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FROM Eleonora Rigo
Kronos Solar Projects GmbH
ADDRESS Petersplatz 10
80331 München

KS SPV 67 Ltd • 14 High Cross • Truro TR1 2AJ Cornwall

TO East Staffordshire Borough Council
FAO Planning Officer
ADDRESS PO Box 8045
Burton Upon Trent
DE14 9JG

DATE 22 November 2021

SUBJECT. **Screening for a photovoltaic park at Leigh Crossing, East Staffordshire, ST10 4PE**

To whom it may concern,

We are pleased to hereby send you our screening opinion for the proposed photovoltaic park in East Staffordshire north of Middleton Green.

We are looking forward to your feedback. Please do not hesitate to contact us at any time in case you have remarks or questions around the following content.

Kind regards,

Kronos Solar Projects GmbH

Eleonora Rigo

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1. QUICK INTRODUCTION TO KRONOS SOLAR PROJECTS GMBH

The Kronos Solar Projects GmbH, hereafter Kronos Solar, is a photovoltaic (PV) park developer with a head office located in Munich, Germany, from where the company has operated internationally for many years. Since our inception, we have completed over 40 large-scale solar park installations, many of them in the UK. We have significant experience in the design, planning, development, construction and maintenance of PV parks for both roof-top as well as free-field/standalone applications. As a comprehensive PV developer, we operate alongside the complete value chain from the identification of suitable sites to the delivery of turnkey ready PV parks. In this context, we provide both the technical expertise and the financial means to bring projects to life.

2. INTENTION OF THIS SCREENING OPINION

Kronos Solar is acting on behalf of KS SPV 67 Limited. Based on Regulation 5 of the Environmental Impact Assessment (EIA) Regulations, we kindly ask for a screening opinion by the East Staffordshire Borough Council Planning Authority to confirm if this proposal is a Schedule 2, Class 3 project and if an EIA is required.

Given that our development is intended for the production of electricity and the site has an area of more than 0.5 ha, our intended PV park should be considered a Schedule 2 project. As no specific category for PV parks exists, we consider the proposed project a Class 3 "Energy Industry" development.

3. SITE LOCALITY AND SUITABILITY

The PV Park is a large development comprised of three farms: Blythe Gate Farm, House Farm and Hollies Farm. The farms are located north of Middleton Green, between the A50 and Sandon Rd. The overhead lines passing with towers directly on the fields of the proposed development, provide the presumed point of connection (see Appendix A for an indicative layout of the farm).

The land classification for the selected area is mostly grade 3, which is agricultural land of moderate quality. Several factors make this location unique in its setup and extremely well suited for the development of a PV park:

- This type of agricultural land is not the most efficient for food production and therefore falls into the suitable category for solar developments and alike.
- It is visually nicely separated from large parts of the adjacent environment, not creating an intrusion to the landscape.
- The site is not within any nature protection or archaeological heritage designations (e.g. Green Belt, AONB, SSSI or Local Nature Reserve).
- The site composition (ground, soil, slope, etc.) fit very well with the specific requirements of PV parks.
- The site is clear and the use for a PV park will not require major modifications of the site such as removal of buildings and the like.

4. ENVIRONMENTAL EFFECTS

There will be very little environmental impact during the construction of the PV park and almost none during its 40 years of operation. Based on our experience in diligent construction approach, we will

select means of construction, which keep potential environmental effects during construction to a minimum. This will include the application of solar panel mounting systems, which are pile-driven and do not need concrete block stabilizers. Moreover, once the site is constructed, there will be no environmental effects such as noise or pollution.

4.1. Emission and Climate Effects

Solar power replaces energy from fossil energy sources and delivers an important contribution for the reduction and avoidance of CO₂. The energy balance of park is positive already after 2 years. The operational PV park clearly causes no emissions and contributes directly to the local, national and global targets of increasing the share of electricity produced through clean energy sources.

4.2. Nature and Grazing Ground Conservation

The site will become a natural habitat for small animals. With only about a third of the site effectively covered by solar panels, the soil and habitat will remain completely intact and appropriately covered with grass. Also, with significant spare ground between the solar panels, the site can continue to be used as grazing ground. It is a common practice to have sheep grazing between the panels, further contributing to the biodiversity of the soil and efficient use of the land.

4.3. Soil Conservation

There will be practically no sealing of the earth during or after the construction of the park. An important benefit is the regeneration of the earth, which comes as a consequence of not using the ground for farmland during an extended period (40 years). Furthermore, there will be no danger of erosion, or contamination by pesticides, biocides or excessive soil conditioning.

