

PHILIP HEARD IP NUMBER [REDACTED] : FOSSE GREEN DEADLINE 2 COMMENTS

1.0 Climate:

1.1 In response to RR-222 (REP1-047) Para 7.1 Page 245,) the Applicant states “*The methodology and the Environmental Product Declarations (EPDs) used for assessing the carbon impact of the solar panels are set out in paragraph 6.4.31[APP-31]. These are in line with best practice and have been accepted in similar DCO projects by the planning inspectorate.*” An acceptance by the planning inspectorate previously is not necessarily an indication that the Applicant’s assessment is correct. Where is the evidence this is ‘best practice’? APP-031 Para 6.4.31 states “*an average of published EPD data from manufacturers Jinko and Sunpower” An ‘average’ is clearly not a reasonable worst case approach and is not in accordance with the Rochdale Envelope.*

1.2 Neither reference referred to in APP-031 Para 6.4.31 appears to be available on-line to read; could the Applicant please reproduce these. Do they include Green House Gas (GHG) emissions from mining in Africa? Do they include transportation of raw materials to China, then transportation to the UK?

1.3 The Applicant has dismissed my comparison with the proposed Springwell development regarding GHG emissions from manufacturing. The Springwell applicant equally wishes us to believe that ‘best practice’ has been adopted. The comparative calculation is:

Fosse Green GHG emissions from the manufacture of solar PV Panels (APP-031 Table 6.7) are **110,110 tCO₂e** for 569,000 (fixed south facing) panels. The proposed Springwell Solar development, with 1,500,000 panels, will produce GHG emissions of **1,009,233 tCO₂e** (Planning Inspectorate Springwell Solar Farm APP-048 6.1 Environmental statement Volume 1 Chapter 8: Climate Table 8.11). Note, Springwell GHG emissions were “reported using the modular structure outlined in Royal Institution of Chartered Surveyors (2023) guidance” (Ref 8-17 of Springwell APP-028). This document is later than either of the documents referenced by the Applicant in APP-031 Para 6.4.31 and would therefore be assumed to be the more up to date guidance. If similar data to that applied for Springwell GHG emissions were applied to the proposed Fosse Green development, the result would be:

$$(1,009,233/1,500,000) \times 569,000 = \mathbf{382,836 \text{ tCO}_2\text{e}}$$

This figure should be applied as a **realistic worst case** GHG emission estimate for original manufacture and for that of replacement panels.

1.4 Further, in responding to RR-222, the Applicant states “.... **[App-031]** *assumes that the solar panels will be replaced at Year 30 and is therefore a worst case estimate of the carbon intensity of the Proposed Development.*” How can this be ‘worst case’? Given that a 30 year life appears to be beyond any current manufacturers guarantee, it is reasonable to assume a large number will not reach this point; hence a worst case would be a total replacement plus a further large percentage for faulty, damaged and life expired panels. There was considerable debate during the Springwell examination regarding panel life (see Paragraph 2.1 below); we do not know what the ExA will decide but there is no evidence nor any manufacturer’s guarantee to suggest 40 years is achievable. Indeed, the Fosse Green Applicant refers to Jinko Solar (APP-031 P-031 Para 6.4.31); Jinko Solar offer a Service life of 25 years.

1.5 In response to my statement that a 60 year time limited consent period, as opposed to a 40 year period, results in a lower carbon intensity figure, the Applicant states “*The 60-year operational life of the Proposed Development does not result in a lower carbon intensity figure.....*”. How has the Applicant arrived at this conclusion? Given that the denominator is the total energy generation figure which, being reasonably consistent across the 60 years, will need to be reduced by one third for a 40 year calculation, whilst the numerator will be only slightly reduced, as by far the majority of GHG emissions are as a result of component manufacture, this statement is incorrect. My calculations are as follows:

For a 60 year time consent development the Applicant’s carbon intensity figure is: **37 gCO₂e/kWh** (APP-031 Chapter 6 Para 6.4.68) (715,924 tCO₂e divided by the total energy generation figure of 19,438,499 MWh (APP-031 Chapter 6 Para 6.4.67)).

