

**Design and Access Statement supporting an Application for the
siting of a Ground Mounted 10.88 kWp Photovoltaic Array at Abbey
Farm Barn, Church Street, Higham, Rochester, Kent ME3 7LS**

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1. Application Description

The applicant, Mr Savage, seeks planning permission for installation of a ground mounted 10.88 kWp photovoltaic array in the grounds of Abbey Farm Barn. Their objective is to increase the self-sufficiency of their property by generating their own electricity; thereby reducing their reliance on mains supplied electricity which has a high carbon factor¹.

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On this site it is estimated that a south facing array will generate more than 12,000 kWh of electricity each year and is equivalent to an annual saving of 7 tonnes of carbon dioxide versus mains electricity. This will help to offset the annual electricity consumption of Abbey Farm Barn, including the charging of an electric vehicle, and at times a surplus will be supplied via the grid to neighbouring properties. This installed capacity will also help to contribute towards regional and national targets for renewable energy generation.

2. Evaluation of the site and its characteristics

A site survey has been undertaken by Invicta Clean Energy Ltd during which the site was walked to evaluate the landscape character and to identify site constraints. A hardstanding already in place on the site is the proposed position for the PV array, which would face south, at 185 degrees. It is in a secluded walled garden within the Abbey Farm Barn complex, which includes a garage and an annex. These buildings obstruct visibility from most of the properties locally and from the nearby footpaths and bridleway, though it is partially visible from the nearby converted Church and from a property which overlooks the garden. The potential visual impact of the PV array was assessed from a number of places within the village of Higham.

The evaluation process has sought to balance the various aspects of the proposal. Details of this appraisal and evaluation are included in this statement. The site chosen by the applicant satisfies the requirements of relevant local and national planning policies and in particular those relating to Built & Cultural Heritage, Public Safety and Security, Ecology and Hydrology, Landscape and Access.

3. Technical

This section gives an overview of the site location and the specifics of the array, including the physical dimensions and specifications.

3.1 Site location

Abbey Farm Barn consists of a large 4 bedroom detached house with a 2 car garage and self-contained annex set back off Church Road in approximately 0.7 acres of land. The house is Grade II listed and is located in the Church Street, Higham Conservation Area within the Borough of Gravesham. The chosen site for the ground mounted PV array is on a hard standing previously used for a static caravan. Between the proposed site of the

¹ Under the Standard Assessment Procedure (SAP 2009) 0.591 kgs of CO₂ are attributable to each kWh of mains electricity consumed. This takes into account the widespread and increasing use of carbon intensive coal-fired power stations to generate a large proportion of the UK's mains electricity.

array and the boundary is a one-story annex, which obstructs the view of the array from two nearby houses and the entrance to Abbey Farm.

The property is set in a rural location at the northern end of Church Road, at the edge of the village of Higham, which lies about 6.5 km NW of Rochester, in the Borough of Gravesham. The neighbouring land to the north and east is Abbey Farm, beyond which is RSPB marshland. To the south is the village of Higham, but the view of the proposed PV array is obstructed on the south by the Abbey Farm Barn Annex and the boundary wall, the view from the west is obstructed by the Barn itself. A partial view is seen from the entrance gate to the property.

