

From: [REDACTED]
To: [One Earth Solar](#)
Subject: Water Framework Directive Failure.
Date: 27 December 2025 09:47:36

To: The Examining Authority

From: Stephen Fox, Interested Party (Ref: [REDACTED])

Date: 19 December 2025

Deadline 8 Submission

Project Reference: EN010159 – One Earth Solar Farm

Dear Sirs

Please accept this critical deadline 8 submission.

Reservation of Rights (Litigant in Person)

This submission is made under **explicit protest** and strictly **without prejudice** to the Interested Party's right to challenge the lawfulness and procedural integrity of the Examination.

The Interested Party's continued participation is legally **compelled** by the statutory process (Planning Act 2008) to maintain standing, but this action does **not** constitute a waiver, acceptance, or validation of any alleged procedural impropriety, ExA bias, unlawful censorship, or fundamental flaws in the Administrative Record.

All rights to seek Statutory Appeal and Judicial Review against the final Development Consent Order decision are fully reserved.

Water Framework Directive Failure.

Stage 1 Water Framework Directive Screening Assessment (Appendix 7.4) – One Earth Solar Farm (EN010159)

Document Status: Formal Objection & Regulatory Compliance Audit

Subject: Validity of Appendix 7.4 and Compliance with EIA Regulations 2017

Date: 27 December 2025

1. Summary: The Convergence of Geological and Legal Failure

This report submits that the **Appendix 7.4 Stage 1 Water Framework Directive (WFD) Screening Assessment** is scientifically obsolete, legally defective, and procedurally void. The Applicant's case relies on a fundamental disconnect between the "postulated" ground conditions and the physical reality of the Trent Valley's **Glacial Spillway** geology.

The Applicant's decision to "screen out" impacts on the River Trent is invalid due to three fatal pillars of failure:

1. **Geological & Scientific Obsolescence:** The assessment ignores the **"current knowledge"** mandated by **EIA Regulation 14(3)(b)**. It relies on a "postulate" that the site behaves like generic, cohesive agricultural land. This

is falsified by the specific "make up" of the spillway deposits (particulate, non-cohesive sands/silts) and 2023 empirical evidence (*Baiamonte et al.*) proving that solar panels amplify hydraulic load by up to **11.7 times**^{1,2}. This combination guarantees scour and sediment mobilization that the proposed "grass cover" cannot mitigate.

2. **The "Derogation Trap":** The Applicant is legally trapped by **Regulation 19** of the Water Environment Regulations 2017 (Article 4(7) WFD). Uncontested evidence (REP4-079) proves the existence of "**significantly better environmental options**" (alternative sites in Flood Zone 1)³. This existence legally bars the Secretary of State from granting a derogation if *any* deterioration (e.g., scour, sediment, or frac-out) is proven.
3. **Procedural Fatalities:** The Applicant has unlawfully deferred critical risk assessments for **HDD Frac-out** and **BESS Fire Water** to the post-consent phase. This violates the *People Over Wind* ruling (no deferred mitigation at screening)⁴ and creates a **Rule 19 (Examination Procedure Rules)** dead-end, preventing the late submission of derogation evidence ⁵.

2. Geological Characterization: The "Postulate Make Up of the Spill"

The critique centres on the Applicant's failure to characterize the specific sedimentology of the site, relying instead on generic "Greenfield" assumptions.

2.1 The "Spillway" Vulnerability

The term "the spill" refers to the **Glacial Spillway** nature of the Trent Valley.

- **The "Postulate" (Applicant's View):** The site consists of standard agricultural soils that will remain stable under "Greenfield runoff rates" if vegetated.
- **The "Make Up" (Physical Reality):** The site is defined by **Holme Pierrepont Sand and Gravel** and other glacial flood deposits ⁶. These are "particulate" soils—dominated by silts and fine sands with low cohesion. Unlike clay, which binds electrostatically, these soils rely on "Particulate Organic Matter" (POM) for stability.
- **The Failure Mechanism:** The Local Impact Report notes that solar arrays lead to "lower levels of soil organic carbon and particulate organic matter" ⁷. As the POM degrades due to shading and microclimate changes, the "glue" holding the spillway sands together dissolves. The soil reverts to a loose, highly erodible material.