For a 40 year development, the operational GHG emissions would reduce by 1744 (APP-031 Table 6-10) to 468,744 tCO₂e (note: this assumes all component replaced at the 25 – 30 year point but a reduction in staff transport costs etc) resulting in a lifetime GHG emission figure of 715,924 – 1,744 = 714,180 tCO₂e. Also, the total energy generation figure will reduce by approximately one third to 12,958,999 MWh. Dividing 714,180 by 12,958,999 gives a carbon intensity figure of **55 gCO₂e/kWh**, significantly higher than the 60 year carbon intensity figure.

As previously stated, the UK Government’s 2030 target (Clean Power Action Plan) states the target is to be well below 50gCO₂e/kWh in 2030”. 55 gCO₂e/kWh is significantly above the Government’s target and if the Applicant cannot provide reasonable justification to seek a 60 year time limited consent, the proposed development cannot be justified.

1.6 I will not repeat my Deadline 1 comments but, suffice to say, the Applicant’s comparison to GHG emissions from fossil fuel produced power across the entire 60 year operational life is unjustified. This was echoed by the Secretary of State, in approving the Gate Burton Energy project, when he considered a Combined Cycle Gas Turbine an **inappropriate** baseline for comparisons (Gate Burton Decision Letter dated 12 July 2024 Para 4.59); this was further echoed by the Secretary of State in the Tillbridge decision.

2.0 Solar PV Panel Replacement:

2.1 The comment by NKDC regarding the draft DCO (REP1-058 Page 3 sub bullet 4) refers to the Springwell Inspector proposing a cap on annual replacement of solar panels at 5%. This needs a correction; it is not annual, it is 5% across the entire 40 year lifetime of the proposed Springwell development. The Springwell ExA proposed a change to the draft DCO:

“Replacement solar PV panels

The number of solar PV panels replaced over the lifetime of the authorised development shall not exceed 5%. Details of the number of solar PV panels replaced, including an overall percentage figure that includes all previous years, shall be submitted to the relevant planning authority on a yearly basis.”

[Planning Inspectorate Springwell Solar Farm: REP4-050 (Response to Examining Authority’s Schedule of Proposed Changes to the draft Development Consent Order) Page 1]

2.2 In response to LCC, REP1-047 Page 123, the Applicant states “*The failure rate of 0.05% is considered a worst-case failure rate.*” Available data suggests this is an average failure rate, so cannot be considered ‘worst-case’. Further, the LCC LIR (REP1-053) para 18.25

states “the applicant anticipates one full replacement of PV panels, but this may be insufficient given the proposed 60-year project lifespan, when we are aware that similar projects with a 40-year lifespan are also suggesting they will undertake a single replacement.”

2.3 Indeed, given the low figure stated by the Applicant for panel failure across the life of the proposed development, and the challenge facing the local authorities regarding cumulative waste from a number of solar developments, a similar wording in the DCO to that quoted by the Springwell ExA limiting total unplanned replacements would be appropriate. Otherwise, the Applicant could replace up to 99% of panels under ‘maintenance’ if the solar PV panel life does not reach 30 years.

3.0 Gross Inefficiency:

3.1 As often quoted, the World Bank has ranked the UK as second to last regarding photovoltaic potential in the world. UK Solar Alliance has looked closer; the UK Government’s target for installed solar capacity is 47GW. Based on 2024’s UK solar load factor of 9.9% the actual output would be as low as 4.65GW. Across a decade of operational data captured by the Department for Energy Security and Net Zero (DESNZ), the average efficiency level does not even reach 11%. Projections based on DESNZ’s own data suggests that if solar achieves the Gov 2030 target of 37GW, the gross inefficiency means it would produce less than 13% of the country’s total annual electricity demand. If the full 2030 47GW target is reached via ground mounted solar, it would take some 2% of all cropland out of production and would contribute less than 13% of the UK’s total annual electricity supply and with significant intermittency challenges. How can such inefficiency justify the huge impact on agriculture and the environment?

