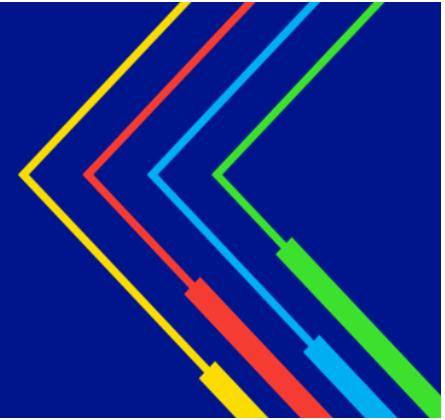


National Grid briefing - Climate Change, Environment and Rural Affairs Committee



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 are working to develop solutions to make the transition to a clean economy, in which nobody is left behind. Furthermore, as we look ahead toward 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 committed to enabling the transition to net zero in the most efficient way and for the benefit of consumers in Wales and the rest of the UK.

Understanding National Grid

This briefing note 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 2,820km 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). We would advise inviting the ESO, WPD and SPEN to the evidence session as no single entity can answer questions on the entirety of the network and for the expertise across all electricity infrastructure businesses operating in Wales to be represented.

Enabling net zero

As the backbone of the UK's energy system, we are uniquely placed to help deliver Welsh Government's ambitions to achieve net zero and safeguard the wellbeing of future generations. However, we need a fundamental shift in the way we think, plan and deliver for the future in order to deliver net zero, grow the economy and ensure no one is left behind.

The electricity transmission 'super 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. The recent increase of renewable energy generation, such as on-shore wind which is often sited in rural areas, means that electricity networks are adapting to connect this new generation and transmitting it to where it is needed. The energy is flowing from different parts of the country and the electricity network needs to adapt to accommodate this change.

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. For example,

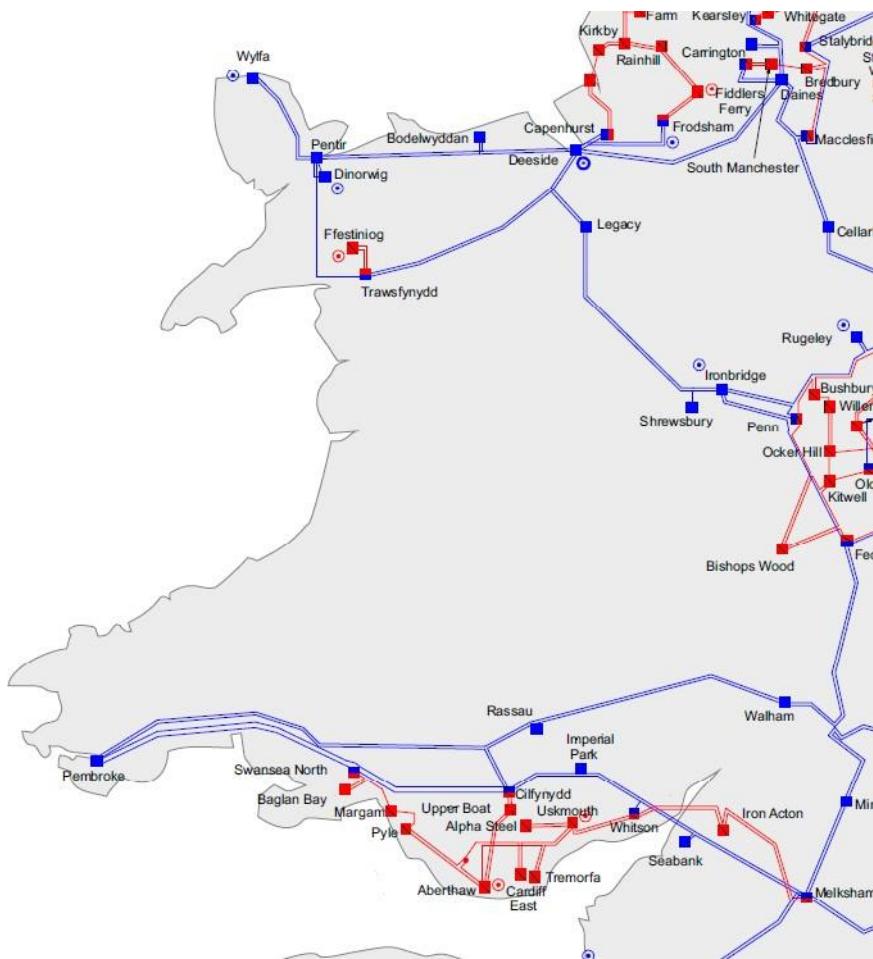
distribution and transmission electricity networks will play an essential role in supporting the charging infrastructure required to enable the rollout of electric vehicles (EVs) at scale. EVs will be charged in many different locations: at home, at work or at ultra-rapid EV charge points along the strategic road network, all of which rely on a fit-for-purpose electricity infrastructure.

Addressing local concerns

Our recent experience in Wales of connecting renewable energy to the transmission network, showed that grid infrastructure is often viewed by the public as highly contentious in planning and environmental terms. The visual impact of wind turbines and pylons have been opposed by communities and their representatives. Therefore, in our response to the draft NDF, we encouraged Welsh Government to plan positively for grid infrastructure in the same way as they have for wind turbines and include policies that help to co-ordinate strategic action. It should also identify the decisions that need to be made, providing a platform for a shared understanding across industry, Government and the public of why significant investment in energy infrastructure is required, and the benefits and balance needed to gain a safe, secure, affordable and sustainable energy future.

Now is the right time for a strategic approach to be developed including relevant stakeholders. NGET is keen to support this but feel it is best lead by Welsh Government. These conversations should seek to agree on the best strategic solutions moving forwards to deliver on Welsh Government's ambitions for renewable generation development, including new grid infrastructure where appropriate, whilst ensuring solutions are coordinate, fair, disruption is minimised and that local communities see benefits for housing the infrastructure.

Figure 1 – NGET network map for Wales



As you can see from Figure 1 There is not currently any National Grid transmission infrastructure within Mid Wales. Any new generation in this area would need to be used locally, stored or transmitted. Best solutions for this would depend on the scale of new generation developed.