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Introduction

Rhiwlas Green Energy Network (Rhiwlas GEN) is a proposed new 132kV (132,000 volt) electricity connection approximately (35km in length) supported on wood poles that will transport energy from generators in Wales to the national electricity transmission system.

Between November 2023 and January 2024, we consulted local people on our preferred route corridor for the new connection. Since then, we have carefully considered all the feedback we received, alongside further environmental and technical assessments, and we have made several changes to our proposals.

We are now consulting on our draft route alignment, which gives more detail on where the proposed new infrastructure might go, including proposed wood pole positions. Our second round of consultation runs from Tuesday 5 November to Tuesday 17 December 2024.

You can find out more information about the consultation, the draft route alignment, and our revised proposals in this document and on our website www.rhiwlasGEN.wales We look forward to receiving your feedback on our proposals which will be vital in helping us develop the project.

1.1

Unlocking Wales' Green Energy Potential.

Proudly based in Wales, Green GEN Cymru has been granted an Independent Distribution Network Operator (IDNO) Licence from Ofgem. We are developing new grid infrastructure to unlock Wales' energy capability and meet the future needs of its' people, communities, and businesses.

There's endless potential for new, clean energy sources in Wales. We need to get it to the homes, hospitals, schools, businesses, and communities that require it. Our proposed green energy network responds to this challenge by supporting, accelerating and enabling our net zero transition. Connecting local generation to the national electricity transmission system is crucial for improving the country's energy independence and reducing our vulnerability to UK energy supply disruptions.

We will design, construct and maintain a new 132kV (132,000- volt) electricity distribution network. This would allow direct connection for new energy users such as businesses and new energy generators, including community and other renewable projects, while reducing pressure on the existing electricity grid, supporting energy resilience and enable the rollout of green heating and electric vehicles.

How we're addressing these challenges:



Connecting renewable generation, reducing use of fossil fuels



Acting fast and delivering projects efficiently



New grid infrastructure to connect renewables to homes and businesses



INTRODUCTION

1.2

Acting now to address the climate emergency

"...inadequate grid capacity will continue to be the biggest block on the pathway to Wales reaching Net Zero." - Welsh Affairs Committee, October 2022

Much of the existing electricity network infrastructure in Wales was built many years ago to transport energy from old fossil-fuel power stations in the north and south. The existing network in Mid Wales does not have nearly enough capacity to connect all the new energy we need for our homes and businesses, locally and nationally. To end the use of fossil fuels we need new infrastructure, and quickly.

Rhiwlas GEN responds to this challenge by supporting, accelerating and enabling our net zero transition.

You can find out more at the Green GEN Cymru website www.rhiwlasGEN.wales

About the Rhiwlas GEN project

The Rhiwlas GEN would reinforce the local grid network and allow the direct connection of community and renewable projects to the national electricity transmission system. This includes the clean, green energy generated by the proposed Banc Du and Rhiwlas Energy Parks.

A new 132kV (132,000 volt) overhead line, supported on wood poles will run between Rhiwlas Energy Park and a new substation near Cefn Coch, Llanfair Caereinion. The proposed substation will be part of Green GEN Cymru's Vyrnwy Frankton connection project.

The Rhiwlas GEN will also consist of a new 33kV underground cable route of approximately 3km long, to connect the Banc Du and Rhiwlas Energy Parks near Llangurig.

5 | Rhiwlas Green Energy Network

INTRODUCTION

1.3

Identifying the preferred route

Working with our specialist consultants, we carefully identified and assessed several potential overhead line route options to connect the new energy parks to the electricity network.

Following consultation and further assessments we have revised our proposal, and we are now asking for people's views on the draft route alignment, which includes the proposed wood pole positions for Rhiwlas GEN. We believe the draft route alignment achieves the best balance between our technical requirements and reducing the potential impacts on the environment and the nearby communities.

In this document you can find more detail on our proposals for each section of the route.

For more information about our first round of consultation, the feedback we received and how we took this into account, please see our Stage One Non-Statutory Consultation Report. This is available on our website www.rhiwlasGEN.wales





A high performing electricity network is key to:



Making the transition to a future in which we end the use of oil and gas



Ensuring homes, education and businesses, both locally and nationally, have access to low carbon energy



Supporting the roll out of low carbon technologies such as electric vehicles, heat pumps and other technologies



Helping communities prosper by providing electrical capacity to support investment in jobs, businesses and housing

How we chose our preferred route for Rhiwlas GEN in 2023

As we develop our projects, we consider the visual impacts of the overhead lines and how the potential for these can be reduced through careful routeing; for example, seeking to avoid towns and villages, and areas with environmental designations.