3.2 Indeed, ‘Energy Dashboard’ data for Cleve Hill Solar Park for w/c 26 Jan 2025, below, shows the export capacity limit of 320MW. The maximum generation period on any day is about 7 hours, with a peak output of about 60MW; grossly inefficient.



3.3 What load factor has the Applicant applied in the calculation resulting in a total 60 year energy generation figure of 19,438,499 MWh (APP-031 Chapter 6 Para 6.4.67)? Note: it is assumed following Change Request 1, that this figure needs to be adjusted.

4.0 Permanent Sealing of Agricultural Land:

4.1 The Applicant states (REP1-047 Page 145) there will be “*permanent loss of 1.5ha ... of Grade 3a land ...*” There is no evidence to support the Applicant’s claim that land can be returned to its previous ALC grading; indeed, there is considerable evidence to suggest it cannot. The Rochdale Envelope approach requires the Applicant should assume worst case that the land under BESS, substation, compounds, access roads etc may be permanently sealed; this is a similar approach taken by a number of other solar developments,

4.2 It is worth noting the approach to the Mallard Pass NSIP, a 60 year time limited consent, which was also promoted by the same applicant as Fosse Green. Table 12-4 of Chapter 12 of the Mallard Pass ES, Land Use and Soils (APP-042), states that the areas of access tracks and solar stations on the site amounts to 8 ha. Paragraph 12.4.16 acknowledges that these areas will be treated as **permanently sealed over**. It was accepted in paragraph 12.4.20 that even though the outline Decommissioning Environmental Management Plan required the solar station and tracks to be restored to agricultural use at the end of the operational phase, “**it is assumed that restoration may not be back to comparable quality, at least initially, following decommissioning**”. The onsite substation containing 6.4 ha (paragraph 12.4.45 and Table 12-5 refers) was also considered as **permanently sealed over** for the same reasons as the access tracks and solar stations. Of the 14.4ha of agricultural land affected by the substation, access tracks and solar stations, 4.2ha was BMV land (Table 1 of the ExA Recommendation Report refers). Therefore, the Applicant has already previously accepted that infrastructure and vehicle tracks are permanently sealed; why has the Applicant now changed its stance regarding the extent and areas of land that are permanently sealed?

5.0 Funding Statement:

5.1 In response to RR-222 regarding funding for decommissioning, REP1-047 Page 352 states “*The Applicant notes that decommissioning costs are not included in the capital cost estimate of the Proposed Development in the Funding Statement [APP-021]*” The Funding Statement says “*The current capital cost estimate for the Proposed Development is approximately £340M. This estimate covers all aspects of the Proposed Development and has been arrived at by including construction costs, preparation costs, supervision costs, land acquisition costs, equipment purchase and commissioning.*” This needs to clearly state that NOT ALL aspects of the proposed development are included as decommissioning costs are excluded.

5.2 At REP1-047 Page 352 the Applicant says it is a criminal offence to breach DCO commitments. If, at the time of decommissioning, the undertaker is bankrupt, no amount of criminal action will pay to clean up the mess which would be left to the local authority to deal with. It is irresponsible not to put financial provision in place for decommissioning. Moreover, in Chapter 12, Page 12-17 (APP-037) the Applicant states “***The Applicant is committed to setting aside money for decommissioning the Proposed Development.***” As the “*Applicant does not consider a restoration bond to be necessary or proportionate*”, exactly how is the Applicant going to fulfil this commitment? (Note: this statement regarding commitment to set aside money refers to the Applicant, not any subsequent developer or owner).