4.1. Water Pollution Control

The PV park will not cause any runoff of nitrates, pesticides, biocides nor harmful chemical substances to the ground water or nearby water bodies. The PV park will also not have an impact on the water storage volume on the site.

4.2. Landscape Effects of the PV Park

The site selected offers an optimal site for a solar development due to its location in a rural setting, by being far from designations and the possibility of connecting to the overhead line directly onsite. Located south of Cresswell, the land belongs to both Staffordshire Moorlands District and East Staffordshire District. The three development sites are surrounded by agricultural fields and offer enough land to develop a sub 50MW solar park with connection to the national grid system. There are no significant long-distance views from any direction, given that the terrain for the development is slightly undulating mainly with east facing slopes. The short distance views into the site are protected by scattered woodland, hedges and natural vegetation, the only short distance view is from Cresswell Rd to the west of the site. These views can be highly restricted by reinforcing existing and mature hedgerows to aid in screening, if necessary, following the LVIA results. Other short distance, permanent views do not apply from any direction, as the land is surrounded by further farmland. Overall, no significant landscape effects are caused by the proposed development.

Furthermore, the initially suggested solar panels and mounting systems will have a height of maximum 3 meters. Based on the hedgerows around the ground, this will create a minimum visual impact. Clearly, both the design of the mounting systems and the landscape protection i.e. through hedges will be detailed out, and are subject to consultation. A complete LVIA will be part of the application to analyse potential impact.

4.3. Cultural Heritage / Archaeology

Based on our current analysis of the site, we do not foresee any negative impact on cultural heritage and archaeology.

5. TECHNICAL INFORMATION OF THE PROPOSED PV PARK

5.1. PV Park Construction

For the construction of the solar park, a pile-driven steel sub-construction will be used to cause minimal sealing of the surface and it is fully removable after the period of operation of 40 years (See Figure 1). The construction fulfils all static requirements, it is flexible in height and length of the tables, as well as in the number of mounted modules and the module angle.

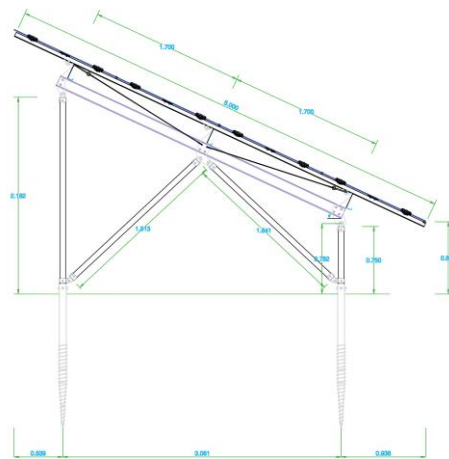


Figure 1. Example of a common steel sub-construction used in Germany, Spain and Italy. More than 200 MWp of PV parks were built with this construction.

A PV park is usually designed in rows of module tables, which go from the east to the west. As a result, the module surfaces are oriented towards the south to capture as much radiation as possible during daytime. This is illustrated in Figure 2.



Figure 2. Module tables oriented towards the south.

A table is usually between 10 and 50 m long depending on the requirements and the shape of the site. The lower border of the table will be at least 80 cm above the ground (See Figure 3) and the construction will have a maximum height of 3 m. Modules will be typically mounted in 2 to 6 rows on a table in an angle between 15 and 30 degrees. All of these elements are exemplary and will be subject to consultation in the process of planning of the proposed development.



Figure 3. Lower border of module table 80 cm above the ground.

Sufficient spacing between individual module tables is also accounted for in the design of the PV park to avoid one table throwing a shadow on the next one, as shown in Figure 4. As a result, usually not more than one third of the site surface will be covered by module tables.



Figure 4. Distance between module rows in a PV park.

Another important aspect of a PV park is the way it is electrically connected. The modules on a table are connected to each other in series in what is called a module string. The strings are connected to inverters that convert the DC power produced by the modules into the AC power needed by the grid when feeding in electricity. In general, multiple inverters are required for a solar farm. Central inverters each with a capacity of 1 MWp are used in smaller scale PV parks, such as the one shown in Figure 6, but string inverters are preferred for larger PV parks since they provide better efficiency. Inverters contain transformers to reach the voltage level of the closest grid access point (11 kV / 33 kV / 132 kV) and together they are usually placed in a pre-fabricated box like the one in Figure 5. This way, the noise emitted from inverters is strongly mitigated and is at least 28dB at a distance of 50m (considering 73dB at the source).



Figure 5. Example of a 20 kV / 400 kV transformer station.



Figure 6. Central inverter from SMA (left) and string inverter from Huawei (right) .

