Written evidence submitted by National Grid (REW0035)

National Grid sits at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day. We understand our responsibilities to the environment and future generations and we are working to develop solutions to make the transition to a clean economy, in which nobody is left behind. Furthermore, as we look ahead towards recovering from the COVID-19 pandemic, it is important that we seize the opportunity to be world leading in decarbonising our economy as a driver of economic growth. We are delighted to respond to the Welsh Affairs Committee's call for evidence and would welcome further engagement.

UK and Welsh governments have shown a clear ambition to deploy technologies such as renewables which will be key to delivering net zero, however now is the time for collaboration across governments and industry to turn ambition into action through delivery. National Grid is committed to designing infrastructure solutions which can both enable the development of renewables at scale whilst also look to minimising the impact of our infrastructure on local communities and delivering value for consumers.

Executive Summary

- National Grid is committed to working with the UK Government, Welsh Government and other key stakeholders to develop strategic and coordinated infrastructure solutions for connecting renewables that minimises the impact on and benefits the environment, local communities and consumers.
- Having articulated a clear vision for a net zero economy, it is critical that the UK and Welsh Government and industry now work together to translate this ambition into delivery at pace.
- The growth of renewables, required to achieve net zero, is often sited in remote areas where there is a lack of existing electricity grid infrastructure. Successfully delivering the scale and pace of infrastructure required will necessitate a fundamental shift in the way we think, plan and deliver infrastructure across the UK.
- Given the scale and pace of infrastructure required to deliver net zero, we would encourage the Welsh Government to lead in developing a strategic approach to energy infrastructure, supported by key industry and NGO stakeholders. This group should look to develop holistic and coordinated net zero infrastructure solutions across Wales, which both mitigate the impact to local communities and deliver broader net zero benefits.
- Continuing to invest in the clean energy transition post-pandemic presents an opportunity to reset the economy via a green recovery, delivering green-collar jobs whilst tackling regional inequalities. The delivery of net zero energy infrastructure will be a central component of this, providing an opportunity to unlock thousands of skilled and meaningful jobs in the process. Our *Building the Net Zero Energy Workforce* report released at the start of 2020 found that 400,000 roles will need to be filled within the energy sector by 2050 in order to reach net zero, with ~25,000 of those needed within Wales

Understanding National Grid

This consultation response represents the views of National Grid Electricity Transmission (NGET). NGET owns the high voltage electricity transmission network in England and Wales. The network covers some 7,212km of overhead line and 2,239km of underground cable. We connect sources of electricity generation to the network and transport it onwards to the distribution system, so electricity can reach homes and businesses. NGET is committed to running a safe and reliable network at the best cost to consumers whilst enabling the Britain to meet its net zero carbon emissions target by 2050.

Following the legal separation of the Electricity System Operator (ESO) from NGET, its views are not represented in this submission and representatives from NGET cannot answer questions on the ESO's behalf. The lower voltage distribution networks in Wales are owned and operated by Western Power Distribution (WPD) and Scottish Power Energy Networks (SPEN).

Enabling net zero

As the backbone of the UK's energy system, we are uniquely placed to help deliver the UK's ambitions to achieve net zero and safeguard the wellbeing of future generations.

The electricity transmission grid was developed in the 1960s to carry the electricity generated at fossil fuel power stations, to the cities and towns that needed it. The power stations were usually located close to large populations or coal mining areas with the transmission grid carrying the energy around the country providing safe and reliable electricity to all. In comparison, the increase of renewable energy generation, such as offshore wind, onshore wind and

solar – required to achieve net zero, is often sited in remote areas where there is a lack of existing grid infrastructure. Successfully delivering the scale and pace of infrastructure required for net zero will necessitate a fundamental shift in the way we think, plan and deliver infrastructure across the UK - in order to ensure we can bring the communities which often house the infrastructure with us.

How we use electricity is also changing and becoming more important to our everyday lives and the future prosperity of our communities. We are increasingly using electricity to heat our homes and power our vehicles. Energy intensive industries, such as data centres, are growing and are wanting to be powered by green energy. Having a robust electricity network, that carries renewable energy, will become more important to the way we want to live our lives. Indeed, the Committee on Climate Change (CCC) estimates that electricity demand will double by 2050, the UK will need robust and flexible electricity networks to meet this demand. For example, distribution and transmission electricity networks will play an essential role in supporting the charging infrastructure required to enable the rollout of electric vehicles (EVs) at scale. EVs will be charged in many different locations: at home, at work or at ultra-rapid EV charge points along the strategic road network, all of which rely on a fit-for-purpose electricity infrastructure.

How should the UK and Welsh Governments work together to support the development of renewable energy projects in Wales?

The UK and Welsh Governments have set ambitious targets for developing renewable energy at scale over the next decade. For example, as part of his 10 Point Plan on 18th November, the Prime Minister targeted 40GW of offshore wind by 2030, a fourfold increase on today's capacity. The majority of offshore wind projects are expected to be developed off the east coast of England and Scotland, however significant volumes are also expected to be developed along the Welsh coastline. The Welsh Government also has ambitions for 70 percent of its energy to come from renewable sources by 2030, and via its recently drafted National Development Framework (NDF), now renamed Future Wales – the National Plan, identified areas for renewables to be developed at scale. Having articulated a clear vision for a net zero economy, it is critical that UK Government, Welsh Government and business now work together to translate ambition into delivery at pace.

