

Penpergwm Solar Farm: Virtual Consultation Event Q&A

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Introduction

Great House Energy Centre Limited (GHEC) is undertaking an eight week period of public consultation in support of Penpergwm Solar Farm. The consultation period runs between 30th June and 25th August 2021.

Letters and information leaflets were sent to local residents near the project site in February 2021 and again in June 2021. Two virtual information events were held on 28th July and 5th August where the GHEC project team provided an overview of the project and answered questions for attendees.

A video of the presentation is provided here: <https://vimeopro.com/instinctifpartners/renewable-connections-penpergwm-solar-farm-presentation>

This note provides written responses to those questions raised during the virtual information events to provide local residents and community groups with information to inform their feedback before the community consultation closes on 25th August 2021.

About GHEC / Renewable Connections

1. What other solar sites have RCD completed? What experience do RCD have in Wales specifically? Given that RCD was formed in 2020, what experience does your team have?

GHEC is a joint venture between Renewable Connections and European Energy. Renewable Connections was founded in early 2020 by Armstrong Capital Management Limited (Armstrong). Collectively the combined development team has delivered solar projects across the UK, including in Wales, Europe and the Americas, developing an accumulated 1GW of renewable energy in total.

Penpergwm Solar Farm is the first project Renewable Connections has developed in Wales under the new “Developments of National Significance” planning regime. However, our project team includes consultants and advisors with extensive experience in the Welsh planning system and will ensure Penpergwm Solar Farm conforms to Welsh national policy.

2. How many other projects have you delivered on undulating land?

Solar projects are not restricted by undulating terrain in the same way as other developments. Solar mounting structures have a high tolerance for slopes of any direction, for example the type of panels proposed for this scheme can be used on slopes of up to 10 degrees. Renewable Connections has extensive experience delivering projects on undulating land and ensuring that any effects arising from such landscapes are effectively managed. For this project, a topographical survey of the site was commissioned in Spring 2020 which has recorded the gradients of the proposed site area as well as other topographical details. Our designs, reflect the topography by avoiding the steepest slopes, as well as avoiding areas of the site that are more visible from local receptors.

3. Is European energy involved in the current stage of development or will the project once consented be passed over to them to operate?

European Energy is an equal shareholder of the project company, GHEC. As such, both Renewable Connections and European Energy are fully involved throughout the development process in all elements of decision making. While the Renewable Connections team manage the day to day development aspects, European Energy lead on the technical and commercial components of the project to ensure seamless transition from development, through construction and ultimately into operation. European Energy build, own, operate and maintain solar sites across the world.

Planning application process

4. Was the traffic count undertaken during lockdown?

A Transport Assessment and Construction Traffic Management Plan has been prepared to inform the design of the solar farm proposals. This Plan includes an Automated Traffic Count (ATC) survey to determine the average speed of road users and inform the design of the visibility splays onto the A40. This ATC took place on 28 November 2020 (during the second national lockdown) and was left in place for one week to collect real time data. Given that the survey was collecting data on the speed of road users, rather than counting the number of road users, we believe the outcome was not affected by reduced traffic during lockdown.

5. Can you confirm that the route assessment has been a desktop exercise?

A Transport Assessment and Construction Traffic Management Plan has been prepared to inform the design of the solar farm proposals. This Plan includes desk-based assessment of the proposed construction route via the A40 using Ordnance Survey mapping data and swept-path analysis via

Autotrack, as per standard industry practice. This desk-based work has been complemented by an on-site Automated Traffic Count (ATC) survey to confirm the average speed of road users, which was undertaken in November 2020.

6. At what time of the year was the brook sampled for great crested newt DNA

Great Crested Newt eDNA surveys of various ponds surrounding the application site were undertaken on 1 May 2020. These were undertaken during the “best practice” survey window of 15 April to 30 June inclusive in accordance with Natural England guidance.