2.2 The "Baiamonte" Kinetic Energy Effect (11.7x)

The geological vulnerability is triggered by the altered physics of solar runoff.

- **The Statutory Breach: EIA Regulation 14(3)(b)** mandates the use of "current knowledge" ⁸. By relying on outdated policies (Cook & McCuen, 2013) and ignoring *Baiamonte et al. (2023)*, the assessment is legally defective.

- **The Physics:** *Baiamonte* proves that solar panels collect rainfall and discharge it in a concentrated curtain at the drip line, amplifying intensity by up to **11.7 times** 1.
- **The Scour Dynamic:** When this 11.7x hydraulic load strikes the "particulate" spillway soil, the **Shear Stress** exceeds the soil's critical strength. The result is **impact detachment** (slaking), surface sealing, and the formation of "erosion pits" that undermine the infrastructure 2.

WFD Conclusion: The "embedded mitigation" (grass) fails because it is planted in non-cohesive soil that is being washed away from the roots. This mobilizes sediment (a WFD pollutant), causing deterioration in the **Physico-Chemical Status** of the River Trent.

3. The "Derogation Trap": WFD Regulation 19 (Article 4(7))

This is the most strategically lethal aspect of the application. The Applicant *must* screen out impacts because they are legally barred from obtaining a derogation to excuse them.

3.1 The Legal Test for Deterioration

Under the *Weser Ruling* (C-461/13), "deterioration" occurs if *any single quality element* (e.g., Macrophytes or Invertebrates) drops by one class 9. The sediment mobilization described in Section 2 guarantees such a drop.

3.2 The Impossibility of Derogation

To consent a project that causes deterioration, the Secretary of State (SoS) must grant an exemption under **Regulation 19** of the *Water Environment Regulations 2017* (Article 4(7) WFD) 10.

- **Condition (d):** The derogation can *only* be granted if "*the beneficial objectives... cannot... be achieved by other means which are a **significantly better environmental option***".
 - **The Trap:** The submission **REP4-079** (*Robust Consideration of Alternative Site Constellations*) provides uncontested evidence that the project's capacity could be delivered on alternative sites in **Flood Zone 1** (a significantly better option) 3.
 - **The Fatality:** Because these "better options" exist, the project **cannot pass Regulation 19(1)(d)**. The SoS has no legal power to grant the derogation.
 - **Conclusion:** The Applicant *must* prove "No Deterioration" beyond reasonable doubt. The geological flaws in Appendix 7.4 make this impossible.
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4. The "Rule 19" Procedural Trap (Examination Rules)

The Applicant is attempting to defer risk assessments to the post-consent phase. This creates a procedural deadlock under the *Infrastructure Planning (Examination Procedure) Rules 2010*.

4.1 The Dead-End Mechanism

- **The Scenario:** The Applicant screens out HDD Frac-out risks at Stage 1, promising a Construction Environmental Management Plan (CEMP) later. The Examination closes.
- **The Intervention:** The SoS realizes that *Weser* and *People Over Wind* prevent this deferral. Deterioration cannot be ruled out.
- **The Problem:** To grant consent, the SoS needs a WFD Derogation case. *But the Applicant never submitted one.*
- **The Trap:** Under **Rule 19(3)** of the Examination Rules, the SoS cannot accept new evidence (a retrofitted derogation case) without re-consulting all Interested Parties 5.
- **The Outcome:** As seen in the *Immingham* decision 11, the SoS is legally paralyzed. They cannot grant the DCO without the derogation, and they cannot get the derogation without reopening the Examination (indefinite delay).

5. Operational Blind spots: HDD & Fire Water

5.1 HDD Frac-Out & "People Over Wind"

- **The Risk:** "Frac-out" of bentonite drilling fluid during the River Trent crossing 12.
- **The Violation:** Appendix 7.4 defers the "Frac-out Risk Assessment" to the CEMP 13. This violates the *People Over Wind* (C-323/17) ruling, which states that mitigation measures cannot be used to screen out risks if they are not defined and assessed *at the screening stage* 4.
- **The Precedent:** In the *Cottam Solar Project*, the Applicant was forced to submit a detailed "**Technical Note on HDD**"¹⁴ to cure this defect. One Earth has failed to do this.

