






# Planning, Design and Access Statement
# Battery Energy Storage

## Land off Armshead Road, Werrington Stoke-on-Trent, ST9 0NB

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# 1.0 Introduction

1.1 Alder King Planning Consultants have been instructed by Conrad Energy to submit a full planning application seeking permission for the development of a battery energy storage facility on land off Armshead Road, Werrington, Stoke-on-Trent, ST9 0NB ('the proposal site').

1.2 Our client Conrad Energy are working to deliver electricity storage projects that will be targeted at multiple local and national grid support mechanisms to provide various services such as the 'time shifting' of generated electricity into periods of high demand, grid frequency response, grid stability and peak lopping.

1.3 The purpose of this statement is to explain the technology and how it relates to current policy and to provide assessment of the proposed development against the relevant policies of the development plan and any other material considerations.

1.4 In summary the proposed development will contribute to the National Grid (NG) and the Local Distribution Grid's increasing requirements for fast, flexible power, which provides electricity to the grid at times when demand rises above the generation from renewable and conventional power generating stations and absorbs excess electricity when demand is below the level of generation.

**What is battery energy storage? The benefits**

1.5 In simple terms, battery energy storage provides a means of allowing electricity from the grid to be imported and stored within the batteries at times of low demand and exported back into the grid at times of system stress/demand.

1.6 In addition, battery energy storage technology can provide frequency response to help National Grid comply with its obligation to maintain system frequency at 50Hz, ensuring grid system stability.

1.7 Due to an increased deployment of renewable forms of energy, such as wind and solar which are weather dependant and thus highly variable, the grid has become more volatile and exposed to blackouts. As a result of the variable nature of renewables and the continued requirement for National Grid to balance supply and demand and grid frequency, storage facilities are required.

1.8 As the Carbon Trust stated in its report[1], "The UK electricity system is undergoing significant changes to provide electricity that is secure, affordable and ultimately low carbon. Energy storage, alongside other flexibility options such as demand response and interconnectors, can provide such flexibility as will be required by any future system that may see an increasing share of intermittent renewables and more distributed generation".

1.9 To quote from the International Renewable Energy Agency January 2015 report[2], "The variable and decentralised nature of renewable energy deployment presents unique challenges to maximise and ensure reliable electricity supply. At high levels of penetration, increased electricity production fluctuations may increase the risk to reliable supply of electricity. This is because supply and demand of electricity must be

[1] https://www.carbontrust.com/media/672486/energy-storage-report.pdf
[2] http://www.irena.org/remap/IRENA_REmap_USA_report_2015.pdf

balanced at all times". Therefore, National Grid as system operator must measure and balance electricity on the Grid by monitoring system frequency and taking steps to provide short term additional electricity or to absorb short term excess.

1.10 Electricity has historically been generated by fossil fuel power stations e.g. coal fired, and electricity generated and supplied to National Grid. The grid itself cannot store electricity so supply and demand has to be exactly matched at every instant. Electricity supplied from these sources can be increased or reduced in response to demand in tens of seconds. However, the significant rise in power generated by renewable sources e.g. wind and solar, bring problems to the grid because these sources are variable in output or intermittent, changing in tenths of seconds, and placing burdens on the grid in relation to the matching of supply and demand. As stated in the summary to the House of Commons Energy and Climate Change Committee Low Carbon Infrastructure First Report of Session 2016 – 2017 (15 June 2016)[3], "some of these sources are variable in output, such as wind and solar electricity; system operators must therefore employ new tools to balance supply and demand" and, "efforts to overcome these obstacles must not be impeded by outdated and inflexible regulation and governance" and, "there is a need for better integration of connection and planning-consent processes".

1.11 Battery energy storage provided near to and connected direct to the local grid allows available power, surplus to anticipated demand, to be stored and then resupplied at high demand. Battery energy storage delivers a very fast response time to fluctuations (less than a second) thereby supporting the grid and the increasing speed of variation in electricity supplied to it. The technology is also highly efficient (sustainable) because it receives electricity from the grid which would otherwise be lost at times of over-supply and is a potential significant support to renewable energy in general. The Carbon Trust 'Energy Storage Report: Can storage help reduce the cost of a future UK electricity system?[4]' states 'the range of potential benefits provided by energy storage includes absorbing 'wrong time' energy, then releasing it to meet demand, to help support capacity constraints and to balance the influx of intermittent and, or inflexible low carbon technologies onto the grid, plus avoiding expense associated with reinforcing assets and adding new capacity'.

1.12 Battery energy storage also brings additional benefits in that it provides reserve electricity whilst avoiding the emissions associated with reserve generators. Battery energy storage technology has in recent years become a viable option and it is expected that its widespread adoption will significantly improve the efficiency and security of the grid, while also reducing costs to consumers.

1.13 There is therefore, an acknowledged urgent need to secure development of the type proposed wherever possible, to support the grid. The proposal site in this case is located in very close proximity to the Cellarheard Substation to the northeast. This represents a great opportunity to secure the development very close to an existing point of connection (POC) where the applicant already has a grid connection offer in place.

[3] http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/267/26702.htm
[4] https://www.carbontrust.com/resources/reports/technology/energy-storage-report/

1.14 The UK government estimates technologies like battery storage systems – supporting the integration of more low carbon power, heat and transport technologies – could save the UK energy system up to £40 billion by 2050, ultimately reducing people's energy bills.

1.15 Battery storage technologies are essential to speeding up the replacement of fossil fuels with renewable energy. Battery storage systems will play an increasingly pivotal role between green energy supplies and responding to electricity demands.

**Battery Energy Storage Services (BESS)**

1.16 The increase in renewable technologies such as wind and solar which have variable output and low electrical inertia, has resulted in a need for the grid operators to procure various balancing, stability and frequency response services to help keep the system flexible and responsive to changing needs. Battery storage technology can meet these requirements, by charging with excess electricity from the network, and in milliseconds, releasing power back into the grid at specific speeds, frequencies and volumes.

1.17 The proposed development will comprise a fast, short term frequency response (1-2 hour system) in order to be able to provide peak lopping services when demand on the grid is at its highest. The local electricity network operator identifies 17:00hrs to 19:30hrs to be the 'red band' time where demand is highest and extra generation is most valued. The proposed battery system can charge at periods of low demand and export power back to the grid during the 'red band' window (export for circa 1-2 hours).

1.18 In summary, by importing excess energy from the grid and storing it, batteries can capture energy that would otherwise be lost. In light of their storage ability, batteries offer opportunities to support the intermittent nature of renewables by storing any excess energy they produce, and exporting it back into the grid when required.

*Alternative to energy storage facilities*

1.19 The current alternative to storage facilities are known as 'peaking plants'. Peaking plants or standby gas generators operate on standby, only producing energy at times of peak demand and have no ability to import and store excess energy from the grid. Battery Energy Storage Systems (BESS) are an alternative form of technology that are inconspicuous on environmental and amenity grounds and entirely emission free.

**Recent developments in the international context and security of energy supply**

1.20 In recent months there have been significant issues affecting the topic of energy supply. The world now faces major changes arising from the Russian invasion of Ukraine. This has prompted European governments, including the UK to make urgent reappraisals of energy supply. On 08 March European

Commission has proposed a REPowerEU a joint European action for more affordable, secure and sustainable energy[1].

1.21 On 09 March the UK Parliament announced the need to, "urgently publish a new energy security strategy for the UK that reduces our funding of the Russian state whilst keeping us on track to hit net zero. That must include bringing forward funding to reduce our demand for heating".[2]

1.22 The Prime Minister has confirmed that the government will set out an energy strategy to explain the UK's long-term plans for greater energy security, including both renewable and nuclear power – building on the 'Ten Point Plan'. The future transformation of the energy sector reinforces the vital importance of increasing renewable energy generation through measures such as the development.

