

TECHNICAL & POLICY REPRESENTATION

TO THE PLANNING INSPECTORATE (National Infrastructure Planning)

Reference: The Drovers Solar Farm Project (NSIP Application EN010142 / EN0110013)

Territorial Scope: Castle Acre Parish, Swaffham, and West Norfolk Boundaries

Submission Date: Deadline 4 (September 2026) | **Status:** Formal Technical Representation

Interested Party (IP) Reference: [REDACTED]

Dear Sir/Madam,

RE: Deadline 4 Submission – Technical, Policy, Environmental, Deliverability, Compulsory Acquisition and Grid Connection Objections to the Proposed Drovers Solar Farm and Integrated 25-Acre Battery Energy Storage System (BESS).

This representation is formally submitted on behalf of affected local stakeholders and residents within the Castle Acre and Swaffham localities for consideration by the Examining Authority at Deadline 4. Our submission fundamentally challenges the assertions made by the Applicant regarding the winter reliability, safety profiles, legal policy weight, deliverability, environmental containment measures, the justification for seeking compulsory acquisition powers under Article 21 of the draft Development Consent Order, and the current status and deliverability of the project's grid connection under NESO's Connections Reform (Gate 2 / TEC Register) of the proposed 500MW scheme.

This comprehensive submission package encompasses the following material components:

- **Sections 1-4:** An engineering and policy cross-examination proving the systemic collapse of winter efficiency (0–5°C) and the subsequent failure of the NPS EN-1 Critical National Priority (CNP) Balancing Test.
- **Section 5:** Formal Written Summary of the Oral Case presented at Open Hearing 2 on 10th September 2026.
- **Section 6:** Formal Request for Visual and Topographic Clarification utilizing strict Ordnance Survey (OS) Above Ordnance Datum (AOD) height maxima.
- **Section 7:** Interrogation of Grid Connection Paradoxes arising from National Grid Electricity Transmission (NGET) structural statements.
- **Section 8:** Engineering and Safety Clarification Requests concerning underground toxic and clean firefighting containment infrastructure.
- **Section 9:** Ecological Interrogation regarding the permanent exclusion and fragmentation of terrestrial mammals across the 2,800-acre order limits due to 3.5m high mesh perimeter fencing.
- **Section 10:** Formal Interrogation of Compulsory Acquisition Powers under Article 21 – necessity, alternatives (time-limited lease), and compliance with the 'last resort' principle.
- **Section 11:** Formal Interrogation of Grid Connection Deliverability – Gate 2 status, TEC Register position, connection date integrity, and the proposed New Swaffham 400kV Substation.

- **Section 12:** Material Weight of Recent Planning Precedent – Submission of the Gayton/Rothersthorpe Solar Farm Ministerial Overrule regarding agricultural land preservation, landscape character, and regional saturation.

We respectfully request that the Examining Authority compels the Applicant to provide unambiguous, quantified, and spatially mapped answers to the distinct technical interrogations appended herein before the close of the Examination.

Yours faithfully,

Antony Morgan

Local resident of Castle Acre

Interested Party Number: [REDACTED]

1. Executive Summary of Technical Objections

The proposed Drovers Solar Farm scheme incorporates a 500MW solar PV capacity and an extensive 25-acre lithium-ion BESS unit. While the applicant leverages the updated Critical National Priority (CNP) provisions within the energy National Policy Statements (NPS) to imply that net-zero benefits automatically override local impacts, this representation demonstrates that the facility faces severe, interconnected systemic inefficiencies during winter months in Castle Acre. When ambient temperatures drop to 0–5°C, the combination of low solar irradiance and sub-optimal chemical performance heavily degrades both generation capacity and BESS charging efficiency, failing the underlying legal test for CNP status.

2. Local Micro-Climate Context (Sustained Winter 0–5°C Constraints)

According to historical Met Office meteorological data for the West Norfolk/East Anglia region, Castle Acre experiences an average of 45 to 55 days per year where the average daily temperature falls strictly within the 0–5°C range (concentrated between late November and early March). On these specific days, the system suffers from co-existing generation and storage penalties that disrupt its ability to perform as a reliable national asset.