We apply the long-established Holford Rules for routeing overhead lines. The key principles of which include avoiding prominent ridges and skylines; following broad wooded valleys; avoiding settlements and residential properties; and maximising opportunities for 'backclothing' and the screening of the overhead line.

Alongside landscape impacts, we considered other environmental and technical constraints and effects, including ecology and ornithology, recreation and tourism, hydrology, cultural heritage, ancient woodland, forestry, farming and other land uses.

Feedback from stakeholders and local communities is important in shaping our proposals, so at each development stage we consult on our plans.

Prior to our first round of consultation last year, we began by comparing the environmental, technical, and cost implications of 11 potential connection options (different points on the electricity transmission network in Wales and England), the findings of this work are presented in our Green GEN Stage One Grid Connection Strategy.

Following this work, we determined that on balance, connecting the proposed energy parks to the national electricity transmission system via a connection that runs south from Cefn Coch and concludes near Llangurig was the most appropriate option balancing effects on communities, the environment, technical and cost considerations. This solution was taken forward for more detailed routeing studies and consultation.

Working with our environmental consultants, we identified corridors of land through which an overhead line route could be installed between a proposed substation in Cefn Coch and the Rhiwlas and Banc Du Energy Parks. We looked at how each section of the route might affect local communities, the landscape and views, biodiversity and geology, forestry, cultural heritage, flood risk, and other land uses.

From the corridors identified we selected the one that, on balance best reduced the potential for effects on communities and the environment and then identified potential route options within it.

A 10km wide study area was identified, providing an area large enough to accommodate all potential overhead line (OHL) route options for the proposals.

HOW WE CHOSE OUR PREFERRED ROUTE FOR **RHIWLAS GEN IN 2023**

There are several communities within the proposed study area for the route. including: Carno, Trefeglwys, Llandiloes and Llangurig – as well as several smaller villages and properties across the vicinity; we've carefully considered the area in which people live and have sought to avoid these when designing our proposals.

This preferred route is approximately 35km long and was the basis of our first round of public consultation held in late 2023/early 2024.

More information

You can find more information about how we identified the route, and the other options we considered, in our Routeing and Consultation Document and our Green GEN Stage One Grid Connection Strategy.

In our work we have considered:



Visual effects

Community effects



Environment and heritage



Technical



What will the overhead line look like?

We understand that there are a variety of views about the infrastructure required to connect the new renewable energy projects to the national electricity transmission system.

The overhead line (OHL) proposed as part of Rhiwlas GEN would be made on wooden poles, examples of which can be seen above. These poles are typically 12-14m tall, though this may vary depending on local conditions, for example changes in topography, or where the connection needs to cross roads or railways. Wood poles are proven in communities across Wales and are reliable and efficient.

Where the proposed line changes direction, angle poles will be required, with additional stay wires to reduce tension and ensure stability.

In developing our proposals, we have aimed to reduce the visual effects as much as possible, using the contours of the land and existing trees and vegetation for screening.

HOW WE CHOSE OUR PREFERRED ROUTE FOR RHIWLAS GEN IN 2023

3.2

First stage of consultation

Our first stage of consultation ran from 15 November 2023 to Wednesday 10 January 2024.

We asked people for their views on our preferred route for Rhiwlas GEN, and anything they would like us to consider when developing our proposals, as well as wider questions about climate change and renewable energy.

People were able to comment on the route and project as a whole, but we also divided the route into three sections to make it easier for people to view and comment specifically on the area which was of most interest to them.

We held three drop-in public exhibitions in Cefn Coch, Llangurig and Carno, where you could view detailed plans and ask questions of the project team, and we also made maps, documents and materials available on our dedicated project website www.rhiwlasGEN.wales

We received 80 consultation responses, and carefully considered all the issues raised alongside further technical and environmental assessments. You can find out more information about our first round of consultation, the feedback we received and our responses to the issues raised, in our Stage One Non-Statutory Consultation Report.

3.3 Stage two events in your area

Events

You can help us understand any potential effects and benefits that we may not have considered in our work to date, and to inform our work going forward, by providing your feedback as part of this consultation from Tuesday 5 November to Tuesday 17 December 2024.

Come and meet our team and ask questions to find out more about our proposals.

| | Thursday 14 November | 2pm – 7pm |
|----------|--------------------------|-----------|
| SY21 OAE | | |
| · · | Tuesday 19 November | 2pm – 7pm |
| | Wednesday 20 November | 2pm – 7pm |

Development of the project following the stage one consultation

Following the first stage of consultation we continued to develop our draft preferred route alignment based on the corridor shown, from an environmental, technical and economic perspective. We also sought to see if we could address any of the requests we received about changes to the design of the route based on the feedback received, and the findings of our own further assessments and site visits.