1.23 Lastly, the Energy Minister Greg Hands has said that the UK's transition to cleaner forms of energy production was, ***"an issue of national security"*** and not just of decarbonisations. Speaking at an event in London, he said:

***"by switching to cheaper power generation in the UK, for the UK, we will ensure that we're not dependant on any unfriendly foreign country to keep our homes warm and lit".***

1.24 However, Mr Hands acknowledged that the transition to cleaner energy sources would take time, and there was still a need to invest in domestic fossil fuel production.

[1] European Commission (2022). REPowerEU: Joint European action for more affordable, secure and sustainable energy [Online]. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511 (Accessed 16/03/2022).

[2] The UK Parliament (2022). Energy Security: Decarbonising homes key to weaning off Russian gas [Online]. Available at: Energy Security: Decarbonising homes key to weaning off Russian gas - Committees - UK Parliament (Accessed 16/03/2022).

[2] Department for Business, Energy & Industrial Strategy (2022). Statement on the phasing out of Russian oil imports [Online]. Available at: Statement on the phasing out of Russian oil imports - GOV.UK (www.gov.uk) (Accessed 16/03/2022).

# 2.0 Site and Surroundings

2.1 The application site constitutes an area of circa 4.07ha of agricultural land which forms part of Armshead Farm. The site is situated off Armshead Road, Werrington, Stok-onTrent, ST9 0NB. The site is washed over by the designated Green Belt land.

2.2 The site is located in Flood Zone 1 (low risk) and is currently serviced by an existing access from Armshead Road. This existing track provides access for Armshead Farm including the farmhouse and the proposal site.

2.3 The site forms part of Armshead Farm and is located in close proximity to other outbuildings to the west. In the context of energy generation, the site is located in close proximity to Cellarhead Substation to the northeast to which the proposed development shall connect.

2.4 **Figure 1** provides an aerial view of the application site which for locational purposes is edged green, including the access to Armshead Road. For reference, Cellarhead Substation is identified to the north along with the settlement of Werrington to the south.

**Figure 1: Site Location and wider context**



# 3.0 Planning History

3.1 No relevant planning history pursuant to the site has been found on the Council's website. The following planning applications are considered to be of material interest which include proposals for battery storage in close proximity to both the proposal site and Cellarhead Substation in the Green Belt.

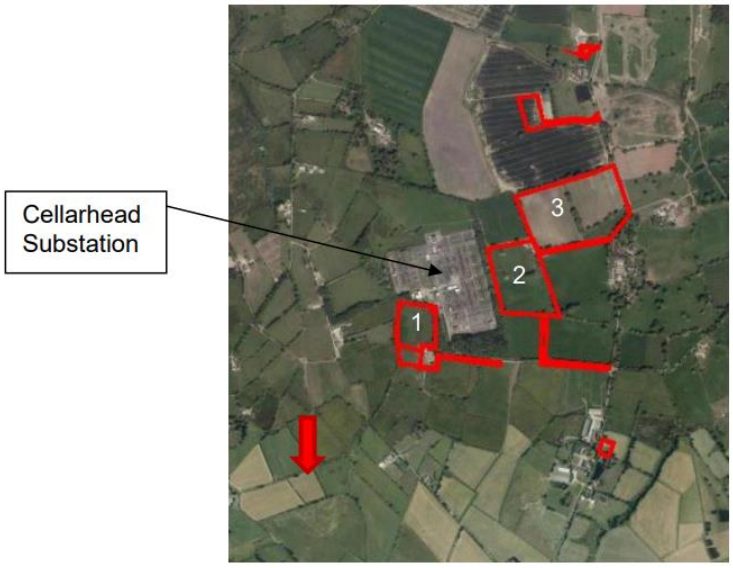
1. **SMD/2022/0180 |** Newfields Farm, Rownall Road, Wetley Rocks, Staffordshire, ST9 0BS. *"Development of a Battery Energy Storage System (BESS) with ancillary infrastructure, security fence, access, landscaping and biodiversity enhancements, to provide balancing services to the local electricity grid"*. Planning application validated 21/04/2022 pending determination.

2. **SMD/2022/0047 |** Land adjacent to Cellarhead Substation, Rownall Road, Wetley Rocks, Staffordshire. "*Erection and operation of a Battery Energy Storage System and associated infrastructure and equipment*". Planning application refused 21/06/2022

3. **SMD/2021/0695 |** Land adjacent to Cellarhead Substation, Rownall Road, Wetley Rocks, Staffordshire. "*Erection of a Flexible Energy Facility*". Planning application refused 21/06/2022.

3.2 The aforementioned planning applications are identified on **figure 2** to illustrate their location in relation to the site. Cellarhead substation is labelled for context and the proposal site is identified by the red arrow.

**Figure 2: Neighbouring BESS planning applications**



# 4.0 Development Proposals

4.1 Formally the proposed development for the site is as follows:

*Erection of storage containers, support infrastructure and security fence for Battery Energy Storage Facility along with landscaping and all associated works.*

4.2 The proposed development will be temporary and time-limited to 35 years. After this time, all battery energy storage facility infrastructure will be removed from the site.

4.3 Development is proposed to facilitate the introduction of the following elements on the site pursuant to its use as a battery energy storage facility:

- 64 no. battery units;
- 32 no. inverter units;
- amenity/welfare cabin;
- perimeter security fencing;
- auxiliary transformer;
- customer controller/switch room;
- DNO substation;
- CCTV columns/lighting;
- fire hydrant;
- access;
- landscaping.

4.4 The appearance and size of the battery storage infrastructure is detailed on the plans submitted with this application.

4.5 Two full time, permanent staff will be employed as a result of the development for maintenance. They will not be based at the site; rather visit the site several times per week to check the 'kit' and undertake general maintenance. Once operational, all site maintenance access will be for small vans only.

4.6 After acceptance testing, the system will operate autonomously with remote monitoring by Conrad and National Grid. The system will control the import and export of electricity, charging or discharging the battery cells, based on measurements that the control system will take and a pre-defined control curve.

4.7 The direct current (DC) voltage at the batteries will be converted to alternating current (AC) by the power converters and stepped up to the local network voltage by the transformer.

4.8 The project will connect to the Local Distribution Network (DNO) via the WPD switchgear substation provided by the DNO on the site. The connection for battery energy storage is unusual (unlike that for solar parks for instance) in requiring both capacity to import from the network and export to the network. The combination of the two requirements restricts the number of locations at which battery energy storage facilities can be located.

**Site Selection – Location and Operational Requirements**

4.9 There are numerous pre-requisites to choosing a battery energy storage site and when identifying a suitable location. The sites like the application site aren't particularly big but require a very unusual connection to the local electricity distribution network that allows both the import of electricity (load) and export of electricity (generation). Over the years the large deployment of renewables has used up the vast majority of generation capacity in local networks and very few sites remain.

4.10 With regard to grid connection, it has been confirmed with the Western Power that the Cellarhead Substation in close proximity to the site is one of a limited number of substations that has capacity to both export and import electricity. The BESS proposals on the application site have been located here due to the proximity to the Western Power Distribution, Cellarhead Grid Supply Point. This substation is one of few grid points of connection in the UK that can facilitate a large-scale BESS scheme without the need for significant reinforcement.

4.11 Site identification for potential energy projects is a meticulous and considered task, with Conrad Energy employing several full time staff and contractors to locate new suitable energy sites.

4.12 Furthermore, connections need to be made to existing large scale substations with capacity as the only practical point of connection to the distribution networks and the sites need to be as close as possible to these (0.75km maximum) to have a connection of the required electrical strength and a viable connection route for the required underground cable. Locations which are distant from a connection point are unlikely to be viable due to the additional infrastructure costs of laying buried cabling or installed new overhead transmission lines. In summary the below pre-requisites are required in Conrad Energy's site selection process:

- Their proximity to a sufficient 132KV electrical grid connection point for connection (maximum distance usually 0.75 km) where sufficient capacity is available on the network without significant reinforcement

costs. This is a difficult task as the Distribution Grid is heavily constrained and in need of significant upgrade works due to the large amount of distributed generation connecting in to it over the last few years, for example with the roll out of significant amounts of solar PV, which typically generates during times of low demand. The battery energy storage technology helps solve this problem by providing supply to the networks when demand is high and PV generation is low, and absorbing energy when supply is high and demand is low;

- Alongside the above connection which needs to be practically and physically feasible, there also needs to be a willing land owner with commercially available land;
- Whether there is sufficient space for the equipment and for safe and practical separation within the site for maintenance access;
- Whether the site is previously developed land (PDL)/brownfield. There is a preference for this over greenfield land as a starting point and so the application site is perfectly suitable to accommodate this type of infrastructure;
- Good existing access arrangements; and
- Suitable separation distances from any Noise Sensitive Receptors (NSRs) and ecological receptors.

