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POLICE

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Date: 21st December 2023

Application: SMD/2023/0594

Location: Land at Blythe House farm, south of A50 Draycott in the Moors

Proposal: Installation of a solar array, substation and associated works forming an extension to Blythe Solar Farm (ref: SMD/2022/0160)

The proposal has been reviewed with particular reference to Police CPI's Secured by Design guidance and in accordance with the recognised principles of Crime Prevention Through Environmental Design.

The following comments should be considered in the light of the following:

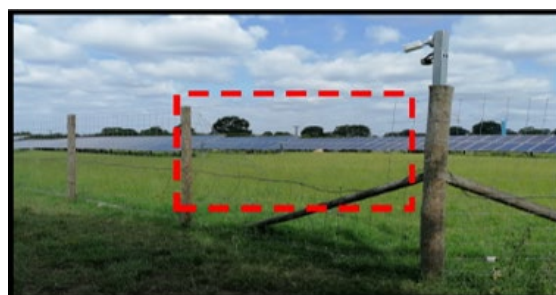
- Under the heading Promoting Safe and Healthy Communities, Para 92(b) of the NPPF 2021 states "Planning policies and decisions should aim to achieve healthy, inclusive and safe places which are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion."
- Under the heading Achieving Well-Designed Places, Para 130(f) of the NPPF 2021 states "Planning policies and decisions should ensure that developments create places that are safe ... and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience."
- Under the heading Planning Should Address Crime Prevention, Design Para 10 of the NPPG states "Designing out crime and designing in community safety should be central to the planning and delivery of new development";
- Staffordshire Moorlands Local Plan - Design Consideration, Spatial Objective SO10 – "To deliver sustainable, inclusive, healthy and safe communities";
- The statutory obligation placed on local authorities to do all they reasonably can to prevent crime and disorder in accordance with Section 17 of the Crime and Disorder Act 1998;
- The 2006 CABE document entitled 'Design and Access Statements: How to Write, Read and Use Them', which states "Statements should demonstrate how development can create accessible and safe environments, including addressing crime and disorder and fear of crime".

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1. In addition to the above, Paragraph: 013 Reference ID: 5-013-20150327 (Revision date 27 03 2015) of the NPPG sets out the particular planning considerations that relate to large scale ground-mounted solar photovoltaic farms. It states that a local planning authority will need to consider, amongst other things "the need for, and impact of, security measures such as lights and fencing". Surprisingly, while the applicant's planning statement is mainly given over to discussing 14 different planning considerations, security is unfortunately not one of them. That is not to say that there isn't reference to security elsewhere, there is, albeit this is almost in passing.
 2. The Local Planning Authority needs to be aware that inadequately protected solar farms within the Midlands (indeed nationwide) have previously attracted not insignificant criminal activity including that conducted by organised criminal gangs who will travel considerable distances to

target a vulnerable site. For example, in 2020 a site within Staffordshire sustained losses approaching £300,000 following the overnight theft of copper transformer cables. On that occasion the fencing was damaged in 3 places and locks on the inverters attacked. According to a crime intelligence report seen, separate incidents in 2022 in Worcs resulted in a theft valued at £87,000 (solar panels) and theft/damage value £150,000 (solar panels and metal frames) aside from a host of lesser value thefts and incidents of criminal damage. A different report covering the first months of 2022 cited an incident where "Thieves stole £100,000 worth of copper cable from a solar farm in Shropshire. CCTV shows 3 men wearing balaclavas cutting a padlock to gain access before bringing a ... van on site and making off with the cable." Another incident quoted was "Camera systems/tamper alarms have been triggered where 3 males have entered the location. Hundreds of metres of power cable has been stolen at a value of £36,000 with a repair cost of £80,000." And another report – "Theft of approximately 43km of cable from a solar farm, whereby entry has been gained through a fence which has been cut. Damage to the cabling as it exits the inverters on the solar panels."

3. A crime intelligence report in 2021 discussed thefts in Cheshire and Derbyshire, citing one where 35,000 metres of copper cabling was stolen, and another where a deer fence was cut. The text of the last incident and the image that accompanied it are shown below.

"Thieves took advantage of the solar farm's remote location and cut a large section of fencing just above the fence alarm cable, very close to a CCTV camera, to gain access... Thieves targeted just the cable with an unspecified quantity stolen; the solar panels were left in situ".