5.2. Ongoing Operations

Once the PV park is built, the scheme requires minimal maintenance efforts. Experience shows that the modules are sufficiently cleaned by rainfall and the monitoring of its performance is done via Internet. Thus, requiring personnel to enter the PV park is only necessary for repair or maintenance purposes and for mowing the lawn. However, for the latter purpose, it is very common to allow grazing sheep in PV parks.



Figure 7. Sheep grazing in a PV park.

6. ASPIRED PLANNING APPLICATION

A map of the proposed PV park can be seen in Appendix 1, showing the site boundaries with red line. We seek full planning permission for a sub 50 MW PV Park along with complementary equipment.

7. SCREENING OPINION

From the perspective that the proposed PV park falls into the category “Schedule 2, Class 3” developments of the EIA regulations, it is clear that the scheme is subject to a screening opinion to define if a complete EIA is required. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 set out basic questions to be asked, to ultimately answer if this particular development is likely to have significant effects on the environment.

To address this question, Schedule 3 of the EIA Regulations provides guidance on to how to assess "significant effects" under three main headings, which are individually analysed according to the development. The headings are:

- The characteristics of the development,
- The environmental sensitivity of the affected location(s), and
- The characteristics of the potential impact.

Paragraph 017 of the EIA Guidance states, furthermore, that “to aid local planning authorities to determine whether a [Schedule 2] project is likely to have significant environmental effects, a set of indicative thresholds and criteria have been produced”. Although universal thresholds are not possible, it is generally assumed that an EIA is likely necessary for:

- a) Major developments, which have characteristics above the thresholds in Column 2 of Schedule 2.
- b) Developments located in particularly environmentally sensitive areas or vulnerable locations.
- c) Developments with unusually complex and potentially hazardous environmental effects.

Considering the statements of the Guidance and our provided description of PV parks, our initial perspective on the proposed project is that:

- PV parks are not of more than local importance in their effects since they will have a limited impact on the local landscape and ecosystem. Their scale does not render trans-frontier nature impacts and their prominence is restricted to the local environment. Although the proposed development is of a larger scale and lies above the threshold for Schedule 2, Class 3 developments, PV parks are not explicitly categorized in any Class.
- The proposed PV park is not located in any particularly sensitive location, such as a Site of Special Scientific Interest, a Designated Landscape Area or alike.
- There are no unusual or complex processes or potential negative effects. As energy from the sun is collected and sent back to the grid, the possibility of on-site processes that may be hazardous or have secondary environmental consequences is eliminated.

The 2015 Renewable Energy and Low Carbon Guidance of the National Planning Policy highlights the necessity of increasing green energy developments as long as they are within suitable areas. Specifically for ground-based solar parks, the guidance suggests that planning authorities consider the following points when encouraging such developments:

- Effective use of land by focusing on previously developed, non-agricultural land and land of poor quality, as well as continued agricultural use.
- The temporary nature of solar farms allows for the recuperation of the soil after the removal of the installation at the end of its lifetime.
- Visual impacts and security including glint, glare, lighting, fencing and screening native with hedges.
- Conservation of natural and historic assets.

