

From: [REDACTED]
To: [One Earth Solar](#)
Subject: Deadline 3 submissions.
Date: 09 September 2025 15:15:30
Attachments: [Critical Assessment of the One Earth Proposal.docx](#)
[Submission on Sequential and Exception Test Failures in One Earth Solar Farm NSIP.docx](#)
[WFD Compliance.docx](#)
[Flood risk including cumulative effects and resource deficit..docx](#)
[Cost of floodingExpanded Cost Analysis of the One Earth Solar Farm.docx](#)
[Public safety..docx](#)

Stephen Fox

Resident of North Clifton

Interested Party Reference number: FA3AE8AE5

9 September 2025

The Examining Authority

The Planning Inspectorate Temple Quay House Temple Quay Bristol BS1 6PN

By Email

Dear Sirs

I enclose 6 submissions

- 1) Critique of the One Earth Proposal's Flood Risk Assessment.
- 2) Report on Sequential and Exception Test Failures in One Earth Solar Farm NSIP.
- 3) Analysis of WFD Compliance for the One Earth Solar Farm.
- 4)The Cumulative effects of Flood risk from the One Earth Proposal and Implications of the deficit in Local Authority Resources.
- 5)One Earth Solar Farm: Hydrological and Flood Risk Cost Analysis for the Trent Valley and Considerations on Siting Near High Marnham Grid Connection
- 6) Public Safety implications Of the One Earth proposal.

These submissions serve 6 purposes:

- 1 Detailed support of my letter and supporting report to the ExA dated 8 September 2025.
- 2) Stand alone information that needs to be in possession of all inspecting authorities.
- 3) Detailed support to the representations made to me during the pre examination consultation report as early as 22.07.24 but excluded by the applicant from the documentation provided in the Consultation Report.
- 4) Comments on responses to WR's.
- 5)Responses to Comments to ExQ1.
- and) the Exa's invitation to me,made at Issue Specific Meeting 2,to make any necessary representations in writing tot Deadline 3.
- and

6) Comments on any additional submissions received by D2.

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Yours faithfully

Stephen Fox

Critique of the One Earth Proposal's Flood Risk Assessment

1. Summary

1.1. Core Findings

The analysis of the documentation pertaining to the One Earth Solar Farm reveals significant limitations in its flood risk assessment (FRA). While the applicant has presented a case that the project's flood-related impacts would be "neutral" and has proposed specific mitigation measures, the assessment is challenged on multiple fronts by statutory and community stakeholders. The evidence suggests that the methodology and assumptions underpinning the developer's flood risk evaluation are not robust, underestimating the project's hydrological impact on the surrounding landscape. The project's status is characterized by a critical procedural gap, a lack of scientific rigor in its modelling, and a failure to adequately address broader, cumulative environmental effects.

1.2. Key Limiting Factors

The assessment is critically limited by several key factors. First, the applicant has provided **insufficient evidence** to demonstrate compliance with the mandatory Sequential Test for site selection, a finding raised by the Lincolnshire County Council (LCC)¹. Second, the hydrological modelling is based on **outdated assumptions**, failing to account for the substantial increases in runoff and peak discharge rates that can be caused by large-scale solar arrays². Third, the assessment neglects a robust analysis of the **cumulative flood effects** from other large-scale solar projects in the same regional catchment area, an issue highlighted by both local critics and quantitative land use data³. Finally, the public consultation process has been described as **procedurally deficient**, creating a public trust deficit that could undermine the project's viability⁴.

1.3. Overall Conclusion

Based on a comprehensive review of the submitted documentation and external analyses, the current flood risk assessment for the One Earth Solar Farm is **not robust**. It contains significant vulnerabilities that could lead to increased regional flood risk, particularly from surface water runoff, and a failure to meet regulatory and scientific standards. The project's approval is exposed to a high degree of procedural and environmental risk, as its claims of safety and compliance are contested by both official bodies and external experts.

2. Introduction and Definitional Clarification

2.1. Defining the "One Earth Proposal": A Critical Clarification

An essential point of clarification is required at the outset of this report. The term "One Earth Proposal" is used in the provided material to describe two entirely distinct concepts. The first is a broad, global socio-economic and environmental concept rooted in the 1972 Stockholm conference, captured by the slogan "Only One Earth". This proposal advocates for a "harmonized co-operative world" where each part "is a centre, living at the expense of nobody else, in partnership with nature and in solidarity with future generations". This

foundational concept has been influential in shaping subsequent policy discussions on topics such as a "just transition" and the "financial drain from the Global South"⁵. It is associated with non-profit organizations and philanthropic initiatives aimed at addressing the climate and biodiversity crises through three pillars: renewable energy, nature conservation, and regenerative agriculture.

