

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

APPEAL REF. APP/P3040/W/23/3330045

Land East Of Hawksworth and Northwest Of Thoroton, Nottinghamshire, NG13 9DB

1. This is a rebuttal on behalf of the Rule 6(6) Party, Hawksworth and Thoroton Action Group, of the Appellant's evidence in respect of site capacity and grid connection.
2. The evidence is contained in statements from Patrick Smart and Jean-Christophe Urbani, attached as appendices to the Appellant's planning witness's proof. It is unclear whether Mr Smart or Mr Urbani will appear as witnesses to the inquiry to enable scrutiny of their evidence.

Evidence of Mr Urbani

3. Mr Urbani's evidence confirms that the appeal proposals include large scale overplanting of solar panels, to generate energy well above the 50MW threshold for a Nationally Significant Infrastructure Project (NSIP).
4. EN-3 permits overplanting but only to compensate for the degradation of solar panels over the lifetime of development. This is confirmed in a recent letter to Marches Planning from Minister of State for Energy Security and Net Zero, Justin Tomlinson MP. (Appendix 1)
5. The Minister says: *"In the Energy Policy Statement EN-3 guidance, overplanting is countenanced where reasonable, to address panel degradation. Unreasonable overplanting, or overplanting for any other reason, would not be supported."*

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

6. Mr Urbani advises that solar panels degrade at a rate of less than 0.5% per year, so a maximum overplanting allowance over the 40-year lifetime of the development would be 10MW. He also says that panels have a lifetime of 30-40 years, meaning a proportion are likely to require replacement, reducing the amount of overplanting needed.
7. The overplanting in the appeal proposals is well above that required to allow for degradation. The note to the inspector dated 16th April 2024, advises that the site would accommodate 128,752 610W panels, giving an annual output of 78.54 MW (in direct current – DC).
8. According to the Appellant's statement of Case, there would be 139,568 panels, giving an output of more than 85MW DC if 610W panels are used.
9. Mr Urbani says:

"We are at what we think is an efficient GCR (Ground Coverage Ratio) for this site and increasing it further will lead to higher levels of shading and energy loss for that reason.

We have also taken account of forecast improvement in module efficiency in proposing the number of panels likely to be used and as for any developer need to retain some flexibility for the site to remain competitive when sourcing components for the final construction.

Any scope for further changes to GCR or panel rating to affect site area to achieve similar performance to the current appeal layout would be of marginal effect and unlikely to result in changes that would be noticeable to the public."

The wording is identical to Mr Urbani's statement in Appeal ref. 3329235 on behalf of the same Appellant on a site near East Leake, Nottinghamshire. In that case, the site

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

was 80.65 hectares (199 acres), compared with the Appeal Site, which is 94.24 hectares (233 acres) – although there are inconsistencies in the Appellant’s information. For example, Mr Urbani says the site is 221 acres.

10. The East Leake appeal proposal is for 91,936 panels with the Appellant presenting two panel-capacity options: 580W panels giving a site capacity of 53.32 MW, or 610W panels, resulting in capacity of 56.08 MW. Mr Urbani said this area of land and number of panels was also an efficient Ground Coverage Ratio for a 49.9MW solar development.
11. Mr Urbani explains that the purpose of overplanting on the Appeal Site is to generate more energy over longer periods. Excess energy is “clipped” to prevent it entering the grid. His Fig. 1 shows how clipping works in principle. It is not indicative of the level of clipping proposed on the Appeal site.
12. As Mr Urbani says: *“This DC to AC ratio of more than 1 allows the maximum inverter capacity to be used more often during the day and more energy to be produced – for example in the early morning and late afternoon.”*
13. As Minister Tomlinson said, EN-3 does not sanction overplanting for this purpose.
14. Mr Urbani refers to the Appellant’s wish to retain flexibility to take advantage of improvements in module efficiency, suggesting that the proposed solar panels are likely to be of greater capacity than the 610w described in the note to the inspector and overplanting even greater than described in the Appeal documents.
15. The planning witness also confirms the Appellant proposes to use *“the most efficient technology currently available,”* inviting the inspector to attach moderate beneficial weight to this aspect of the proposal.

