



BATTERY ENERGY STORAGE AT ECCLES SUBSTATION - A GUIDE

Introduction:

At a time when we are very concerned and anxious about the proliferation of battery energy storage systems (BESS) in our area, it is useful to set out our understanding of what this is about and what we can do to try to protect our valued countryside from being industrialised by stealth.

Transition to Renewable Energy:

The United Kingdom, in common with the rest of the world, is in the process of transitioning from generating our electricity from fossil fuels to renewable energy. This is creating significant challenges to all parties involved, from the process of generating electricity and through to delivering it to our homes and industries. In the past, our electricity was produced in a small number of large power stations and our National Grid was developed on the basis that inputs to the grid were from a small number of sources. Fluctuations in electricity production were managed through tasking the more flexible power stations to either produce more power in peak times or less during off-peak.

In the United Kingdom some renewable energy has been produced for many years from hydro electric schemes. To replace fossil fuel generation, however, we are moving swiftly to using large wind and solar generation. The nature of this generation means that our grid, managed in Scotland by Scottish Power Energy Networks (SPEN), now needs to connect to a high number of renewable production sites, both onshore and offshore, and at this time it is undergoing major development to cope with this challenge. Such is the scale of this challenge that some energy experts believe that it would be better to start anew rather than adapt our current grid. The second major challenge is that renewable energy, by its' nature is not constant: turbines turn when the wind blows, solar panels generate only when the sun shines. Such is the contract between operators of wind turbine sites and the grid, that the grid pays fees whether they can use the electricity produced or not and continues to pay fees when turbines are switched off when not required. As a nation, we therefore need battery energy storage systems to collect and store electricity from renewable sources during off-peak periods, to maintain power to our homes and industries during peak periods.

Battery Energy Storage Systems:

BESS are effectively large arrays of lithium-ion batteries, similar to those used in electric cars and housed in large shipping containers or cabinets. Several hundred of these containers are generally sited on concrete pads, across fields ranging in size from 25 - 50 acres. Alongside the containers are large transformers which are protected by a concrete blast wall. These allow the batteries to be connected to the high voltage grid at a nearby substation. Electricity generated at renewable sites (windfarms and solar) enters the grid at time of production for transmission to consumers. During periods of low consumer demand, this electricity is supplied by the grid to BESS sites for storage until needed. The rate of battery charging/discharging is measured in megawatts (MW), where a megawatt is equivalent to 1,000 kilowatts. The storage capacity is typically measured in megawatt-hours (MWh), with most of these systems typically able to provide full power output for only 2-3 hours. A typical BESS rating is often quoted as e.g. 500MW/1,000MWh, enough to supply 230,000 homes for 2 hours. Hence the storage is only suitable for 'within day' usage.

BESS Concerns:

Despite ongoing battery development, there remains a risk of a chemical fire associated with lithium-ion batteries, including the potential for 'thermal runaway' in a cell, either due to a fault or overcharging, and results in a rapid temperature rise that spreads to adjacent cells within that battery and leads to uncontrollable

fire, possible explosion and the release of toxic fumes. The storage containers are equipped with fire prevention systems and fire suppression systems, although these do need to be managed well. In the event of an un-suppressed fire, the procedure is to allow the fire to burn out, during which time these toxic fumes can be released into the atmosphere. Through lessons learned in the past, containers are now sited further apart, thereby reducing the potential for a cascade, where one container fire spreads to nearby containers.

Further concerns include the decimation of good arable land: it will take two years with up to 40 lorries per day delivering concrete and other materials to convert a 25-acre field to a BESS site. The Eccles substation and proposed BESS developments are located in a rural area of prime arable land, capable of yielding 3 - 3.5 tons of wheat or winter barley per acre. At a time of world food shortage, exacerbated by the Ukraine war, the use of prime arable land for BESS sites should be a last resort. It is highly unlikely that such fields will ever be returned to profitable farmland. The construction period will also bring substantial disruption to the local road network and communities.

Each of the 200 - 300 storage containers will also have air conditioning, which will create noise, to the potential detriment of local residents and wildlife.

The Position at Eccles Substation:

Eccles is one of a small number of strategic substations in the United Kingdom, in this case providing power from Scottish renewable developments to the large conurbations in the north-east of England. The substation is owned and managed by Scottish Power Energy Networks, who recently gained planning permission to double its size and to upgrade major power lines between Galashiels and the substation. All this is to facilitate the connection of renewable projects, including the need for battery storage. This development has now commenced, with completion expected in 2026.