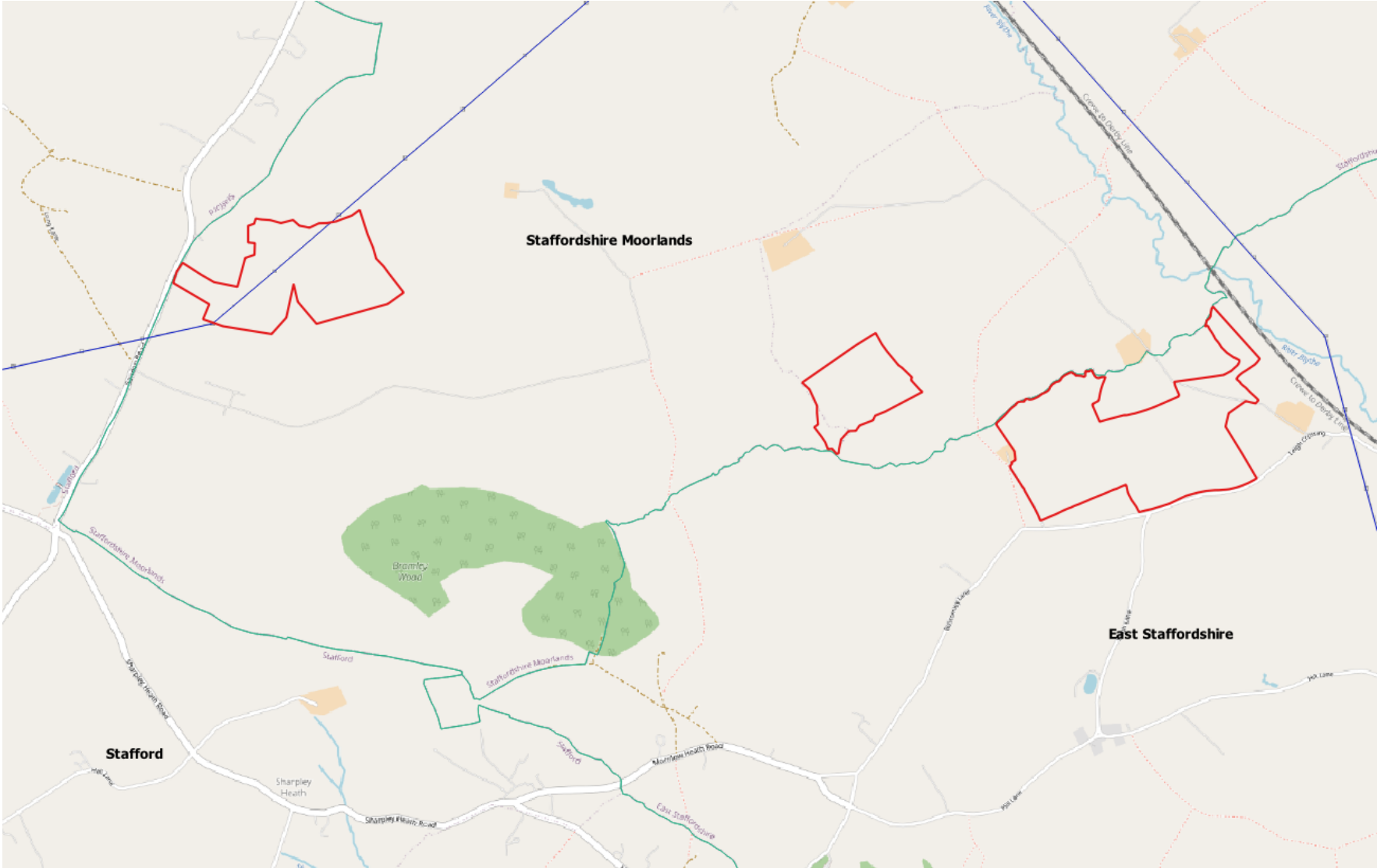
Against these points, the impacts of the development are minimal. To summarize, the development is proposed on land of ALC grading 3, it would allow for grazing of the land during the 40 year operation of the scheme and it is also not within or close to any heritage assets. Any possible visual impacts will be assessed through an LVIA and environmental mitigation effects will be assessed through an EIA, if at all required. With this in mind, the proposed development is not expected to have "significant effects" on the surrounding environment. We, therefore, think an EIA is not required.

We would like to request an informal scoping opinion by the Planning Authorities in any case, in order to analyse the criteria for an environmental report which will complement the planning application.

8. MITIGATION MEASURES

The environmental report will, if at all applicable, identify possible and adequate mitigation measures for eliminating or reducing the impacts caused by the development of the PV park.

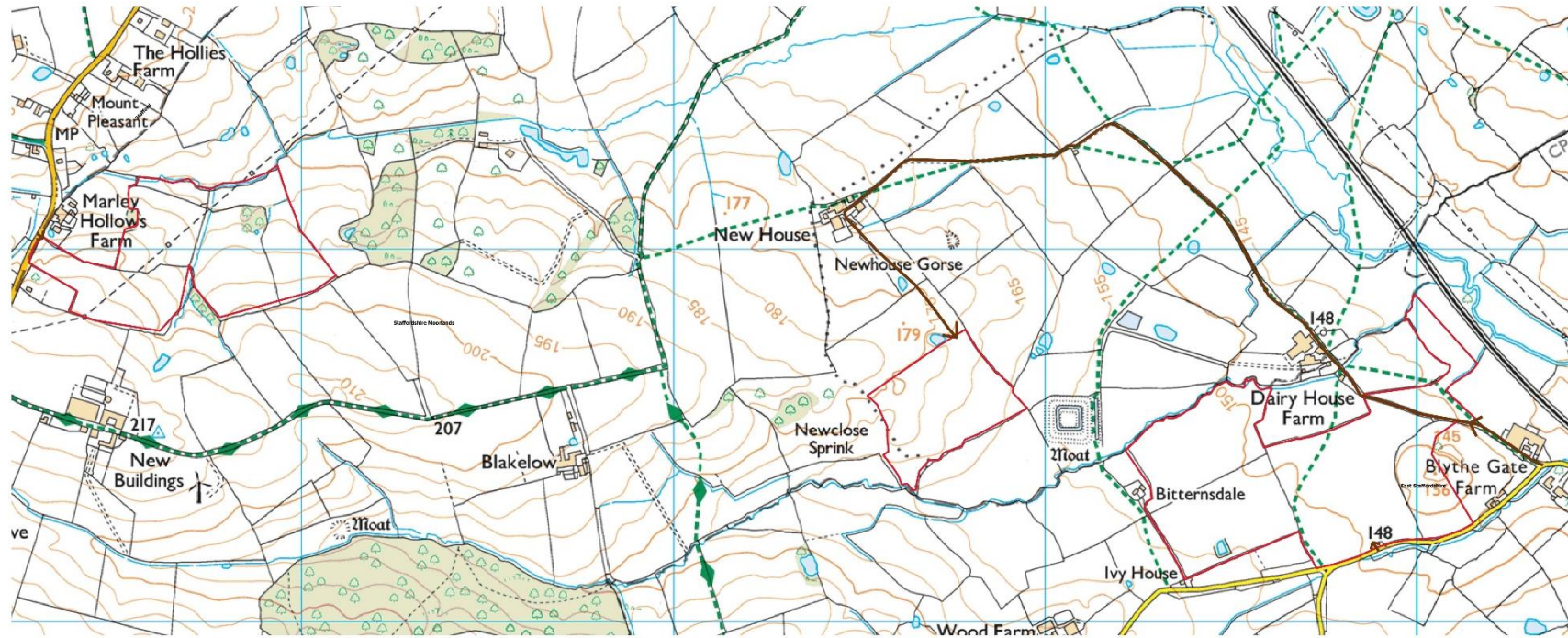
Appendix A1. Suggested Draycott PV Farm site (edged in red)



