Geo Green Power

Rushcliffe Borough Council
Rushcliffe Arena
Rugby Road
West Bridgford
NOTTINGHAM
NG2 7YG

10th May 2021

REF: Planning Permission: 13.2kW Solar PV array at Manor Farm, Sibthorpe, Newark, NG23 5PN

The applicant approached Geo Green Power to ask for advice on how they could best utilise renewable energy generation opportunities on their land to reduce the environmental impact of the farm it will be connecting into. The Solar PV system has been designed to work in conjunction with the existing low carbon heat pump that utilises renewable energy at the property. The existing heat pump provides renewable space heating and hot water to the property which saves the property 12 tonnes of CO2 per annum. The proposed Solar PV installation would also provide renewable electricity for the property which would include contributing to powering the existing heat pump and would further reduce the co2 footprint of the property by 5.94 tonnes of co2. Thus the property would be moving towards a sustainable and carbon neutral property.

DESIGN & ACCESS STATEMENT, 13.2kW SOLAR PV ARRAY

1. ACCESS

The specific location for the proposed Solar PV array is in a field to the east of the applicant owned buildings. A minimum gap of 2 metres will be left between the closest boundary of the field and the solar PV array to allow for access and to avoid shading. Access to the Solar PV array will not impact accessibility needs to public highways, cycle paths or foot paths. It will also not impact access needed for emergency vehicles, or connections that these may require. During the installation, occasionally vehicles may drive between the house and the proposed location of the array, however no alterations will be made to the land to enable this to happen as it is already all-purpose terrain.

2. CHARACTER

Geo Green Power designs and installs Solar PV systems with high regard for the aesthetics and impact on surrounding areas. In order to meet the local requirements, Geo Green Power will be careful to ensure that this solar PV system is a non-permanent installation by using a pile driven mounting system, therefore eliminating the need to fix the mounting system into concrete.

The PV modules that will be used are 44 x Canadian Solar 300w panels. The datasheet has been included separately (GGP.DATA1.pdf). These modules have an anti-reflective coating to ensure that there are no undesirable side effects related to light reflecting glare. At its highest point, the development will be approximately 2.5m tall and therefore will not be highly visible to the surrounding area as there are hedgerows and trees providing screening, as well as neighbouring gardens and buildings between the proposed development and any highways. At its closest point, the array will be 116m from Church Lane.

Fields, hedging and buildings are between the proposed development and this road and therefore the development isn't readily visible.

The area of land chosen for the development is Grade 3c and the development will be installed in a field to the north east of the applicant's properties, tucked behind hedgerow and screening, making it even more unobtrusive to the surrounding landscape. Pictures of the level of visibility of the site from the highway and surrounding area can be seen in Appendix A.

Once the PV system is no longer in operation the system will be removed immediately. Solar PV systems have no moving parts and therefore maintenance to the arrays is minimal. There should be no need for the array to be accessed on foot any more than 4 or 5 times over the duration of the guaranteed period of twenty years and online monitoring is being installed so performance can be access remotely. The applicant owns all the surrounding land of the proposed site.

The solar PV array will cover an area of 63.3sqm. The full array will be made up of 44 panels: 1 mounting table (18.79m x 3.37m). Each table holds 44 panels: formation being 11 wide, 4 high in landscape. Scaled drawings of the solar PV array and scaled examples of a table with 44 panels have been included in the application: GGP.PLANS.pdf and also of the bare mounting frame: GGP.ScaledMountingFrame.pdf. The cabling will run directly from the solar PV array to the existing supply and the land shall be returned to its original state immediately once the cables are laid. A to scale Ordnance Survey Map has been submitted separately (GGP.LocationPlan.pdf).

The array does not fall within an area of outstanding natural beauty nor does the site fall within a biodiversity and ecological point of interest.

3. COMMUNITY SAFETY

Geo Green Power will make the PV array as safe and secure as possible. This includes meeting specific health & safety requirements during installation and for the lifetime of the system. A fence can be erected around the array area if it is deemed necessary. All inverters will be located above ground level and are type tested and IP rated. The proposed array will not have any moving parts that could impact the safety of the system. All work and materials used in the system will meet the relevant electrical and mechanical standards including, but not limited to, BS7671 compliance for any A/C components, and MCS compliance regulations for D/C components, G83 IET wiring regulations.

Geo Green Power is NICEIC accredited. Geo Green Power will have taken care to ensure that the proposed PV array is in a location so as not to impact the safety of the general public.

4. ENVIRONMENTAL SUSTAINABILITY

The applicant wishes to reduce the environmental impact of their land and a 13.2kWpk Solar PV array will reduce their carbon footprint by approximately 5.94 tonnes of CO_2 per annum. This will reduce the environmental impact of their land on the surrounding area immediately.

The solar PV system will not contribute to the merging of neighbourhoods and indeed we can demonstrate that the solar panels would have a limited impact on the appearance and openness of the surrounding

area. Additionally, the solar PV array will not be widely visible from the surrounding highways or footpaths and its location has been specifically selected because of this (see Appendix A). We would draw attention to the fact that the site is already well contained by physical barriers within the landscape.

Furthermore, this location has not only been chosen for the minimal visual impact but also to assist in the development having minimal amenity impact.