Over the past six months, we have attempted to establish the capacity of the substation to receive battery energy storage system connections. Enquiries with Scottish Power Energy Networks (SPEN) have been protracted and led to confusing responses. The initial response was that SPEN have a legal duty to provide a connection to every developer who wishes to connect to the grid. While strictly speaking this is true, the reality is that it can take many years for the grid to cater for these needs. At this time, it appears that only three developers have confirmed connections within the scope of the current substation expansion (Eccles Energy Centre Ltd., Zenobe and another project called Paxton Dal, see below). This information is still sketchy, however, and due to the state of flux within SPEN at this time, it cannot be fully relied on.

Developers:

For quite some time now, developers have been canvassing our farmers to lease their fields. The experience of one landowner who was approached, but did not accept the offer, provides some evidence of the amount of money apparently being offered to lease a field, which was projected to be in between £600 – 750k per year for a 25-acre field on a 40-year lease! However, the amount is dependent on the **average** energy being stored, so is subject to the grid actually taking sufficient electricity from that particular developer during the course of a year. A further generic concern in relation to the projects is that, with the exception of Zenobe and Amp Clean Energy, the developers appear to be using shell companies in this process.

Amp Clean Energy:

This was the first company to apply for and receive planning permission to develop a small 50MW BESS site adjacent to the east side of the substation. They are awaiting a connection and this will not be available until 2028/9.

Zenobe:

This company has recently received permission to develop a 500 MW BESS site between Fernyrig and the sawmill on the A697, on a 25-acre field to the south of the Eccles substation. While Zenobe, apparently with Scottish Government blessing, did not do any pre-application consultation, they have been pro-active in meeting with the community and explaining their position. We understand that Zenobe are the only company contracted by the Electricity Systems Operator (National Grid) to provide 'balancing services' to facilitate grid stability. This involves providing an input of electricity to the grid on an immediate basis, to cover for any fluctuations from power stations and other generators and requires the battery storage to be close to the substation. Zenobe intend to begin developing their site in autumn 2024, a process which will take about 2 years and should coincide with the completion of the substation extension.

Eccles Energy Centre Ltd:

Their parent company is Intergen, who started the application process under the name Weaver Power, but is now Eccles Energy Centre Ltd. They have an application pending with the Energy Consents Unit (ECU) of the Scottish Government for a 25-acre site to the immediate west of the Eccles substation. While the Community Council did not formally object to the development within the tight framework of 4 weeks from application, we have submitted a letter to both Scottish Borders Council and the Energy Consents Unit expressing concerns.

Potential Future Applications for Battery Energy Storage Developments:

We are currently aware of three potential future planning applications pending, two of which have applied for 'Screening Requests' with SBC and ECU and also carried out some pre-application consultation.

Will Ramsay:

This project is to develop a 25-acre field for a 340MW BESS on Pittlesheugh Farm, which, unusually, is being proposed by the landowner, Will Ramsay, who has held a number of local consultation events. His intention is to pursue planning permission with a view to 'selling' the project to an actual developer. To date, he has had a sizeable negative reaction to his proposal. At least 24 letters of objection have been sent to Mr. Ramsay at pre-application stage. Despite this, we anticipate that a planning application will soon be submitted.

AAH Consultants:

AAH Consultants, working on behalf of Green Power Consultants, are proposing a huge 50-acre site at the Laundry Field, Springwells to cater for approximately 500MW of battery storage. The field concerned is located at Orange Lane, behind Sheriff's and stretches about ½ mile parallel to the road to Leitholm, immediately adjacent to at least 10 homes and businesses. The company refused to do a consultation in Leitholm, but did their pre-application consultation at Coldstream. Such was the hostility shown to the proposal at the first consultation, followed by a large number of objection letters, that the company have put further consultations on hold to re-consider their next steps. We anticipate that this project will re-surface at some time.

Paxton Dal:

Paxton Dal is the working name for a project from a large global renewable company - Renewable Energy Systems (RES). This company has a contracted connection to the grid at Eccles, with the intention of developing a large combined solar power and BESS facility in our area, although at this time, we are unaware of the location they intend to develop.