When considering the rollout of renewables at scale in Wales and particularly Mid-Wales, a strategic and coordinated infrastructure approach will be necessary to ensure the most cost efficient and least impactful infrastructure solutions are delivered. As highlighted by Annex 1, there is currently no National Grid electricity transmission infrastructure within Mid-Wales. Any new energy generation in this area would need to be used locally, stored or transmitted – with the best infrastructure solution determined by the scale of new generation developed.

For development in Mid Wales, there are clear lessons from the development of offshore wind along the east coast of England, where the current regime favours uncoordinated infrastructure delivery via immediate radial connection for each windfarm rather a more offshore coordinated solution to reduce the coastal impact. This has led to local communities raising concerns with regards the scale of impact caused by infrastructure required to connect the UK Government's target of 40GW of offshore wind by 2030. In response to these concerns, the Department for Business Energy and Industry Strategy (BEIS) launched the Offshore Transmission Network Review on 15th July 2020, which will seek to explore how onshore and offshore networks are designed and delivered in a way that is consistent with the net zero target.

In Wales, the visual impact of wind turbines and pylons have historically been opposed by local communities and their representatives. Therefore, in our response to the draft NDF, we encouraged the Welsh Government to plan positively for grid infrastructure in the same way as they have for wind turbines and to include policies that help to co-ordinate strategic infrastructure. We advised that the NDF should identify the decisions which need to be made and provide a platform for a shared understanding across industry, Government and the public as to why significant investment in energy infrastructure is required, highlighting by the benefits and balance needed to gain a safe, secure, affordable and sustainable energy future.

In an effort to mitigate the visual impact of electricity network infrastructure, the Welsh Government has been keen to pursue a policy of undergrounding electricity grid infrastructure as opposed to building overhead electricity pylons. The framework on undergrounding infrastructure is set by the UK Government, through the Electricity Act 1989 and is reflected in the National Policy Statements (NPS). It is important to note however that funding for these works will only be approved by the energy regulator, Ofgem, if network companies are able to effectively demonstrate that proposals are cost efficient, in comparison to direct alternatives – as well as aligned to the terms set out within the NPS.

We have been encouraging the UK Government to review the NPS to ensure solutions are developed which mitigate the impact of infrastructure on the environment and local communities, whilst continuing to deliver value for consumers. We therefore welcome the commitment to review and update the NPS as outlined in the Energy White Paper and will be feeding our ideas into this review. Beyond examining the rules that dictate whether projects should pursue undergrounding or overhead lines, we believe a revised suite of NPS could encourage partnerships for the

development of natural screening to enhance landscapes and support wider government targets on reforestation. Additionally, changes could ensure infrastructure brings benefits by supporting local communities in accelerating their own decarbonisation ambitions, through enabling decarbonisation of heat and transport.

Given the scale and pace of infrastructure required to deliver net zero, we would encourage the Welsh Government to lead in developing a strategic approach to energy infrastructure, supported by key industry and NGO stakeholders. This group should look to develop holistic and coordinated net zero infrastructure solutions across Wales, which both mitigate the impact to local communities and deliver broader net zero benefits.

What implications is COP26 expected to have on Wales?

COP26 is a huge opportunity for the UK as a whole to show leadership and drive ambition and action to tackle climate change, in the UK and globally. At National Grid, we are delighted to be one of the Principal Partners of this important global climate event.

Governments from all around the world will be reporting on their countries' progress and agreeing to new actions to cut carbon emissions. As the fastest decarbonising economy in the G20, we think the UK has a great story to tell, a story that can help encourage other countries to take their own steps to decarbonise, Wales is an integral part of that story. Furthermore, COP26 provides an opportunity for countries around the world, such as Wales, to connect through the Marrakech Partnership – which aims to enable collaboration between governments, cities, regions, businesses and investors to strengthen and increase resilience against climate impacts.

What opportunities are there for renewable energy to aid Wales post-COVID-19 economic recovery?

One of the many negative impacts of this pandemic is the huge loss of jobs right across the economy with young people particularly hard hit. Continuing to invest in the clean energy transition post-pandemic presents an opportunity to reset the economy via a green recovery, delivering green-collar jobs whilst tackling regional inequalities and embracing the new opportunities that net zero necessitates. This will drive economic growth in the short-term, whilst establishing the robust foundations upon which the economy can flourish over the longer-term. The delivery of net zero energy infrastructure will be a central component of this, providing an opportunity to unlock hundreds of thousands of skilled and meaningful jobs in the process.

The path to net zero will necessitate the creation of new roles across the energy industry, based around cutting edge skills including carbon capture scientists, clean gas experts, engineers with renewable energy skills, and heat pump and EV charge point installers. Our *Building the Net Zero Energy Workforce* report released at the start of 2020 found that 400,000 roles will need to be filled within the energy sector by 2050 in order to reach net zero, with ~25,000 of those needed within Wales. We will not fill these roles however, and meet our net zero target, unless we can attract those who have, so far, not considered a role within the energy sector. That means attracting diverse talent from across the UK, especially women, those from minority ethnic groups and lower socio-economic backgrounds.

This will require investment in retention and retraining and collaboration between government at all levels, trade unions and business. Industry also has an important role to play in tackling those barriers and perceptions that see many young people opt out of a career in STEM. Last autumn, National Grid Group launched its Responsible Business Charter which includes commitments and ambitions in a range of areas, including commitments to achieve 50% diversity in our Senior Leadership group and in all our new talent programmes by 2025. We will be reporting against all the metrics included in the charter yearly alongside our annual report and accounts via a new responsible business report.

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Annex 1 – National Grid Electricity Transmission network map for Wales