📄 SUPPLEMENTARY SUBMISSION — WIND-INDUCED CATASTROPHIC FAILURE RISK (CAMBLESFORTH SOLAR FARM)

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1. Purpose of This Submission

This supplementary document expands on my previously submitted Relevant Representation (RR) and Information for Requirements (IFR). It highlights a critical engineering concern: **the risk of catastrophic structural failure of solar panels and mounting systems under high wind loads**, referencing known issues observed at **Camblesforth Solar Farm (Second Barlow Lane, Selby YO8 8NE)**.

Camblesforth provides a relevant real-world comparator due to its open terrain, exposure, and similar mounting technologies.

2. Catastrophic Failure Risk from High Wind Loads

Large-scale solar arrays in exposed agricultural landscapes face significant uplift, torsional, and oscillation risks during extreme wind events. Camblesforth's location — flat, open farmland with long fetch distances — demonstrates how these risks can be amplified.

Key engineering concerns include:

- **Panel uplift forces** exceeding mounting tolerances during storm-force winds.
- **Progressive failure**, where detachment of one panel triggers cascading structural collapse across adjacent rows.
- **Resonance and oscillation**, where repeated gust loading fatigues fixings, rails, and support frames.
- **Debris hazard**, with detached panels becoming high-velocity projectiles capable of causing injury, property damage, or obstruction of emergency access routes.
- **Generic mounting systems**, often installed without site-specific wind tunnel testing or gust-factor modelling.
- **Terrain-driven exposure**, with Camblesforth's flat landscape offering no natural shielding — a condition mirrored at Light Valley Solar.

These risks must be fully quantified before any construction activity is permitted.

3. Required Evidence from the Developer

To ensure public safety and infrastructure resilience, the developer must provide:

- Full wind-load calculations for all panel types and mounting assemblies
- Site-specific modelling including gust factors, turbulence, directional exposure, and extreme wind events
- Evidence of compliance with relevant wind-load and structural standards
- Failure mode analysis and mitigation measures
- Emergency response planning for panel detachment events

Without this information, the risk of catastrophic failure remains unquantified and unacceptable.

4. Conclusion

Camblesforth Solar Farm demonstrates the heightened vulnerability of solar installations in exposed agricultural environments. The same conditions exist at Light Valley Solar, and therefore **wind-induced catastrophic failure must be treated as a primary engineering risk** within the DCO examination.

I request that the Examining Authority require the developer to provide full wind-load evidence and failure-mode analysis before any construction activity is permitted.