

Vyrnwy Frankton Connection
FREEPOST
Green GEN
Cymru
V2F

Your Ref: -----
Our Ref: SE/V-FC10.23

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Cc: [REDACTED] - Welsh Government

18 October 2023

PHASE ONE CONSULTATION ON VYRNWY – FRANKTON CONNECTION

Dear Sir/Madam,

Thank you for the opportunity to comment on the information made available as part of the recent Phase One Consultation. We have noted the proposed connection design comprising a new collector substation and a new 132kV double circuit 50km overhead line from this substation to a new 132/400kV substation in England to connect into the existing National Grid Electricity Transmission (NGET) network. The purpose for this connection is to export generation from Green Gen Cymru's related company Bute Energy's Mid Wales renewable energy parks. We have reviewed the project consultation documents, in particular the Grid Connection Strategy document and Figures 1 to 3 illustrating the proposed connection.

This letter provides comments from National Grid Electricity Transmission (NGET), and SP Energy Networks (SPEN). NGET own and manage the electricity transmission network in England and Wales. SPEN operate and manage the electricity network up to 132kV in this area on behalf of the licenced network owner, SP Manweb (SPM). NGET and SPEN must ensure the avoidance of any adverse impact on our assets or on other customers as we develop networks capable of meeting the increase in demand and generation from a decarbonised electrified economy. The next decade will be crucial in preparing the grid for these changes - developing the right holistic solutions for Wales will be pivotal to enabling local communities to decarbonise. This is why we are very interested in commenting on proposals which may affect the existing network and our ability to develop a network to meet future needs in Wales.

NGET/SPEN have four main concerns in respect of the proposed Green Gen Cymru connection. These are provided in more detailed below, in summary:

1. The proposal impacts on current connections projects and customer interests.
By occupying the grid corridor for the required 400kV circuit proposed by NGET, the Green Gen Cymru proposals would conflict with the proposals put forward by SPEN and NGET for existing contracted customers. The SPEN/NGET project is well advanced and is listed in the National Infrastructure Planning projects list.
2. The proposed connection does not facilitate a coordinated system
NGET and SPEN are concerned with the Green Gen Cymru proposed connection due to the limited consideration of the wider strategic connection options currently being discussed/developed. The proposed SPEN/NGET project could form an integral part of a wider coordinated North-South link. This would bring much greater capacity into

the area and facilitate the longer-term Distribution and Transmission network requirements across this area required for local communities to decarbonise. The proposed Green Gen Cymru 132kV connection sterilises a key planning corridor, significantly impacting the routes available to SPEN/NGET for strategic options to facilitate capacity in Wales for decarbonisation. This risks an uncoordinated incremental approach which may lead to inefficient infrastructure deployment, less overall capacity for customers, and may risk the deliverability of long-term solutions. Significant delays to long term solutions in this area could introduce delays to domestic/business customers and local communities in their decarbonisation.

3. Impacts on the existing SPEN network

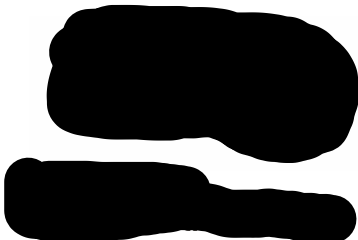
SPEN requests that Green Gen Cymru prepare overlay plans showing all affected parts of the SP Manweb network to ensure these impacts are taken into account in subsequent assessments.

4. The needs case has not yet been proven


The needs case for the proposed connection is dependent on the Llyn Lort and other Bute Energy Wind Farms being granted planning permission. We understand that this has not yet happened.

We would welcome further engagement with Green Gen Cymru to discuss our concerns and seek a way forward to efficiently provide the capacity you require. We will continue to review the application and may wish to raise further matters in due course.

Yours faithfully,



National Grid Electricity Transmission



SP Energy Networks

1 Current Mid Wales connections projects and customer interests

The proposals conflict with SPEN/NGET's proposed solution, as set out in the SP Manweb Mid Wales Connections Project. The SPEN/NGET project proposes three 132kV connections from several wind farms into a new 132kV/400kV grid hub site near Cefn Coch. The wind farms are proposed by several renewable energy developers who have agreed terms with SPEN for the 132kV connections. This project has advanced to the pre-application stage of EIA Scoping and is listed in the National Infrastructure Planning projects list.

Two of the three proposed 132kV connections are routed through the Bute Energy Llyn Lort Wind Farm site.

The proposed wind farms remain contracted to SPEN and, subject to ongoing key stakeholder discussions, are currently suspended pending the ongoing review of transmission options.

The proposed 132kV/400kV grid hub is promoted by NGET (previously National Grid) and is located at a site known as Bryngwyn which lies just outside of the south east boundary of the Llyn Lort Wind Farm.

The proposed 132kV/400kV grid hub would collect the generation from the wind farms via the 132kV connections and transmit this renewable energy along a new 400kV transmission connection into the existing transmission network in Shropshire, which is also being promoted by NGET. This project has also advanced to the pre-application stage of EIA Scoping and listed in the National Infrastructure Planning projects list.

The proposed routing of Green Gen Cymru's connection occupies the corridor identified by SPEN and NGET. This corridor was identified following extensive work in considering routing options having regard to environmental constraints and extended community engagement.

By occupying the grid corridor for the required 400kV proposed by NGET the Green Gen Cymru proposals would conflict with the proposals put forward by SPEN and NGET.

The contracted renewable energy developers, who are SPEN's customers, would be disadvantaged as a result of the Green Gen Cymru's proposals.

The Green Gen Cymru's Grid Strategy document notes your proposed connection is needed to connect the five contracted Bute Energy renewable energy parks, which total 685MW.