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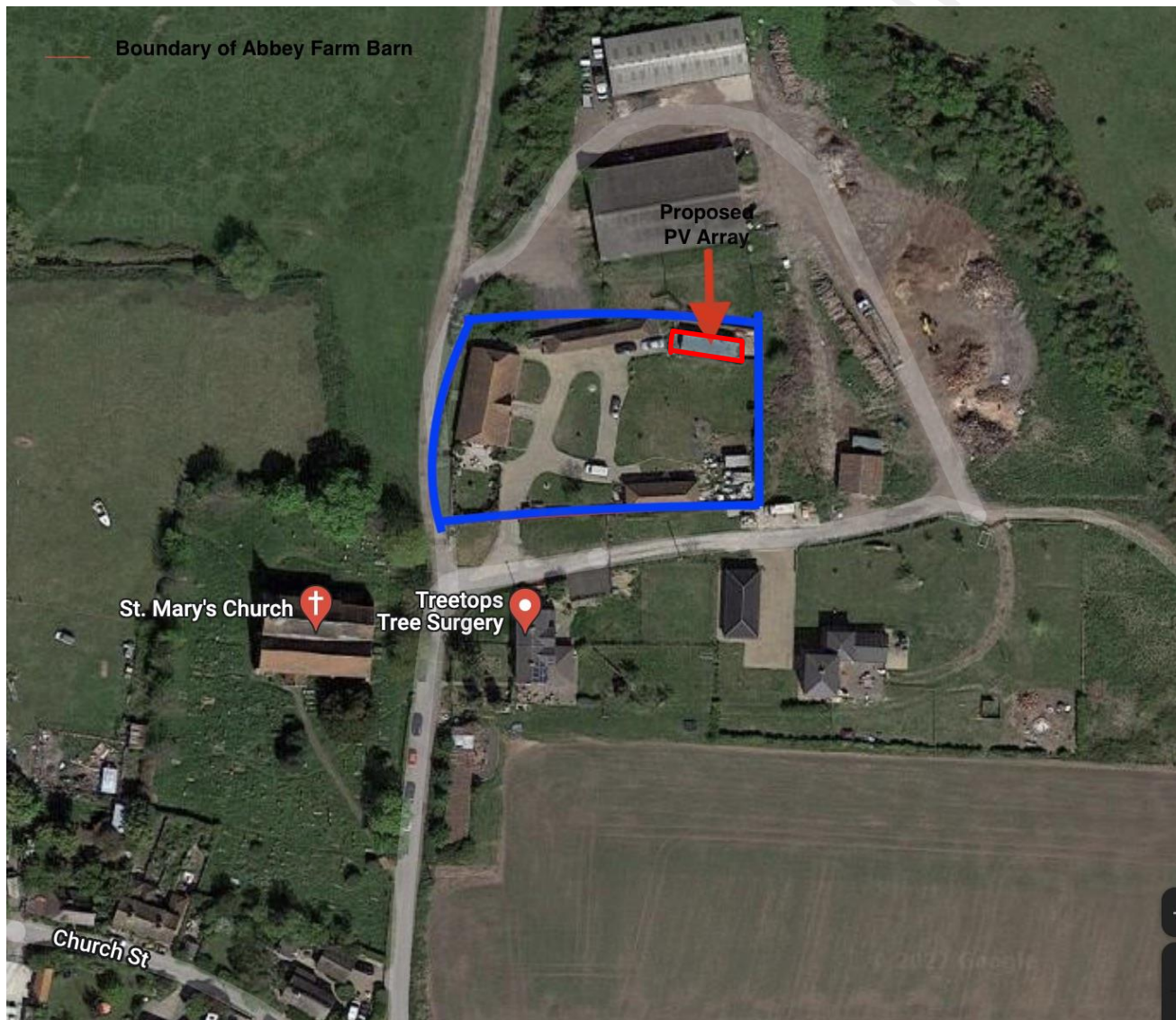


Figure 1. Map extract from Google Maps (2022), application site identified (red), land within the applicant's ownership identified in blue

3.2 Photovoltaic Array Dimensions and Technical Specifications

The installation consists of a 32 module photovoltaic array, mounted in two single rows on a field mounting system manufactured by Renusol as illustrated in Figure 2 below. The array will be installed in two rows 16 panels mounted in portrait mode, at an angle of inclination of 35 degrees, giving an overall footprint of 85 m² area (including the gap between the rows). The surface area of the panels is 54 m². The PV array will be mounted on existing hard standing which will prevent foliage growing underneath the array.

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Figure 2. Typical array using Renusol Trisole TS+ mounting equipment