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

16. The 610W solar panels described are not the most efficient technology. Manufacturers last year introduced 750w panels, reflecting rapid increases in the generating capacity of solar technology. The first 600w utility scale panels were introduced in 2000.
17. If the 139,560 panels (using the Statement of Case figure) were 750W, the nameplate capacity of the site would be 105MW, more than double the claimed export capacity.
18. The reduced cost of solar panels has made overplanting cost-effective, but the consequence is a proposal for capacity potentially well in excess of the NSIP threshold, utilising more food-producing land than is required to deliver energy up to the threshold.
19. Mr Urbani has also failed to explain why 26 inverters are needed on this site, when only 17 inverters are proposed to deliver the same capacity on the appeal site at East Leake.
20. The Appeal proposals would entail using inverters with a capacity of no more than 1.9MW each, although typical utility scale inverters are 4-5MW. Mr Urbani advises that inverters of 1MW are available and that bespoke inverters of specific capacity can be obtained, but he does not explain why the Appellant would choose such an option.
21. National Energy Policy Statement EN-3 was revised earlier this year to say that solar site capacity is measured by the capacity of the inverters in alternating current (AC). Previously, capacity could be measured either by the combined capacity of installed solar panels (in DC) or of the inverters, which convert the power to AC.
22. The amendment was intended to bring solar into line with other forms of renewable energy development, in which capacity is delivered as AC. The new EN-3 does not suggest that the capacity of solar panels is no longer relevant and information about

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

solar panel capacity is becoming more critical, because as solar panels become cheaper and more powerful, there is a temptation to overplant sites to deliver at capacity for longer periods, requiring energy to be wasted through clipping.

23. EN-3 recognises that solar developers may not have final details of proposed site infrastructure at the time of an application. Where this is the case *“Applicants should set out a range of options based on different panel numbers, types and layout”*. (Paras 2.10.71-72)

“Where flexibility is sought in the consent as a result, applicants should, to the best of their knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed.” (para 2.6.2)

24. The Appellant has not complied with this guidance, which is a material consideration in this appeal. The drawings of proposed structures on site are indicative only, the information about the number of panels is inconsistent between the appeal documents and the Appellant has declined to provide relevant information about either panels or inverters.

Evidence of Patrick Smart

25. Mr Smart argues that the Appeal should be allowed because the Appellant has an agreement for a connection to the National Grid.
26. He says that the site will be connected to the Staythorpe Grid Supply Point substation via the 132Kva pylon within the appeal site boundary. He advises that the National Grid is planning to install a third supergrid transformer (SGT) at Staythorpe and provides a

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

link to NG’s Distribution Network Options Assessment of March 2024 in support of this statement.

27. However, the National Grid Assessment does not mention installation of a new SGT at Staythorpe. Instead, it says that the proposal is to manage the substation through “flexibility and reinforcement.” (Fig. 1) The document says reinforcement includes a range of options, which may or may not include installing new substations. National Grid describes flexibility as “reducing loads on the network by using customers’ ability to change their usage patterns by either switching on generators or reducing consumption.”

Executive summary

Table 2 Summary of investment decisions in the East Midlands

Scheme	Constraint	Proposed scheme closure	Flexibility Start Year	DNOA Decision
Staythorpe GSP	Staythorpe Grid Supply Point (GSP) has two Super Grid Transformers (SGTs), each rated at 240 MVA. The demand is near this rating so in an N-1 scenario, for the loss of one of the SGTs, the other could potentially overload.	2027	2024	Reinforce with Flexibility
Toton	Toton is a two transformer primary. In an N-1 scenario, for the loss of one of the transformers, the full demand is on the second transformer which could potentially overload.	2027	2024	Reinforce with Flexibility
Woodbeck	Single transformer primary with firm capacity reliant on 11 kV interconnection, which is expected to be exceeded for an outage of the transformer.	2025	2024	Reinforce with Flexibility
Hockley Farm Road	The constrained circuit is a short cable section on the Leicester North – Hockley Farm Road T1 33 kV circuit, which is anticipated to overload when picking up the site’s demand following an N-1 outage on the infeed from Leicester BSP.	2024	-	Reinforce
Northampton group	The Northampton group is approaching 300 MW of group load, at which point the existing circuits will not be able to meet the security of supply obligations.	2028	-	Reinforce
South Holland – Long Sutton – Holbeach Circuit	Both thermal and voltage constraints are forecast on the 33 kV network feeding Long Sutton and Holbeach primaries for various outage conditions.	2028	-	Reinforce
Staythorpe C to AD1C circuit	Two spans of 132 kV overhead line between Staythorpe C and tower AD1C are constrained. Various outage conditions can overload the 132 kV circuits from Willington to Derby South BSP	2024	-	Reinforce