3. Deep-Dive Breakdown of Winter Inefficiencies & NPS Framework Conflicts

3.1 Solar PV Panel Inefficiencies vs. NPS EN-3 Utility Principles

While silicon solar panels are technically more efficient at moving electrical charges in colder temperatures, this chemical advantage is entirely negated by winter geometry. In December and January, Norfolk experiences low solar angles, heavy cloud cover, and short daylight hours. Solar PV arrays in East Anglia operate at a capacity factor of just 2% to 5% during these cold winter days, compared to over 25% in summer. Under NPS EN-3 Section 2.10, applicants must demonstrate that solar farms are optimized to make a reliable contribution to the energy mix. The applicant's generation models rely on high-yield summer data, masking the fact that for roughly 50 days a year, the asset provides negligible output, failing the policy intent of providing dependable, year-round decarbonisation.

3.2 BESS Unit Inefficiencies vs. NPS System Flexibility & Safety Mandates

At ambient temperatures between 0–5°C, internal chemical resistance in the lithium-ion cells spikes sharply, slowing lithium-ion diffusion within the anode. Forcing a standard charge rate during these 45–55 days risks lithium plating, which permanently degrades cell capacity and creates a severe long-term thermal runaway fire hazard. This directly conflicts with NPS EN-3 safety assessment requirements for co-located battery storage systems.

Furthermore, to prevent degradation, the BESS must continuously run internal heating and HVAC systems to warm the cell enclosures. Instead of storing energy for the National Grid, the facility shifts from being a grid asset to a net parasitic consumer of grid energy, violating the system flexibility mandates embedded within NPS EN-1.

3.3 Grid Congestion and Transmission Inefficiencies (NPS EN-5)

The Droves Solar Farm intends to tap into the heavily congested Walpole-to-Necton 400kV overhead line corridor via a new substation near Swaffham. Because solar generation drops precisely when winter peak demand rises, this facility fails to deliver localized grid relief, forcing expensive winter curtailments where the National Energy System Operator (NESO) must pay to keep the local network balanced.

4. Summary Cross-Examination Matrix: Inefficiencies vs. Policy Legality

Component / Factor	Operational Failure (0-5°C Days)	Impact on The Droves Scheme	CNP Balancing Test Deficit (NPS)
Solar PV Array	2% – 5% operational capacity factor due to low winter irradiance.	Zero meaningful power generation during peak winter seasonal loads.	Fails Energy Security Benefit (NPS EN-3 Sec 2.10): Negligible contribution to the year-round grid mix.
BESS Units	Extreme chemical resistance; charging must be heavily throttled.	Loss of grid-flexibility and balancing capabilities when the grid is most vulnerable.	Fails Flexibility Mandate (NPS EN-1): Becomes an operational liability rather than a network asset.
System Thermal Management	Intensive parasitic HVAC power draws required to heat cell units.	The project switches from an active power producer to a net grid consumer during prolonged cold snaps.	Fails Net-Zero Presumption: Creates an inefficient net-energy penalty during freezing weather.
Battery Safety Profile	High risk of lithium plating and subsequent thermal runaway.	Elevated long-term fire, explosion, and toxic plume hazards close to community lines.	Triggers CNP Public Safety Exception: Presumption in favor of consent is legally voided.

5. Written Summary of Oral Case Submitted at Open Hearing 2

The following section provides the formal transcript text of the oral summary submitted to the Examining Authority during Open Hearing 2, held on 10th September 2026, which highlights the community’s critical concerns regarding localized impacts and design flaws:

Good afternoon. My name is Tony Morgan. I am an electrical engineer with over 40 years’ experience in Electrical systems. I strongly support renewable generation, especially rooftop solar. My objection is to the scale, location and system design of the proposed Droves Solar Farm.

SCALE – This large-scale solar installation would cover roughly 2,800 acres of productive farmland with over a million solar panels mounted up to 4.5 metres high, plus a large Battery Energy Storage System together with two large substations equivalent to 75–80 football pitches. To put the footprint in everyday terms, the BESS compound and the two substations alone is large enough to store 23,000 vehicles.