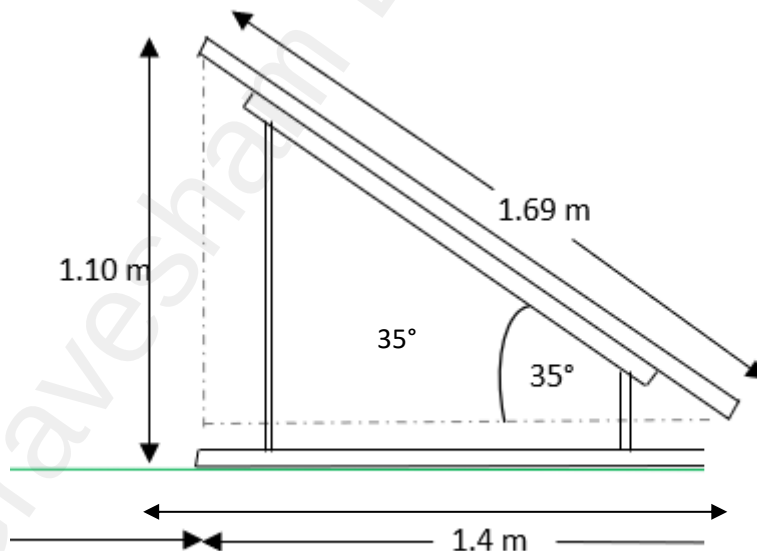


Figure 3. Side view dimensions of the array

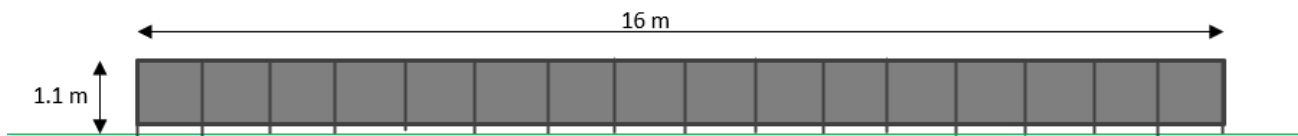


Figure 4. Front view dimensions of the array

4 Planning Statement

Under the GPDO 2015, one standalone photovoltaic array is treated as a permitted development, as is a ground mounted array with a surface area of less than 9 m² would be considered a permitted development. However in this instance the array is to be ground mounted with a surface area of approximately 54 m², hence it is not covered under permitted development regulations.

The information contained within this application provides a comprehensive assessment of the landscape, visual effects and other aspects of the proposed development. It also provides details of the specific environmental, economic and social benefits that arise from this project. As such it provides the information that the planning authority needs to address the key development control issues and to determine the application.

This application does not fall within the scope of the 1999 Environmental Impact Assessment Regulations. As such it does not require an Environmental Impact Assessment (EIA). This supporting information has been prepared to include details of the effects of construction and operation. It also identifies both beneficial and adverse effects, together with relevant mitigation measures where necessary.

4.1 Planning Policy Overview

The **Climate Change Act** commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. To drive progress and set the UK on a pathway towards this target, the Act introduced a system of carbon budgets which provide legally binding limits on the amount of emissions that may be produced in successive five-year periods, beginning in 2008. The first three carbon budgets were set in law in May 2009 and require emissions to be reduced by at least 34% below base year levels in 2020. The fourth carbon budget, covering the period 2023–27, was set in law in June 2011 and requires emissions to be reduced by 50% below 1990 levels.³

Specifically, the carbon budgets limit our greenhouse gas emissions to:

- 3,018 million tonnes of carbon dioxide equivalent (MtCO₂e) over the first carbon budget period (2008 to 2012). This target has been met.
- 2,782 MtCO₂e over the second carbon budget period (2013 to 2017). 31%. This target has been met.
- 2,544 MtCO₂e over the third carbon budget period (2018 to 2022). 37% by 2020. On track.
- 1,950 MtCO₂e over the fourth carbon budget period (2023 to 2027). 51% by 2025. Off track.

- 1,725 MtCO₂e over the fifth carbon budget period (2028 to 2032). 57% by 2030. Off track.
- 965 MtCO₂e over the sixth carbon budget period (2033 to 2037). 78% by 2035. Off track.

The **National Planning Policy Framework** (NPPF) was first published in March 2012 (last updated 2021) and sets out the Government's overarching planning policies on delivering sustainable development through the planning system. This replaces all previous Planning Policy Statements and Planning Policy Guidance notes.

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At the heart of NPPF is the presumption in favour of sustainable development (Section 2). Accordingly, Local Plan policies should provide a presumption in favour of sustainable development.

NPPF proactively encourages the development of renewable energy sources. Paragraph 155 outlines a number of steps that councils should take to increase the supply of energy generation from renewable or low-carbon sources. These include:

155. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);*
- b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and*
- c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for colocating potential heat customers and suppliers.*

158. When determining planning applications for renewable and low carbon development, local planning authorities should:

- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- b) approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.*

4.2 Regional & Local Policy

The Gravesham District Local Plan (adopted September 2014) core strategy states that “It is recognised that action is needed to reduce the impact of human activity on the climate system, primarily through reducing greenhouse gas emissions.”

