

Engineering Scrutiny in an NPS Examination (Oral Submission).

The real impediment to solar projects in particular, is the delay caused by the skills and resource shortages within the National Planning Inspectorate ('PINS'). A number of Development Consent Order ('DCO') applications currently in progress have seen delays of up to eight months in their Examination Hearings, due to shortages of staff, or the inexperience of inspectors.¹

[REDACTED], Photovolt Development Partners

In the opinion of most commentators, the 'real impediment' to utility-scale solar roll-out in the UK is the slow pace of grid expansion rather than the competency of the Planning Inspectorate. Nevertheless, PVDP does highlight a weakness in the Inspectorate's examination process.

The central role of the examination is to answer the question posed in primary legislation for NPS planning applications (PA2008, s104(7)):

Do the benefits of the proposed scheme outweigh its adverse impacts?

The Planning Inspectorate is certainly the ideal authority to assess the **Local Impacts** of an NPS proposal. Quantifying its electrical benefits (with regard to **National Policy** Statements) lies outside the Inspectorate's traditional spectrum of expertise.



© Planning Inspectorate (YouTube)



In the latter half of the 20th century, all electricity generation and national distribution was provided by the Central Electricity Generating Board.² The CEGB vastly expanded the early national grid, and it designed, built and operated all the power generating stations. We complained about our electricity bills; the CEGB kept the lights on.

Major generating projects would have been scrutinised by the most experienced engineers of the CEGB before being approved for construction.

Today, this scrutiny is performed by the Planning Inspectorate, guided by publications such as the NPSs and the Energy Security Strategy. The aim is a carbon-free national electricity system with 24/7 availability – basically, to keep the lights on.

Major UK generating stations are built and operated by (typically) European private or state-owned companies. Their aim is maximum return on UK investment, assisted by a CfD³ and constrained by the limitations (if any) stipulated in the DCO.



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¹ Submission to the House of Commons Environmental Audit Committee (*Enabling sustainable electrification of the economy*, 2024) <https://committees.parliament.uk/writtenevidence/126869/pdf/> paragraph 15.

² Wikipedia has a nice article. Senior CEGB staff were mostly professional engineers.

³ Contract for Difference: a 15-year feed-in tariff that guarantees a fixed 'strike price,' supplemented by a pricing mechanism that also pays out handsomely for unused renewable electricity.

Two More Reasons why Engineering Scrutiny is More Important Today

1) The energy transition involves a radical departure from the straightforward load-following thermal generators running at 70% capacity with inherent frequency/voltage inertia and black-start capability. Intermittent generation requires bulk storage; inverter-based sources need to be complemented with synthetic inertia. Does the proposal support grid forming? Is there sufficient reactive power provision to satisfy the examiners' anticipated future grid Power Factor? Is a fast-response battery unit included to handle unscheduled load changes on the grid due to demand peaks, outages and HV short circuits?

Stability is a major grid challenge in the 21st century, as exemplified in Spain recently. A skilled engineer will be able to distinguish a proposal that addresses Britain's energy security requirements from one that has its eye on a lucrative CfD-backed income stream.

2) An unwelcome market sector has emerged: solar DCO proposals from applicants that have no intention of constructing a solar farm. The prize is a DCO for resale. Unsurprisingly, what subsequently unfolds bears little, if any, resemblance to the narrative presented at examination (see Appendix).

Given the current examining regime, an applicant in this category has little reason to plan a plausible project. The export rating will be optimistic, and the attention to operational requirements will be inadequate. If the constructor too is a temporary participant, costs will likely be saved by using equipment (e.g. dc cabling) that is not spec'd for the proposed lifespan and fasteners that may prove inadequate in Britain's more extreme weather.

An engineer will confirm the claimed PV performance data⁴ based on validation of installed capacity, accounting for losses from peripheral- and self-shading, panel orientation, inverter undersizing, and string and transmission/transformer losses. Is there sufficient harmonic attenuation to prevent, among other consequences, premature transformer failure?



Storm Darragh vs
Porth Wen Solar Farm,
December 2024.
(© Daily Mail)

Recommendation

PA2008 tells us to have “regard” for the NPSs. It does *not* invite box-ticking of NPS criteria to establish a satisfactory technical proposal. On the contrary, PA2008 requires analysis of the “benefits” of the proposal – fundamentally, its quality as an electricity generator.

The SoS would not appoint an Electrical Engineer to adjudicate the plans for a proposed new town. For electrical installations, assessing the “benefits of the proposed development” is a task for an Electrical Engineer not a Town Planner holding a copy of EN-3.

The ideal Engineer will have extensive experience in high-voltage design and commissioning, as well as familiarity with solar PV characterisation/operation and the interaction of grid components in a renewables-centric architecture.⁵

⁴ Necessary also for the purposes of EN-3 (2023) 2.10.17.

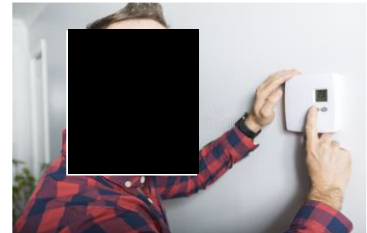
⁵ i.e. not an engineering consultant with polished presentation skills. The ideal candidate owns a screwdriver.