7. Where is the evidence behind the levels of energy you say the development will produce?

Penpergwm Solar Farm will produce approximately 40,000 megawatt hours (MWh) per annum. While the precise volume of energy generated will depend on the final site capacity as-built, the estimated generation output utilises detailed computer simulations based on historical meteorological data for Monmouthshire. Simulations such as these are commonplace in the solar industry in determining the volume of energy generated from a solar site. South Wales has some of the highest solar irradiation in the UK, and so we anticipate that the volume of energy generated will be close to our initial estimates.

Calculations used to reference the equivalent household numbers, for example the equivalent numbers of Monmouthshire homes that can be powered and how much CO² savings will be delivered, use reference data taken from the Digest of UK Energy Statistics (DUKES) produced by the Department of Business, Energy and Industrial Strategy (BEIS). The latest figures are available to view online via the following link: <https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2021>

Land use / Site selection

8. Please confirm whether or not you have conducted a sequential assessment?

An “Alternative Site Assessment” is usually undertaken to demonstrate that the use of previously developed or lower grade agricultural land has been prioritised over higher quality agricultural land when siting new development proposals. As part of our draft planning documentation, GHEC has prepared an Alternative Site Assessment which uses a “sequential” approach to demonstrate that the chosen site is the preferred location for development, having regard to the order of priority set out above and taking into account technical constraints such as the feasibility of connecting to the distribution electricity network.

9. Can you confirm whether subsoil is to be removed from under panels?

No topsoil or subsoil will be removed from beneath the solar panels. The panels will be mounted on metal frames anchored by driven piles, causing minimal ground disturbance and occupying less than 1% of the land area. The rest of the infrastructure, such as the substation or inverter cabinets, typically disturbs less than 5% of the site area and this effect is temporary in nature and fully reversed following decommissioning at the end of the project life. Areas where ground or soil disturbance is unavoidable, such as cable trenches or inverter cabin foundations, will adopt strict soil separation measures to ensure top soils and subsoils are preserved and the agricultural properties of the soil is maintained.

10. What livestock are proposed on the site?

Sheep grazing under and around panels is now common practice and can be seen on numerous operational solar projects across the UK. Utilising sheep grazing in this way represents an excellent example of farm diversification and innovation.

Only 5% of the area of the solar farm is taken up by infrastructure, meaning the remaining 95% of the land will still be accessible for vegetation growth, and will be able to support livestock grazing as well as local wildlife. While the areas directly beneath the panels will have a lower grass yield grass can still grow adequately and only around one third of the projects ground surface would be over-shaded by panels. Spaces left between rows also allows grass to thrive.

Throughout operation, sheep will continue to graze the fields under and around panels. This has the benefit of ensuring agricultural use can continue across the site during the operational period and grazing sheep provide a sustainable solution to solar land management.

11. Can you guarantee that the panels will not deteriorate over their 40-year lifespan, and cause environmental damage via landfill leaching of cadmium and lead into the soil?

While older “thin-film” panels contained cadmium, Penpergwm Solar Farm will be utilising newer crystalline silicon panels which do not contain cadmium. While some welding materials used in panel assembly have historically contained lead and copper, the panels themselves are appropriately encapsulated to prevent leaching of any substances into the environment. It is also worth mentioning that the chances of damage to the panels causing the encapsulation to fail is extremely low, panels are very durable and are designed to account for, and operate safely in, the local climate. Additionally, regular checks and maintenance throughout the entire operational period of the site will ensure that in the low chance of any panel failure, this will be quickly rectified.

12. Given that the land has organic certification already can you explain how the land will be improved by removing topsoil and covering with panels.

No topsoil will be removed from the soil, and the land will be permanently vegetated for the lifetime of the solar project without disturbance. A specialist land management team will maintain the site throughout the solar farm’s operational period. This team will be responsible for implementing the approved landscape strategy, which will include tree planting, hedges, a wildflower meadow, and continued sheep grazing. Chemical pesticides and herbicides will be avoided and nutrients will be recycled into the soil naturally.

13. Is it true that this could create a planning loophole that will class these sites as brownfield so that they can be built on after? What guarantees can you give on the loophole in planning?

“Brownfield land” is defined in Planning Policy Wales (Edition 11) as “land which is or was occupied by a permanent structure”. This application is for a temporary structure and Welsh Government planning policy defines solar farms as such. A planning condition will be attached to the permission which will require all solar farm equipment and infrastructure to be removed from the site at the end of the operational period. The land must then be restored to its prior use as agricultural land.