EFFICIENCY – From a power-engineering viewpoint the inefficiencies are significant. UK solar is very inefficient – roundabout 10%, falling to 3% efficient – compared with gas or oil being 94% efficient. If solar

panels were as efficient as oil/gas boilers we would only need 290 acres. Large solar arrays also need extensive new high-voltage infrastructure — two substations, new pylons and a Battery compound housing approx 400 × 16 m × 3 m × 3 m battery containers. They will require air conditioning cooling and heating 24 hours a day. These batteries could take up to 44 days to fully charge in winter and be drained in 5 hours. This size and scale of solar farm creates transmission losses, voltage and fault-level challenges, and permanent industrial assets in a rural setting. Rooftop solar avoids most of these problems because generation is closer to demand.

FOOD LOSS – The food-production loss is also large. Nearly 900 million meals. That is equivalent to providing three meals a day for every resident of a city the size of Norwich for more than 40 years.

REPLACEMENT AND RECYCLING – Solar panels will need replacing and recycling 3 times at approx £100 million each time. Battery Energy and Storage Systems will need to be replaced and recycled at least 5 times at approx £500 million. We have no idea where these panels and batteries will end up to be recycled. Solar glass needs heating to 500°C to remove chemical films.

ENERGY SECURITY – Intermittency costs are already real. Just over a month ago, during the solar eclipse, the National Energy System Operator paid £6.2 million for extra power for 2 hours from abroad due to the solar eclipse. Those costs at approx £10 per person will land on consumer bills.

FIRE RISKS – The Lithium Battery Energy Storage System also carries recognised fire risks, especially in surface-water flood zones. Stored water onsite will last for 2 hours to cool adjacent lithium batteries. After that runs out, who knows what happens. Field fires under solar: firefighters are not allowed to enter solar farms as solar panels cannot be switched off, causing electrocution risk.

TRAFFIC – Construction traffic from HGVs and cars will be approx 600 two-way movements a day (A47 / A1065 / South Acre Road junction). Also 3 million litres of de-ionised water will be required per year to be delivered to site – another 100 to 200 lorries once per year.

DECOMMISSIONING – Finally there is no ring-fenced decommissioning fund for the £950 million project. This could run into £500 million or more at today's costs. Even if the solar project was removed, the substation and pylons and miles of plastic-coated underground cables will stay in the ground leaching into the aquifers.

In short, locking high-quality farmland into a large ground-mounted scheme for 60 years is an inefficient way to deliver electricity for the future. Thank you.

6. Formal Request for Visual and Topographic Clarification (OS & AOD Height Maxima)

The Applicant is hereby requested to provide a rigorous, transparent cross-examination of their structural designs against Ordnance Survey (OS) topographic data to address the following omissions in the current Environmental Statement:

- The Applicant must confirm the absolute highest levels of equipment to be installed across the site, calculated explicitly using Ordnance Survey terrain models and Above Ordnance Datum (AOD) parameters.
- The Applicant must supply a comprehensive digital overlay combining localized terrain spot-heights with the proposed maximum physical ceiling heights for all structural infrastructure, including the 25-acre BESS enclosures, associated HVAC cooling stacks, inverter platforms, and substation gantry systems.

Given the rolling topography characteristic of the Castle Acre and Swaffham valleys, evaluating infrastructure purely on relative ground level ('Above Ground Level') is insufficient. The true visual, landscape, and heritage impacts on surrounding conservation areas can only be validated by analyzing absolute AOD heights to ensure taller assets are not masked by terrain contours.

7. Formal Request Regarding National Grid Infrastructure Contradictions

Serious concerns are raised regarding the deliverability and legal basis of the proposed grid connection infrastructure, prompting a formal demand for clarification from the Applicant:

- The Applicant must clarify the legal and operational status of the proposed National Grid Electricity Transmission (NGET) connection substation within the current application boundaries.
- This follows official statements from NGET indicating they have no current plans, capital allocations, or operational designs to construct infrastructure within the designated Order Limits.

The Applicant must explain how they can justify seeking development consent and associated Compulsory Acquisition powers over local land for a substation that the statutory undertaker (NGET) states it has no intention of building. This contradiction represents a major deliverability defect under NPS EN-1 and EN-5, directly undermining claims regarding the project's contribution to the national energy network.