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With regards to climate change, in the Gravesham District Local Plan it is stated that:

5.14.1 Climate change is expected to lead to hotter, drier summers and warmer, wetter winters with increased storm and flood events. Human activity has the potential to have a profound impact on both the scale and rate of that change. The NPPF recognises the role that planning can have in supporting the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and by encouraging the reuse of existing resources and the use of renewable resources.

5.14.3 Climate Local Kent accords with the Council’s Corporate Plan which includes a pledge to work with partners to mitigate and adapt to the effects of climate change on the Borough and proactively reduce the impact the council and its operations, its residents and its businesses have on climate change.

With regards to Carbon Reduction, in the plan it is stated that:

5.14.20 The Core Strategy seeks to reduce greenhouse gas emissions through the appropriate location and design of future development in the Borough. The NPPF requires local planning authorities to support energy efficiency improvements to existing buildings and to take into account the Government’s zero carbon buildings policy and national standards when setting local requirements for building sustainability. The aim is to move towards zero carbon development and to reduce the overall carbon footprint of the Borough.

5.14.21 To help increase the use and supply of renewable and low carbon energy, the NPPF states that local planning authorities should:

- *Have a positive strategy to promote energy from renewable and low carbon sources;*
- *Design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily;*
- *Consider identifying suitable areas for renewable and low carbon energy sources; and*
- *Identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.*

5.14.28 The Council also supports proposals for stand-alone decentralised, renewable or low carbon energy development. It is recognised that such development may employ a range of different technologies where the impact of proposals will depend on location and will need to be evaluated on a case by case basis. Small scale proposals for renewable or low carbon energy production (particularly at a domestic scale) may not always require planning permission.

The alignment of local policy with photovoltaic systems for domestic power comes under climate change and carbon reduction is summarized clearly in 5.14.42: The council will support proposals which lead to a reduction in carbon footprint including the retrofitting of existing homes and businesses.

5.0 Economic, Social and Environmental benefits of the proposed development

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In accordance with the NPPF the economic, social and environmental benefits of this proposal should be seen as material considerations in determining the application. This proposed array will utilise solar energy – this is an abundant natural resource. It is non-polluting, clean and sustainable. Solar energy is an important element in achieving the UK Government's commitment to reduce carbon dioxide emissions outlined in section 4.1.

Taking into account the site's average solar irradiation, a 10.88 kWp array can be expected to generate on average 12,284 kWh of electricity per year. This will offset a substantial proportion of the electricity consumed at Calcott Hall. Any generation not used on site in peak periods would be fed back into the grid to supply neighbouring properties, thus providing a wider community benefit by contributing towards regional and national targets for the supply of energy from sustainable sources.

6.0 Impact on the Landscape

Due to the siting and height of the proposed photovoltaic array it is partially visible from the northernmost part of the cemetery at St Mary's Church and from the end of Church Road. It would have only a very minimal visual impact on the landscape quality of the area or the local people and this would be mitigated by the positive impact of a reduction in CO₂ emissions by an annual saving of over 6 tonnes of CO₂, helping to sustain the integrity of the landscape in the longer term against the threat of climate change.

When considering landscape impact the NPPF also places an emphasis on the encouragement of site-specific small-scale development and stress that the provision of clean sources of sustainable energy can override perceived landscape harm. Small-scale projects can provide a valuable contribution to overall output of renewable energy and to meet energy needs both locally and nationally. Planning Authorities should not therefore reject planning applications simply because the level of output is small. The system has the potential to generate electricity and hot water from a sustainable source to cover a large proportion of the site's energy consumption, which is significant and in the applicant's view offsets perceptions of its impact on the landscape.



Figure 4. Map showing where viewpoint photographs were taken from (Googlemap, 2022)

The proposed array will be shielded from view by the garden wall and buildings on the Abbey Farm Barn complex and the only public highway it will be visible from is Church Road, at the entrance of Abbey Farm Barn (see photo 4). It is therefore sufficiently remote from all sensitive receptors so as not to adversely affect people's use or enjoyment of local public rights of way in terms of nuisance or disturbance, public safety and security considerations. For every person who dislikes the appearance of a PV array there will be others who believe that they are a positive introduction to the landscape and add visual interest.