Any subsequent planning application would need to be considered on its planning merits on the basis of adopted planning policy at that time. The land will not become brownfield land via installation of the temporary solar farm.

14. Has the Welsh Government confined your site search area exclusively to Monmouthshire, if not where else was considered?

The Welsh Government is not involved in the site selection of any renewable energy project. Projects put forward to the Welsh Planning Inspectorate by renewable energy developers are considered on their merits as to whether they conform with adopted Welsh planning policy in support of renewable energy. Every community must play a part in meeting Welsh renewable energy targets and tackling the climate emergency, including Monmouthshire.

As such, an Alternative Site Assessment was undertaken for this site which included the whole of Monmouthshire in its defined area of search. A range of potential sites were considered across the county. However, the application site was found to be the most suitable option for a solar development due to its proximity to the Extra High Voltage (EHV) network in South Wales, and the feasibility of connecting to the 132kV line which runs north to south between Abergavenny and Pontypool North. As a result of these factors, a solar development of the scale proposed in this location could provide the equivalent electricity demand for approximately one third of Monmouthshire's household demand.

15. Why not use a brownfield site which has pylons in place?

Brownfield land of the scale required is seldom available for solar farm development and, typically, any brownfield land of an appropriate scale is located within or on the edge of urban areas where the policy presumption prioritises residential or commercial development. Solar generation requires unobstructed and consistent exposure to the sun's irradiation to be effective. As such, for greenfield sites, proposals should aim to use poorer quality agricultural land before higher quality land is considered.

The planning application is supported by an Agricultural Land Classification (ALC) Survey Report which confirms the quality and grading across the proposed site. This report has identified that the site contains a mix of ALC Grade 2, 3a and 3b land. Wherever possible, land identified as ALC Grade 3b has been prioritised for the location of solar panels. It is worth noting that only a small amount of Grade 2 land has been identified (1.95ha, or 2% of the land area) and that its usage is constrained due to minor wetness caused by topsoil clay, which is likely to restrict access with machinery. Similarly, the Grade 3a land identified is also constrained by its wetness and restricts machinery access in winter and early spring. These parts of the site are therefore already significantly restricted in their versatility and are suitable for solar development in accordance with Welsh planning policy.

16. Why are you building on a hill that is visible to everyone?

Our landscape and technical consultants have undertaken numerous visits to the site since early 2020. We have worked with a qualified landscape and visual consultant to model potential visual impacts and to develop our proposals to minimise impacts on views from local residences and sensitive views in the wider area, including from Brecon Beacons National Park. We have worked to avoid the more prominent areas of the site where possible, while recognising that existing and proposed vegetation will help to minimise the visual impact from panel areas which remain visible and will naturally integrate the solar park into the wider landscape over time.

17. Why are you building solar panels on grade 2 farmland, i.e. prime agricultural land?

Solar farms do not lead to the permanent loss of agricultural soils. The land can and will continue to be used for agriculture, for example sheep grazing. Given that this farm is already used for sheep grazing, the land would continue to be agriculturally productive but have the dual benefit of providing a significant and much needed contribution to local renewable electricity, helping to tackle the climate emergency.

Maintenance / Traffic

18. Currently 2 vehicles have difficulty passing in the proposed lane. If this does go ahead, will you be implementing any traffic management measures?

As part of the planning application, GHEC will be submitting a Construction Traffic Management Plan (CTMP). This will recommend a variety of specific mitigation measures to be implemented during the construction period that will minimise the impact of construction traffic and ensure traffic safety on the local highway. This will include, for example, either a banksmen-controlled entry and exit from the site

or temporary traffic lights to help manage traffic along the nearby lane. Furthermore, deliveries to the site will avoid peak hours when the local roads are likely to be busiest. The exact suite of measures to be implemented will be agreed with Monmouthshire County Council Highways Department in advance of construction.