Our draft route alignment explained

As in our previous consultation, we have split the draft preferred route alignment into three sections for ease of reference.

In the following pages there is more information on each section and what has influenced our decisions to date.

A more detailed map giving indicative positions of the wood poles is available at www.rhiwlasGEN.wales

1

Cefn Coch (Llyn Lort Energy Park) – Carno – Trefeglwys

2

Trefeglwys -Llanidloes – Llangurig (Rhiwlas Energy Park)

3

Rhiwlas Energy Park
– Banc Du Energy Park

Section 1

Cefn Coch (Llyn Lort Energy Park) – Carno – Trefeglwys

As the route leaves the Bryngwyn substation location, it previously headed towards the Y Capel Stone Circle and passed through the site of the proposed Esgair Cwmowen Wind Farm. A decision has been taken to avoid the boundary of the wind farm as far as possible, so the revised route now deviates outside of the previous corridor to the east and south to avoid the wind farm and more closely follow the River Rhiw at the base of the Esgair Cwmowen. From there, it rejoins the corridor to the southeast of the stone circle.

There were also some specific change requests relating to the ecological value around the existing Scottish Power Energy Networks (SPEN) 132kV line that heads down to the A470. In response to this request, we have avoided vegetation clearance as far as possible, and sited wood poles in field margins. The route now also hugs the western extent of the corridor between Maesypandy and the A470 at Oerffrwd. This is driven by needing to locate the most practical and least impacting crossing point of the road and mainline railway. It also avoids the more sensitive vegetation to the north of the Scottish Power Energy Networks (SPEN) route and maintains appropriate separation from the SPEN route itself.

Section 3

Rhiwlas Energy Park - Banc Du Energy Park

This section remains largely unchanged and limited feedback was received as part of the previous consultation on the preferred corridor in this area. The proposed underground cable route follows the access track that was established for the construction of the Bryn Blaen Wind Farm, which heads northeast from the A470 near the Rhiwlas substation and following the track up to Bryn Blaen-y-Glyn. It crosses the minor road between Llangurig and Llanidloes in the centre of the preferred corridor, where it continues to follow the access tracks past a few of the Bryn Blaen turbines.

Section 2

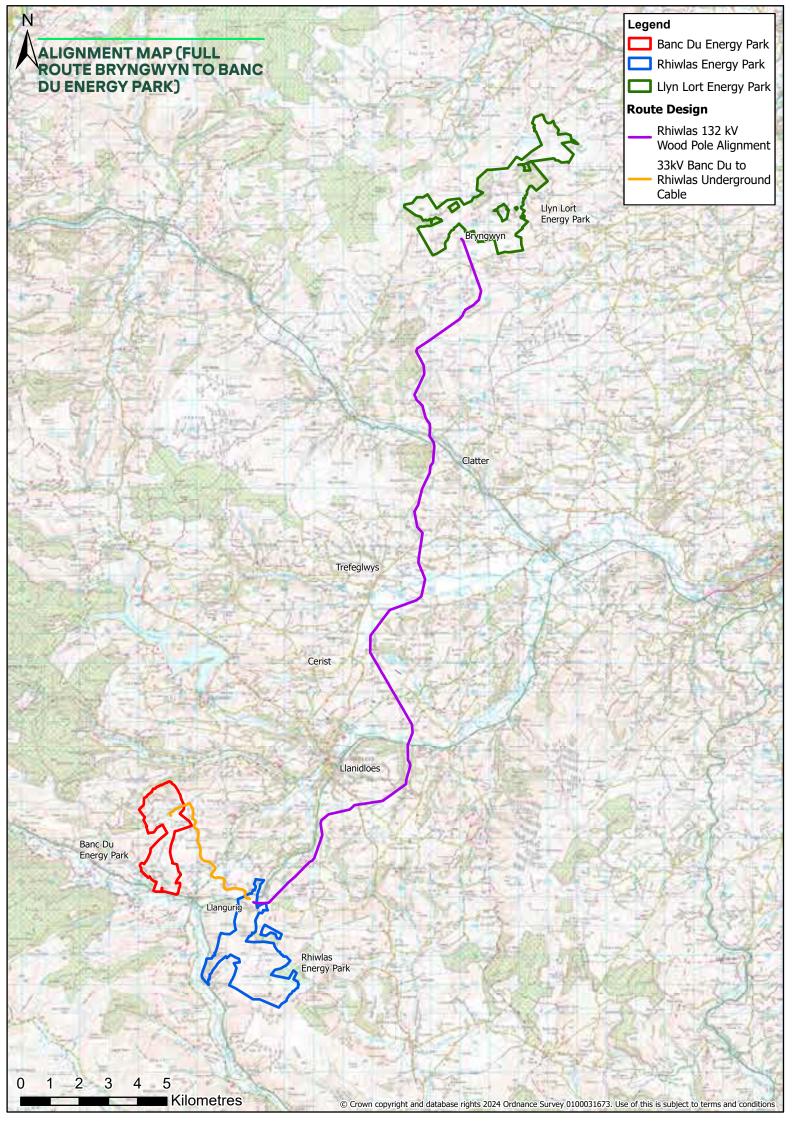
Trefeglwys – Llanidloes – Llangurig (Rhiwlas Energy Park)

