



REPORT TO LANDULPH PARISH COUNCIL - WORKING GROUP UPDATE

Please complete and submit this form for Working Group updates.
to be considered by Landulph Parish Council.

TITLE	Landulph Energy Working Group
DATE OF UPDATE	13 th February 2024
ACTIVITIES TO REPORT	<ol style="list-style-type: none"> 1. Working Group Terms of Reference finalised. 2. Meeting of Working Group: Cllrs' Ansell, Gawith, Worth, Cole (Cornwall Council Member and St Enoder Parish Councillor) & Parishioner Gerald Burn on 1st February 2024. <ol style="list-style-type: none"> a. Discussion with Cllr Dick Cole sharing experience of securing community support from energy developers. b. Reviewing latest formal BESS planning application, noting that no regard has been taken to our previous concerns and guidance on site access. 3. Email exchange with Haarith Dhorat (National Grid: Energy Systems Operator (NG ESO) – Network Services Procurement Manager) <ol style="list-style-type: none"> a. NG ESO still not available to join a Parish Council Meeting, which is disappointing. b. Shared document explaining function/role of NG ESO and purpose of Landulph Grid Stability development. 4. Support Transmission Investments Ltd (TIL) request to join the Parish Council Meeting on 19th February in order to present its revised plans for the Landulph Grid Stability development.
COUNCILLORS INVOLVED	Cllr Worth, Cllr Gawith, Cllr Ansell
RECOMMENDATIONS (including any communications)	<ol style="list-style-type: none"> 1. Continue to engage with all developers on the need to coordinate project site access, timing, road safety and movements of primary equipment/plant. 2. Communicate to developers' community support expectations. 3. Circulate NG ESO document.
Date of full Landulph Parish Council	19 th February 2024

Stability pathfinder briefing

Who is the Electricity System Operator?

As the Electricity System Operator (ESO) for Great Britain, our role is to operate Great Britain’s electricity transmission system, whilst building a secure, clean, and fair system for tomorrow. We move electricity around the system to ensure there is enough electricity supply to match demand second by second, 365 days a year.

We work in partnership with governments, the Office of Gas and Electricity Markets (Ofgem), industry and consumers to guide Great Britain on what the energy resources, markets and networks will be required to securely accelerate the transition away from fossil fuels into new energy technologies and economies.

As the ESO, we do not generate or sell electricity, we also do not own or build the infrastructure the electricity travels through. This ensures the ESO is independent of companies with a commercial interest in generating energy or building network infrastructure.

With the passing of the Energy Act 2023, we are transitioning into an independent public corporation in the summer of 2024. We will have new responsibilities for advising government across the whole energy system as it transitions to net zero, from strategic network planning across electricity and gas to new technologies such as hydrogen.

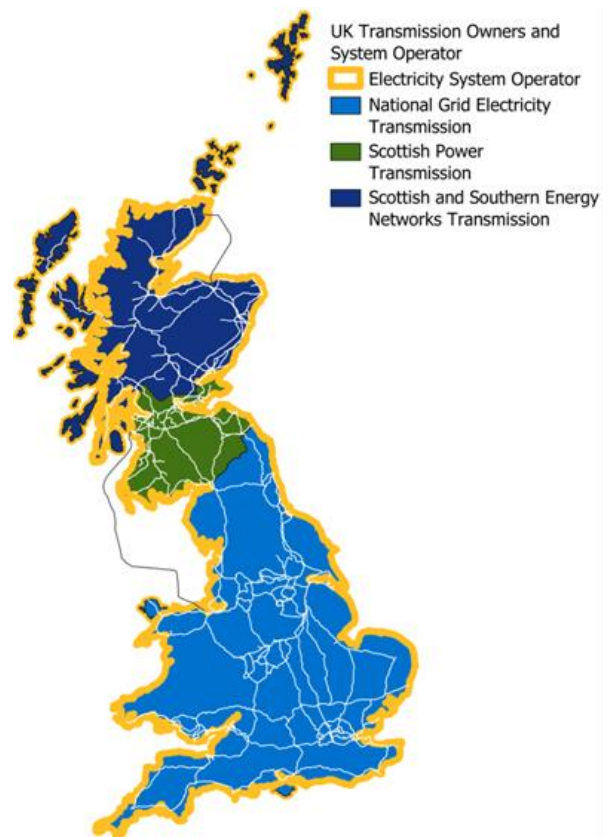
What is the electricity transmission system?

