

Heather Fox

IP FCC2DAFFA

## Summary

In this submission I have answered an ExA question, replied to responses from the applicant, asked further questions of the applicant, made comments on the Sequential and Exception Test and addendum, referenced an article on flood return data, discussed the use of tolerances, referenced the updated PPG, given a view of flooding and a conclusion.

## ExQ12.0.3

Although the applicant has assessed the project as having satisfied the Exception test, it is questionable. The flood risk assessment includes an increase in levels with no indication of how this increase would be contained within the site. The flood risk overall is not reduced and given that a percentage of panels would be flooded and part of the Western Bess area could be flooded in certain flood events, safety for its lifetime is not secure. How could the Exception test have been fulfilled, let alone the SoS be confident that it would not increase flood risk elsewhere? In view of the above it would seem inadvisable and would risk non-compliance to rely on the applicant's intention that the future FRA will be "no worse than the outcomes included in the FRA."

The applicant uses the word "hopefully" twice regarding review time. The possibility that the applicant will have reached an agreement with the EA without scrutiny from other authorities and IPs is contrary to what has previously happened.

It cannot be policy to accept that a future FRA in these circumstances would/ could be compliant, especially as it relates to public safety? The SoS needs to be confident that this is secured.

## Response to the Applicant Responses to me at D2

RRR4. I have spoken to BDC and they assure me they are not responsible for the delineation of the functional floodplain. I am still waiting for a response to my email of 4th August 2025 to the EA regarding this matter. More phone calls and a further email and they now confidently tell me I will have a reply by 31st October 2025.

RRR5. I asked how flood flows are safely managed at the time of a flood as well as about the removal of debris.

If debris is not removed at the critical time of flooding, for safety, then how are flows managed safely. Indeed, given the unpredictable nature of debris in the river, how easy will it be to manage flow around the obstacles on the floodplain?

RRR6. What modelling is the applicant's assertion "that the mounting structures and voids will allow the free flow of water/debris and blockages will be minimised", based on?

RRR7. The ISH2 meeting has cast doubt over the acceptance of a tolerance by the EA. The increases the applicant mentions are precisely that, increases, which are contrary to policy and should not be dismissed under the guise of tolerance.

RRR9. Since listed properties are specifically mentioned regarding mitigation for Landscape and Visual, why should they not be afforded flood risk mitigation? Flooding would cause more damage.

RRR10. Assume makes an Ass out of U and Me. No, it was not a specific reference to my home. There is a government, long term flood risk website, which allows you to put in any postcode to check future river, surface water and reservoir flood risk.

General questions 14<sup>th</sup> October 2025

Will the panels be arranged perpendicular or parallel to the contours of the land?

Has the Bore been mentioned?

Why was the 29% climate change addition used in the breach scenario not the 39% and for the breach freeboard assessment, which the EA also asked for? The EA gave the figure to the applicant but did the applicant ask why it was used rather than the 39%?

It is stated, 27<sup>th</sup> Feb 2024," that 94% of the Site would either not experience flooding or will be raised 300mm above design flood levels." For clarity please could the applicant say if site refers to the whole area or the solar site only and what percentage of the solar area will experience flooding, with some indication of panel numbers to be raised to the max height? If this information is already in documents could the applicant give reference points, please?

Will the solar panels and cabling be resistant to the effects of saline flood water. Please refer to the River Trent Catchment Flood Management Plans, Shelford to Gainsborough section, which references the combined flooding with saline or brackish water.

What is the effect of turbulence around the panels as the water passes from one array / row to the next. This cannot be dismissed as not occurring.

Soil erosion due to turbulence and before ground cover is established/failure.

Damage and ensuing dislodgement of the panels, with likely numbers and where they would collect after a storm. To discount the possibility of panel damage is folly. Please refer to the examples Porth Wren Dec 2024, Low Burntoft Farm Nov 2024.

Why has there been no inclusion of the fencing/posts when quantifying the loss of floodplain storage space and flow disruption?

Has loss of ground infiltration space, due to all structures, been accounted for? If yes, please could the applicant show details?

The solar farm is expected to power 200,000 homes. Are there more details please?

Please could the applicant provide a breakdown of total lost flood storage and compensation areas?

How will all the structures affect flow direction on site, where will the flow be directed to and what measures have been taken to account for these?

I have previously asked, if homes are flooded after the solar farm is installed, how will it be decided whether it was because of the solar farm, or whether we would have flooded anyway? I feel this is a pertinent question and I would like it to be answered this time please, rather than it having to be discussed if it were to happen.

Has any solar farm of the magnitude of the applicant's proposal, on a majority flood zone 2 and 3, with a major river through it, within a similar climate zone, where local communities are at serious risk already, been approved long enough to show it makes no difference to flood risk? Since the applicant makes references to other consented solar farms in defence/relation to theirs, I feel this is a legitimate question.