The second, and for the purpose of this report, the relevant "One Earth" is a specific, large-scale energy infrastructure project: the **One Earth Solar Farm**. This is a proposed ground-mounted solar photovoltaic (PV) array with an associated Battery Energy Storage System (BESS) located at the border of Nottinghamshire and Lincolnshire in the United Kingdom.

The duality of these two entities is notable. The commercial project's use of a name associated with a global, non-profit, and progressive socio-ecological movement creates a significant rhetorical juxtaposition. The project itself is facing substantive critiques from local stakeholders and a statutory authority on specific environmental and procedural grounds, which stands in direct contrast to the ideals of a "harmonized world" and "partnership with nature" embodied by the original global proposal. This report will focus exclusively on the technical and procedural assessment of the One Earth Solar Farm project, as this is the subject of the query.

2.2. Scope and Purpose

This report provides a critical and level assessment of the One Earth Solar Farm's flood risk, its underlying assumptions, and its compliance with the UK's National Planning Policy Framework (NPPF) and other relevant guidance⁶. The assessment will be a deep dive into the specific claims and methodologies of the project's flood risk assessment, analysing them against critiques from key stakeholders and evidence from external academic and regulatory sources.

3. Project and Site Context

3.1. Project Overview

The One Earth Solar Farm is a proposed new solar farm with associated batteries and infrastructure⁷. It is a ground-mounted solar photovoltaic (PV) array designed to generate electricity from sunlight, with a Battery Energy Storage System (BESS) to store energy and release it to the grid as needed. The project has secured a grid connection agreement for up to 740MW of electricity, which the developer claims is enough to power over 200,000 UK homes⁸. The location was chosen primarily due to the availability of a grid connection point at the decommissioned High Marnham coal-fired power station, which created capacity for new energy projects. (It should be noted however, that this capacity will be used irrespective of the approval or rejection of the project.) The project's design has undergone several iterations.

3.2. Hydrological Profile of the Site

The project's proposed location straddles the River Trent, a major waterway in the UK. This geographical positioning places the site in a high-risk flood area⁹. The provided documentation confirms that approximately 56% of the site is situated within Flood Zones 2 and 3, which are areas with a higher risk of flooding from rivers and the sea. This fact immediately triggers a heightened level of regulatory scrutiny under UK planning policy¹⁰. The Lincolnshire County Council (LCC) and the Nottinghamshire County Council (NCC), as the Lead Local Flood Authorities (LLFA), have a statutory responsibility for managing flood risk from surface water, ordinary watercourses, and groundwater in its area. This dual-county location and the significant proportion of the site within designated flood zones make a robust and comprehensive flood risk assessment paramount for the project's viability.

4. Assessment of the Developer's Flood Risk Assessment (FRA)

4.1. The Applicant's Position and Proposed Mitigation

The developer's Flood Risk Assessment (FRA) acknowledges a "medium to high risk of fluvial and tidal flooding" for the site but concludes that the risk from other sources, such as surface water, is low¹¹. The applicant asserts that the overall impact of the solar farm on surface water run-off will be "neutral" and has proposed a series of mitigation measures to support this claim. These measures include the sequential approach of placing no built development within the functional floodplain and locating sensitive equipment, such as substations and battery storage systems, outside of the design flood extent. Inverters would be raised on platforms above the design flood level, and the height of the solar panels would be varied depending on the flooding extent to allow for the passage of floodwater.

4.2. Regulatory Framework: The Sequential and Exception Tests

UK planning policy, as outlined in the **National Planning Policy Framework (NPPF)**, mandates a risk-based approach to development. The primary tool for this is the **Sequential Test**, which aims to "steer new development to areas with the lowest risk of flooding" from any source¹². Development proposals in higher flood zones (2 and 3) must demonstrate that no other suitable and available sites with a lower risk exist. If the Sequential Test cannot be satisfied, a development may then be subject to the **Exception Test**, which requires a developer to demonstrate two key points: first, that the project provides wider sustainability benefits to the community that outweigh the flood risk; and second, that the development will be safe for its entire lifetime, without increasing flood risk elsewhere¹³. The NPPF now classifies solar farms as "Essential Infrastructure," which allows them to be considered for the Exception Test. The developer has submitted a detailed assessment to provide "further evidence" for how it has applied and satisfied these tests.

4.3. Conflicting Assessments: A Comparative Analysis

The following table provides a clear comparison of the developer's claims regarding the flood risk assessment and the direct critiques from key stakeholders, specifically the Lincolnshire County Council and, Stephen Fox¹⁴. This juxtaposition highlights the central points of contention and provides a framework for the subsequent critical analysis.