8. Formal Request for Clarification on Firefighting Infrastructure, Excavation Depths, and Flood Risk Management

To address significant public safety and environmental protection omissions concerning the 25-acre BESS facility, the Applicant must provide detailed technical answers to the following engineering queries:

1. What are the exact geometric dimensions, storage capacities, and physical footprints of the underground tanks designated for clean firefighting water supply?
2. What are the exact geometric dimensions, storage capacities, and physical footprints of the underground containment tanks designated for capturing highly contaminated, toxic firefighting runoff water?
3. At what precise depth below natural ground level are these underground clean and contaminated water tanks to be physically positioned?
4. Will the excavation profile for these tanks penetrate local groundwater tables or sub-surface flood levels? If not, please indicate the exact floor and ceiling heights of these tanks relative to Ordnance Survey topographic height levels (AOD) to prove total isolation from regional water paths.

This detailed specification is essential to ensure that any potential BESS thermal runaway event does not result in the uncontrolled discharge of lithium-heavy toxic firewater into local aquifers, the sensitive River Nar catchment area, or regional drainage systems.

9. Ecological Interrogation: Wildlife Exclusion, Fragmentation, and Perimeter Fencing

Serious ecological concerns are raised regarding the long-term displacement, fragmentation, and permanent exclusion of terrestrial wildlife across the expansive 2,800-acre development site, directly challenging the Applicant's claims of achieving meaningful Biodiversity Net Gain (BNG):

- The proposed site spans approximately 2,800 acres of contiguous agricultural land, woodland edges, and margins that have historically functioned as a vital, uninterrupted ecological corridor. Mammals and wider terrestrial wildlife have relied on this open landscape to roam, hunt, breed, and feed without structural fragmentation.
- The Applicant plans to secure the extensive solar array compounds using an intensive, small-mesh security fence standing 3.5 metres in height. This mesh configuration represents an absolute physical barrier to almost all mammal species, effectively sealing off thousands of acres of foraging and breeding grounds.

Consequently, the Applicant is formally required to provide robust, empirical proof and ecological modeling demonstrating how these mammals and wider wildlife populations will maintain historical movement, hunting ranges, and genetic exchange. The Applicant must explicitly clarify how a 3.5-metre high, small-mesh perimeter fence can coexist with the unhindered movement of terrestrial species, and how this severe fragmentation complies with the biodiversity preservation requirements of NPS EN-3.

10. Formal Interrogation of Compulsory Acquisition Powers under Article 21 – Necessity, Alternatives and the ‘Last Resort’ Principle

The draft Development Consent Order seeks extensive powers of compulsory acquisition of freehold land under Article 21 (Compulsory acquisition of land). The Applicant (The Drovers Solar Farm Limited, a subsidiary of Island Green Power) proposes to acquire freehold title over substantial areas of the Order Limits (shown pink on the Land Plans). Compulsory acquisition is a serious interference with private property rights and is only justified where strict statutory and policy tests are met.

Government guidance on the compulsory purchase process makes clear that compulsory acquisition is intended as a last resort. Acquiring authorities are expected to take all reasonable steps to acquire land and rights by agreement before (and alongside) seeking compulsory powers. The guidance states that compulsory purchase is to secure the assembly of land needed for projects where attempts to acquire by agreement have failed.

The Applicant has publicly indicated that constructive discussions with landowners are ongoing and that option agreements have already been secured over a significant proportion of the site. In these circumstances the following formal questions are put to the Applicant:

10.1 Why is freehold compulsory acquisition being sought when a time-limited lease (or lease option) of sufficient duration to cover the operational life of the scheme (typically 40–60 years) would provide the Applicant with all necessary control, exclusive possession and security of tenure for construction, operation, maintenance and decommissioning? A lease arrangement is the standard commercial model for the majority of UK solar farms and would avoid the permanent alienation of agricultural freehold title.

10.2 Can the Applicant demonstrate, with clear evidence, that it has met all the requirements and legal tests for the exercise of compulsory acquisition powers under Article 21 of the draft DCO and section 122 of the Planning Act 2008? In particular, can it show that the land is required for the development, or is required to facilitate or is incidental to the development, and that there is a compelling case in the public interest?

10.3 Given that compulsory acquisition is expressly recognised as a power of last resort, to be used only where negotiations have broken down or are demonstrably incapable of delivering the necessary interests, how does the Applicant reconcile the continued pursuit of freehold CPO powers with its own statements that discussions with landowners remain positive and productive?