In response to the applicant's scoping report the EA wrote "Given that a large part of the site benefits from the presence of flood defences, given that there are some defence assets present within the red line boundary, we recommend the applicant consider whether the scheme could provide flood risk betterment, through maintaining or upgrading existing flood defence infrastructure in and around the site". Did the applicant give this some consideration?

. oCMP APP/7.5.3 VOL7

2.2.2 15 FTE permanent staff compared to

2.6.3 Small number of private vehicles for the 3 permanent staff. Should that read 3 of the permanent staff?

Table 3.3 “A detailed Surface Water Drainage Strategy for the grid connection substations and Bess compounds (based on the detailed design and infiltration testing data) will be developed post consent”. Is this acceptable if this should be part of the FRA that is used for consent purposes?

Table 3.4 “No water quality monitoring is required during the operational period”. “During the life of the project the use of such chemicals, (fertiliser and pesticides) will be ceased which will lead to beneficial impacts on the water environment”. Perhaps it is a missed opportunity not to monitor the water quality?

#### The Sequential and Exception Test APP/ 9.15

2.1.7 Para 5.8.7 EN-1 “Policy aims to make it safe” not mitigation. Why, therefore is so much reliance placed on mitigation, which can fail?

2.1.10 Para 5.8.11 EN-1 Any development on a floodplain takes space and pushes the flood risk elsewhere. Has compensatory storage been allocated?

2.1.11 Para 5.8.12 What methods of flood flow management would be employed to safely manage the deflected flow and constriction?

#### Relevant Considerations Cleve Hill

3.2.3 “Modelling confirmed a freeboard between the flood depths and lowest edge of the panel”. At Cleve Hill, is it predicted that their freeboard will be breached by 300-600mms for 45,000panels, as in the applicant’s case? Also, it is a 360ha site and will work with the EA on maintaining flood defences.

#### The sequential and Exception Test Addendum APP/9.26

2.1.3 The expected operational date of the National Grid is 2031 (a brochure was recently delivered confirming this date) compared to the applicant 2029.

It was not made apparent that others could suggest an alternative site. That seemed presumptuous.

2.1.4 How is the argument that if other lower risk sites exist, they would be needed as well as, not instead of, relevant to the applicant’s choice?

2.2.3 To state slender frames have a negligible impact on flood risk “as the water flows underneath the panels” is a sweeping remark, guarded by, in the majority of cases. In this case however there will be 45,000 panels that do not comply with this remark!

2.2.4 If, as the applicant states, they “considered flood risk at an early stage” why are we now only “hopefully” having enough time to discuss the FRA.

2.2.5 Perhaps the phrase “no real world harm” has been taken from the case of Land at Ham Road, which was in relation to a proposal where the entire site was made safe from tidal flooding. This does not apply to the applicant’s project and is not relevant to Cottam which is majority flood zone 1 or Heckington Fen which is 524ha, with no major river flowing through it.

2.3.4 The applicant asserts that “there is a technical solution to allow solar to be safely accommodated in flood zones 2 and 3 without increasing flood risk elsewhere and to the satisfaction of the EA”. If the applicant is referring to the use of tolerance figures, then this is not universally accepted by the EA, as stated at the ISH2. If it is a reference to the panels having a freeboard allowance then, as referred to earlier, there will be thousands of panels not achieving the required freeboard distance and free flow of water.

2.3.5 Para 5.8.7 “policy aims to make it safe”. Policy alone has not done this and despite all the mitigation there is still an increase in flood level.

3.1.4 The suggestion by LCC for the applicant to look outside of the region is not unreasonable, given the congestion already in the Trent Valley and the flooding frequency and now the latest update to PPG.

3.1.6 Why would the possibility that future capacity at High Marnham would not be used, be included in reasons for not choosing a site. The applicant’s start date is 2029 and the date for High Marnham is now 2031. Solar applications in planning amount to 140GW, that is twice the 2035 target of 70GW, as stated at ISH2. So, concern for possible unused future capacity is perhaps misplaced.

3.1.7, 3.1.8, 3.1.9 The predicted additional cost could be offset by less need for flood risk mitigation at an alternative site?

5 Conclusion. It reflects the unsuitability of the area and energy infrastructure overload within the Trent Valley, that the applicant is unable to locate 4 sites of 250ha to accommodate their proposal. Alternatively, it could suggest that the applicant’s project is simply too big for the area.

Ref an article published 10<sup>th</sup> January 2024

Louise Slater, Professor of Hydroclimatology, Oxford University

Jamie Hannaford, Principal Hydrologist, UK Centre for Ecology and Hydrology.