Consultation feedback sought to minimise the impacts on Trefeglwys village and the overall village itself. The route has been revised eastwards from the crossing of the B4569 towards the bottom of the valley and the Afon Cerist.

The route follows the corridor tightly to the east as it heads up past Llyn Ebyr to follow the contours and use the topography of the area to maximum screening effect. There is also a 132kV line within the centre of this corridor and the route has been designed to ensure it is an appropriate distance away from that.

Between the foot of the Brynposteg Hill and the A470, the route now deviates slightly outside of the original corridor and is closer to the A470. This was because further environmental studies have identified this area had suffered landslips in the past, which made it highly unsuitable for wood poles. Feedback also suggested the route should follow the hill ward side of the old railway to the east of the River Dulas and some concerns were raised about impacts on properties and businesses here. Due to these two factors, the route has been aligned to cross the River Dulas closer to the A470 and nearer to the disused quarry in a more direct alignment.

The route deviates outside of the preferred corridor to efficiently connect to the Banc Du substation and avoid overlapping with the network of underground cables connecting the Bryn Blaen turbines to their substation. Where the cable route leaves the preferred corridor, it continues to follow the access track before picking up the alignment of a bridleway northward and then south-westerly to the Banc Du substation.

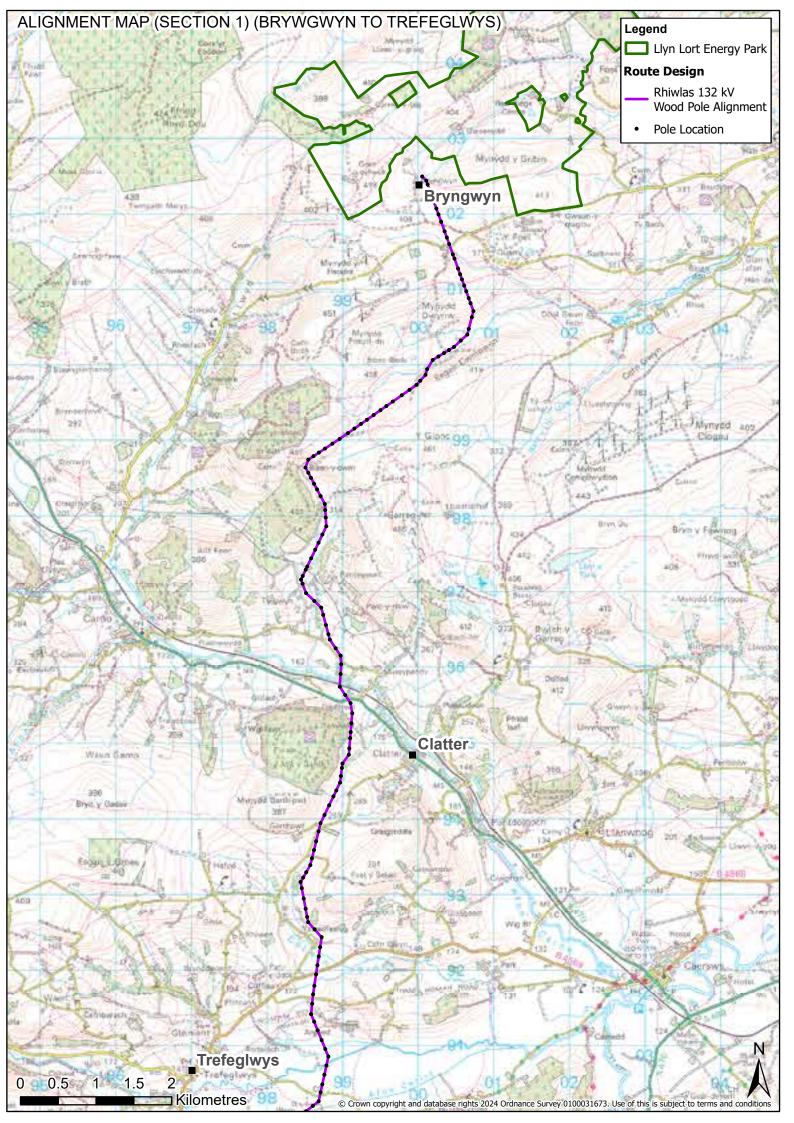


4.1 Section 1 Cefn Coch (Llyn Lort Energy Park) – Carno – Trefeglwys

The new proposed route alignment deviates from the corridor initially from Bryngwyn towards the Y Capel stone circle. From there, it broadly follows the centre of the corridor towards Blaen-y-Cwm holiday let where it hugs the western extent of the corridor due to the steepness of the terrain in Cwm Cra as it drops down towards the A470.