**BESS – A Generating Station**

In planning terms, BESS is classified as a form of generating station[5]. This has been confirmed in the Government's consultation response to the 'Storage Order', where they say on page 17 that,, *"The government considers electricity storage facilities to be a form of electricity generating station for planning purposes",* and that in a High Court case in Northern Ireland there is reference to the Government in England, Scotland and Wales confirming, "*that electricity storage facilities are a form of generating station"* (ABO Wing NI Ltd at paragraph [29]). Therefore, the context for such infrastructure being located in an established industrial area is appropriate and compatible with the surrounding industrial and business uses.

[5] See the letter from the Chief Planner in England, Steve Quartermain, dated 21 December 2017: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670593/Chief_Planner_Newsletter_-_December_2017.pdf

# 5.0 Planning Policy and Legislative Context

5.1 This section outlines the principal planning policy considerations.

5.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004, read together with section 70(2) of the Town and Country Planning Act 1990, requires that applications be determined in accordance with the Development Plan unless material considerations indicate otherwise.

5.3 The site is located in the jurisdiction of Staffordshire Moorlands District Council and the development plan comprises the Staffordshire Moorlands Local Plan (adopted September 2020).

5.4 According to the Local Plan proposals map the site falls outside of the development boundary, within the Green Belt.

5.5 The relevant *(our emphasis)* Local Plan policies are set out below, in no particular order.

**Staffordshire Moorlands Local Plan (adopted September 2020)**

*5.6* ***Policy SD 2 (Renewable/Low-Carbon Energy)*** *states that the Council will strive to meet part of the District's future energy demand through renewable or low-carbon energy sources (which could be through a variety of technologies, for example solar energy, biomass etc), in line with current evidence which identifies the feasibility of these forms of energy across the District. The Council will assess wind turbine schemes in line with the Government's specific policy on wind turbines. For all other forms of renewable energy, the Council will support small-and large- scale stand alone renewable or low-carbon energy schemes subject to the following considerations:*

- *the degree to which the scale and nature of a proposal impacts on the landscape, particularly having regard to relevant Landscape Character evidence and impact on the Peak District National Park (taking into account both individual and cumulative effects of similar proposals);*
- *the degree to which the developer has demonstrated any environmental/economic/social benefits of a scheme, as well as how any environmental or social impacts have been minimised (e.g. visual, noise or smell);*
- *the impact on designated sites of European (or successor), national and local biodiversity and geological importance in accordance with policy NE 1;*
- *the impact on the amenity of residents and other interests of acknowledged importance, including the historic environment;*
- *the degree to which individual proposals reflect current local evidence regarding the feasibility of different types of renewable or low-carbon energy at different locations across the District;*

- *in the case of solar energy proposals that are not affixed to buildings or structures, applicants will be expected to demonstrate that they have examined whether previously developed land is available before greenfield land. Where agricultural land is proposed, poorer quality land should be utilised before higher quality agricultural land.*

5.7 ***Policy DC 3 (Landscape and Settlement Setting)*** *sets out that the Council will protect and, where possible, enhance local landscape and the setting of settlements in the Staffordshire Moorlands by:*

1. Resisting development which would lead to prominent intrusion into the countryside or have a significant adverse impact on the character or the setting of a settlement or important views into and out of the settlement as identified in the Landscape and Settlement Character evidence;

2. Supporting development which respects and enhances local landscape character and which reinforces and enhances the setting of the settlement as identified in the Landscape and Settlement Character evidence;

3. Supporting developments which conserve or enhance the biodiversity qualities of any natural or man-made features within the landscape, such as trees, woodlands, hedgerows, walls, watercourses or ponds;

4. Supporting opportunities to positively manage the landscape and use sustainable building techniques and materials which are sympathetic to the landscape;

5. Ensuring that development does not adversely affect the wider setting of the Peak District National Park.

*5.8* ***Policy SS 10 (Other Rural Areas Strategy)*** *states that the other rural areas comprise the countryside and the green belt outside of the development boundaries of the towns and larger villages and the open countryside surrounding the smaller villages. These areas will provide only for development which has an essential need to be located in the countryside, supports the rural diversification and sustainability of the rural areas, promotes sustainable tourism or enhances the countryside.*

*5.9* ***Policy NE 1 (Biodiversity and Geological Resources)*** *states that the biodiversity and geological resources of the District and neighbouring areas will be conserved and enhanced by positive management and strict control of development.*

5.10 ***Policy NE 2 (Trees, Woodland and Hedgerows)*** *states that the Council will protect existing trees, woodlands and hedgerows, in particular, ancient woodland, veteran trees and ancient or species-rich hedgerows from loss or deterioration.*

**Staffordshire Moorlands District Council Climate Change Emergency Declaration 2019**

5.11 Staffordshire Moorlands District Council recognised the serious threat posed by climate change and the responsibility that institutions, businesses and communities have in reducing carbon emissions and

preparing for any impactive change. The Council declared a climate emergency on 10th July 2019, making a commitment to:

*"Start working with partners, across the district and region, towards making the Staffordshire Moorlands carbon neutral by 2030; taking to account emissions from both production and consumption."*

# 6.0 Relevant Material Considerations: Legislation

6.1 The electricity distribution network throughout the country is often at capacity, resulting in the need for developers to fund expensive, and sometimes cost prohibitive upgrades to the network to accommodate new employment and residential development. The proposed development will contribute to providing increased capacity and flexibility within the Grid network, thus increasing the viability of employment and residential related development both locally and in the wider region.

6.2 There is a significant body of research, advice and policy reports emerging in relation to this much needed technology, especially since it now has cross stakeholder support and it is financially viable. Number of these are referred to in the subsequent sections in an effort to capture current thinking and the policy direction.

**The Climate Change Act 2008 (2050 Target Amendment) Order 2019**

6.3 The Climate Change Act 2008 introduced a legally binding climate change mitigation target for the UK to reduce its greenhouse gas emissions by 80% by 2050, compared to 1990 levels. On 27 June 2019, the Climate Change Act 2008 was amended to introduce a target for at least a 100% reduction in greenhouse gas emissions (compared to 1990 levels) in the UK by 2050. This 'net zero' target led to a series of Government renewable and low carbon energy targets and strategies and created a more positive policy environment for energy storage and management development.

**Infrastructure Planning (Electricity Storage Facilities) Order 2020 (the Storage Order)**

6.4 The Storage Order redefined electricity storage facilities in the Planning Act 2008 so that proposals for battery storage above 50MW in England are submitted as planning applications rather than follow the longer NSIP process. These changes were introduced to remove barriers to electricity storage and make it simpler for large storage facilities to obtain planning permission.

**The Committee on Climate Change: The Sixth Carbon Budget (December 2020)**

6.5 The main recommendations are set out in The UK's Path to Net Zero report, which sets out a recommended pathway requiring a 78% reduction in UK territorial emissions between 1990 and 2035, bringing forward the UK's previous 80% target by nearly 15 years. These recommendations are a clear indication of the increased ambition implied by the government's net zero target.

# 7.0 Relevant Material Considerations: National Planning Policy

**National Planning Policy Framework (NPPF) – updated July 2021**

7.1 The NPPF actively supports renewable and low carbon energy development, with the environmental objective supporting, "moving to a low carbon economy" (Paragraph 8).