4. A crime intelligence report seen very recently identified 3 separate reports of damage and theft at solar farms in the Central England during November 2023.
5. Incidents can also occur during the construction phase. At the end of 2022 in the East Midlands, a man guard was attacked and detained for a number of hours by armed offenders while others stole drums of cable from the site. In the light of this, the applicant's attention is directed to the following publications from recognised bodies:
 - Construction Site Security – A Guide (British Security Industry Association)
 - Construction Site Security Guide 2021 (Secured by Design)
 - Construction Site Security Guide (National Business Crime Centre)
6. Referring back to NPPG Paragraph: 013 Reference ID: 5-013-20150327 (Revision date 27 03 2015), clearly there will be a need for security measures to provide an appropriate level of protection for the site. The incidents cited above are purely representative of wider scale offending relating to solar farms. Offenders are very organised and may carry out hostile reconnaissance of sites to assess security and identify potential weaknesses. They may test security arrangements in the days prior to an attack to determine the nature of the response to it. Attack precursors can include damage to fencing, and interference with alarm detection systems and cameras, which may be deliberately moved up or down to reduce coverage. Both the copper cabling and the panels themselves can be targets for theft. £100k of panels were stolen in June 2023 from a solar farm in one Midlands county. High metal prices, demand for solar panels fuelled by the high energy prices and the move towards more sustainable energy are common drivers. The inherently rural location of solar farms contributes to their potential vulnerability as they have very limited natural surveillance and there can be slower police response times. Evidence indicates that once a solar farm has been targeted, it is at greater risk of repeat offences as offenders return either in quick succession to carry on where the left off (as was the case with the June 2023 incident cited above) or in the future to remove the cabling that has been replaced etc.
7. The 2013 document 'Planning Guidance for the Development of Large Scale Ground Mounted Solar PV Systems' published by the BRE contains some useful advice regarding security and as such, attention is directed to it.

8. A suitably robust boundary treatment should be a very important consideration and first line of defence. The boundary will need to sufficiently deter and delay offenders. Any perimeter gating will need to be suitably robust, deter climbing/crawling under and be fitted with adequately protected locking arrangements.
9. As suggested, security considerations receive a brief mention within the application Planning Statement under 3.1.2, The Proposed Solar Farm. It states "The installation will be fenced to a maximum height of 2 metres with deer fencing, including openings to allow wildlife travel into and across the site. The site will be monitored by CCTV mounted on poles and no external lighting is proposed. Examples of the supporting infrastructure can be found within the accompanying Design and Access Statement". While the deer fencing will no doubt keep deer out etc, it is likely to offer a minimal deterrent to organised offenders. The above guidance document advises, "If perimeter fencing is to be used then it should be a proven security fence". The deer fence would certainly not fall into this category. A proven security fence is one which has independent third-party certification from a UKAS accreditation body to a recognised manual attack-resistant security standard (such as LPS1175 or STS202). These are manufactured and certified to differing security/burglary ratings.
10. Welded mesh, which might be considered a suitable type of fence given the rural setting and need to limit the visual impact (as the guidance suggests), comes in varying qualities and can be manufactured to a range of independently proven (third party certified) levels of attack-resistance, although in many cases unfortunately they are not. As many basic weld mesh fences are not able to independently demonstrate that they are able to withstand a penetration attack (for a set amount of time using a particular set of typical attack tools) as they do not possess any form of independent third-party security accreditation. As such, basic welded mesh fences can unfortunately be vulnerable to bolt cropping etc, even more so, the deer fencing proposed. While any fence can be overcome (given enough time and the right tools etc), it is recommended that fencing and gating with relevant third-party security certification at a suitable security/burglary rating is installed in place of the deer fencing, especially where there is no dense hedging to provide an outer protective buffer or at locations that might be potentially more accessible by offenders. Such fences provide a proven and demonstrable level of attack resistance. Of note, the applicant should also be aware that basic palisade fencing (enclosing the substation compound?) can be easily breached by informed and toolled up offenders. Security certified variants of this product are available that can provide much greater levels of attack resistance than basic non-security certified palisade. All fencing should also be manufactured and installed in accordance with the relevant part of BS1722.
11. In security terms, the railway line and River Blithe to the south, the elevated A50 trunk road to the north and fields to the east will provide excellent buffers to the application site and the consented solar farm. However, the applicant will need to be very aware that approach by offenders to the northern portion of the application site via the bridge over the A50 (taking Riverside Road in Upper Tean and following the lane to Blythe House Farm) and to the consented solar farm (taking the lane leading to Upper and Lower Newton Farms from Totmonslow and that passes under the A50) would be eminently possible. There are very few properties passed along the way that might even be aware of vehicles let alone observe them. The consented site access from Totmonslow direction and the arrival point just over the A50 from Upper Tean direction are not overlooked at all. There would be the possibility for offenders to travel to these points with limited chance of arousing any attention and once at them, of being unobserved. The internal track along the northern edge of consented solar farm from the Upper Tean lane could allow any vehicle to disappear out of sight. The potential vulnerabilities that might attach to the above, for the consented site and the proposed extension to it will need to be factored in. The track approach to the southern portion of the application site that runs quite close to the railway line may be a less attractive proposition to potential offenders as seemingly it would necessitate offending vehicles passing close to the farms which could arouse suspicion.
12. The nature of the various access gates (particularly those that might be deemed more vulnerable) is unknown, but presumably they would be fairly basic construction with deer fencing infill mesh. How they might be secured and whether they would resist a range of attack methods (ramming, bolt cropping etc) is unknown. Again, certified attack-resistant gating devoid of climbing aids and supplemented by some suitable anti-climb topping with robust locking arrangements could be an altogether different proposition to offenders.