6.0 Food Security:

6.1 On 20 January 2026, the UK Government published a national security assessment “Global biodiversity loss, ecosystem collapse and national security”. The following are quotes from the assessment:

Critical ecosystems that support major global food production areas and impact global climate, water and weather cycles are the most important for UK national security. Severe degradation or collapse of these would highly likely result in water insecurity, severely reduced crop yields, a global reduction in arable land

Without significant increases in UK food system and supply chain resilience, it is unlikely the UK would be able to maintain food security if ecosystem collapse drives geopolitical competition for food. The UK relies on imports for a proportion of both food and fertiliser and cannot currently produce enough food to feed its population based on current diets. Countries best placed to adapt are those that invest in ecosystem protection and restoration, and resilient and efficient food systems.

The UK is unable to be food self-sufficient at present, based on current diets and prices. Full self sufficiency would require very substantial price increases for consumers, as well as improvements in efficiency, waste reduction and resilience across the food system, including agricultural production, food processing, distribution and consumption. The UK does not have enough land to feed its population and rear livestock: a wholesale change in consumer diets would be required. It would also require greater investment in the agri-food sector so that it is capable of innovating in sustainable food production.

Given the stark warnings in the Government paper, it would be reasonable to assume that the UK Government will impose greater restrictions on the use of arable land for anything other than farming purposes. This puts the Applicant’s failure to find reasonable alternatives into even greater context.

6.2 REP1-047 P274 states “.....0.09% of the total farmland in the East Midlands” What does the Applicant define as East Midlands? Why not Lincolnshire or NKDC? What is certain is the proposed development will, for example, consume 47% of the Parish of Thorpe on the Hill. The Applicant goes on to say “... Approximately 50% of the land within the proposed Principal Site is currently used for the cultivation of non-food crops.” The Applicant does not state what non-food crops. Crops for feeding cattle are still supporting the human food chain. Moreover, the Applicant will be aware of crop rotation; what was grown in 2024 when the Applicant did ‘research’, will almost certainly not be grown in 2026. The Applicant states that “This retained arable land includes approximately 116ha (288.6 acres) of Subgrade 3a BMV agricultural land.” If the Applicant thinks this is so important why has the Applicant not retained ALL BMV land?

7.0 BESS:

7.1 Given that the updated NFCC Guidance was initially due to be published in March 2025, and then by the end of 2025, and is still not published, it is reasonable to assume there are some issues. In Aug 2025, the NFCC issued a ‘Battery Energy Storage System (BESS) Position Statement’.

“NFCC calls on the UK Government and Devolved Administrations to minimise BESS fire safety risks by:

- Creating an overarching framework and UK standard for the safe deployment and operation of BESS. This should be supported by technical standards and include clear guidance on the design and suitable locations for BESS, taking into account potential impacts of BESS on Critical National Infrastructure, any sensitive environmental receptors, local communities, and the need to ensure effective FRS pre planning and operational response in the event of a fire.
- Including BESS in the Environmental Permitting Regulations 2016 at the earliest opportunity and ensuring that equivalent regulations are established for Scotland and Northern Ireland.
- Ensuring that FRS concerns and advice are taken into account and responded to when they are engaged about fire safety risks in BESS planning applications.
- Investing in a programme of continuous research on best practice firefighting tactics for fire incidents involving BESS to inform FRS training and operational guidance.”

To date, there appears to have been no response from the UK Government. Until there is, it would be appropriate to suspend further BESS developments especially given that the recent NESO “Connection Reform Results” (Jan 2026) showed that large-scale battery sites are already in excess of 3 times oversupplied and the urgent need for further solar deployment has reduced significantly.

7.2 REP1-047 Page 152 states *“There have been very few utility scale BESS fires in the UK to date, all of which were built prior to the current NFCC safety guidance.”* This statement is incorrect. The NFCC Guidance was issued in November 2023. There have been 4 BESS fires to date in the UK (plus one in Ireland). The Essex (Feb 2025) and Aberdeen (Feb 2025) fires were both post issue of the NFCC Guidance. Moreover, in the absence of UK legislation, the Applicant references US Legislation eg NFA 855; a number of BESS built to such legislation have had fires, including fires resulting in thermal runaway.