19. Will you have CCTV covering the site?

CCTV cameras will be located inside the perimeter fence of the solar farm. These will only be triggered in the event of unwanted intrusion into the site and will not be directed towards any public highways or paths.

20. Can you confirm that repair of the local lanes has been costed and funded by the developer so these costs would not be borne by the local authority?

GHEC will conduct a pre- and post-construction condition survey of the local road from the access point to its junction with the B4598. The developer will be liable to repair any damage to the road that is attributable to the construction of the solar installation. Additionally, through the implementation of a Construction Traffic Management Plan (CTMP) which recommends a variety of specific mitigation measures, the likelihood of damage to local roads occurring is considered very low.

21. You suggest a field as a meadow – who will be responsible for the upkeep of that field?

A specialist land management team will maintain the site throughout the operational period of the solar farm. The team will be responsible for implementing the approved landscape strategy which will include tree planting, hedges, a wildflower meadow, and sheep grazing. Chemical pesticides and herbicides will be avoided. Where possible, we will be inviting local contractors to undertake ongoing maintenance such as this.

Decommissioning / End of life

22. Can you explain why the project will be decommissioned after 40 years?

The solar farm is designed to be a temporary installation and Welsh planning policy supports it as such. While many of the components are likely to be in good working order after the end of the project life, the solar farm will be legally required to cease operating after a period of 40 years. The components which are still in good condition will therefore be reused elsewhere, components have no further operational use will be recycled.

23. What happens if the various different companies involved at this moment in time cease to exist with regard to decommissioning? Who bears ultimate responsibility for decommissioning?

Decommissioning of the solar project is a legal requirement as a condition of a planning consent. This will require that all equipment be removed shortly after the project has ceased operations. In addition to this planning obligation GHEC enters into a long-term lease with the landowner, included in this lease is a legally binding obligation to remove the solar farm infrastructure at the end of the lease term, which is in turn linked to the planning consent term. This legal obligation is supported by a financial instrument (usually in the form of a 'reinstatement security') which ensures funds are available to GHEC to decommission the site. If GHEC does not exist at the point of decommissioning this financial instrument transfers to any new owner or funder and in the highly unlikely event that there is no owner in existence at that time it transfers to the landowner who will then assume responsibility for decommissioning and will have the resources available to do so.

24. What happens to the panels at decommissioning? Do we know the impact this will have in the future?

During the decommissioning phase, all panels will be checked to ensure they do not have further opportunity to be reused in other installations elsewhere before being recycled. The recycling of the silicon-based solar panels that we use starts with disassembling the actual product to separate the aluminium and glass parts. 95% of the glass can be reused or recycled, whilst 100% of the aluminium can be reused for re-moulding in cell frames for new solar panels or recycled. The remaining materials are treated to be used again for manufacturing new silicon modules, resulting in an 85% recycling rate of the silicon material.

Under the Waste Electrical and Electronic Equipment Directive (WEEE), solar panel waste management is regulated and bound by law to fulfil specific legal requirements and recycling standards to ensure that solar panels do not become a burden to the environment.

25. Given that local power generation is scoped out for the future, what measures have been included to ensure the project is future proofed?

GHEC is aware of the Welsh Government's commitment to having 1GW of renewable energy capacity in Wales to be locally owned by 2030. While policy on how renewable energy developers can meet this objective has yet to be formally published, GHEC is working to develop a community ownership offering to allow local people to invest in a stake of the project. This is in response to both the Welsh Government's draft policy statement for local ownership, and the feedback we have received from local people who are interested in such an offering.

26. What load factor and panel degradation figure were used to calculate annual output?

To calculate our average annual output, we do not rely on the "load factor" (i.e. the percentage of output generated compared to what it could theoretically generate at 100% 24/7 for a whole year) as this method does not take into account various practical considerations such as the fact that solar power can only be generated during daylight hours, not 24/7.

Instead, we use software known as "PVSyst" which uses accurate, historical meteorological data over the last 20 years to estimate the hourly irradiance on the site across the year. This includes irradiation from direct sunlight, as well as indirect sunlight that diffuses through the atmosphere (the latter of which we will be able to harness through the use of bifacial panel technology).