7.2 Multiple references are made in the NPPF in support of renewable energy infrastructure proposals and summarised below:

- The planning system should support the transition to a low carbon future in a changing climate, improve resilience and support renewable and low carbon energy and associated infrastructure (Paragraph 152).
- Plans should identify suitable areas for renewable and low carbon energy sources and supporting infrastructure to increase the supply of renewable and low carbon energy (Paragraph 155).
- Applicants for renewable or low carbon energy development should not be required to demonstrate the overall need for renewable or low carbon energy and that applications should be approved if the impacts are (or can be made) 'acceptable' (Paragraph 158).

7.3 The NPPF advises that local planning authorities should approach decisions on proposed developments in a positive and creative way (Paragraph 38).

7.4 Moreover the NPPF sets out that planning policies and decisions should support development that makes efficient use of land; the application site is brownfield land within an existing urban area and so an appropriate context for this form of development (Paragraph 124).

7.5 Paragraph 147 states that inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances. Paragraph 148 goes on to say that very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations.

7.6 Paragraph 151 sets out that when located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources.

**Energy National Policy Statements (NPS) (July 2011) – (EN1)**

7.7 In the overarching Energy NPS the Government set out commitments to sourcing 15% of energy from renewable sources by 2020. It explains that to hit this target, and to largely decarbonise the power sector by 2030, it is necessary to bring forward new renewable electricity generating projects as soon as possible, stating that the need for new renewable electricity generation projects is therefore urgent (Paragraph 3.4.5).

7.8 Even at this stage (2011) the Government identified energy storage will play an important role in a low carbon electricity system (Paragraph 3.3.31).

7.9 The NPS for Renewable Energy (EN-3) places further importance of renewable energy generation in a low-carbon economy.

7.10 Section 1.2.1 of NPS EN-1 and EN-3 makes it clear that these NPSs are likely to be material considerations in decision making on applications that fall under the Town and Country Planning Act 1990.

**Draft National Policy Statement for Energy Infrastructure (Draft NPS EN-1) September 2021**

7.11 The Draft NPS EN-1 states that different types of electricity infrastructure are needed to deliver the national energy objectives, including storage. New generating plants can deliver a low carbon and reliable system, but the increased flexibility provided by new storage and interconnectors is required to reduce costs in support of an affordable supply. Storage and interconnection can provide flexibility, meaning that less of the output of generation plant is wasted as it can be either stored or exported when there is excess production, and they can also supply electricity when domestic demand is higher than generation supporting security of supply (Paragraphs 3.3.15-3.3.19).

7.12 The Draft NPS EN-1 explains that storage has a key role to play in achieving net zero and providing flexibility in the energy system so that high volumes of low carbon power, heat and transport can be integrated. There is currently around 4 GW of electricity storage operational in Great Britain of which about 1 GW is in the form of battery storage. Storage is needed to reduce the costs of the electricity system and increase reliability by storing surplus electricity in times of low demand to provide electricity when demand is higher (Paragraphs 3.3.24 – 3.3.29).

7.13 Section 1.6.1 of Draft NPS EN-1 makes it clear that any emerging draft NPSs are capable of being important and relevant considerations in the decision-making process. Section 1.2.1 of Draft NPS EN-1 and EN-5 makes it clear that these NPSs are likely to be material considerations in decision making on applications that fall under the Town and Country Planning Act 1990.

**National Planning Practice Guidance ("NPPG") (March 2014 and updated thereafter)**

7.14 The NPPG provides guidance on planning practice and advises that planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable (Reference ID: 5-001-20140306).

7.15 Furthermore, in preparing local plans, local planning authorities should consider the potential to help meet the UK's legal commitments to cut greenhouse gases and meet increased energy demand from renewable sources. (Reference ID: 5-003-20140306).

# 8.0 Relevant Material Considerations: Other National Energy Policy and related documents

**National Grid Balancing Services – Overview**

8.1 Energy storage facilities, such as this development are required to maintain and enhance stability of the national grid for electricity. Storage is required to complement renewable electricity generation sources as a component of electricity delivery to the National Grid. The requirement is increased by retirement of traditional large power stations and the introduction of fast changing, solar generation, wind generation and interconnectors with other countries. These last three can start and stop generation in a few tenths of a second, compared with tens of seconds for traditional large power stations and it is this faster change of generation that leads National Grid to need a new service based on electricity storage.

**Department for Energy and Climate Change – The National Need for Reliable Generation**

8.2 The Department of Energy and Climate Change (DECC) Policy Paper titled '2010 to 2015 government policy: UK energy security' set out the Governments strategy for Electricity Market Reform (EMR) which states that the reformed energy market will deliver:

- Low carbon energy;
- Reliable energy supplies; and
- Minimised costs to consumers.

8.3 To achieve the objective of a low carbon energy generation network it is necessary that increased reliance is placed on renewable energy generation such as from wind and solar sources. This will lead to an increasingly intermittent supply as the amount of energy produced will depend on weather and climatic conditions.

8.4 To complement renewable electricity generation sources and to achieve the Governments objective of maintaining reliable electricity supplies in the context of a greater proportion of generation being from unreliable and unpredictable renewable sources, new flexible and reliable sources of electricity with the ability to respond quickly to short-term variations in electricity demand and intermittent output from other sources are therefore essential. Battery energy storage systems provide this reliable output.

8.5 In order to encourage the development of flexible electricity sources such as the proposed development, the Government has introduced a new tool called the 'Capacity Market'. DECC guidance on the Capacity Market states[6]

8.6 *"The Capacity Market will ensure security of electricity supply by providing a payment for reliable sources of capacity, alongside their electricity revenues, to ensure they deliver energy when needed. This will*

[6] https://www.gov.uk/government/collections/electricity-market-reform-capacity-market

*encourage the investment we need to replace older power stations and provide backup for more intermittent and flexible low carbon generation source".*

**The Need for Energy Storage as part of Smart Energy System**

8.7 The DECC paper 'Towards a Smart Energy System' sets out the government's support for storage and smart networks which can help to ensure that the objectives of security of supply, keeping bills as low as possible for families and businesses, and decarbonising are achieved in the most cost effective, affordable way. The paper references external estimates that under a smart, flexible system, overall costs could be reduced in the order of tens of billions of pounds in the period 2050.

8.8 The National Grid System Operability Framework 2015[7] sets out that frequency containment requirements (keeping the National Grid stable) are expected to increase significantly over the next 15 years and the need for frequency response service will increase. The proposed development will provide part of the required service known as 'Predicted Frequency Response'

8.9 In response to this requirement, the Government has set out a clear policy framework for the delivery of facilities to meet the UK's future energy demands. This section briefly describes that framework, and subsequently identifies the clear benefits of battery energy storage facilities and their ability to contribute towards meeting the aims of Government energy policy.

**National Infrastructure Delivery Plan 2016-2021 (March 2016)**

8.10 Prepared by the Infrastructure and Projects Authority, the plan explains requirements and funding for national infrastructure. Innovation in energy storage demand-side response and other smart technologies are identified as important infrastructure for which the Government was committing to allocate at least £50 million up to 2021 (Para 6.10).

**Upgrading Our Energy System: Smart Systems and Flexibility Plan (July 2017) and Progress Report (October 2018)**

8.11 In July 2017, the Department for Business Energy and Industrial Strategy (BEIS) and Ofgem published a policy paper entitled, 'Upgrading our Energy System: Smart Systems and Flexibility Plan'[8]. The Executive Summary identifies that the 'plan is an important part of the government's Industrial Strategy, the forthcoming Clean Growth Plan, and a core component of Ofgem's future-facing work to enable the energy system transition.'

8.12 The plan set out 29 actions that seek to remove barriers to smart technologies (such as storage which includes batteries as illustrated within the case studies); enable smart homes and businesses; and improve

[7] http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/System-Operability-Framework/
[8] https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan

access to energy markets for new technologies and business models. The actions are designed to support clean growth, reduce the cost of the energy system and keep energy bills low for consumers.