Aspect of Assessment	Applicant's Position	Lincolnshire County Council's Assessment	Stephen Fox's Critique
Sequential Test	Applied and satisfied as part of site selection.	Insufficient evidence provided to conclude the test has been passed. The methodology is flawed.	The proposal should not be approved as it is on a flood plain and other sites exist.
Hydrological Modelling	Solar farms are not expected to cause a significant increase in runoff. Impact will be "neutral".	Surface water flood risk appears to be appropriately addressed in application documents.	The assessment fails to incorporate current scientific understanding. Runoff can increase by 99% to 154%, and peak discharge by up to 11.7 times. The Wallingford Procedure model is inappropriate.
Cumulative Impact	Not explicitly addressed in the provided documents. The focus is on the project's direct impact.	Notes that if all "reasonably foreseeable" schemes proceed, the change in land use in Lincolnshire would be 0.70%.	The collective impact of other solar projects within a 30-mile radius has not been properly assessed and could lead to amplified flood risk throughout the region.
Consultation Process	"Robust and extensive engagement was undertaken" with stakeholders and the community. All local authorities confirmed compliance with statutory requirements.	Confirmed that the applicant has complied with statutory consultation requirements.	The developer "deliberately and consistently" failed to report legitimate challenges to the consultation and "deliberately hidden" dissatisfaction from inspectors.
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5. Critical Analysis of Limiting Factors

5.1. Limiting Factor 1: Insufficient Evidence for the Sequential Test

The most significant regulatory vulnerability in the project's proposal is its apparent failure to fully satisfy the Sequential Test. The Lincolnshire County Council, a key statutory consultee, has stated in its Local Impact Report that there is "insufficient evidence to properly conclude that the Sequential Test has been passed regarding site selection"¹⁵. The council's critique is precise and procedural. It notes that the developer's methodology "appears to have disregarded land that could not be leased by them" and did not consider a wider search area beyond a 10km radius from the High Marnham substation¹⁶. This narrow, self-imposed search radius appears to have prioritized a pre-selected grid connection point and land availability over the primary objective of the Sequential Test, which is to guide development based on flood risk.

This finding is not merely a bureaucratic hurdle; it represents a fundamental regulatory failure that undermines the core purpose of UK planning policy. The purpose of the test is to ensure that development is steered towards areas of lowest flood risk, a principle that the applicant's site selection process seems to have contravened. This is a critical vulnerability. As illustrated by precedent in other solar farm appeals, the failure to rigorously justify a site search can be a sufficient reason for an appeal to be rejected, particularly when the proposed development is on agricultural land and viable alternative sites may exist¹⁷.

5.2. Limiting Factor 2: Questionable Hydrological Assumptions and Modelling

The developer's claim of a "neutral" impact on runoff is directly contradicted by external scientific and academic evidence. While the applicant states that solar farms are not expected to cause a significant increase in run-off, a local critique by Stephen Fox argues that this assumption is outdated and contradicted by scientific research¹⁸. Fox references studies that suggest runoff could increase by 99% to 154% and peak discharge rates could increase by as much as 11.7 times¹⁹.

Academic research supports these concerns. One study using a rainfall simulator found that solar panels increased peak discharge by "about 11 times" compared to a reference hillslope²⁰. Other research indicates that a scenario with altered land cover after solar farm construction could lead to a "100% increase in peak runoff"²¹. The mechanism behind this is not the panels' physical presence alone but the altered ground cover and the increased kinetic energy of water flowing from the panels, which can cause soil erosion and create channelized flows. These channelized flows can then increase the rate and volume of surface water discharge, potentially overwhelming existing drainage infrastructure. The developer's proposed mitigation of raising panels only protects the equipment itself from floodwaters; it does not address the fundamental issue of increased runoff and the resulting flood risk to neighbouring areas. This discrepancy between the developer's assumptions and the scientific consensus represents a critical technical flaw in the FRA.

The issue is compounded by the fact that the hydrological impact of solar farms is not yet fully understood, and the "lack of established modelling methods tailored to their unique land cover" is a known issue in the scientific community²². Fox's critique of the developer's use of the "Wallingford Procedure model" for this specific application is therefore well-founded.

5.3. Limiting Factor 3: Neglect of Cumulative and Regional Impacts

A significant gap in the project's flood risk assessment is its failure to account for the cumulative impact of other "reasonably foreseeable" solar projects in the region. The assessment appears to have been conducted in isolation, focusing only on the site-specific effects. However, the Lincolnshire County Council has noted that if all such schemes in the area proceed, the total change in land use would be 0.70% within the county²³.

This absence of a robust, regional analysis is a major oversight. Multiple large-scale solar farms, each contributing to increased runoff and peak discharge rates, could collectively overwhelm the existing drainage infrastructure and exacerbate flood risk for the wider community. The "death by a thousand cuts" scenario, where individual, seemingly manageable impacts combine to create a significant systemic problem, is a real risk in this context. The FRA's failure to model this broader effect is a systemic vulnerability in the overall planning process for renewable energy infrastructure in a flood-prone region.

