



Glenhead Solar Farm

December 2024

80MW

Capable of producing up to 80MW of clean, low-cost electricity

24,000¹ homes

Equivalent to the average, annual electricity consumption of 24,000 homes

42,170² tonnes

Carbon emissions saved each year.

Project Update

Since our public exhibition in June 2024, we are taking time to carefully consider the feedback received from the local community and statutory stakeholders as well as findings from site surveys which are ongoing. As such, we now expect to submit a planning application in early 2025.

We have developed this newsletter in response to common questions and concerns raised to us as well as to provide more information as we progress our proposal.

A Power for Good

As well as supporting Northern Ireland's climate change and energy security targets, solar farms like Glenhead can make a meaningful contribution to the local area and its surrounding communities.

If the Glenhead project is consented, we plan to launch our innovative Local Electricity Discount Scheme (LEDS) which provides an annual discount on the electricity bills of properties closest to the solar farm. The scheme would be open to all residential, business and community buildings (including schools, places of worship and village halls) within the eligible area with an electricity meter. We continue to welcome feedback from the community on any alternative suggestions that will help to secure long-term economic, social and environmental benefits and provide a lasting legacy in the local area.



Another direct and meaningful benefit that can be delivered from a project like this, during the construction phase, are jobs and employment for local businesses and contractors, in addition to the use of local services and amenities, all of which can generate a significant amount of inward investment within the area. RES is committed to using local contractors in all aspects of the project. If you're a local business interested in getting involved in solar farms and/or battery storage, then please contact us.

Glenhead could also deliver an important biodiversity enhancement to the site and local ecosystem. A typical solar farm uses around just 5% of the total site area with the rest of the land remaining undisturbed, creating significant opportunities to provide a range of ecological benefits. Such measures could include the planting on species-rich meadow and grassland, which are among the most threatened habitats on the island of Ireland. These habitats also provide vital ecosystem services by sequestering carbon and locking up harmful pollutants.

Need for the development

Northern Ireland's Climate Bill has a target to meet at least 80% of electricity consumption from renewable sources by 2030.

Whilst Northern Ireland has been successful at utilising its natural resources, to meet its electricity needs, around 50% of electricity consumption still comes from fossil fuels. Significant new renewable generation is required to meet this target with solar having an important role to play.

Solar energy also enables more electricity to be generated domestically without reliance on imports and is not subject to sudden price fluctuations or the uncertainty of global markets. It can therefore play an important role in improving the security and diversification of NI's energy supply.

Energy storage is crucial in enabling the rollout of zero carbon energy and supporting NI's net zero emissions target.

Scale and location

The site has been chosen as it lies outside of any statutory ecological and landscape designations. Importantly it has a viable grid connection which can be achieved via the existing 110kV transmission overhead lines, which cross the site, which negates the need for an approximate 9km grid connection as proposed in the preliminary plans.



Unlike older solar farms which benefitted from subsidies, economies of scale are required to drive the cost efficiencies needed to keep the cost of electricity low and to meet NI's net zero ambitions.

Glenhead Solar Farm is being specially designed to be dual-purpose, combining renewable energy generation with agricultural in the form of sheep farming. Sheep farming provides employment, supports rural economies and can produce a much more diverse ecological mosaic across the site. Landscapes managed by grazing sheep support a rich diversity of wildlife, while producing food.

Furthermore, where a solar farm is installed on land which has been intensively farmed, it enables the ground underneath to recover, while providing income for the farming business. Solar farms also help regenerate soil quality, and so are helping to ensure the continued availability of high-quality agricultural acreage for future generations

Landscape and Visual

We are undertaking a Landscape and Visual Impact Assessment (LVIA) to ensure any potential effects of the project on landscape features, landscape character and residential amenity are properly assessed. The LVIA will inform the final design of the project to minimise impacts at sensitive visual receptors such as residential properties, transport routes, recreational facilities and attractions.

As part of the LVIA, we are considering a combination of landscaping and separation distances between residential properties and solar infrastructure, to minimise potential visibility.

A comprehensive Landscape Proposals Plan (LPP) will form part of any planning application. The LPP will include new and infill planting, to complement the existing plentiful existing trees and hedgerow which will provide visual screening from the solar farm as well as wildlife corridors and vital resources for mammals, birds and invertebrates.

Infrastructure

The solar panels we propose for Glenhead will be up to 3.6m metres tall. This height is becoming more common as solar technology becomes increasingly efficient allowing increased generation in a smaller area. The height also allows the optimum ground clearance of 0.8 metres for sheep grazing and is the effective height for the use of the more efficient bifacial panels which we propose for Glenhead.

Bifacial solar panels which as the name suggests, have two sides of solar cells, enabling additional energy generation from the reflected and diffused light on the rear-side of the panels. Solar panels do not require direct sunlight to produce energy – diffuse sunlight is sufficient, and a grass surface reflects enough light to justify the use of bifacial modules.

The final height of the solar panels will be informed by ongoing surveys and assessments and feedback from the community and stakeholders.

Biodiversity

RES take the protection of the site and surrounding area's ecology seriously and an Ecological Impact Assessment will form part of the planning application which ensures any potential impact on ecology is appropriately assessed and mitigated, where necessary, and takes account of any sites of local nature conservation interests.



Glenhead Solar Farm has significant potential to enhance biodiversity and provide a Biodiversity Net Gain to the site.