“Heavy rain across southern Britain meant that most rivers in England swelled at the beginning of 2024, prompting widespread flooding. The River Trent was among the most severely affected. The water level on the Trent at the start of January 2024 was actually higher than what scientists would consider a once- in -50-year event in today’s warmer climate. Another way to understand how much floods have changed is to consider how often they happen today compared with the past. If we look at the 50-yr level from 1959 (about 3.46metres), how often would such a flood occur in today’s climate? On the Trent, a 3.46 metre flood level would now be expected to occur every 9.38years. Historical archives of river monitoring data can help us understand how the largest floods are changing on the River Trent. The historical data shows that extreme water levels are being reached more frequently on the Trent. Overall, the UK must prepare to live with bigger floods and be able to predict flood rich periods several years ahead. This starts with an understanding of how the severity and frequency of such events is changing.”

The above is in support of my questioning the return period of flood data, as the applicant also did in the Feb 2024 meeting between themselves and the EA. The article acknowledges the UK`s efforts to predict and prepare for future floods are supported by the EA`s flood road hydrology map and they go on to say they (the authors) are preparing an interactive map to explore how flood return periods are changing across the UK.

Environment Agency Review of Policy for Development in Areas of Flood Risk. July 2021

Key findings of the Sequential and Exception test.

42% of LPA respondents indicated the term “Wider sustainable development objectives” to be somewhat or completely unclear.

39% of LPA respondents considered the term “Wider sustainability benefits for the community” to be somewhat unclear.

Update to the PPG September 2025

There was supposed to be updated guidance on both the terms “reasonably available” and “wider sustainable development objectives” in the PPG September update, but only “reasonably available” was immediately obvious.

Relevant to the applicant's proposal is that avoiding flood risk is still paramount, the search area for major infrastructure has been widened to include regional consideration, ownership is irrelevant and smaller sites together can amount to being reasonably available.

The applicant has acknowledged an increase in flood levels of 2.3mms and 4.1mms, and noted it was within an agreed tolerance level of 5mms with the EA. At ISH2 the EA were insistent that they "do not have a set tolerance and we do not have guidance that has a set tolerance in it". So, for the applicant to have repeatedly, stressing repeatedly, suggested that the predicted increases are within agreed tolerance levels was misleading. To allow a tolerance is suggestive of a way of circumventing the requirement for "no increase" and a means of permitting an unacceptable increase. It is an increase in flood risk whichever way it is viewed.

Following on from the above, the assertion that the Exception test has been satisfied is again debatable. According to point 16.6.30 of Chapter 16 Human Health APP/6.16.1, the ES Vol 2 Chapter 7 Hydrology and Hydrogeology APP/6.7, "considers flood risk and ensures there will be no increase off site". Considering this statement, how does the applicant propose to "ensure" that the increase remains on site?

Flooding is misery for people and costly for the UK economy, (please refer to Gov.UK Evidence on the Costs of floods in England and Wales.) The Government is investing an extra, record, £2.65 billion 2025-2026, alongside the long-term flood budget, to improve resilience against the ever-increasing threat of flood. It would be an unacceptable situation if a solar farm, built in response to climate change, exacerbated flooding. It is incomprehensible how the situation has gone from the EA asking for a freeboard of 300mms, to now allowing 45,000 panels to be submerged by 300 to 600mms. How has that been sanctioned? The panels would already be 1.5mtrs above ground, there would be a 300mms freeboard and still they would have up to 600mms of flood water over them. Add on inverters with voids, contrary to EA advice, contributing to debris accumulation and flow distortion. To an onlooker it appears that EA recommendations and advice have not been heeded.

Where is all the modelling for this being done? I have not seen mention of the wire fencing and wooden posts included in any volume or flow distortion calculation. Land area will be lost for infiltration due to the upstands, posts and concrete; has that been factored in? When, as an area, we are on a tightrope, every minor addition is the difference between homes being flooded or not.

## Conclusion

I looked back to my first submission of 13<sup>th</sup> May 2025, and I am dismayed that today, I am still asking the same question. Namely, "is it certain that such large areas of solid panels, drilling, cables, pipes etc. will not affect the river/water behaviour?" At that point I had not even thought of the influence that all other consented solar farms along the valley could have on water dynamics. Incidentally, I had put the same question to the EA and the Trent Valley Drainage Board in July 2024.

After the discussions I have heard and submissions I have read, I cannot conclude that this solar farm will have no effect on flood risk, on site or elsewhere. It is implausible to expect putting structures, especially of this scale, on a floodplain, will have no impact on what water does or where water goes. Think domestically of a burst pipe, how water travels unexpectedly. Then think of the River Trent, whose name has Celtic derivations meaning strongly flooding and whose behaviour has previously been monitored and determined within an open expanse to flow over. The impact of this one solar farm is difficult to fathom; add in the rest of the new structures in the Trent Valley and we are in uncharted water. Despite myriad mitigation measures there is an increase in flood level. This increase, which may still not include all contributing factors, has no accompanying strategy for keeping it on site. Where will it go?