We also then take into account other losses on the system such as shading losses, electrical losses, panel degradation, and soiling losses (i.e. when the panels get dirty) to build a more accurate picture of the average annual output. Through this process, we have calculated that the proposed solar development will be capable of generating around 40,000 megawatt hours (MWh) per annum taking all of the above factors into account.

Community engagement / benefit

27. Does the Llanover Community Council gain financially from this proposal?

GHEC will be making a contribution to the Llanover Community of £2,000 per MW of final capacity installed. Based on our current assumptions, this equates to a total payment of £80,000 made available for the benefit of the local community. This will be in addition to any other schemes for local ownership and investment.

28. What specific community benefits are there other than a financial package for the local community?

GHEC is working with our delivery partner European Energy to develop a community ownership offering to allow local people to invest in a stake of the project. This is in response to both the Welsh Government's draft policy statement for local ownership, and the feedback we have received from local people who are interested in such an offering.

GHEC is excited to share further details of our proposals when we formally submit our application later in 2021.

Regarding non-financial benefits, through the development itself, the provision of biodiversity enhancements and additional planting throughout the site are considered to provide community benefit both through footpath and access improvements as well as improvements to local flora and fauna.

Additionally, we welcome the opportunity to work with local schools and colleges. Such partnerships can teach children and young people about the effects of climate change and why renewable energy is so important to combatting it.

A further important benefit to the local community is the significant and crucial contribution the proposal makes towards Monmouthshire's climate targets, supporting national and local efforts to avoid the potentially catastrophic impacts of climate change.

Following the UK Government's declaration of an Environment and Climate Emergency in May 2019, the Committee on Climate Change (CCC) advised that to meet 'Net Zero' targets, the UK will require substantial amounts of new, low carbon power sources to be built before 2050, up to four times that of today's levels. Monmouthshire County Council declared their own Climate Emergency in May 2019.

The Secretary General of the United Nations (UN) recently said that a new report by its Intergovernmental Panel on Climate change is a 'code red for humanity'. It says that unless there is immediate rapid and large-scale action taken to reduce emissions the average global temp is likely to reach or cross the 1.5-degree Celsius warning threshold in 20 years.

This installation will have a sufficient output to produce enough clean, renewable energy to power the equivalent of 11,180 local homes annually. An estimated 18,000 tonnes of CO₂ will be saved each year. This project is therefore very much needed to deliver on the UK and Monmouthshire's ambitions for carbon reduction and prevent a climate emergency.

29. How can it be of benefit to the community when it will devalue properties by up to 5% that are near the site? This site will reduce the value of our homes. What compensation will we get?

There is no evidence to suggest that house prices are affected by proximity to solar farms. They generate clean power, without emitting any noise, light or other environmental pollution.

30. How many people attended the consultation events?

Over the two sessions, a total of 29 people attended including, representatives from Llanover Community Council, the local Monmouthshire County Council, and the local Member of Parliament.

In order to encourage attendance at these events, we circulated leaflets and letters to over 320 addresses surrounding the site. We also publicised the details of these events on our public consultation website: <https://penpergwmsolar.co.uk/>. The details of our public consultation event were also published in the Abergavenny Chronicle.

Throughout the consultation period, we have been in regular contact with Llanover Community Council including presenting to them about the proposals in April 2021. We have taken local advice from the Community Council about raising awareness locally of proposals and the webinar to facilitate greater attendance. This has included providing hard copies of the application materials for public use and encouraging that the Community Council to raise awareness of the webinar in local social media groups.

The principle of solar

31. What about the carbon footprint of mining the silver for the panels, the transportation of 100,000 panels and the decommissioning of these panels in 40 years?

Large scale solar installations typically have a low life-cycle environmental impact compared to most conventional forms of energy such as coal and natural gas. The greatest carbon emissions caused by solar are created by the energy required for panel manufacturing and this is outweighed by the positive effects of clean energy generation over the project's operational lifetime.

Taking all the emissions together, full lifecycle emissions, in the UK it takes approximately 4-6 years for a module to become fully carbon neutral. Overall, silicon PV panels payback the required upfront energy costs of production well before their useful lifetime and are "net carbon negative" for the majority of their operational life.