We aim to retain and enhance all existing hedgerow and woodland, where possible, and new native and infill planting will be introduced. As well as species-rich meadows and grasslands, we could include a variety of measures such as bird and bat boxes, bug hotels which when combined together can support healthy populations of insects, birds, bats, amphibians, and many other animals. Riparian woodland planted around any surface water and drainage system could deliver further biodiversity enhancements, providing good habitat for invertebrates.

Perimeter fencing will be in the form of deer fencing up to 2.4m high, typically located inside boundary vegetation, with mammal gaps to ensure the free movement of small mammals.

Safety

At RES, safety is of the utmost importance.

Wherever electricity flows, both electric and magnetic fields exist close to the lines that carry electricity, and close to electrical appliances. The relatively low voltages in a solar farm and the fact that electric fields are easily shielded by common materials, such as plastic, metal, or soil means that there is an extremely low risk of negative health impacts from electric fields. The DC electricity produced by solar PV panels produces 0 Hz electric and magnetic fields, AC electricity produces c. 60 Hz which is at the low-energy end of the electromagnetic spectrum (equivalent to the compressor of a kitchen fridge³)

Any equipment installed on a project in the UK will be required to conform to local regulations. Specifically, energy storage equipment will comply with the Electromagnetic Compatibility (EMC) Directive 2014/30/EU.

In the unlikely event of a fire or flood in the energy storage system, a water containment system can be built into the design. This involves surface water flows being collected by a series of filter drains before discharging into an above ground attenuation basin, typically sized to allow for a 1 in 200-year storm plus an allowance for climate change. Flows discharging out of the attenuation basin are restricted by means of a flow control device, and restricted flows discharge to the proposed surface water management solution.

Glint and glare

Solar panels are not highly reflective surfaces as they are designed to absorb sunlight and not to reflect it.

A full glint and glare assessment will accompany any planning application and will consider potential impacts on roads and residential properties as well as aviation.

Consultation website

We apologise for technical difficulties which resulted in the Glenhead website being inaccessible for a few days during the consultation period. This was rectified as soon as we were aware of the problem, and we extended the closing date for comments by a week to ensure the community were still able to submit their views.

We will continue to update the website with the latest information as we progress closer to submitting a planning application. If you would like to share feedback on the proposal, or ask any questions, do not hesitate to contact us using the contact details at the end of this newsletter.



Decommissioning and recycling

The solar farm does not contain any permanent infrastructure and is entirely reversible at the end of its operational lifetime (40 years), with the land being returned to its previous use.

In most cases, 99% of a solar panel is recyclable, and there are well established industrial processes to do this.

A solar panel is made of a frame (typically aluminium), glass, crystalline silicon solar cells, and copper wiring, all of which can be extracted, separated and recycled or reused. The remaining 1% is an encapsulant material which bonds the layers of a panel together.

There are organisations around the UK and Europe specialising in solar recycling. They are working with solar developers to minimise electrical waste and recycle old panels in line with the Waste from Electrical and Electronic Equipment (WEEE) regulations⁴.

To support sustainable energy storage, the industry is working hard to establish a circular economy for industrial batteries. It is now widely accepted that lithium cannot remain a 'throwaway' material; it must be a circular material, recycled and reused indefinitely. There are current directives to ensure battery producers are responsible for minimising harmful effects of waste batteries on the environment and they must accept batteries for recycling and disposal at the end of life.

Recovered materials can be used to make new batteries, reducing manufacturing costs, the quantity of materials sent to landfill and our reliance on mining. As the battery markets grows, we are already seeing the number of techniques available for recycling increase.

We aimed to break the cycle of decommissioned materials ending up in landfill at two of our recent energy storage decommissioning projects. We prioritised the reuse and recycling of all components achieving a 98% recycling rate. This serves as a blueprint for decommissioning future projects and sets a precedent for sustainable practices in the industry.

¹ The homes figure has been calculated by taking the predicted annual electricity generation of the site (using an average solar capacity factor of 11.2%) and dividing this by the annual average electricity figures from DESNZ showing that the annual GB average domestic household consumption is 3,239 kWh (January 2024).

² RES uses DESNZ's "all non-renewable fuels" emissions statistic of 437 tonnes of carbon dioxide per GWh of electricity supplied in the Digest of UK Energy Statistics (July 2023) Table 5.14 ("Estimated carbon dioxide emissions from electricity supplied") to calculate carbon reduction. Carbon reduction is calculated by multiplying the total amount of electricity generated by the solar farm per year by the number of tonnes of carbon which fossil fuels would have produced to generate the same amount of electricity.

³ <https://www.emf-portal.org/en/emf-source/123#:~:text=The%20necessary%20heat%20for%20the,frequency%20of%2050%20Hz%20resp.>

⁴ https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en

If you require information in braille, large text, or audio, please let us know.

Next steps

We are continuing to refine the design and gather all the necessary studies and assessments which form the Environmental Impact Assessment.

We currently expect to submit a planning application in early 2025.

If you wish to be kept up to date on the progress of the project, and you did not complete the comment form which was available at the public exhibition and on our website, please email carey.green@res-group.com to request that your details are added to the mailing list.

Your contact details will be treated by RES with the strictest of confidence, in line with the General Data Protection Regulations (GDPR) 2018. We may at times share your contact details, in confidence, with third parties who we employ to help process your comments or update you on the project and by providing your details you consent to this. You may write to RES at any time to ask that your contact details be removed from our records and from any third parties we work with.

Further information

For more information on the proposal please visit our project website or contact us by using the details below.



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