The route follows the contours to the east and down towards the minor road between Oerffrwd and Carno. The route follows the western extent of the corridor here to avoid vegetation clearance and ecological receptors as well as maintaining appropriate separations from the Scottish Power Energy Networks 132kV line in this location. The route at the western extent of the corridor also reflects the need to optimise the alignment for the most appropriate crossing of the rail line and the A470 which is quite constrained.

From the A470 crossing, the route follows the contours at the base of the Allt y Genlli plantation woodland to the west of Clatter and between the steep hillsides (Mynydd Garth-pwt and Foel y Belan) as it heads south. It deviates slightly to the east near Bryn-Wgan and Ystradfaeolog and around the base of Foel y Belan and heads south towards the B4569 between Trefeglyws and Caersws where this section ends



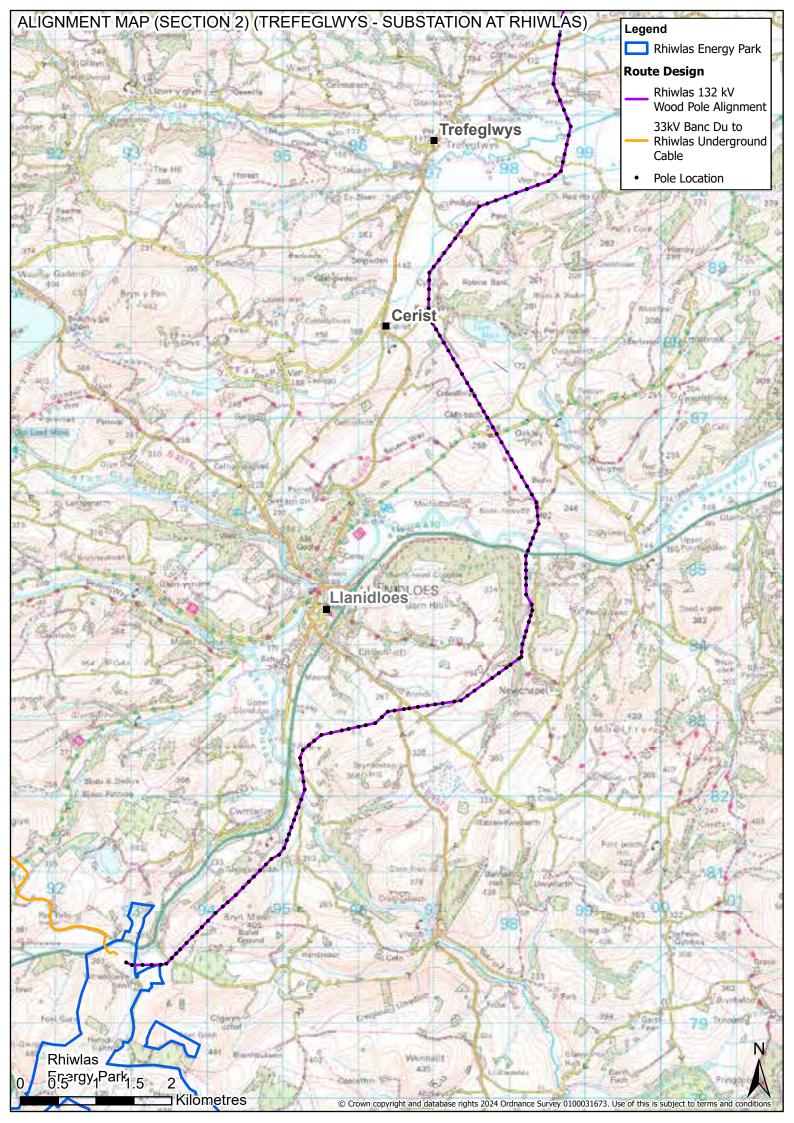
4.2 Section 2 Trefeglwys – Llanidloes – Llangurig (Rhiwlas Energy Park)

The route alignment seeks to minimise impacts on Trefeglwys village and the overall valley itself by hugging the eastern extent of the corridor from the crossing of B4569 and then the Afon Trannon heading across the valley floor to the Afon Ceris at the base of Pen-y-coed. By following the base of the hillside at the southern extent of the Trefeglyws valley, we have sought to minimise the visual impact from Trefeglwys village, and the terrain will act as a backcloth from the village. It follows the edge of the hillside all along the valley towards Cerist so as to minimise interaction with an existing 132kV line that is in the centre of the valley and the previous corridor east of Humphrey's wood and Pwllglas.