Fig.1) Extract from National Grid Distribution Networks Options Assessment March 2024

28. The Planning witness’s appendices also include extracts from an agreement relating to a connection to the grid, which says “All generation connecting under Staythorpe GSP will be required to participate in Staythorpe Transmission Active Management Scheme to manage reverse power flow through the Super Grid Transformer. This is considered as a more cost-effective solution in comparison with the high reinforcement

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

cost of installing a further SGT.” (Our Emphasis) (Pages 10-13 of Mr Urbani’s statement)

29. The evidence provided, therefore, appears to contradict Mr Smart’s statement and indicates there are severe constraints on the part of the network to which the Appellant proposes to connect.
30. The extracts at Appendix B to Mr Urbani’s statement are not a connection agreement as he says, but from a novation agreement dated 18th December 2020, to transfer a connection agreement from one party to another. The content relates to the transfer agreement and not to the connection itself. The only reference to the connection is on the final page. This section is in different colour, format and font to the remainder of the agreement and is unrelated to the foregoing text. It appears to have been copied onto the document.
31. Mr Smart cites data from NGENSO (National Grid Electricity System Operator) that UK generating capacity will reach 800GW *“by the end of the summer.”*
32. NGENSO confirms in its April 2024 report on reform of the UK grid connections process that generating capacity will reach 800GW, by the end of 2024. (Appendix 2). It adds that *“this is more than 4 times the installed capacity we anticipate needing by 2050”*, indicating that even if unsuitable or unviable connections are removed from the queue, generation targets will readily be met.
33. National Grid further confirms in its Guide to Electricity Connections (Appendix 3) that the UK can more than meet its targets for the generation of renewable energy. Grid connections already in the pipeline could deliver nearly six times the amount of renewable energy required to meet the government’s net zero target.
34. Solar is by far the largest sector with some 130GW awaiting connections, making up 40% of the transmission pipeline, substantially exceeding the government’s target of

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

70GW of solar power by 2035. While solar is a valuable source of renewable energy it is unreliable, making no contribution overnight and little in the winter, when demand is highest. It needs to be balanced with other sources, such as wind, which delivers energy when solar does not. The NG report shows the predominance of solar is out of kilter with other energy sources, meaning this balance needs to be redressed.

35. Consequently, the Appellant's own evidence contradicts the argument that the appeal should be allowed to meet a "pressing need" for further solar development.

36. Should the appeal be allowed, the R6P would propose the following planning condition to ensure that the development remains below the NSIP threshold:

No development shall take place before details of all solar panels and inverters, including drawings, model numbers and capacity, have been submitted to and approved in writing by the local planning authority. The development shall be implemented and operated throughout its lifetime in accordance with the approved details.

To ensure that the development remains within its approved capacity of 49.9MW AC, the following criteria shall be strictly adhered to:

- The number of inverters shall not exceed 26.
- The maximum combined capacity of the inverters shall not exceed 49.9MW.
- The maximum combined capacity of the solar panels shall not exceed 60MW.

Upon completion of the installation of the solar panels, and prior to the first export of electricity from the site, a signed and dated certification report confirming that the above criteria have been fully adhered to by the installer shall be submitted to the Local Planning Authority.

Little Covenhope, Aymestrey, Herefordshire, HR6 9SY

Reason: To ensure that capacity of the development hereby permitted does not exceed the statutory capacity threshold of up to 50MW AC that a local planning authority is empowered to approve under Section 15 of the Planning Act 2008

MARCHES PLANNING & ENVIRONMENT

MAY 2024