13. While it is recommended that the proposed deer fencing and (probably) basic gates are replaced with proven security products (which would include the locking hardware on the gates) as discussed above, there is clearly a strong argument that less accessible sections of the solar farm boundary would not require this. It is noted that public rights of way will run through and close to the overall site, which will legitimise the presence of anyone on-foot. Any potential security vulnerabilities resulting from this will need to be considered and countered. Where necessary, offenders will drive across fields, cut through field gates, crop locks, and even drive through or remove weak hedgerows to access perceived vulnerable points of a perimeter so this should be borne in mind in such deliberations. Where dense hedging exists (or can be provided, which will of course take time) this can help reduce potential vulnerability. Currently, the fence lines at the arrival point for the northern section from the Upper Tean lane are basic and devoid of hedging.
14. It is clear that without additional security layers in place, were a site perimeter boundary/fencing to be overcome, offenders may very well be able to act with relative impunity, especially where they are unlikely to be disturbed as could well be the case here. The BRE guidance document states, "There is a huge range of electronic security available. For most sites it is very likely that this will play an important role". The aforementioned Section 3.1.2 of the applicant's Planning Statement states, "The site will be monitored by CCTV mounted on poles". This appears very sound in principle, and is certainly encouraging at face value. As the BRE guidance document rightly points out, "There will probably be little reward in deploying CCTV or other defence unless it is monitored in some way or can provide an instant alert in some form and also who would then respond to this? CCTV which simply records will probably be of very limited value".
15. It will be important to ensure that there are no blind spots along the perimeter in terms of camera coverage and opportunities to compromise the cameras are not provided. Ensuring cameras enabled detection and observation of potential offenders at the fence line, which they would need to firstly overcome would be one specific requirement. No (conventional) lighting is proposed which is very understandable, given the rural location and extensive nature of the site. However, either the CCTV cameras will need to have an adequate level of in-built infra-red lighting or separate infra-red lighting will need to be provided alongside the cameras to ensure that optimum quality images and detection/monitoring capabilities are provided during the hours of darkness – the most likely time of offending. Not only will the planning of the CCTV system be important in such matters, amongst others, but a thorough dummy attack-testing of the detection/CCTV system should be undertaken to confirm its suitability and effectiveness under different weather/lighting conditions. This should identify any failings or vulnerabilities at the outset and enable any modifications to be undertaken as necessary, in a timely manner.
16. As suggested, a key consideration for remote or potential vulnerable locations is to deny potential offenders the time to act with impunity. Unless their presence is detected, they could have fairly limitless time to operate. A well-planned motion detection-activated, remotely monitored CCTV system can be an extremely effective way of protecting vulnerable or remote sites, which could be subject to intrusion and theft. Unlike record-only CCTV systems, remote monitoring can enable suspicious activity or intrusion to be detected, live images to be viewed and pertinent evidence captured, on-going assessments made, audible challenges issued (where public address capability is included), and real-time interventions initiated, as necessary. The ability to audibly challenge potential offenders via a public address arrangement can be a very effective supplementary measure designed to disrupt them and make them aware that serious security arrangements are in place to protect the site. There is no reference to public address provision in either the Planning Statement or the Design and Access Statement (DAS). However, the CCTV and Fence Details drawing shows a speaker near the camera at the top of the pole. Assuming this is indeed accurate, its inclusion is warmly welcomed. Suitably worded CCTV warning signage should be used to reinforce the presence of the system at various points along the perimeter and particularly at points which offenders might be most likely to target.
17. Of interest, the image on page 11 of the DAS showing the type of fencing proposed with a pole-mounted CCTV camera internally is not unlike the image in paragraph 3 above showing an entry point in relation to theft from a solar farm in 2021. This should serve as a suitable warning reinforcing the need for suitable robust fencing, and well-designed and installed motion-detection and remotely-monitored CCTV arrangements with good attention to detail.