From Cerist, the route heads southeast up towards Oakley Park within the centre of the previous corridor and to the south of Llyn Ebyr. From the top of the hill at Oakley Park as the route heads down through largely open fields, the alignment here has now been changed to avoid as far as possible effects on residential properties around Pentre. The route then heads down towards the crossing point of the River Severn and the A470 at the northeastern edge of Gorn Hill. The alignment will avoid crossing the land associated with the Hafren Dyfrdwy (Severn Dee) sewage treatment works and will be between the treatment works and the junction on the minor road towards Newchapel to the east.

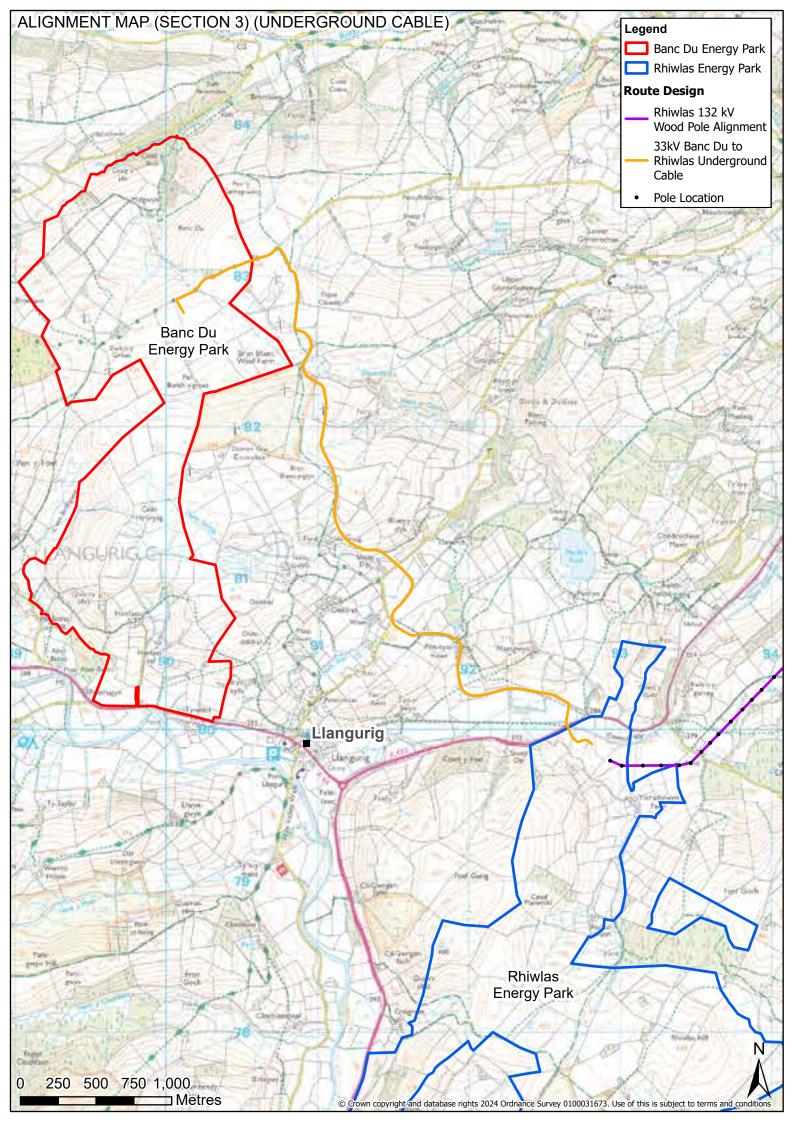
The alignment follows up the valley between the Gorn Hill plantations and Coed Clydfannau, heading south towards Vaynor and Newchapel. The alignment passes through pockets of woodland and then crosses the extremely steep narrow valley of Nant y Bradnant approximately 600m to the northwest of Newchapel Baptist church. The alignment then heads in a southwesterly direction through open fields to where it crosses the B4518 at Bryndu, approximately 1.5km southeast of Llanidloes.

The alignment follows the contours around Brynposteg hill towards the A470, then crosses the densely vegetated River Dulas near the former quarry between Cwmbelan and Tynycoed. From there it follows through open fields and scattered woodland and heading up towards Bryn Mawr. From the elevated ridge of Bryn Mawr, the alignment continues to head southwest down towards the Rhiwlas substation near the A470 and to the west of Nant Gwynwydd.