NGET/SPEN are aware that there are a number of other renewable energy developers who are not yet contracted but have interests in bringing forward additional renewable energy proposals and would be prevented from doing so as a result of the Green Gen Cymru's proposals. The proposed Green Gen Cymru proposals would be unable to cater for the overall level of capacity required in Mid Wales.

2 The proposed connection does not facilitate a coordinated system

Energy Context in Mid Wales.

At distribution voltages there is currently limited existing electricity infrastructure in Mid Wales due to the electricity network being originally designed to supply low levels of local demand with limited distributed generation. There are no transmission voltage assets in Mid Wales.

In the coming decades, the levels of both generation and demand are expected to significantly increase in this area due to renewable energy projects, and as communities decarbonise.

A collaborative Whole System planning approach is required to identify efficient coordinated long-term network solutions to upgrade the Mid Wales networks to meet these demand and generation requirements.

NGET and SPEN are working with National Grid Electricity Distribution (NGED), National Grid Electricity System Operator (NGESO) and Welsh Government to collaboratively establish efficient, coordinated, and enduring network solutions.

The NG ESO Holistic Network Design includes the 'PSNC' requirement for a new transmission link between North and South Wales. A 'key insight' in the Welsh Government's *'Future Energy Grids for Wales'* report recognises this critical infrastructure project as being required for GB, including that *'the North-South link has the potential to support meeting the increasing electrification of energy demand, and decarbonisation of energy supply, in Mid Wales. This could reduce emissions and support the transition to a low-carbon energy system.'*

A wide range of options are being assessed, and these discussions and assessments are ongoing. They recognise that solutions at distribution voltages, including 132kV, are unable to cater for long term requirements in this area.

A 400kV option is required

A 400kV connection option was the preferred option identified in a previous review of connection options. This review considered alternative voltage options and identified that for the anticipated level of renewable generation, a transmission solution was required. Other options included multiple 132kV wood pole overhead line routes and long lengths of underground cabling which were ruled out on the grounds of increased environmental impacts and costs. A 132kV double circuit tower option was discounted due to the design not having sufficient capacity. To date the optimum holistic design for larger scale renewable energy generation schemes in this area remains the transmission design option as originally published by NGET.

The proposed connection is not coordinated with wider customer needs

NGET/SPEN are concerned with the Green Gen Cymru proposed connection due to the limited consideration of the wider strategic connection options currently being discussed/developed. The proposed development would, in effect, promote a 132kV solution ahead of this ongoing work, and may risk the deliverability of holistic long-term solutions. As such the Green Gen Cymru proposals are premature in terms of there potentially being a more comprehensive design.

The Green Gen Cymru's proposed 132kV connection sterilises a key planning corridor, significantly impacting the routes available to SPEN/NGET for strategic options to facilitate capacity in Wales for decarbonisation. At 132kV, the proposal can only facilitate collections of individual projects, it cannot be integrated in parallel with the Main Interconnected Transmission System to facilitate an increase in transmission transfer capacity. This risks an uncoordinated incremental approach which may lead to inefficient infrastructure deployment and may risk the deliverability of long-term solutions. Significant delays to long term solutions in this area could introduce delays to domestic/business customers and local communities in their decarbonisation.

In comparison, the SPEN/NGET proposed project, including a 400kV link along this same planning corridor, could form an integral part of a wider coordinated North-South link. This would bring much greater capacity into the area and could potentially meet the need for transmission transfer capacity whilst meeting the longer-term requirements of both SPEN and NGET distribution networks to facilitate local communities to decarbonise.

Green Gen Cymru's narrowly focussed design does not represent a coordinated approach that is required for licenced network operators. It is noted that Green Gen Cymru has applied for a distribution network licence and in the event of this being awarded, Green Gen Cymru will be obligated to provide a coordinated system, which is not the case with the current design.

3 Impacts on the existing SPEN network

Overlay plans

The proposed Green Gen Cymru connection may affect SP Manweb Distribution network assets.

The affected electricity infrastructure may include overhead lines and underground cables at 132kV, 33kV, and 11kV as well as multiple lower voltage networks. Protecting all this network from adverse impacts is critical in ensuring the electricity network is capable of meeting current and future demands placed on it and that other customers are not adversely impacted.

It is noted that the Green Gen Cymru plans published for the consultation omits all of the 11kV and lower voltages network which extend throughout the preferred corridor and, in some locations, omits sections of the 33kV and 132kV network.

At this stage, SPEN requests that Green Gen Cymru prepare overlay plans showing all affected SPM network to ensure this is taken into account in subsequent assessments of the likely impact. SPEN would like to see the crossover points identified as soon as possible in order to provide further comments as to whether the affected network would need to be diverted or not.

Construction access and mitigation proposals would also need to take account of these SPM assets and the required operational requirements such as access. SPEN has 24/7 access rights to the affected network and this cannot be compromised.

Impact on distribution network

It is critical to identify and protect the affected network as it is this network that will be relied upon to distribute the generation into local homes and businesses. Any adverse impacts on the SPM network that need to be resolved by SPEN would impact on the benefits of delivering this proposed scheme. Green Gen Cymru should discuss the above with SPEN as soon as possible.

The SPM assets also benefit from there being extensive land rights in place and for the affected network these rights must be protected.

4 The needs case has not yet been proven

In addition to the above concerns, the needs case for the Green Gen Cymru proposal has not yet been proven.

NGET and SPEN are aware of proposals for the Llyn Lort Wind Farm which is at the early stages of EIA Scoping with an application not coming forward until later in 2024. There is no certainty that this application will be granted planning permission. Noting the proposed Wind Farm would conflict with SPEN's own proposed connection corridors (see below), SPEN has submitted comments on this application (PEDW Ref: CAS-02362-P3S4H4).

Similarly, the remaining four energy parks are less progressed in the planning system than the Llyn Lort scheme.