Photo 1. View from entrance of the Abbey Farm Barn main building ENE towards site



Photo 2. View from Entrance of Abbey Farm Barn north east towards site (not visible)



Photo 3. View from the entrance of Abbey Farm towards site (proposed PV array behind annex outbuilding, not visible)



Photo 4. View towards site from Church Road (Proposed PV array partially visible)



Photo 5. View from outside Abbey Farm Cottages on Church Road (not visible).



Photo 6. View from Church Road towards site (not visible)



Photo 7. View from public footpath towards site (not visible).



Photo 8. View from the back of St Mary's Church yard (partial view in the distance)



Photo 9. View from close to the train track looking south. PV array would be on the other side of the shrubbery (not visible)



Photo 10: From the start of the village the PV cannot be seen.

In conclusion, as outlined above, the proposed photovoltaic array will not cause unacceptable harm to the visual amenity of the locality, nor will it have a detrimental effect on the character and function of the landscape. Furthermore, it is a material consideration that the perceived impacts of the installation will be temporary in nature if conditions are attached to planning permissions, which require the future decommissioning of the array following the end of its useful life.

7. Residential Amenity

There are several properties in the vicinity of the site, two houses on Church Road (Abbey Farm Cottages), Abbey Farm and St Mary's Church, but because of the wall surrounding the array site and Abbey Farm Barn buildings largely obscure it from view, there are not anticipated to be any adverse impacts on residential amenity associated with its installation. In addition, there is a presence of PV in the village already (on the rear of one of Abbey Farm Cottages and one other house), which suggests PV is approved as a form of electricity for residents of the village.

8. Access

Access to the site will be gained via the existing road network and site access via the driveway. Access to the site for emergency vehicles is not anticipated as being necessary. Should such access be required then this is available via Abbey Farm Barn from Church Road.

9. Ecology & Nature Conservation

The application site for the proposed photovoltaic array is hard standing which will prevent foliage shading the array. Abbey Farm is just to the north of the Abbey Farm Barn complex, beyond which is RSPB marshland which is set aside for Countryside Stewardship of the Lapwing and Corn bunting habitats. Neither site will be disturbed during the installation.

10. Heritage Statement

Abbey Farm is grade II Listed. However the proposed PV array would be situated approximately 30 m from the house where a mobile home was once situated. The array will be mounted on a low-profile mounting system which will result in the array being only 1.1m at its highest point. The array may be surrounded by a wattle fence if deemed necessary by Abbey Farm Barn residents, since the main impact on this will be the Abbey Farm Barn itself, as it will only be partially visible from the entrance of the complex and the grounds of St Mary's Church. Page | 17

The site for the photovoltaic array has been carefully chosen to ensure that it will cause minimal impact to the overall visual impact of the area and is outweighed by the economic, social and environmental benefits of the proposal. The PV array is not a permanent structure and can be easily removed at the end of its lifetime.

11. Decommissioning

The design of the photovoltaic array and the choice of location have been consciously made to facilitate ease of dismantling of the equipment and restoration of the site at the end of its useful life – estimated at approximately 25 years. The applicant has no objection to the imposition of a planning condition requiring removal of the array at the end of its operational life and reinstatement of the land to its former condition.

12. Conclusion

The site for the photovoltaic array has been carefully chosen to ensure that it uses existing hard standing, and is in a relatively discrete location, obstructed by Abbey Farm Barn buildings and walled garden from almost all public viewpoints. Compared to the previously installed mobile home, it will be a lot less visible. Whilst the PV array will be partially distinguishable from a few vantage points in St Mary's Church grounds and at the entrance of the complex, we feel this will not impact adversely on the landscape. We also understand that there is already a presence of PV in the village, thus it is an accepted technology in the village.

In conclusion, the visual impact of the photovoltaic array has been minimised through appropriate siting and design, and is outweighed by the economic, social and environmental benefits of the proposal outlined above. Taken together with the demonstration of no harm, the applicant considers that this development is appropriate for the location and purpose for which it is proposed.