8.13 As set out in the conclusion to the plan, it seeks to enable the development of a smart, flexible energy system that will reduce costs for consumers and industry, and support the growth of innovative new businesses. The aim of which is to upgrade the regulatory and market framework, open up new opportunities for consumers/market participants, and provide conditions in which innovation can flourish. Finally, it recognises, 'As a core part of the Industrial Strategy, it is an opportunity to increase productivity at home, and put the UK in a leading position to export smart energy technologies and services to the rest of the world.'

8.14 A progress update was published in October 2018. This confirmed that at the date of publication, 15 actions had been implemented with the commitment to delivering the remaining 14 actions by 2022. It also set out 9 No. new actions beyond those set out previously that have been committed to since the original publication. These include actions to ensure that the network connections process is appropriate and does not present any undue burdens to storage.

**Clean Growth Strategy (October 2017)**

8.15 The Clean Growth Strategy[9] was published in October 2017. The strategy outlines the ambition of delivering a, 'diverse electricity system that supplies our homes and businesses with secure, affordable and clean power.' It goes on to state that this, 'means upgrading our electricity system so it is smarter (using data to provide greater control), more flexible (providing energy when it is needed) and takes advantage of rapidly developing technologies such as energy storage…' (page 95)

8.16 Page 96 identifies that one possible clean growth pathway (to 2032) 'could see power emissions fall by 80 per cent compared to today, to around 16 Mt.' it goes on to identify that, 'This could be achieved by:

- Growing low carbon sources such as renewables and nuclear to over 80 per cent of electricity generation, and phasing out unabated coal power;
- Enabling a smarter, more flexible system, unlocking significant expansion of interconnection, electricity storage, and demand side response, the first steps of which are set out in the Smart Systems and Flexibility Plan...'

8.17 A range of policies and proposals are set out within the strategy; those of relevance to the Proposed Development include:

- 'The Government, Ofgem and industry will implement the 29 actions set out in the Smart Systems and Flexibility Plan published on 24 July. These will enable technologies such as energy storage and demand side response to compete effectively within the energy market, help integrate more low carbon generation such as solar into our energy system, and deliver secure, smart appliances and smart tariffs

[9] https://www.gov.uk/government/publications/clean-growth-strategy

to allow consumers to benefit from using energy at times when it is cheaper. Innovations and other steps to increase flexibility could unlock up to £40 billion in energy cost savings up to 2050.'

- 'We will work with Ofgem to ensure the necessary regulatory and market arrangements evolve to support the development of a clean, smart and flexible energy system as outlined in their strategy for regulating the future energy system.'
- 'The Government expected to invest around £900 million of public funds between 2015 and 2021 in research and innovation in the power sector.' For power and smart systems, this includes, 'Ensuring that the power system is smart and resilient to new demands and new sources of supply will be important for energy security, cost and industrial opportunities. The government, in partnership with the Research Councils and Innovate UK, expects to invest around £265 million in research, development and deployment in this area which will help to reduce the cost of electricity storage, advance innovative demand response technologies and develop new ways of balancing the grid...'

**Building a Britain Fit for the Future (November 2017)**

8.18 The 'Building a Britain Fit for the Future'[10] White Paper was published by the Department for BEIS in November 2017. It sets out the long-term plan to help businesses create better, higher paying jobs with investment in the skills, industries and infrastructure of the future.

8.19 The plan is supported by five foundations of productivity (ideas, people, infrastructure, business environment and places) which align with the government's vision for a transformed economy. It also defines 4 No. 'grand challenges', one of which is the aim of, *'maximising the advantages for UK industry from the global shift to clean growth.'* (page 10).

8.20 The Government identifies that, *'The move to cleaner economic growth – through low carbon technologies and the efficient use of resources – is one of the greatest industrial opportunities of our time…'* (page 42). The strategy goes on to identify that the Government, *'…will take action to establish and extend UK leadership in the following priority areas:'* which amongst others includes developing: *'…smart systems for cheap and clean energy across power, heating and transport'* (page 44).

Page 45 of the Strategy recognises that, *'Smart systems transform our ability to use clean energy cost-effectively…we are setting ourselves the challenge of remodelling it* [the national electricity grid] *so it can handle many different sources of clean energy, and use new technologies to store energy and manage demand…'*

**Committee on Climate Change Net Zero Publications (May 2019)**

*Net Zero – The UK's Contribution to Stopping Global Warming (May 2019)*

[10] https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future

8.21 In May 2019 the Committee on Climate Change published Net Zero – The UK's Contribution to Stopping Global Warming. The report recommends a new target of net zero greenhouse gas emissions by 2050. This was passed into law in June 2019.

8.22 The report highlights the falling cost of key renewable technologies including battery storage and advises that flexibility in the energy supply (e.g. demand response, storage and interconnection) should be encouraged by policy and regulatory frameworks (page 46).

*Technical Annex: Integrating Variable Renewables (May 2019)*

8.23 The Technical Annex emphasises that reducing electricity emissions close to zero will require sustained and increased deployment of renewables and improvements in system flexibility, such as battery storage, can help accommodate large volumes of variable renewables in the system at low cost (Page 3).

**Single Department Plan (June 2019)**

8.24 In June 2019, the Department for BEIS published 'The Single Department Plan'[11]. The plan identifies five overarching objectives, including ensuring that: 'the UK has a reliable, low cost and clean energy system'. This objective is broken down into the following sub-objectives:

- Set out a vision for the energy system consistent with the government's 2050 climate goals, with concrete actions that the government will take up to 2030' – to be achieved by (amongst others): 'delivering an ambitious Energy White Paper addressing the transformation of the GB electricity system, including proposed legislation where appropriate'; and 'further developing carbon capture, use and storage deployment, to support decarbonisation and meet our legally binding carbon budgets, including potential 'net zero' by 2050';

- 'Support clean growth and promote global action to tackle climate change' – to be achieved by (amongst others), 'working with business…to deliver the Clean Growth Strategy, our legally binding greenhouse gas emissions reductions targets…'; 'becoming the first major economy to legislate for net zero. Maintain the UK's position as a global leader in cutting emissions while growing the economy, and develop world leading sectors to drive clean growth across the UK'; and 'continuing to decarbonise the power sector by running the next Contracts for Difference allocation round to secure new renewable capacity'.

- 'Ensure our energy system is reliable and secure' – to be achieved by (amongst others): 'ensuring reliable supplies of electricity and gas, including for example through (…) industry to reinstate the capacity market and undertaking a statutory 5- year review of the capacity market'.

- 'Deliver affordable energy for households and businesses' – to be achieved by, 'continuing to implement the Government and Ofgem's 'Smart Systems and Flexibility Plan' by 2022, removing

[11] https://www.gov.uk/government/publications/department-for-business-energy-and-industrial-strategy-single-departmental-plan

barriers to smart technologies enabling smart homes and businesses, and improving access to markets for new technologies and business models'.

**Net Zero – Opportunities for the power sector (March 2020)**

8.25 The report was prepared by the National Infrastructure Commission to advise the government. It explains that due to current planned fossil fuel plant retirements in the 2020s there will be a gap in electricity generating capacity that needs to be filled. It emphasises that low carbon generation must fill this gap. Given their short lead times, renewables are ideally placed to do this.

8.26 The report also recommends battery storage as an important flexible technology to help balance supply and demand.

**Reducing UK Emissions: 2020 Progress Report to Parliament (June 2020)**

8.27 Following assessment of a wide range of measures the Climate Change Committee identified strengthening energy networks as one of five clear investment priorities.

**Ten Point Plan for a Green Industrial Revolution (November 2020)**

8.28 The government set out a 10 point plan to lay the foundations to meet its legal obligation to reach net zero greenhouse emissions by 2050 and encourage a Green Industrial Revolution. A key focus of this plan is to invest in clean technologies.