Currently, we are aware that other consultants, operating on behalf of developers, are still canvassing landowners in our area to identify further sites. We suspect that there could be as many as 10 further

developments in the offing. The uncertainty surrounding these approaches are of great concern for the community.

To the best of our knowledge only Zenobe are being contracted to provide the critical service of grid stabilisation at the substation, whilst other developers are said to be purely 'merchants', buying cheap electricity when available and selling it later when the price rises.

The Planning Process:

The planning process falls into two paths: for developments below 50MW the application is considered by the local authority: for those over 50MW the application is considered by the Energy Consents Unit of the Scottish Government. The Energy Consents Unit, on receipt of an application, will notify the local authority who will carry out due diligence and submit a report, with council recommendations to the Energy Consents Unit, who will make the final decision. In addition, the Energy Consents Unit will consult with Community Councils and other local bodies. Developers can take as long as they wish to submit an application. Local authorities have four months to do their due diligence, whereas Community Councils and others have 4 weeks to lodge comments/objections.

To date, the Energy Consents Unit has not refused any BESS applications.

The Community Council Position:

For a variety of reasons, your Community Council did not formally object to planning applications submitted by Amp Clean Energy, Zenobe or Eccles Energy Centre Ltd, albeit we have submitted a letter outlining our concerns in relation to the Eccles Energy Centre Ltd proposal. These concerns are mainly around proliferation of sites in our area and the need for further screening in the event that this application is approved.

NB: Should these developments proceed they will provide a storage capacity of 950 mw, amounting to 4.75% of the total UK storage capacity needs by 2035.

Our position, which is informed by communication with our community, a petition signed by over 300 residents and the input of 130 residents who attended a recent meeting with our elected members, is to oppose all other planning applications for Battery Energy Storage Systems in our area. This position is supported by all our elected members.

A small committee of four has been formed to research all aspects of battery energy storage and the planning process. This committee now works as part of the campaign group "**No to Leitholm & Eccles Batteries Action Group**" to inform our community and coordinate opposition to battery storage proliferation. The group has a **Just Giving Page** [No to Leitholm Batteries - fighting fund](#). This fund has allowed the purchase of banners and signs highlighting the issue, which are displayed in the area, and the engagement professional advisers to assist with the technical areas of submitting objections.

The main challenge to our progress is in gaining access to accurate and meaningful information. Neither developers, nor the Energy Consents Unit, nor Scottish Power Energy Networks, nor Government Ministers appear capable of giving straight answers to questions. It is only through dogged persistence by our team that we are gradually gaining the knowledge we need to keep you informed and to have the information required for comprehensive objections.

We are keeping our community informed through our email circulars. Should you wish to be included in our circulation list, please email me at LeitholmEcclesBirghamcc@gmail.com and via our website <https://leitholm-eccles-and-birgham.com/council.scot/home>. In addition, our campaign group can be contacted through their Facebook page [No To Leitholm Batteries](#).

We are engaging fully with our politicians and have written a number of letters to Scottish Government Ministers, stating our position and seeking meetings. This has led to a meeting with key government officials on 7th November, facilitated by Rachel Hamilton MSP and John Lamont MP. I am in regular contact with Scottish Borders Council Planning Department who are helpful in their responses to queries.

We have managed to get good media coverage of the situation in our area, through appearing on Debate Night Scotland and having articles on Radio Scotland, Radio Borders news, BBC Internet News, The Scottish Farmer and the Times newspaper.

We have coordinated a significant number of objection letters to both Will Ramsay and AAH Consultants at the pre-consultation stage of their application process.

What do we do now?

We need to keep pressure on the Scottish Government through direct letters to Ministers and through working with our elected members. Part of this will be to continue to seek media coverage and through this gain the support of other Community Councils and agencies in our area and across the country.

As applications are submitted, we need to ensure that we submit a comprehensive objection to that application as a Community Council. The Scottish Government has stated that they place significant weight on communities having a strong say on what happens in their area and on a Community Council's Plan for Place. We have overwhelming community support for our position, which is included in our Plan for Place.

At the appropriate time, we will need your further support in submitting objections to planning applications or letters to ministers. The window between an application being formally made known to us and the relevant objections to be submitted is just 4 weeks. We will keep you informed and assist with the process of individual objections.

Yours faithfully,

Bob Hope

Chair, Leitholm, Eccles and Birgham Community Council.