5.4. Limiting Factor 4: Procedural Deficiencies in Consultation

While the developer asserts that it conducted "robust and extensive engagement" and that local authorities have confirmed compliance with statutory consultation requirements, a direct contradiction exists in the public record²⁴. A community representative, Stephen Fox, alleges that the developer "deliberately and consistently failed to report" legitimate challenges to the validity of the consultation. He claims the developer "deliberately hidden" deep dissatisfaction from inspectors and local councils, intending to have the proposal pass for examination without revealing the extent of community opposition²⁵. More over most of the issues that are now having to be corrected were raised in submissions made to but excluded by the applicant from the Consultation report.

This direct conflict between the developer's formal compliance and the community's perception of a flawed process create a significant procedural and reputational risk. Even if the developer has met the minimum legal requirements, the perception of a non-transparent and non-responsive process can lead to heightened public opposition, legal challenges, and delays. The formal backing of local authorities on a legal checklist does not negate the existence of a deep-seated public relations problem that could escalate and hinder the project's timeline and viability.

6. Holistic Assessment and Recommendations

6.1. Synthesis of Conflicting Viewpoints

The flood risk assessment for the One Earth Solar Farm is fundamentally flawed. While the developer has meticulously addressed the project's vulnerability to flooding by proposing measures to protect its equipment, it has largely failed to demonstrate an adequate understanding of the project's potential to **cause flooding**. The developer's claims of formal compliance and a "neutral" impact are directly contradicted by expert analysis from a local authority and by external scientific research. The core of the issue lies in the applicant's site selection methodology, which appears to have prioritized a pre-existing grid connection over the principles of flood risk mitigation, and in its use of outdated hydrological models that do not accurately represent the effects of large-scale solar arrays.

6.2. Detailed Recommendations for Mitigation and Further Assessment

To address the identified vulnerabilities and provide a scientifically and procedurally sound basis for project approval, the following recommendations are made:

- **Hydrological Modelling:** The applicant should be required to re-run the FRA using modern, solar-farm-specific hydrological models that account for increased runoff, peak discharge rates, and erosion from the panels. The use of models tailored to this unique land use is critical to accurately predict the project's impact and should not be based on simplified, generalized assumptions.
- **Sequential Test:** The developer must re-evaluate the Sequential Test with an expanded and transparent search area. This re-evaluation should consider all suitable and available sites regardless of their current leasing status or proximity to the

preferred grid connection point. The re-run must demonstrate that the project's chosen site is indeed the most appropriate one from a flood risk perspective.

- **Cumulative Impact:** A full and robust assessment of the cumulative impacts on regional flood risk is essential. The analysis must model the combined effect of all "reasonably foreseeable" solar projects within the River Trent catchment area to ensure that the total effect on local and regional drainage infrastructure is fully understood and mitigated.
- **Land Management:** The project's consent should be conditional on a long-term, enforceable land and vegetation management plan. This plan must include specific, scientifically backed measures to maintain ground cover between panels, prevent soil compaction, and use best practices such as swales and infiltration basins to manage surface water runoff and prevent channelization and erosion.

6.3. Final Concluding Statement

The One Earth Solar Farm's flood risk assessment, in its current form, is not fit for purpose. It demonstrates an inadequate understanding of a new and evolving land use's hydrological effects and a failure to meet the spirit, if not the letter, of regulatory requirements. Granting consent without a complete and transparent reassessment would expose the local community and the wider region to significant and unnecessary flood risk, making the project's long-term viability questionable. The principles of the original "One Earth" proposal—living in "partnership with nature" and in "solidarity with future generations"—demand a more rigorous and responsible approach to environmental assessment than what has been presented.

Sources used in the report

Sources Referenced in the Report

- 1 – nsip-documents.planninginspectorate.gov.uk
- 2 – researchgate.net
- 3 – nsip-documents.planninginspectorate.gov.uk
- 4 – nsip-documents.planninginspectorate.gov.uk
- 5 – oefse.at
- 6 – gov.uk
- 7 – oneearthsolarfarm.co.uk
- 8 – oneearthsolarfarm.co.uk
- 9 – check-for-flooding.service.gov.uk
- 10 – lincolnshire.gov.uk
- 11 – nsip-documents.planninginspectorate.gov.uk
- 12 – n-somerset.gov.uk
- 13 – geosmartinfo.co.uk
- 14 – nsip-documents.planninginspectorate.gov.uk
- 15 – nsip-documents.planninginspectorate.gov.uk
- 16 – cornerstonebarristers.com

- 17 – cornerstonebarristers.com
- 18 – researchgate.net
- 19 – researchgate.net
- 20 – researchgate.net
- 21 – iee.psu.edu
- 22 – north-herts.gov.uk
- 23 – nsip-documents.planninginspectorate.gov.uk
- 24 – nsip-documents.planninginspectorate.gov.uk
- 25 – nsip-documents.planninginspectorate.gov.uk