8.0 Tourism/Recreation:

In response to my comment (RR-222) regarding the recently erected full size Lancaster Bomber statue, the Applicant states (REP1-047 Page 253) *“Whilst this statue was not subject to detailed assessment (if indeed it could be considered a heritage asset at all, considering its recent establishment and whether it is of sufficient interest to comprise a heritage asset)*” My comment made **no reference to the statue being a heritage asset**. It is a memorial to over 55000 aircrew of bomber command who gave their lives for their country. Look at the visitor numbers for the Bomber Command Museum near Lincoln to gauge the likely interest in the coming years. The Applicant goes on to state that *“... it recognises that the villages of Coleby, Bassingham, Navenby and Auburn contain visitor and recreational attractions, and that there is also a network of PRoWs in the surrounding area which may be used by visitors. The assessment concludes that overall the impact of the Proposed Development on tourism/recreation receptors is not significant during the construction, decommissioning and operational phases.”* Visitors come to this lovely area primarily for views of the open, panoramic landscape and PRoWs associated with tranquillity and calm. The LIRs from NKDC (REP1-056) and LCC (REP1-053) both consider that the proposed development will have negative impact regarding landscape and visual, and

PROWs. In addition, both LIRs, in relation to socio-economics, consider the visitor economy and economic impact; both consider the proposed development will have a negative impact. It is reasonable to assume that those representing the Applicant who assessed this as 'not significant' are not familiar with the County. The local authorities are the experts and their professional judgement is borne from many years experience of working and living in the local area; their assessment should carry greater weight in the planning balance.

9.0 House Prices:

In response to many concerned IPs regarding house prices (REP1-047 Table 7.6 Page 268), the Applicant refers to a study by The Centre for Economics and Business Research and Renewable UK (2014); Renewable UK can hardly be considered an independent body. Science Direct (who do appear to be independent) have published a far more balanced and recent study 'Wind Turbines, Solar Farms and House Prices' by Martijn I Drees and Hans R A Koster (2021). This concluded "Further results indicate that solar farms lead to a decrease in house prices within 1 km of about 2.6%. By comparing the overall impact on house prices, we show that the external effects of solar farms per unit of energy output are comparable to those of wind turbines. Thus, building solar farms instead of wind turbines does not seem to be a way to avoid the external effects of renewable energy production." The average house price in the area of the proposed development is circa £350,000, hence the likely impact of the proposed development of properties within 1km will be an average of £9,100 decrease in value per dwelling.

10.0 Ground Contamination:

REP1-047 Page 288 IP comments state "the Applicant has accepted that panels can leak chemicals and heavy metals." The Applicant's response does not adequately address this issue, explaining in detail about maintenance activities and manager responsibilities. The Applicant proposes measures to prevent leaking of chemicals from the BESS but does not explain what action will be taken if solar PV panels leach heavy metals into the groundwater. It should be noted that Porth Wen solar farm on Anglesey suffered severe damage "to hundreds of panels" as a result of Storm Darragh in Dec 2024. No amount of maintenance checks can prevent such unforeseen damage which could lead to serious implications for the Protected Drinking Water Area. Such a significant risk can only be avoided by not constructing a solar farm in such a sensitive area.

11.0 Further Comments Regarding Applicant Responses to Relevant Representations:

11.1 UK HSA (REP1-047 Page 70), regarding emissions from a BESS fire, stated "... *The modelling results presented do not detail the BESS location(s) in comparison with sensitive receptors, which would be needed to contextualise the potential plume impact.*" The Applicant's response stated "*The location of the BESS is dependent on the BESS arrangement that is progressed post-consent as part of the Proposed Development.*" It is difficult to understand what is preventing the Applicant from making a decision now regarding which BESS arrangement will be pursued. If that remains the case then the Applicant should model the sensitive receptors regarding potential plume impact for both BESS options in order to inform the UK HSA. Moreover, worst case should model fire propagation from one container to another as has occurred on a number of real occasions worldwide (eg Moss Landing, California).