**National Infrastructure Strategy: Fairer, Faster, Greener (November 2020)**

8.29 This provides the latest government infrastructure strategy and prioritises decarbonising the economy as one the key principles of the strategy. Chapter 3 explains the priorities for power and states that to achieve net zero by 2050, the power system will need to be virtually carbon free and significantly larger to cope with the additional demand. This expanded system will require increased investments in network infrastructure, sources of flexibility, such as interconnection, demand response and storage and enough low carbon generation capacity to provide the vast majority of the UK's electricity needs (Page 50).

**Energy White Paper (December 2020)**

8.30 Following on from the Ten Point Plan and the National Infrastructure Strategy, the Energy White Paper reiterates the need to act now to achieve the 2050 net zero emissions target. Energy storage in batteries is stated as an important element to balance supply and demand and achieve the key commitment of Efficient Electricity Markets (Page 72).

**Industrial Decarbonisation Strategy (March 2021)**

8.31 The government strategy sets out the aim to show how the UK can have a thriving industrial sector aligned with the net zero target and how it will act to support this through support and investment in low carbon technologies.

**Upgrading our Energy System: Transitioning to a Net Zero Energy System: Smart Systems and Flexibility Plan (July 2021)**

8.32 The Department for BEIS published the, 'Smart Systems and Flexibility Plan 2021' in conjunction with Ofgem to set out a vision for delivering flexible electricity systems underpinning energy security and the transition to a net zero 2050. Page 5 states that around 30 GW of total low carbon flexible capacity in 2030, and 60 GW in 2050, may be needed to maintain energy security and cost-effectively integrate high levels of renewable generation.

8.33 Page 38 explains the importance of battery storage as essential to a net zero system as it can store electricity when it is abundant (e.g. when it is windy or sunny) for periods when it is scarce (e.g. when demand is higher). It goes to say that the need for electricity storage will rise as we increase the volume of renewables on the system and increase peak demand through the electrification of heat and transport.

8.34 The plan sets out that there is 1 GW of battery storage today, with a further 8 GW of battery storage in the pipeline.

8.35 The plan explains the government intends to amend key planning guidance documents to set out the need case for storage and reflect the legislative changes made in 2020 and support the planning permission process for planners and developers (Page 40).

**National Infrastructure Assessment (November 2021)**

8.36 The interim assessment by the National infrastructure Commission stresses the significant challenges across sectors, with infrastructure needing to improve performance to reduce emissions from the electricity sector to near zero by 2035 (Page 25).

**British Energy Security Strategy (April 2022)**

8.37 The British Energy Security Strategy sets out the government's aims to reduce reliance on coal and gas and to generate and store more renewable and nuclear energy in the UK. In the Networks, storage and flexibility section, the government commits to ensure a more flexible, efficient system for both generators and users by encouraging all forms of flexibility with sufficient large-scale, long-duration electricity storage (Page 25).

# 9.0 Relevant Material Considerations: Infrastructure operator-related documents

**National Grid ESO: Future Energy Scenarios (July 2021)**

9.1 Future Energy Scenarios outlines four different scenarios for the future of the UK's energy system, three of which would achieve the target of net zero emissions by 2050. Holistic energy market reform is needed to drive the investment and behaviour changes needed to deliver net zero and ensure security of supply at a fair and reasonable cost for consumers.

9.2 It states one of National Grid's aims is to be able to operate electricity system carbon free by 2025 adding that this means alternative sources of inertia will need to be found (page 114).

9.3 Amongst other things, achieving net zero could require as much as 13 GW of new electricity storage by 2030 to help balance period of high and low renewable output.

**National Grid ESO: Day in the Life 2035 (2022)**

9.4 The 'Day in the Life 2035' published by the National Grid presents an illustration of what a net zero power system could look like on a winter's day with low winds and very little sunshine. The executive summary explains that energy storage is key, alongside development of low carbon dispatchable generation. The Day in the Life demonstrates that energy storage, especially long-duration storage, will be critical to make best use of low-cost energy, balance demand and supply, and to operate the system.

9.5 In the net zero system, electricity storage plays a critical role. In addition to providing system services at both transmission and distribution level, energy storage will be critical to maximise the value of renewable electricity through 'price arbitrage', meaning when electricity is cheaper, typically during periods of low demand and/or high renewable output, energy is stored and then supplied when prices are highest, either when demand is high, available generation is low, or there is a requirement for system services.

# 10.0 Planning Justification

**Principle of Development & Green Belt**

10.1 The site is situated in the countryside, within the Green Belt. Local Plan Policy SS 10 sets out that such areas will provide for development which, *inter alia*, has an essential need to be located in the countryside and supports sustainability of the rural areas. The nature of the proposed development is such that this location is necessary in order to gain connection to Cellarhead substation, with no alternative possible sites available that would be within the development boundary and outside of the Green Belt. To this end, in accordance with policy SS 10, the proposed development has an inherent essential need to be located in the countryside.

10.2 Moreover, Local Plan Policy SD 2 supports the delivery of renewable and low-carbon energy sources to meet part of the District's future energy demand which accords with the proposed development which comprises a BESS scheme to support the grid network.

10.3 The proposed development has direct support from Government and those advising them as critically important and nationally essential grid support infrastructure. Furthermore, future development in carbon capture, use and storage deployment is required to support decarbonisation and meet legally binding targets. The National Grid recognises that reaching a net zero carbon emissions target by 2050 is achievable but this will require immediate action across all key technologies and the future energy scenarios identifies that there is a need to support the intermittent output from renewables.

10.4 Battery storage is inherently fundamental infrastructure in achieving environmental targets set by the Government. The proposed development provides greater capacity and flexibility in the energy generation network, supporting the move towards the low carbon energy network.

10.5 In accordance with national planning policy, it is acknowledged that the proposal constitutes inappropriate development in the Green Belt. However, as set out within this statement and supporting documents, very special circumstances exist which support the need for a BESS scheme on the application site. Pursuant to paragraph 151 of the NPPF, in relation to Green Belt renewable energy projects, very special circumstances in support of the proposed development include the wider environmental benefits associated with increased production of energy from renewable sources.

10.6 The proposed landscape enhancements are such that the proposed development will have a limited impact on the perception of openness within the Green Belt and upon visual receptors. Ultimately, the urgent need for the developments such as BESS is clearly outlined in the Government's energy strategy and in national planning policy. The proposal will contribute to meeting this requirement which clearly carries significant weight and represents very special circumstances.

10.7 Moreover, the temporary nature of the proposed development is noted in that it represents a very special circumstance in support of the proposal. Owing to the nature of the proposed development, at the time the

BESS has been decommissioned, the development would be removed and the land swiftly returned to its existing baseline state.

10.8 Local Plan Policy SS 10 states that rural areas *"will provide only for development which has an essential need to be located in the countryside"*. With respect to the Green Belt, the policy goes on to say that *"strict control will continue to be exercised over inappropriate development within the Green Belt allowing only for exceptions as defined by Government policy".* A review of the Green Belt was undertaken as part of the evidence base for the adopted local plan. The conclusions reached in this for the parcel of land encapsulating the application site (parcel C8) are replicated below with respect to the purposes of the Green Belt.

| | |
|---|---|
| **Purpose 1** – To check the unrestricted sprawl of large built-up area | Limited contribution |
| **Purpose 2** – To prevent neighbouring towns merging into one another | Limited contribution |
| **Purpose 3** - To assist in safeguarding the countryside from encroachment | Contribution |
| **Purpose 4** – To preserve the setting and special character of historic towns | Limited contribution |
| **Purpose 5** – To assist in urban regeneration, by encouraging the recycling of derelict and other urban land | Limited contribution |

10.9 Overall, the Council's review identifies the parcel of land including application site makes a 'contribution' to the purposes of the Green Belt. Based on the criteria set out in the Council's Green Belt Review, this means that the purposes of the Green Belt are only partially being fulfilled, and that the boundary could be revised if other factors so indicate.

