from clearing the minimum voltage threshold required to trigger the grid inverters.
- **Extreme Seasonal Path Variance:** Due to the UK's high latitude, the sun's path across the sky changes dramatically between summer and winter. In winter, the low celestial arc combined with short days means the system suffers near-total generation failure precisely when national grid demand peaks.

3. Reconciling the Math: Audited 11% Capacity Factor

When regional climate data, cloud cover, and low-angle limits are completely accounted for, the real-world generation matches the **11% annual capacity factor (load factor)** mandated by DESNZ for UK solar installations. The true yield is calculated using a transparent, realistic framework below:

Metric Factor	Developer Public Relations Narrative	Audited Climate Reality (DESNZ / Local Met)
Peak Nameplate Capacity	500 MW (Implies massive industrial scale)	500 MW Peak (Achievable only a few hours per year in June midday)
Annual Electricity Generation	Omitted as a raw figure; substituted with an inflated '115,000 homes' metric	481,800 MWh (Calculated as: 500 MW × 8,760 hours × 11% audited load factor)

Effective Continuous Equivalence	Implies continuous localized power support	55 MW The facility performs like a tiny 55 MW continuous plant, yet consumes a massive land footprint.
Spatial Footprint Efficiency	Framed as 'harmony with surroundings'	1,100 Hectares (2,718 Acres) utilized to deliver a modest 55 MW annual average output.
Winter Peak Support	Claimed grid support via BESS battery buffering	10 MW to 15 MW (2%–3% winter capacity factor). Battery storage is useless if there is insufficient daylight generation to charge it.

4. Recommended Cross-Examination Questions for the DCO Hearings

The Planning Inspector is urged to put the following technical challenges to the applicant's engineering team during the Issue-Specific Hearings:

- Inverter Threshold Question:** 'Given that South Norfolk experiences between 1,530 and 1,620 total sunshine hours per year, what percentage of these hours occur when solar altitude is below the minimum angle required to overcome inverter startup voltage?'
- Spatial Disproportion Question:** 'Can the applicant justify the expropriation and sterilisation of 1,100 hectares of rural landscape to deliver an effective annual continuous equivalent of just 55 MW of power?'
- Winter BESS Deficit Question:** 'During winter months when the local capacity factor drops below 3%, what is the audited source of electricity intended to charge the Battery Energy Storage System (BESS), and will it require pulling power from the National Grid fossil-fuel baseline during peak times?'

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