Appendix A2. Suggested Draycott PV Farm site (edged in red)



Appendix A3. Suggested Draycott PV Farm site (edged in red, accesses marked with brown arrows)



**ADDITIONAL INFORMATION
FOR SCREENING OPINION REQUEST**

**LAND AT LEIGH CROSSING,
UPPER LEIGH,
EAST STAFFORDSHIRE,
ST10 4PE**

**PROPOSED INSTALLATION OF
PHOTOVOLTAIC ARRAYS**

December 2021

1. INTRODUCTION

- 1.1. Kronos Solar is acting on behalf of KS SPV 66 Limited. Based on Regulation 5 of the Environmental Impact Assessment (EIA) Regulations, we kindly ask for a screening opinion by the East Staffordshire Borough Council Planning Authority to confirm if this proposal is a Schedule 2, Class 3 project and if an EIA is required.
- 1.2. Given that our development is intended for the production of electricity and the site has an area of more than 0.5 ha, our intended PV park should be considered a Schedule 2 project. As no specific category for PV parks exists, we consider the proposed project a Class 3 "Energy Industry" development.

2. SITE DESCRIPTION

- 2.1. The land selected belongs to 3 landowners and has been chosen based on individual criteria that make it highly suitable for a solar park development. On the image below you will find the boundaries for the proposed development. The separate land to the northwest is intended for the point of connection and some modules ('the substation site') and the rest of the photovoltaic modules will be placed on the larger selection of land to the south ('the main site').
- 2.2. The two most northern parcels of land belong to Staffordshire Moorlands District and the largest piece of land in the south belong to the East Staffordshire Borough.

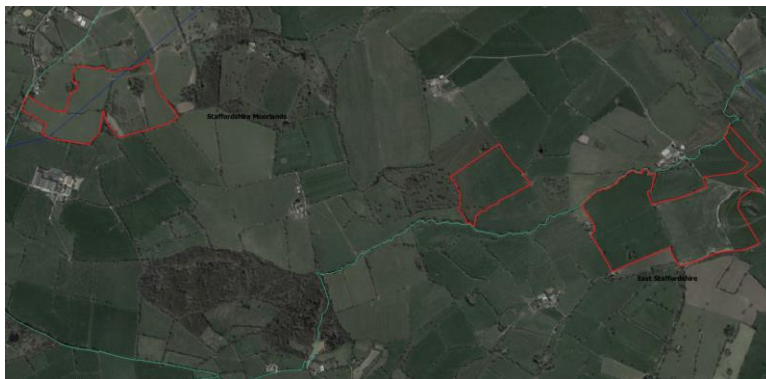


Figure 1. Proposed development boundary of the site (red line) comprised of land belonging to three landowners.

- 2.3. The land to the northwest (parcel A) has an area of 49a available for modules and the substation; the land in the middle (parcel B) and to the southeast (parcel C) would be the site for the rest of the modules. Parcel B has an area of 21a and parcel C has an area of 82a making a total of 152a.
- 2.4. The site selected offers an optimal site for a solar development due to its location in a rural setting, by being far from designations and the possibility of connecting to the overhead line directly onsite. The land is located north of Middleton Green in the East Staffordshire Borough and is surrounded by agricultural fields.
- 2.5. With regards to the land, it includes on-site vegetation, mature trees and existing rights of way. The terrain for the development is slightly undulating mainly with east facing slopes. This landscape contributes to limited viewpoints into the site.