10.10 Furthermore, the Council's review sets out that land parcels making a 'significant contribution' to the Green Belt are those situated in a band closest to the urban area of Stoke-on-Trent, and that all other areas make a partial contribution. Based on the objective conclusions reached by the Green Belt Review, it is evident therefore that the application site lies within an area that only partially fulfils the purposes of the Green Belt and where the boundary could be revised if 'exceptional circumstances' or 'very special circumstances can be demonstrated'.

10.11 In this context, a recent appeal decision allowing a BESS scheme on land west of Wolverhampton West Primary Substation, South Staffordshire Railway Walk, Wolverhampton, WV4 4XX is highlighted (appeal ref: APP/C3430/W/22/3292837). The decision by South Staffordshire District Council to refuse the proposed development was overturned at appeal with the appeal allowed on 16/08/2022. In this case, the inspector found that the environmental benefits of the scheme, and the fact that impacts could be made acceptable, were sufficient to outweigh the harm to the Green Belt, concluding that the very special circumstances necessary to justify the proposal did exist. Similarities can be drawn to the proposed

development on the application site with both being BESS schemes on Green Belt land. In allowing the aforementioned appeal, particularly relevant comments from the Inspector are noted in her decision stating:

*"Although modest in scale, the appeal scheme would make a valuable contribution to cutting greenhouse gas emissions, by increasing the opportunity to store energy, and this also attracts substantial weight…National policy advises that developments should be located where impacts are, or can be made, acceptable. I consider that the location of the proposed development, adjacent to an existing substation and agricultural buildings, together with the existing and proposed landscaping means that this would be the case here. Additionally, whilst the proposed development would be located at the site for a number of years, it is reversible and capable of being removed from the site."*

10.12 It is further noted that, pursuant to the site selection process, the proposed development is required to be in close proximity to the existing Cellarhead substation and, in this regard, surrounding land is washed over by the Green Belt. Location of the proposed development outside of the Green Belt is therefore not a possibility.

10.13 Ultimately, when considering the Green Belt balance, the proposed development constitutes very special circumstances and the impacts can be made acceptable such that the proposal as a whole is acceptable in local and national planning policy terms with the inclusion of the proposed mitigation and enhancement measures.

10.14 The proposed development inherently impacts on the Green Belt, however the very special circumstances in place ensures that the harm to the Green Belt, and any other harm resulting from the proposal, is clearly outweighed by the benefits of the scheme.

10.15 We are aware of the Council's decision to refuse planning permission on two nearby sites, surrounding Cellarhead substation, for a BESS and flexible energy generation development in June 2022 (LPA ref: SMD/2022/0047 & SMD/2021/0695) for reasons of impact on the landscape and environment along with impact on nearby residents amenity. In this context, the application site is located considerably further away from any sensitive residential receptors such that no adverse impacts will be experienced by any residents in the area. A noise assessment is submitted with this application, as discussed further below, which concludes that the proposed development is acceptable in this regard. While the need for the proposed development is clear, this establishes that the application site offers betterment when compared to the two recently refused application sites with regard to the potential to impact on nearby residents. Moreover, the landscape impact of the proposed development has been fully assessed to ensure no unacceptable adverse impact on the character of the landscape with the inclusion of a wide range of landscape and biodiversity enhancements.

**Environmental Benefits**

10.16 The proposed development through both its energy storage and grid stabilisation will provide a significant contribution to enabling increases in renewable energy generation in the region. If the Government is to achieve the legally binding target of achieving net zero by 2050, battery energy storage systems are

essential. Increased reliance on renewable energy brings problems of intermittency and grid stability which the proposed development is intended to address.

10.17 The strong support from central Government for this type of infrastructure was expressed by Greg Hands, Minister for Business, Energy and Clean Growth, who recently quoted that:

*"The UK's transition to cleaner forms of energy production was an issue of national security and not just of decarbonisation".*

10.18 This is further acknowledged by Staffordshire Moorlands District Council in recognising the serious threat posed by climate change and the responsibility that institutions, businesses and communities have in reducing carbon emissions and preparing for any impactive change. In this regard, the Council declared a climate emerging on 10th July 2019, making a commitment to:

*"Start working with partners, across the district and region, towards making the Staffordshire Moorlands carbon neutral by 2030; taking into account emissions from both production and consumption".*

10.19 Following setting the legally binding target to achieve net zero from emissions by 2050 in 2019, the Government has published a range of strategies prioritising investment in low carbon technology and energy generation. The 'Energy White Paper' explains the importance of energy storage in batteries to balance supply and demand and achieve the key commitment of Efficient Electricity Markets.

10.20 The latest 'National Infrastructure Assessment' (November 2021) stresses that there needs to be an improvement in infrastructure to help reduce emissions from the electricity sector to near zero by 2035. This follows on from a previous report, 'The Net Zero - Opportunities for the power sector' (March 2020), where the importance and urgency of low carbon generation was highlighted to replace the planned fossil fuel plant retirements in the 2020s. The March 2020 report also recommends battery storage as an important flexible technology to help balance supply and demand. Notwithstanding this, the infrastructure operator-related documents as set out in Section 9 above also reinforce the importance of battery energy storage.

10.21 The Government deliberately amended the legislative framework in the '2020 Storage Order' in order to encourage the delivery of large scale battery storage facilities. Furthermore, the scale, function, compatibility with existing infrastructure and contribution towards meeting the national and local battery energy storage demands are significant benefits of the proposed development, which should be given significant weight when considering this planning application.

10.22 Ultimately, owing the nature of the proposed development, the need for this and associated planning policy support, it is considered that the principle of development is acceptable on the site.

**Arboriculture & Landscape**

10.23 The submitted supporting arboricultural report concludes that the impact of the proposed development on existing trees and vegetation is negligible. The proposal has been designed following consultation to avoid

potential harm to trees onsite and eliminate the need for pruning to facilitate the construction or maintain clearances.

10.24 It is proposed that two small sections of hedgerow are removed in order to create a new access track serving the site. This is considered to be favourable in arboricultural terms to avoid potential harm to the retained mature trees.

10.25 The proposed development has been assessed to carry a low residual risk of harm to the retained trees and is in accordance with Local Plan Policy NE 2. The recommendations of the submitted supporting arboricultural report, including tree protection plan, will be adhered to in this regard.

10.26 The site is situated within the open countryside and identified as being within the 'Ancient Plateau Farmlands' landscape character area within the Council's Landscape Character Assessment. The landscape impact of the proposed development is assessed in full within the submitted supporting landscape and visual appraisal and Green Belt position statement.

10.27 The proposed development incorporates a wide range of landscape mitigation and enhancement measures. This is reflected by the red line boundary of the site to include not only the access and area proposed for BESS kit/equipment but adjacent greenfield land to encapsulate works amounting to landscape and biodiversity enhancement which include planting and reinstatement of hedgerows.

10.28 The submitted support landscape and visual appraisal and Green Belt position statement demonstrates that the proposed development would not result in any significant residual landscape or visual impacts. By adopting a sensitive approach to the layout and incorporating mitigation measures as an integral part of the development, it is evident that the proposals would reinforce local character and would consequently not result in any unacceptable adverse impacts.

10.29 The landscape led design philosophy has produced a well-considered landscape strategy that will maintain and reinforce local landscape character whilst also improving the biodiversity and ecological value of the site which will help to promote a positive sense of place within the site. The proposed development accords with Local Plan Policy DC 3 and is therefore acceptable in this regard.

**Ecology (including Biodiversity Net Gain)**

10.30 The proposed development is supported by an ecological appraisal submitted as part of the application, which includes the findings of a phase 1 habitat survey.

10.31 Following assessment of the proposed development on the site, it is concluded that the development proposals are considered to have a negligible impact on statutory designated sites (including Natura 200 sites). With regard to the Westley Moor Site of Special Scientific Interest (SSSI), the proposed development is considered to have no impact, including no impact through recreational use of the SSSI as the proposed development does not comprise residential use.

10.32 The limited removal of hedgerows will not reduce connectivity around the site or to habitats outside the red line boundary. Retained hedgerows will be protected through a sensitive lighting scheme to reduce indirect impacts to foraging and commuting bats.