4.3 Section 3 Rhiwlas Energy Park – Banc Du Energy Park

This section of the alignment remains unchanged from the original proposed route corridor. As set out in the previous section, the underground cable route within the verge of the access track to the Bryn Blaen wind farm seeks to maximise construction efficiency and minimise additional undisturbed land being affected. Where the alignment deviates outside of the preferred corridor, this is due to the need to avoid several technically challenging crossings of buried cable assets associated with the wind farm. Although the route follows public rights of way for some 1.5km, the installation will be progressed in sections and any diversions required would be done in full consultation with Powys County Council.



4.4 **Switching station**

The proposed switching station, located near Cefn Coch, Llanfair Caereinion will be similar in appearance to an electrical substation, such as the existing Builth Wells substation pictured shown here.

The proposed switching station will also be a connection point for the Vyrnwy Frankton grid connection project

The plans for the switching station are being developed and will be included in the DCO application for the Vyrnwy Frankton grid connection project.



Find out more

To find out more about the switching station near Cefn Coch, visit: www. greengenvyrnwyfrankton.com



How underground cables are installed

The underground cable for this project will be connected between the Rhiwlas and Banc Du Energy Parks.

Underground cables can be installed using multiple techniques, typically digging, ploughing or directional drilling of trenches in which the cables can be laid.

Before work starts, the 'working width' of the area is fenced off to secure the site and protect livestock. A temporary haul road is created for construction vehicles, vegetation is removed (only as required), topsoil is excavated and stored for re-use following construction, and appropriate drainage and temporary environmental protection measures are put in place.

Trenches can vary in width depending on ground conditions, the number of cables to be installed and their voltage, which determines how far apart the cables must be spaced. Underground cables are thicker than overhead conductors because they require insulation and shielding. A trench for a single-circuit electricity line of three cables and one communication cable can comfortably fit within a single lane of a road.

Cables are delivered to site on drums and are then winched into place. Joint bays (usually underground concrete chambers) are required at each point where cable lengths need to be joined together.

Once cable installation is complete, the trenches are backfilled (using the original topsoil wherever possible), all temporary haul roads, surfacing and fencing are removed, and the land is reinstated to its original condition.

Cable ploughing

Cable ploughing may be able to be used for underground construction and Green GEN Cymru is talking to contractors to understand the viability, impacts and costs of this approach.



HOW UNDERGROUND CABLES ARE INSTALLED

5.1

Working with landowners and occupiers

Green GEN Cymru is committed to building strong working relationships with landowners and occupiers as we develop our proposals for Rhiwlas GEN. We will work with you as we develop our plans, and we encourage you and/or your representatives to contact us if you have any questions.

When planning and developing our projects, we need to carry out surveys to help inform both the scheme's design and the Environmental Impact Assessment (EIA).

We need to survey a wide area to ensure we understand the local environment, how it might be affected by our work and any mitigation required. The results of the surveys will help inform decisions on the routeing and siting of the Rhiwlas GEN project. Some surveys, such as those of birds or bats, need to be carried out at specific times of the year to provide information on nesting or habitat usage.

We will work closely with landowners and occupiers to agree access so that surveys are carried out, wherever possible, at appropriate times and with as little inconvenience as possible. Allowing Green GEN Cymru access to land for surveys does not stop landowners taking part in the consultation and commenting about the Rhiwlas GEN project at any time. Our land agents, WSP, will continue to seek voluntary agreements with landowners and occupiers for access, but where that cannot be achieved, we may need to seek relevant legal powers.



Feedback

We are asking for feedback on:

- Our preferred route, and draft alignment including indicative wood pole positions for the overhead line part of the connection
- Our preferred route for the underground section of the connection
- Anything else you feel we should consider when developing our proposal for the project
- Anything else you feel has not been considered in our work to date

This Stage Two consultation is running from Tuesday 5 November to Tuesday 17 December 2024.



Find out more at our community events

How to provide your feedback

You can find more information about the consultation and provide your feedback on our website www.rhiwlasGEN.wales

You can also get in touch with us in the following ways:



Sending an email to: info@rhiwlasGEN.wales



In writing using: FREEPOST TC CONSULTATION (no further address or stamp required)

Please submit your feedback to us by 23:59 on Tuesday 17 December 2024.

Any feedback received after this date may not be considered by our team.

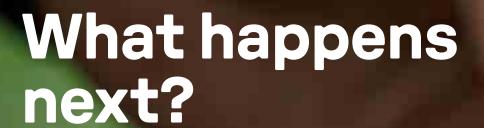
All the feedback we receive by the deadline will be reviewed and carefully considered as we develop our plans.