32. What is the end-to-end carbon footprint of producing a solar panel up to its safe destruction in 40 odd years' time?

Total lifecycle emissions for solar PV panel are typically around 45 g per kilowatt hour of electricity produced. This represents a total of 72,000 tonnes CO₂ for Penpergwm Solar Farm. However, 1 kilowatt hour of electricity generated will also save around 450g of CO₂ by displacing fossil fuel generation, resulting in net negative CO₂ of around 650,000 tonnes of CO₂ over the project life.

33. Given bio-fermentation and tidal generation, is there still a place for solar in the U.K. energy mix?

The National Infrastructure Commission (NIC), official advisor to the Government on infrastructure, produced a report in March 2020 setting out the infrastructure required in order for the UK to reach "net zero" by 2050, including the amount of new renewable energy development that would need to be deployed.

Importantly, the NIC recommends that the generation mix be made up of around 90% renewables. This is due to the variable nature of renewables as, for example, solar and onshore wind technologies tend to operate at different times / climatic conditions and so are complementary to each other. For renewables, it is also important to install additional capacity over and above the target need in order to account for the times in which certain technologies won't be able to operate.

The report recommends that, across all scenarios, significant solar, onshore wind, and offshore wind, with between 129–237 gigawatts ('GW') of renewable capacity needing to be in operation by 2050, including:

- 56–121 GW of solar;
- 18–27 GW of onshore wind; and
- 54–86 GW of offshore wind.

While all renewable energy technologies have a role to play, solar is a proven technology which is supported by planning policy at local and national level, and therefore forms the majority of needed renewables capacity in all scenarios.

34. With the lack of sun in our climate are solar panels efficient? With the lack of sun in our climate, are solar panels efficient?

Wales will still receive around 8 hours of daylight per day during winter. With solar energy it's also important to take into account the output across a whole year. The UK can get very long days of sunlight throughout much of the summer. This can make up for low output months in the winter where other forms of renewables (e.g. wind) typically make up the shortfall. It is also important to note that the UK operates an energy system across Wales, England and Scotland and the system is balanced in different ways at different times of the year. So, for example, in winter months when irradiation is lower, wind generation is typically high and vice versa in summer months. Solar is also the cheapest form of generation in the UK and this can be seen in summer months when solar generation often displaces gas and coal generation and the UK has increasingly prolonged periods of zero coal generation in summer months.

Additionally, one of the most common misconceptions around solar panels is that they only work in direct sunlight, whilst it is true that they are most efficient in direct sunlight, solar panels still generate a substantial amount of energy when it is cloudy or raining. This is because solar panels work on the level of infrared irradiation not just direct sunlight, so even when the sun is not shining there is still irradiation to power our panels.

Construction

35. How long is construction expected to take?

Construction of the solar project will take approximately 6 months.

36. What about noise pollution including during construction?

While there will be some limited periods of noise generating activities at the start of the construction period, the majority of the construction period will be assembly of the mounting structure which is a noiseless and manual activity.

37. What steps will be taken to minimise surface water run off during construction given that the soil is of low porosity and will be compacted by site traffic and vehicles

As part of the site's preliminary works, drainage features will be installed throughout the site in the form of filter drains / infiltration ditches and a detention basin. This will ensure that any surface water flows during the construction period are attenuated and will remain in place during the operational period. Additional drainage measures will be installed to help attenuate the increase in surface water flows at the temporary construction compound, an area which may have higher silt loading due to traffic movements in this area.

38. Will there be construction work at weekends?

All works will be carried out between the hours of 07.00 to 19.00 on Monday to Friday and 08.00 to 16.00 on Saturdays. No construction work will take place on Sundays or bank holidays.

39. Where will you source your solar panels? Where will the panels be made? Will this be in the UK?

Once the design has been finalised, GHEC is committed to ensuring that suppliers meet the strictest standards of health and safety, sustainability, quality, and social responsibility. European Energy, the delivery arm of GHEC, has a strict Code of Conduct and Sustainability Policy for ensuring all contractors and suppliers across their global business meet these strict standards. While it is unlikely that panels will be sourced from the UK given the global supply chain, UK standards of procurement will be adhered to in the pre-construction phases.