5.2 BESS "Disaster Topology": Toxic Spill

- **The Hazard:** Toxic fire water (HF, PFAS) from BESS thermal runaway.
- **The Flaw:** Mitigation relies on "tankering away" fire water 15.
- **The Disaster Topology:** The assessment ignores the scenario of **Concurrent Flood & Fire**. In this event, floodwaters render access roads impassable for tankers. Containment bunds are overtopped.
- **WFD Consequence:** Toxic water spills directly into the catchment. Appendix 7.4 fails to model this "failure case," rendering the screening of Chemical Status invalid 16.

6. Cumulative Impacts: The "5mm Loophole"

- **The Distinct Cell Fallacy:** The Applicant argues the east/west floodplains are "distinct cells" to avoid summing flood impacts 17. This is physically

incorrect, the valley functions as a single hydraulic unit during major events.

- **The 5mm Tolerance:** The Applicant dismisses impacts <5mm as "negligible".
- **The Cumulative Reality:** 5mm (One Earth) + 5mm (Cottam) + 5mm (West Burton) + 5mm (Gate Burton) = **2.0cm**. This cumulative rise is sufficient to breach flood defences, yet Appendix 7.4 screens it out by "salami-slicing" the impact 18.

7. Recommendations to the Examining Authority

1. **Rejection:** Reject the Stage 1 Screening for Hydro morphology and Physico-Chemical status as it relies on falsified physics (Cook & McCuen) and ignores the "postulate make up" of the spillway geology.
2. **Shadwell Principle:** Invoke the *Shadwell Principle* 19 to set aside the Environment Agency's advice due to the "cogent and compelling" evidence of the **Baiamonte (11.7x)** effect and other WFD blindness.
3. **Compel Evidence:** Issue a Rule 17 letter requiring:
 - A **Stage 3 WFD Assessment** modelling the 11.7x kinetic energy coefficient on particulate soils.
 - A **Quantified HDD Frac-Out Risk Assessment** (per *Cottam* precedent).
 - Acknowledgement that the existence of **Alternative Sites (REP4-079)** precludes a future Regulation 19 derogation.

8. References

[^1]: Baiamonte, G. et al. (2023). 'Impact of solar panels on runoff generation process', Journal of Hydrology.

[^2]: Fox, S. (2025). Forensic Hydrological Audit: The Duty to Depart from Defective Statutory Advice. Submitted to Examination.

[^3]: Fox, S. (2025). Robust Consideration of Alternative Site Constellations (REP4-079).

[^4]: CJEU Case C-323/17, People Over Wind & Sweetman v Coillte Teoranta.

[^5]: Infrastructure Planning (Examination Procedure) Rules 2010, Rule 19(3).

[^6]: One Earth Solar Farm Ltd (2025). Appendix 7.2 Flood Risk Assessment [EN010159/APP/6.21], referencing "Holme Pierrepont Sand and Gravel".

[^7]: West Lindsey District Council (2025). Local Impact Report - One Earth Solar Farm.

[^8]: Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, Regulation 14(3)(b).

[^9]: CJEU Case C-461/13, Bund für Umwelt und Naturschutz Deutschland eV v Bundesrepublik Deutschland (The 'Weser' Ruling).

[^10]: Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, Regulation 19.

[^11]: Immingham Eastern Ro-Ro Terminal DCO Decision Letter (2024).

[^12]: Fox, S. (2025). Technical Critique of Environmental Statement Appendix 7.2.

[^13]: One Earth Solar Farm Ltd (2025). Outline Construction Environmental Management Plan [EN010159/APP/7.4.6].

[^14]: Cottam Solar Project (2024). Technical Note on Horizontal Directional Drilling and Cabling under the River Trent [EX5/C8.2.13].

[^15]: Fox, S. (2025). Re: Technical Critique of Environmental Statement Appendix 7.2.

[^16]: Fox, S. (2025). Public Safety implications Of the One Earth proposal.

[^17]: Jacobs (2023). Tidal Trent Hydraulic Model.

[^18]: Fox, S. (2025). The Cumulative effects of Flood risk from the One Earth Proposal.

[^19]: Shadwell Estates Ltd v Breckland District Council EWHC 12 (Admin).

Yours faithfully

Stephen Fox

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