You can find out more about the project and meet the team at our information events, where you will also be able to see a computer visualisation of the draft route alignment.

Please give us your views, even if you have already commented during the first round of consultation held in late 2023/early 2024.

| Location | Date | Time |
|--|--------------------------|-----------|
| Cefn Coch Inn Welshpool, SY21 OAE | Thursday 14 November | 2pm – 7pm |
| Trefeglwys Memorial Hall Caersws, Powys, SY17 5QX | Tuesday 19 November | 2pm – 7pm |
| Llangurig Community Centre Llangurig, Llandiloes, SY8 6SG | Wednesday 20 November | 2pm – 7pm |



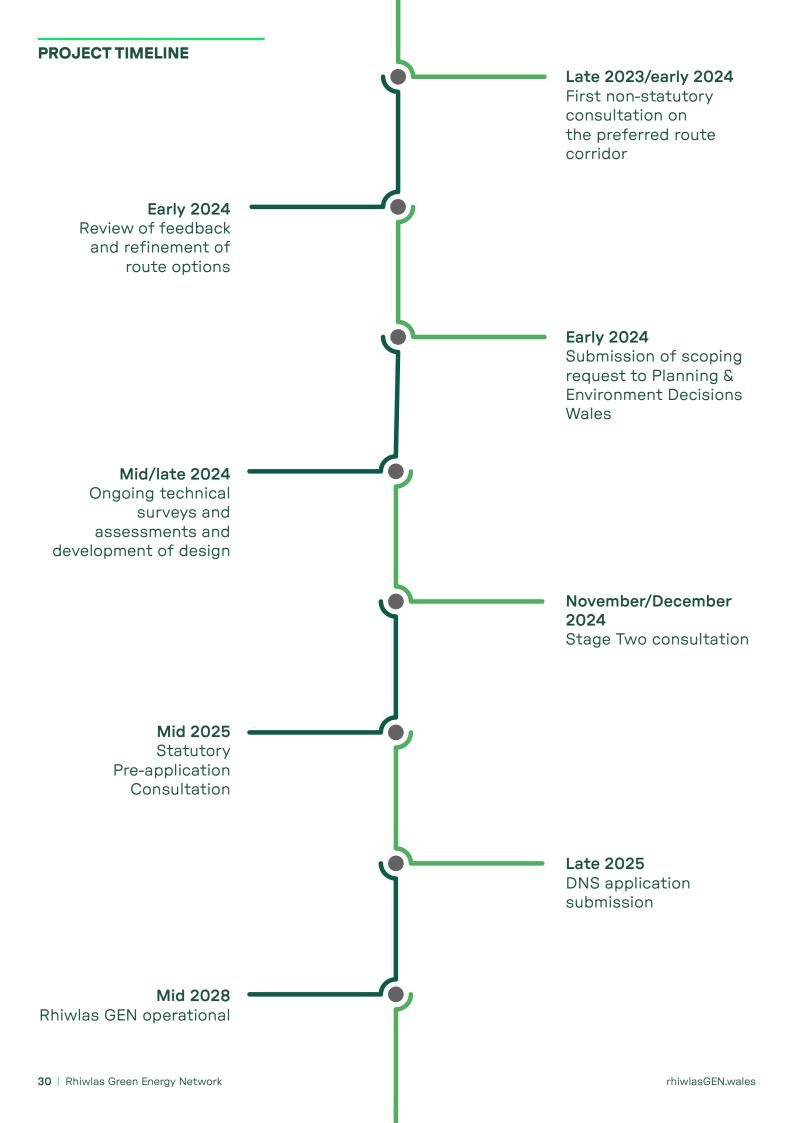


New electricity transmission lines of 132kV that are associated with a devolved Welsh generating station are classed as a Development of National Significance (DNS) in Wales. This means developers must apply for planning consent to Planning and Environment Decisions Wales (PEDW), and final decisions are made by the Welsh Ministers.

Feedback from our public consultation and from local authorities, community councils and national organisations will help us develop a final design for the project. We will also carry out further technical assessments and surveys to inform our Environmental Impact Assessment (EIA).

The EIA will then be reported in the Environmental Statement, which sets out the potential impacts of the project and any proposed mitigations.

Before we submit a consent application to Welsh Ministers, there will be a statutory Pre-Application Consultation (PAC) period, where people will be able to review and comment on the detailed designs and the draft Environmental Statement.









www.rhiwlasgen.wales



Sending an email to: info@rhiwlasgen.wales



Sending written feedback to us: FREEPOST TC CONSULTATION (no further address or stamp required)



Call us free of charge on 0800 699 0081 (Monday - Friday, 9am-5pm, excluding bank holidays)