11.2 In response to RR-222 (REP1-047 Page 324/5) the Applicant states “*Commercial rooftops do present an opportunity for solar development but not at the scale of the Proposed Development which would require vastly more rooftops than are available within the site selection area of search.*” The Applicant set the ‘site selection area of search’, so the Applicant has deliberately excluded any realistic chance of opportunities of brownfield or previously developed sites. It is assumed the vast commercial roof-space in Newark would be within reach of the planned grid extension ‘Trent Valley South’; it might be more technically challenging; the Applicant uses words such as ‘may’, ‘often’, ‘not all’, but it is not impossible. It is worth noting that University College London Energy Institute analysis estimates a technical potential of 117GW of solar power on 650km² of non-domestic and domestic rooftops and car parks in England alone. It is irresponsible of the solar industry to ignore this potential at the expense of the easy option of decimating the countryside.

11.3 At REP1-047 Page 329, the Applicant states “*The provision of visual screening, for example for residents and for users of PRow, has been considered throughout the design of the landscaping proposals*” Visual screening of PRowS will result in some 15 years of walking alongside glass panels and then 45 years of walking between 3m high hedgerows with the loss of wonderful panoramic views; the change from the wide open vistas currently enjoyed will be transformational, and not for the better. The Applicant goes on to state “*There are no significant long term visual effects anticipated on residents of local villages as, by year 15 of operation, the proposed landscaping would have matured*” For many people who have retired in the local area, 15 years will represent most, if not all, of the rest of their lives!

11.4 At REP1-047 Page 333 the Applicant states “*the Proposed Development is in line with achieving the government’s Clean Power by 2030 (CP2030) goals.*” Given that the proposed development will not start output until circa 2033, how does the Applicant consider it is in line with achieving 2030 goals?

11.5 At REP1-047 Page 342 the Applicant states “*Large-scale solar must be deployed where there is the natural resource, where suitable land is available*” What natural resource the sun? It shines, or rather does not shine, reasonably equally across the country. By saying “where suitable land is available” the Applicant clearly admits rooftops were not considered. In fact, the Applicant’s only two considerations appear to be willing landowners and a non-existent grid connection.

11.6 At REP1-047 Page 343, the Applicant states there will be a “*community benefit fund of £400 per MW per year of export capacity.*” The Applicant states that estimated total generation (60 years) will be 19,438,499 MWh (APP-031 Chapter 6 Para 6.4.67)); could the Applicant please explain the ‘per MW per year’ statement and provide an estimated aggregate community benefit figure across the lifetime of the proposed development. If the Applicant is committed to providing this community benefit fund, it should be a requirement of the DCO.

11.7 At REP1-047 Page 347 the Applicant states “*It should be noted the Proposed Development directly relates to energy security ...*” Could the Applicant please explain how there can be any energy security when the technology, manufacture and supply is all sourced from China? Indeed, ‘kill switches’ have been found in Chinese supplied energy products to the US.

11.8 At APP-020 Para 6.1.6, the Applicant states *“The Proposed Development is CNP [Critical National Priority] Infrastructure; therefore, it follows that the urgent need for the Proposed Development in achieving the UK’s energy objectives, together with the national security, economic, commercial and net zero benefits, will outweigh any other residual impacts ...”* It is for the ExA to determine the impact of the proposed development NOT the Applicant. The proposed development will only become CNP infrastructure if a DCO is approved. At APP-020 Para 6.2.21 the Applicant further states *“The Proposed Development is also considered to be broadly consistent with relevant local planning policy ...”* It is difficult to see how the proposed development could be less consistent with relevant local planning policy.