10.4 What specific evidence has the Applicant provided (or will it provide before the close of the Examination) to show that every reasonable alternative to freehold acquisition – including long leases, options to lease, or acquisition of rights only – has been fully explored and exhausted with each affected landowner?

10.5 If negotiations are progressing satisfactorily, why is it necessary or proportionate for the draft Order to include the power to acquire the freehold of agricultural land on a compulsory basis, rather than limiting the powers to the acquisition of rights, temporary possession, or the confirmation of leasehold interests already under discussion?

The Examining Authority is respectfully requested to require the Applicant to provide a clear, evidence-based justification for the freehold compulsory acquisition powers sought under Article 21, addressing each of the questions above, and to confirm whether a time-limited lease structure would not adequately secure the delivery of the authorised development while better protecting the long-term interests of the affected

landowners and the wider rural community.

11. Formal Interrogation of Grid Connection Deliverability – Gate 2 Status, TEC Register Position, Connection Date Integrity and the Proposed New Swaffham 400kV Substation

The Applicant holds a Bilateral Connection Agreement (BCA) with the National Energy System Operator (NESO) for 500 MW export and 500 MW import Transmission Entry Capacity (TEC), accepted in May 2023, with a stated connection date of October 2033. The proposed Point of Connection relies on a new National Grid 400 kV substation (“New Swaffham”) that the Applicant is promoting within the Order Limits of this DCO application.

NESO’s Connections Reform (Gate 2 to Whole Queue process) has fundamentally re-ordered the national connections queue. Only projects that demonstrably meet both (a) readiness criteria (secured land rights or advanced planning progress) and (b) strategic alignment with the Clean Power 2030 Action Plan receive a firm Gate 2 offer with a confirmed connection date and secure queue position. Projects that fail either test receive a weaker Gate 1 offer with no confirmed connection date.

Deliverability of the grid connection is a core component of the need and planning balance under NPS EN-1. A project that cannot demonstrate a firm, timely and deliverable connection is vulnerable on both the need and deliverability limbs of the decision-making framework. The following formal questions are therefore put to the Applicant:

11.1 Gate Status and TEC Register Position

- What is the current Gate status (Gate 1 or Gate 2) of The Drovers Solar Farm following the completion of the Gate 2 to Whole Queue process? Please provide the official NESO notification and the relevant extract from the current TEC Register showing Gate status, any refined TEC values, and the current contractual connection date.
- Has any reduction been made to the contracted 500 MW export TEC or 500 MW import TEC as a result of the Gate process, queue re-ordering, or any subsequent contractual variation?

11.2 Readiness Criteria

- Did the project meet the Gate 2 Readiness Criteria via the land-rights route or the planning-progress route? Please state which route was relied upon and provide the key evidence submitted to NESO.
- If the land-rights route was used: what exact form of land rights (option agreement, lease, freehold or other) and what acreage were submitted as evidence of readiness, and do those rights cover the full area required for the solar arrays, BESS, Customer Substation and the proposed National Grid substation?
- If the planning-progress route was used: what specific planning milestone was relied upon, given that the Development Consent Order has not yet been granted?

11.3 Connection Date Integrity and Strategic Alignment

- Does the project still hold a firm contractual connection date of October 2033, or has that date become provisional, deferred, or subject to further re-assessment under a Gate 1 position?

- Was the project assessed as strategically aligned with the Clean Power 2030 zonal capacity allocations for solar generation and for battery storage in the relevant transmission zone? If it was not prioritised in Phase 1 or Phase 2, what is the earliest realistic connection date now available to the project in this zone?

11.4 New Swaffham 400kV Substation

- What is the current contractual, commercial and investment status of the proposed new National Grid 400 kV substation ("New Swaffham")? Has National Grid Electricity Transmission (NGET) confirmed that it will design, consent, fund and construct the substation, or is the Applicant still solely promoting the substation through this DCO application?
- How does any Gate 1 status or delayed connection date interact with NGET's own investment decision-making for the proposed New Swaffham substation? Is there a risk that the substation will not be built if the project does not achieve a firm Gate 2 position?