The mounting method that will be used is pile driven posts, meaning that no concrete base or excavation is needed, and the land can be returned to its original state once the solar panels are no longer functioning. This method of mounting also means that the land is still able to be used for dual purpose if so needed, as the vast quantity of surface area will still be accessible. One option could the sowing of wildflower seeds. Or, alternatively, the land can use the life span of the solar PV system (20-25 years) as an opportunity to regenerate leading to improved land quality over time. It is considered that the finite and reversible aspect of the proposals should be afforded significant weight when considering the very special circumstances of this proposal.

In addition, the Government has a commitment to solar development and has identified this form of renewable energy production as having an important role to play in a balanced UK energy policy. The European Union Directive 2008/28/EC (April 2009) set a target that 15% of all energy consumed should be from renewable energy sources by 2020. Solar energy is therefore capable of providing a source of energy at a time when there is an overall issue in terms of energy supply and security within the UK.

Overall, the principle direction of both national and local planning policy is to support the use of renewable energy technologies, such as solar panels, to contribute to the U.K.'s target of reducing its carbon dioxide and other greenhouse gas emissions. This solar PV array would allow this farm to cut its CO2 production by 5.94 tonnes a year. One of the core principle planning policies of the NPPF is a move towards a low carbon economy and the Framework is clear in its support of renewable energy projects. The generation of electricity at the site is a positive factor in favour of the proposal and it would make a valuable contribution in the context of wider environmental benefits.

In the future, should the PV array need to be moved or taken down, it is a non-permanent fixture and so can be done with minimal impact on the surrounding areas. Water sources and waste management will not be affected.

5. MOVEMENT TO, FROM AND WITHIN THE DEVELOPMENT

As the Solar PV array will be on the applicants' private land, the use of any public transport will remain the same, as will the parking arrangements currently in place. Any surrounding footpaths, highways or cycle ways will be unaffected by the proposed PV array. Additionally, the delivery schedule of installing this solar PV array will not increase the level of traffic that the house is used to experiencing – it will be typical of usual deliveries made on a daily basis.

Over the course of this 2 day solar PV installation, contractor vans (Vauxhall Vivaros) will be making daily trips to site, these will not cause any over-run whilst accessing the site. These vans will access the site from

Church Lane and turning in to land owned by applicant. Existing access is to be used, no new access will need to be granted. The site also has a off-road parking, so that no vehicles will need to use the public highway for manoeuvring or parking. The size of the vehicles attending site allows for easy and clear access to the property.

6. CUMULATIVE IMPACT

Unlike large scale solar grid generation systems, this application is a proposal for a system that will directly feed the applicant's own property, rather than feeding directly into the national grid, allowing the applicant to lower their carbon footprint by around 5.94 tonnes of CO2 per annum. The proposed 13.2kW system would produce energy similar to the applicant's farm usage whilst utilising the applicant's currently unoccupied field. This proposal is very specific to this particular set of circumstances and will not set a precedent for future large 'grid only' solar PV arrays. This project is one of the few practical alternatives there is to help the transition to a lower carbon energy use footprint. As it has been tailor made to fit the applicant's needs, there should not be a large surplus being exported to the grid and therefore any other surrounding installs should be considered separately rather than cumulatively**.**

7. WILDLIFE & TREES

When designing the current proposal, thought was given to section 11 of the NPPF. There shall be no security lighting installed so this solar PV system will not contribute to the light pollution of the surrounding area. Additionally, the system will not contribute to noise pollution as there are no moving parts in a solar PV system and therefore wildlife that may be situated in the surrounding trees and hedgerow shall not be adversely affected. Attention will be paid to bird breeding season. There will be no building demolition and there are no ponds in the vicinity.

Specific attention has also been paid to BS5837-2012 "Trees in relation to design, demolition and constructions". All existing hedgerows that are currently at the applicant's site have been considered. It is well understood that these are all 'material considerations' in the planning process, and to this end, no demolition will need to occur in order to accommodate the proposal (section 5.4).

Section 5.3 of the BS5837-2012 outlines that the Root Protection Area of any on site tree should not be affected by the proposed development. The construction of this proposed development is purposefully mounted on a non-permanent ground spike mounting system so as to require no concrete footings or for any impermeable surfaces to be used. This minimizes the disruption to the proposed land and allows for the system to be easily dismantled and removed once it is no longer in operation. It also allows for the land to be returned to its original state post dismantling. Furthermore, the structure shall be situated far enough away from the hedgerow so that direct damage to the development shall not occur, e.g. from falling branches, or seasonal nuisances, meaning that there will be no pressure in the future to remove these trees. Instead, the trees and hedgerow which provide character and visual amenity to the surrounding area shall be retained and not adversely affected. The trees and hedgerows will provide

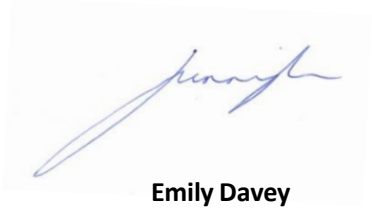
screening to all four sides of the proposed development. Allowances for sufficient room for root growth have been given and the proposal will not interfere with any Root Protection Orders.

8. HERITAGE STATEMENT

Please see separate documentaion.

Please do not hesitate to contact me should you require any further information.

Yours faithfully



Emily Davey
Geo Green Power Ltd

Appendix A

Viewpoints

Viewpoint 1

Viewpoint 2

Viewpoint 3

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