- 2.6.** All the development sites are not visible from the nearest residential dwellings as they are mostly surrounded by agricultural fields, hedges and small woodland areas that reduce visibility into the land. Some fields are close to existing yet well-screened farmhouses. Long-distance views as well as transient views from nearby roads and public rights of way into the site may possible, but these can be managed through appropriate vegetation screening.
- 2.7.** The selected development boundaries are not within any national landscape designations or safeguards. We understand that despite the given value to the countryside nature of the land, the Council supports renewable energies and we believe the selected areas are suitable for this type of development.
- 2.8.** The sites do not fall within SSSI areas, but it is located in an Impact Risk Zone. The closest SSSI area is Chartley Moss which is 8.1km away from our proposed site.
- 2.9.** There are no wildlife sites within a 10km zone of our proposed site.
- 2.10.** There are no cultural heritage designations associated within the site boundaries or nearby. However, there are several listed buildings close to, but not within, the development site boundaries. These buildings are all of grade II and dispersed throughout the land nearby. The nearest listed building of grade II is Moor House Farm 1.17km away from parcel C. The next closest grade II is Blythe House 1.3km from parcel C. Then Moor Farmhouse is 1.45km east of parcel C. Wastegate Farmhouse is 2.8km away from parcel C and Paynsley Hall 1.8km north from parcel C. There are other grade II listed buildings within the proximity of the development, all in the surrounding area of parcel C. None of them are directly affected by the project and therefore will not be mentioned. None are directly visible from the ownership boundaries thanks to both sufficient natural screening in between and the topography of the location.
- 2.11.** Close to all parcels of the development are scheduled monuments. One of the scheduled monuments is Paynsley Hall moated site and outer enclosure. The second scheduled monument is Blithewood moated site. Proper screening and mitigation for these sites will be proposed after further contact with visual impact specialists. Moreover, we welcome the advice of the Council on this matter.
- 2.12.** All of the site is in Flood Zone 1 which has a low probability of flooding i.e. has less than 1 in 1,000 annual probability of river or sea flooding and it is free of apparent risk, because it is on relatively high-lying land. A minor area of the land is in Flood Risk 3. This will be confirmed by a flood specialist, and proper measures will be applied where necessary.
- 2.13.** According to the Magic Map classification of the agricultural land, the sites are on grade 3 and 4 land, which is agricultural land of good to moderate quality and of poor quality respectively. This type of land is only suitable for selected types of crops and provides lower production yield.
- 2.14.** Thanks to the information about Public Rights of Way (PROW) provided by the Staffordshire County Council on their official website, the image below shows the PROWs running through the site. You will notice that some PROWs are running directly through the development sites that we have selected. These footpaths will be taken into consideration in the final module consideration to ensure that they remain unobstructed.



Figure 2. Public rights of way within the ownership and development boundaries. Yellow dashed lines represent public footpaths.

3. PLANNING HISTORY

- 3.1.** We have undertaken a planning history search using the online public access search service provided by the East Staffordshire Borough Council and consider the following applications relevant.
- 3.2.** P/2017/00745 a 20a solar farm removed 11.08km from our proposed project was approved in 2017.
- 3.3.** Removed 16.13km away from our site is planning application P/2015/00405 a 6.2MW solar farm approved conditionally in 2015. Conditions included if the solar farm wasn't working for 6 months or its lifespan of 25years came to an end the park would be decommissioned which ever came first. An application P/2018/00940 has now been made to extend the parks life up to 40years due to the output of the panels.
- 3.4.** P/2015/00791 a 5.8MW solar farm was also approved in 2017 with conditions. They have since applied to extend the life of the park to 30years. This site is 15.47km away from our development.
- 3.5.** Application P/2015/1032 is a 5MW solar farm approved again with conditions in 2015. The project is 8.85km east of our development. Again an application has been made to extend the lifespan of the project.
- 3.6.** Another project P/2017/01044 approved with conditions in 2017 is a 5.1MW solar farm removed 12.12km away from our proposed development. Again an application has been made to extend the lifespan of the project.
- 3.7.** P/2016/00811 is a 18.7MW solar farm approved in 2016. This project is 23.10km south east of our development.
- 3.8.** P/2015/01064 a 5MW park was approved in 2015 being located 25.46km away.
- 3.9.** A smaller project of 10a was approved in 2015 Ref P/2015/00401. Being located 25.87km away from our proposed development.
- 3.10.** Finally in 2012 a 2.2MW solar farm was approved near Newbold Quarry of P/2012/01565. This being 28.16km away from our proposed development.