Why this matters

In the 1970s Britain experienced blackouts. The economy suffered, but most of us coped with minimal inconvenience. We kept a good supply of candles, and central heating was still a novelty. Electricity was one of many domestic heating sources: some used paraffin, propane or gas heaters; coal fires were common; failing all else, the kitchen provided heat.⁶ We cursed the government or the unions, filled our hot-water bottles and went to bed. Nobody succumbed to hypothermia.



By the 2040s, the last of the fossil-fuel heaters will have been retired to the museum. Carbon-free electricity will power everything from the mobile network to our central heating. The daily winter chore of filling a heavy coal scuttle is now a distant memory. Every comfort is at our fingertips.



Thanks largely to the diligence of the 60,000 engineers and support staff of the CEGB, we take for granted the inherited dependability of our electricity supply.⁷ And, should things ever go wrong for some reason, the 1970s demonstrated that we can always fall back on plucky British resilience.

Neither of these assumptions stands up well to scrutiny today. How many of us will survive a 48-hour blackout in winter when we and all our neighbours lack any source of heating? Electricity no longer just contributes to a comfortable life. It is essential to staying alive.

Please invite an Electrical Engineer to join your team.

⁶ Gas cookers in 1970 did not require an electricity connection.

⁷ Heathrow Airport might express a dissenting opinion (March 2025).

Appendix. The NSIP Loophole (a case study).

2020. The first solar farm DCO, a landmark achievement, is awarded to Wirsol/Hive. Cleve Hill Solar Park promises a generating capacity in excess of 350 MW to power around 91,000 homes.⁸ Funding is secured, and construction will commence in Spring 2021, providing opportunities to a wide range of residents, both locally and nationally.

The Cleve Hill Solar Park newsletter ceases publication, and the website falls silent.

2021. Wirsol/Hive sells the DCO and the Cleve Hill project to an asset fund manager for an estimated £25m.

Quinbrook Infrastructures Pty Ltd sets up its UK operation via an offshore company in Jersey. Cleve Hill Solar Park is renamed *Project Fortress*.

2022. Quinbrook launches its *Renewables Impact Fund* with a target of £500m. Quinbrook is particularly keen to offer this investment opportunity to UK local government pension schemes.⁹

2023. Pension fund managers know next to nothing about solar farm economics or design. The fund raises an impressive £620m in just six months.

Mytilineos Energy and Metals (Maroussi, Greece) announces that it has been contracted to design and construct a solar farm at Cleve Hill, Kent, UK.

2024. Construction on the marshland finally commences.¹⁰ The farm will have a generating capacity of 373 MW using [uniquely?] the inefficient east-west PV panel orientation. Tesco and Shell will purchase 100% of Fortress/Cleve Hill's electricity.



L: Construction starts at Cleve Hill. R: Former net biodiversity. (From the cited YouTube video.)

Looking back

The Cleve Hill ExA must be forgiven for swallowing the Wirsol/Hive story about intending to build, own, operate and maintain a solar farm. It was what we all wanted to hear, and solicitors Pinsent Masons did an outstanding job of representing its client's position.

⁸ According to the applicant's 2018 Consultation Briefing Pack. The examination was curiously reticent on performance data. The ExA Report [5.3.13] projected 300–400 MW. The DCO stipulated over 50 MW.

⁹ <https://www.room151.co.uk/151-news/project-fortress-enabling-lgps-funds-to-address-climate-change/> (accessed 14.05.25)

¹⁰ <https://www.youtube.com/watch?v=IhkTGph-R2E> (accessed 14.05.25)

Moving on

The Wirsol director and staff are now at startup BOOM Power Ltd. BOOM already has 637 MW of solar DCO in the pipeline (East Yorkshire and Fenwick).

‘BOOM,’ the website explains, is an acronym for Build, Own, Operate and Maintain. The trustworthy name is unlikely to convince an Inspectorate ExA that BOOM has turned its back on Wirsol’s flog-it business model.¹¹

Pinsent Masons has flourished in this niche market. It is retained by the majority of applicants with similar solar DCO ambitions, including BOOM.

Looking forward

The reported 373 MW generating capacity will almost certainly turn out to be the farm’s *installed* capacity (i.e. 373 MWp), based on current PV performance data and land area. Given the east-west panel configuration, school physics calculation shows that the pensioners and the grid will be extremely lucky to see a peak generating (*export*) value that ever gets near 300 MW.

If it follows its strategy for the Gemini solar project in Arizona, Quinbrook will have offloaded its Cleve Hill portfolio before the facility is switched on. If so, none of the early participants in this project has any financial interest in its medium- or long-term viability.

Time will tell whether Mytilineos installed the superior grade of dc cabling that survives long-term in underground trenches (and all the related infrastructure) – and indeed, whether estuary marshland is fit for a solar farm or if Nature will reclaim her own. As the DCO included no requirement for a decommissioning fund, Swale Borough Council might be well advised to start saving up for the cost of Britain’s first eco-landfill project.

The pension fund managers have only themselves to blame if they were relying on a DCO as endorsement of a solar farm’s technical excellence. Hopefully, the sorry Cleve Hill saga will prove to have been an isolated regulatory glitch.¹²

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2025. Quinbrook buys the Mallard Pass solar DCO.

¹¹ May 9th 2025: the East Yorkshire DCO is consented. Another win for Mr [REDACTED] and the team.

¹² Ten consented solar DCOs now, from ten examined solar applications. Testament to the consistently high standard of applicant.