11.5 Deliverability Consequence

- If the project is currently Gate 1, or if the connection date has slipped beyond 2033/34, how does the Applicant maintain that the scheme remains deliverable within a timeframe that supports the Critical National Priority case, and how does it justify the continued pursuit of freehold compulsory acquisition powers under Article 21 when the fundamental grid connection itself remains unconfirmed?

The Examining Authority is respectfully requested to require the Applicant to provide clear, documentary evidence answering each of the questions above before the close of the Examination. In the absence of a firm Gate 2 position and a confirmed, deliverable connection date, the need and deliverability case for the scheme is materially weakened, and the justification for compulsory acquisition powers is correspondingly undermined.

12. Formal Submission of Planning Precedent: The Gayton Ministerial Overrule

12.1 Purpose and Legal Materiality

12.1.1 This section draws the Examining Authority's (ExA) attention to the recent ministerial planning determination regarding the proposed 175-acre solar farm near Gayton, Rothersthorpe, and Milton Malsor in Northamptonshire (The Gayton Scheme).

12.1.2 While it is acknowledged that the Gayton scheme was determined under the Town and Country Planning Act 1990 (TCPA) rather than the Planning Act 2008 DCO framework, the Secretary of State's final determination establishes a critical, contemporary precedent. It demonstrates that the general policy presumption in favour of renewable energy cannot automatically override severe localized harm to agricultural land preservation, local landscape character, and cumulative regional impacts.

12.2 Critical Precedent Principles to be Applied to The Drovers Scheme

A. Balancing Localized Visual Harm Against Renewable Imperatives

12.2.1 In the Gayton case, the Planning Inspector originally recommended approval, citing the national imperative for rapid decarbonisation. However, the local government minister explicitly overruled the inspector's recommendation. The Minister found that the visual harms to local villages, historic landscape features, and open countryside outweighed the temporary benefits of renewable generation.

12.2.2 The Drovers Solar Farm, as a massive 500MW scheme spanning roughly 2,800 acres, presents a drastically larger and more invasive footprint. The ExA must apply the same rigour to the objections raised by local stakeholders, including Castle Acre Parish Council, regarding the severe erosion of the unique West Norfolk regional character.

B. Rejection of Mitigated Loss on High-Quality Agricultural Land

12.2.3 A core pillar of the government's block on the Northamptonshire case was the long-term loss of productive agricultural land.

12.2.4 Under the updated NPS EN-3 framework, site selection must stringently balance capacity against local impacts. The Applicant for The Drovers Scheme relies heavily on mitigating agricultural loss by transitioning land to temporary grassland grazing. The Gayton precedent demonstrates that central government actively rejects the notion that solar infrastructure is automatically acceptable on productive rural land simply because an applicant proposes temporary or reversible agricultural mitigation strategies.

C. Cumulative Regional Impact & Weight of Community Opposition

12.2.5 The Gayton decision highlights that united local opposition—spanning multiple parish councils, environmental trusts, and local MPs—carries decisive material weight when local infrastructure saturation is reached.

12.2.6 The East Anglia region is already experiencing significant cumulative landscape and grid impacts from multi-gigawatt offshore wind infrastructure and associated battery storage installations. In line with the Gayton precedent, the ExA must evaluate whether the addition of The Drovers infrastructure exceeds the landscape's carrying capacity, regardless of the applicant's proposed community mitigation or screening strategies.

12.3 Formal Precedent Interrogations Put to the Applicant:

In light of the Gayton ministerial overrule, the Applicant is formally requested to answer the following:

- **Q12.a:** How does the Applicant justify the deployment of a 2,800-acre scheme in an open rural landscape given that recent ministerial decisions have blocked significantly smaller schemes (175 acres) purely on the basis of localized visual and countryside degradation?
- **Q12.b:** In light of the Minister's explicit rejection of 'temporary solar usage' as an excuse to compromise productive agricultural land, what specific, un-mitigated agricultural baseline data can the Applicant provide to prove this site is genuinely the sequentially lowest-impact choice in West Norfolk?

This document is for informational and representational purposes only. For legal, engineering, or environmental planning advice, consult a qualified professional. AI-assisted technical compilations may include errors or omissions and must be verified against official National Infrastructure Planning portals.