- 3.11.** On a smaller scale, East Staffordshire Borough Council appears to have accepted many roof-mounted photovoltaic installations as well as several ground mounted solar of lesser capacity (<1MW) in the past. All of this suggests towards the LPA's support for solar energy in general.

4. PROPOSED DEVELOPMENT

- 4.1.** On the site we propose to develop a ground-based solar farm and associated infrastructure to generate just below 50MW of electricity.
- 4.2.** As a photovoltaic park developer, we have gathered international experience since our inception and are well established in the market. Having completed over 40 large-scale solar park installations, many of them in the UK, we have significant experience in the design, planning, development, construction and maintenance of PV parks.
- 4.3.** The site is located on soils with an agricultural land classification of grade 3 and 4, which is suitable for limited types of crops, and the site boundaries do not encompass any environmental, heritage or archaeological designations. This confirms that the site is a suitable candidate for the intended use.
- 4.4.** A detailed layout has not yet been produced, but it is expected that the panels would be arranged in south-facing rows of module tables, with a fixed inclination at an angle between 10 and 30 degrees towards the sun and a length between 10 and 50 metres. Such tables have a minimum height, at their lower border, of at least 80 cm above ground and a maximum height, at the tallest border, of 3.5m.
- 4.5.** Thanks to sufficient spacing between the module tables, we anticipate that only one third of the site would be effectively covered by solar panels, which allows for the ongoing agricultural function of the land as a grazing site for animals. This is also supported by access tracks for construction and maintenance, which will also be accounted for in the future layout.
- 4.6.** A very small area of the site is in Flood Zone 3 which has a high probability of flooding i.e. has a 1 in 100 or greater annual probability of river flooding. Proper measures will be adopted in this area.
- 4.7.** Any PROWs that run through/nearby the site will remain unobstructed. We seek advice from the Council with regards to these paths, so that they can be properly accounted for in the layout.
- 4.8.** The structure of the module tables will likely consist of aluminium frames supported by upright poles that are pile-driven into the ground and do not require concrete foundations nor extensive excavation. This goes in hand with the very low sealing of the soil after the park is constructed, which allows for regeneration of the earth during the 40 years that the park is operational and disregards any danger of erosion, contamination or runoff by pesticides, biocides or excessive soil conditioning.
- 4.9.** After a solar park is built, it has minimal maintenance. Cleaning is unnecessary thanks to rainfall and monitoring can be done remotely via the Internet. Entering the park by personnel is only necessary for repair or maintenance purposes or mowing the lawn. However, for the latter purpose, it is very common to allow sheep to graze around the panels, as briefly mentioned above.

















5. ATTACHMENTS

Please find attached to the email:

- A location plan for the entire site;
- A location plan for the parcel located in East Staffordshire Borough;
- A constraint map for the parcel located in East Staffordshire Borough.

Constraint map

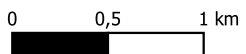
Legend

-  132kV
-  LPA district boundary
- Constraint**
-  Planning Apps
-  PV
-  EnvProtection
-  Bridleway
-  Footpath
-  Listed Building I
-  Listed Building II
-  Listed Building II*
-  Scheduled_Monuments
-  Greenbelt
-  Flood Risk Zone 3
-  Flood Risk Zone 2
-  ALC Grade 3
-  ALC Grade 4