18. It is presumed that the specification of the CCTV equipment will be one of the outcomes of a carefully drafted and site-specific CCTV Operational Requirement (OR). When considering the use of CCTV, end users must be very clear about the objectives they wish to meet and establish a policy for its use and operation before it is installed. The end user must answer the question, 'what do we want the system to do for us?' The development of an OR for the system, which can be supplied to CCTV installers during the tendering process is crucial. An OR will be used for the design, performance specification and functionality of the CCTV system. In effect, it is a statement of potential problems, not solutions and will highlight the areas that must be observed by the system, and the times and description of activities that it is anticipated would give cause for concern. If an OR has been well drafted to ensure the installed CCTV system will be fit for purpose and satisfy the end user's objectives, and the installed system satisfies this OR then a positive outcome is achieved all round. A well-drafted OR enables the end user to hold the installer to account should the installed system fail to meet any requirements that have been laid down. Ultimately the drafting of a site-specific well-drafted OR and its fulfilment with a suitable system will be a matter for and between the two parties involved.
19. The CCTV surveillance camera images will need to be relayed to a Remote Video Receiving Centre, where they can be suitably monitored. Of note, where a police response is required in response to activations of a security system (such as a detector-activated CCTV system), there would need to be compliance with the Police Operational Advice and Security Industry Requirements for Response to Security Systems found within the NPCC Security Systems Policy (May 2021). Remotely monitored detector-activated CCTV systems need to be installed and monitored in accordance with BS8418:2015 - *Installation and remote monitoring of detector operated CCTV systems – Code of Practice*.
20. The BRE guidance notes some other security measures that can reduce vulnerability:
 - The use of security bolts to secure photovoltaic panels and locked housing to secure inverters etc.
 - If the individual solar panels can be marked overtly this would reduce the ease with which they could be re-sold / re-used [online market places are common outlets] and thus help act as an additional deterrent and assist in any future identification.
 - Covert security marking should also be used. [Secured by Design accredited forensic marking products such as Smartwater and SelectaDNA have considerable experience in this field. Their signage can also add to the deterrent value of the marking.]
21. Storage containers containing tools and material can be targets in themselves. Various ways and means can be used to enhance their attack-resistance, which the applicant may wish to consider.
22. While Staffordshire Police clearly have no objection to the *principle* of development, there are definite misgivings with the choice of fencing (and probably gating) and perceived vulnerabilities with certain aspects of the location (ease of unobserved approach from at least 2 directions) that could provide opportunities for potential offenders to consider targeting the location (including the consented site). As reference to incidents of theft/damage testifies, rural solar farm sites can be vulnerable to offenders, particularly well-organised ones (including historically within the Staffordshire Moorlands) unless they are sufficiently well protected. Clearly there is a "need ... for security measures". In the light of the above information, the importance placed nationally and locally within planning upon designing out crime within new development (as exemplified in the bullet points at the start of this response) and the statutory obligation placed on local authorities to do all they reasonably can to prevent crime and disorder in accordance with Section 17 of the Crime and Disorder Act 1998, the Local Planning Authority should satisfy itself that this site will be sufficiently well protected.

Crime Prevention advice is given freely without the intention of creating a contract, and all comments and recommendations are site specific. Staffordshire Police and the Home Office do not accept any legal responsibility for the advice given.

David Elkington
Designing Out Crime Officer

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