Visibility

40. Your new planting of hedges etc. to screen the site will take some time to grow. Will this mean it will all be visible from the start for a long time?

Screen planting will take some years to mature so in the initial years of operation the site will be more visible. As part of the planning application we have commissioned a specialist to undergo a Landscape and Visual Assessment which considers the impacts of the development in Year 1 as well as in Year 5 after mitigation planting has been fully established. The assessment found that, overall, the magnitude of landscape change would be Medium and reducing as the mitigation planting matures into Year 5 and beyond. The mitigation planting is unlikely to fully screen elements of the solar development at higher elevations. However, the development as a whole will naturally become more fully contained as time progresses.

The site design utilises existing mature vegetation across the site to the greatest extent possible, while introducing new nature hedgerows to help incorporate the solar development into the landscape and restore lost field boundaries.

41. Can you comment on the visibility of the site from the A40 and other receptors?

Visibility from the A40 will be largely limited by roadside embankments and vegetation. Where there is glimpsed visibility of the site from the A40, only a small part of the overall development will be seen, and the degree of visual effect is assessed as minor. Nevertheless, the road views without Public Rights of Way (PRoW) are mostly glimpsed views experienced in passing only and are not classified as sensitive receptors to landscape change.

Energy

42. What annual output do you expect from this development?

The annual output from Penpergwm Solar Farm will be approximately 40,000 megawatt hours (MWh) per year.

43. What percentage of Wales's energy needs would this project put into the grid annually?

In 2019, Wales consumed around 14.7 TerraWatt hours (TWh) of electricity¹. Therefore, Penpergwm Solar Farm will produce approximately 0.28% of Wales current electricity needs. In Monmouthshire

¹ <https://gov.wales/sites/default/files/publications/2021-01/energy-generation-in-wales-2019.pdf>

alone, the annual domestic demand for electricity in 2019 was approximately 0.397TWh². This solar development will therefore meet around 10% of Monmouthshire's domestic demand for electricity per year.

The electricity generated by this solar development will be supplied into the local distribution network to serve local households and will not be transported elsewhere. Other parts of Wales will have their own local generation.

44. How much of this energy will be sold overseas?

All of the power generated from Penpergwm Solar Farm will be distributed into the local electricity network and used by local Monmouthshire homes. The UK electricity market is complex and while the electricity sales from the project will be through the national wholesale electricity market, the green energy generated will be accounted for in local and national Welsh energy targets. No electricity from the project will be sold overseas.

45. Can you give an idea of whether the profit generated from the electricity produced will stay in Wales?

GHEC is a UK company funded by both national and international investors. Electricity generated from this project will be used in the UK. Revenue generated from the sale of electricity will go to investors and shareholders.

GHEC is a UK based company. All local taxes and business rates will be paid to the local competent authorities as appropriate.

46. Are you planning on having battery storage areas on the proposed site?

Penpergwm Solar Farm is a solar only project. Battery storage will not be included in these proposals.

Size

47. Should the proposed project not reach its energy targets would the initial acreage be extended?

The project area is fixed. There is no intention to increase the project area, now or in the future.

48. The size of the farm is 200 plus acres. Do you have an option to use more land?

The project area is fixed. There is no intent to increase the project area, now or in the future.

49. How large is the 132kV substation?

The substation is approximately 25 x 50m in area.

² <https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics>

50. Can you confirm how many acres will have panels? Is it 103 or 110 acres you are changing the size?

During this pre-application phase of the development, GHEC has continually reviewed and refined our designs to reflect the results of our surveys and designs, and stakeholder and community feedback. Overall our proposals have reduced in scale since the site was originally identified.

The total area of the site is 110 acres. However, this includes an area for the construction compound, areas for access tracks and areas within the Western Power Distribution overhead line corridor that cannot be built within. The actual fenced area is approximately 95 acres.

51. What size are the transformer cabins?

The transformer cabins are approximately 3.5 x 4m and will be painted in a neutral green colour.