The network spans across Great Britain and comprises a mixture of overhead cables, underground cabling and subsea cables – these assets can operate at a range of voltages such as 400kV, 275kV and 132kV.

These are all linked together via substations across the country to connect generators, interconnectors, large demand (such as transport links & factories), and distribution systems. Distribution networks carry electricity at 132kV and below in England and Wales, and 66kV and below in Scotland.

As the ESO, we are responsible for operating the transmission networks in England, Wales, Scotland and in the surrounding offshore waters, ensuring that electricity is transported from where it is generated to where it is needed reliably, efficiently, and economically.

Great Britain has three onshore Transmission Owners (TOs) that own, maintain and develop their networks. The map above illustrates their boundaries. There are also several



offshore developers that own the assets that connect operational offshore wind farms to the transmission or distribution network.

Ensuring the electricity transmission network is operable

Alongside ensuring that electricity is transported across the country, we are also responsible for ensuring that the electricity network is able to withstand events such as the instant disconnection of a generator. To achieve this, we have to manage a number of technical characteristics that we collectively call stability.

One of these characteristics is [inertia](#) – which can be thought of as momentum of the machines connected to the network similar to a spinning top having momentum to carry on spinning. The other characteristic is [Short Circuit Level](#) (SCL) which helps dampen out any shocks on the network such as the sudden disconnection of a generator.

Historically, stability was provided inherently by coal and gas power stations by nature of them being large pieces of spinning metal – similar to a spinning top having momentum to carry on spinning. As we move to a network dominated by other forms of technology that do not have this same inherent capability, this makes it more challenging for us as the system operator to ensure that the network will be stable enough. As a result, we have been developing a number of tools to allow us to maintain a strong and resilient network.

One of these tools has been the Stability Pathfinder project where we have contracted with 3rd parties to build equipment to strengthen the electricity network while supporting the move to a greener energy future.

Pathfinder Projects in Landulph

In early 2021, ESO initiated the Stability Pathfinder Phase 3 tender through which we sought to award contracts to 3rd parties that could deliver solutions to increase network Stability between 2025 and 2035. While inertia is a characteristic that can be delivered from anywhere in the country, SCL is very locational and so we need to ensure that we have the right equipment in the right places. As a result, in the tender we created five regions of need, with South West England being one of those regions.

Bidding parties then worked to select specific sites and substations within those regions that they could build their solution. The Transmission Owner for England and Wales (NGET) role was to advise on the availability of connection at the sites within each region during the tender process and then work to connect the solutions.

The solution that Transmission Investment (TI) are planning to build at Landulph is a result of being awarded a contract through our Stability Pathfinder Phase 3 tender in late 2022. It was selected based on the costs submitted by TI in their tender, which ultimately would be paid by GB consumers, so we sought solutions which were the most economic. We also considered the proposed technical capability (inertia and SCL) of the solutions by TI which we assessed against the amount of inertia and SCL we required. This tender also contracted with a number of other parties to build solutions in other regions across England and Wales to build similar types of equipment for use by the ESO.

The proposed solution from TI is to build four synchronous compensators (synch comps) connecting to Landulph 400kV substation. Synch comps are similar to coal and gas power stations in that there is a large metal mass that spins, but the main difference is no electricity or carbon emissions are produced, so they are solely used to support system Stability.

Once built and operational, the solutions being delivered by TI and other parties, will help to strengthen the GB electricity network to allow the continuous flow of electricity to where it is needed. Additionally, the solutions will reduce the reliance on the ESO to instruct gas units to provide the same strengthening capability thereby supporting the move to a zero-carbon system.