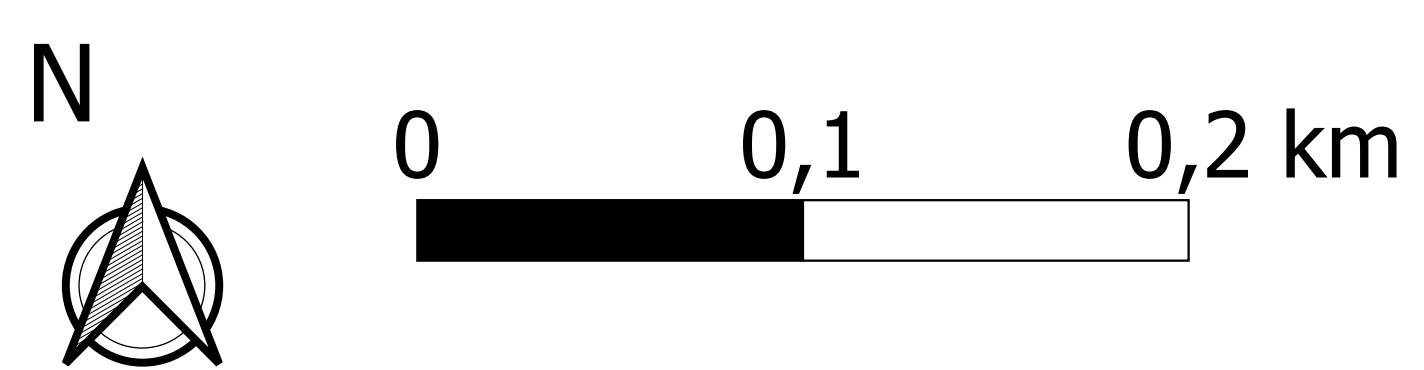
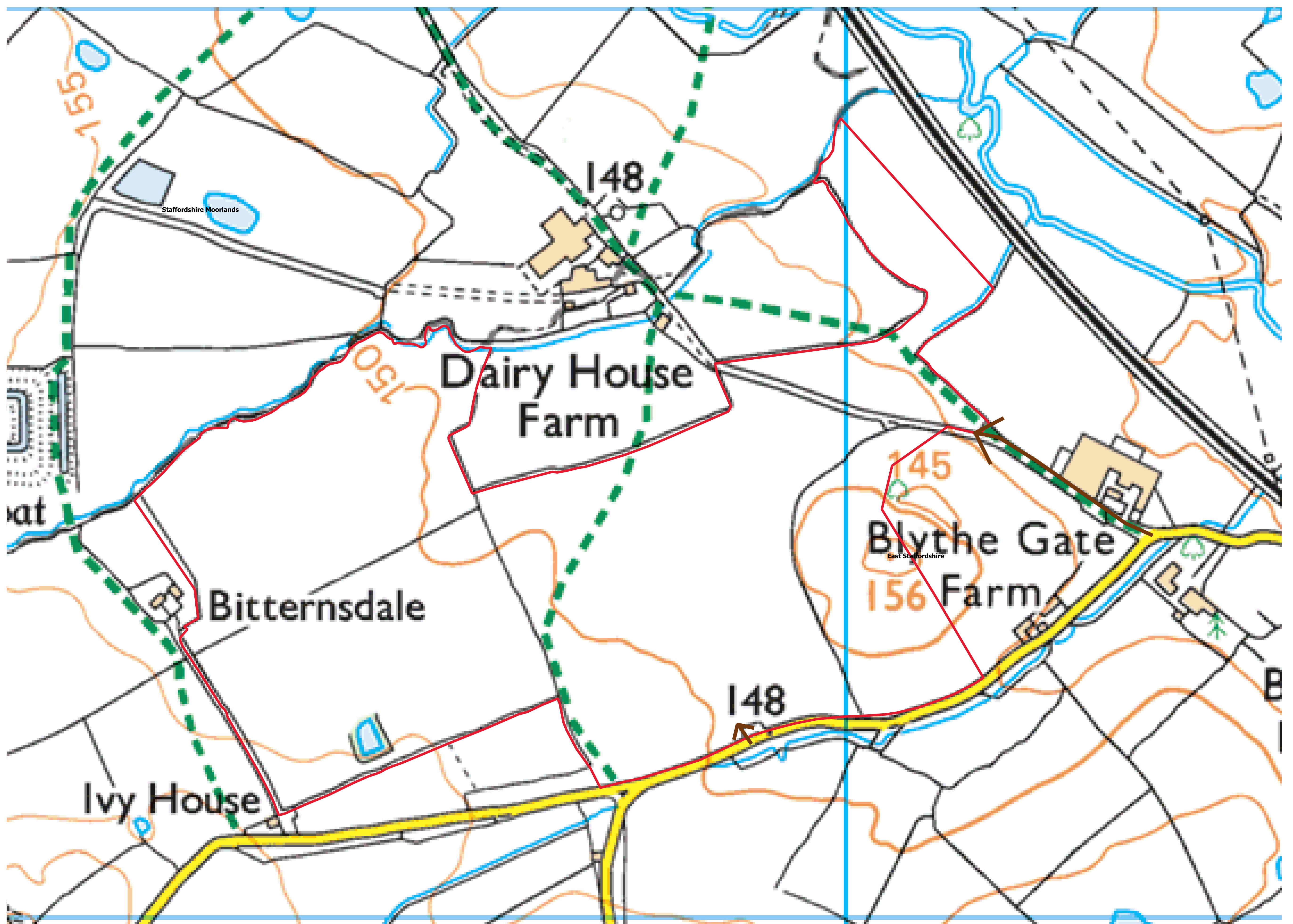


Middleton Green, East Staffordshire

Date: 15/12/2021



Location plan



Location plan