10.33 In accordance with the proposed biodiversity enhancements on the site, the proposed development delivers biodiversity net gain (BNG) which carries great weight in consideration of the benefits of the proposal.

10.34 In this regard, the proposed development would result in a BNG of circa 2.78 habitat units (15.53%) and a net gain of circa 9.11 hedgerow units (218.67%). While Local Plan Policy NE 1 expects development to deliver a net gain in biodiversity, where possible, proportionate to the size and scale of the development, it is clear that the proposed enhancement measures exceeds this policy expectation and is therefore acceptable in this regard.

**Delivery and Timing Benefits**

10.35 Conrad Energy have secured a connection with Western Power Distribution for the proposed BESS scheme with a planned operation date of late 2024.

**Suitability of Proposed Location**

10.36 The application site is optimally located in close proximity to Cellarhead substation which means that any losses of energy along the connection to the grid are significantly reduced and there is no need for overhead power lines which can cause general construction disturbance and visually impact the landscape.

10.37 Paragraph 4.12 sets out the site selection process and the stringent site selection criteria that are applied when choosing the most suitable site. Potential BESS's as close to the existing substations like the proposed scheme are rare and therefore the application site is a prime location to accommodate this much need public utility infrastructure.

**Cost of Living Benefits**

10.38 Battery energy storage systems help reduce the costs of energy for consumers by storing excess energy when costs are low and providing back up into the grid at times of peak demand when costs are higher. These benefits should be given weight considering the current and forecast rising costs of energy due to the uncertain energy supply of oil and gas and the impacts they are having on the cost of living in the UK.

10.39 Energy costs are a huge concern currently and underpin the cost of living crisis. This has prompted the Government to prioritise renewable energy generation and infrastructure even further to secure energy supply and reduce costs. The National Grid in its 'A Day in the Life 2035' document, explain that energy storage is considered critical to be able to increase energy supply during times of peak demand to help reduce energy costs to consumers.

10.40 The world now faces major changes arising from international conflict and this has prompted European governments, including the UK to make urgent reappraisals of energy supply.

**Design and Appearance**

10.41 The development will be industrial in both character and appearance, commensurate in some regard to the neighbouring agricultural buildings, but also clean and low key both in terms of appearance and activity. This is enhanced by the plethora of supporting landscaping which forms a critical element of the proposed scheme.

10.42 The presence of similar energy generation kit the proposed development is established in the landscape at Cellarhead substation.

10.43 Utility supply and connections can be conveniently provided to the site which shall be underground and not visible.

**Noise**

10.44 The submitted supporting noise impact assessment has considered the potential noise generation from the plant associated with the proposed development, with respect to existing sound levels in the area, including mitigation measures.

10.45 The assessment has identified that the proposed development will give rise to rating sound levels that do not exceed the measured background sound level in the area, thus giving rise to a 'low impact'.

10.46 Furthermore, the assessment has identified that no significant change in ambient sound level at identified receptor locations will be engendered as a result of the proposed development and that the amenity of residential receptors will not be compromised.

10.47 Consequently the assessment has demonstrated that the proposed development will give rise to noise impacts that would be within the range of 'no observed adverse effect level' of the NPPG England guidance.

10.48 The proposed development is therefore acceptable in this regard.

**Flood Risk and Drainage**

10.49 The site is situated within Flood Zone 1. The supporting Flood Risk Assessment & Drainage Strategy confirms that the site is at a low risk of flooding from all sources, as required by the NPPF.

10.50 Ground conditions are unlikely to be suitable on the site for the use of infiltration drainage. To that end, it is proposed to discharge surface water to the existing ditch network which flows towards the watercourse to the east of the site.

10.51 Discharge from the site is limited by a flow control device to a maximum rate of 1.0l/s up to and including the 1% AEP including 25% climate change rainfall scenario.

10.52 The proposed attenuation basin has been sized to accommodate the temporary run-off for rainfall events up to and including the 1:100 year event inclusive of 25% climate change.

10.53 Foul water shall be discharged to a septic tank.

10.54 Ultimately, the site is at low risk of flooding from all sources and meets the requirements of the NPPF in terms of appropriate development. The proposed development will not increase on or off-site flood risk.

10.55 The proposed drainage strategy complies with Staffordshire County Council guidance; surface water generated by the proposed development can be attenuated on site in the extreme climate change event and discharged at a controlled rate which will not exceed 1.0 l/s.

**Contamination**

10.56 As set out within the supporting Phase I Geo-Environmental Assessment, owing to the sites historic use for agricultural land any potential contamination is anticipated to be limited.

10.57 With regard to the risk to future site users, it is considered that the risks of the site and construction workers from potential exposure to any ground contamination are unlikely to be significant.

10.58 The risk to controlled waters is further unlikely to be significant based on the anticipated localised nature of any contamination.

10.59 Moreover, risks associated with ground gases are considered unlikely to be significant based on the low sensitivity of the proposed end use.

10.60 Potential geotechnical hazards such as ground instability, dissolution features, landslides, swelling/shrinking clays and running sand are indicated by the geo-environmental database search report as being low. In addition, slope stability is not considered to be an issue.

10.61 In summary, based on the geo-environmental assessment carried out, no potentially significant geo-environmental hazards or abnormals have been identified on the site.

**Access & Transport**

10.62 The BESS proposals once fully operational will be inconspicuous in transport terms with trips limited to staff visiting the site several times per week to check the ‘kit’ and undertake general maintenance. All site maintenance access will be for small vans only

10.63 Access to the site shall be gained off Armshead Road, with vehicles utilising the access track to reach the site as shown on the submitted plans.

10.64 A public footpath runs along the existing farm access track which forms the northern boundary of the field within the site proposed for the BESS kit/equipment. This shall be retained as part of the proposed development.

10.65 The proposals accord with paragraph 111 of the NPPF which states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

# 11.0 Conclusion

11.1 Electricity storage is a key technology in the transition to a smarter and more flexible energy system and will play and ever more important role in helping to reduce emissions to net zero by 2050. Technologies such as Battery Energy Storage alongside other technologies like demand side response and interconnection can provide flexibility to the system, by shifting when and where electricity is generated and shifting when electricity is used.

11.2 The proposed development would support the decarbonisation of the energy industry in the UK. The changing nature of the UK'S energy requirements is clearly defined in Government Energy Policy and is supported by the anticipated requirements of the National Grid. These considerations clearly identify an essential requirement for additional balancing capacity to meet demand and support the transition to a low carbon, resilient energy network. The battery energy storage facility would make an important contribution towards meeting these requirements.

11.3 The proposed energy generation has been designed to help ensure continuity of electricity supply within the local distribution network and this network is essential for supplying homes and businesses with electricity. This is a suitable location for this type of development.

11.4 In summary, the development proposals will:

- Contribute to the wider environmental benefits associated with facilitating increased production of energy from renewable sources;
- Help meet the national and regional requirements for energy storage and stabilisation to support the urgent need to increase renewable energy generation. The scale, function and compatibility with existing agricultural buildings and nearby Cellarhead substation along with the timing for delivery mean that the development proposals deliver on the need to upgrade renewable energy infrastructure and meet growing demand; and
- Contribute towards energy security and cost reduction (Government priorities).

11.5 When considering the Green Belt balance, the proposed development constitutes very special circumstances and the impacts can be made acceptable such that the proposal as a whole is acceptable in local and national planning policy terms with the inclusion of the proposed mitigation and enhancement measures. Furthermore, the comprehensive site design process, including the proposed integral landscape and biodiversity enhancement ensures no unacceptable adverse impact on the landscape character area of the Ancient Plateau Farmland.

11.6 Overall the scheme provides a number of benefits, particularly ensuring local electricity supply. This planning statement provides an assessment of the proposed development against the Development Plan, concluding that it accords with the Development Plan, read as a whole and is further supported by other material considerations including the NPPF and Government and local policy supporting the transition to a

low carbon electricity network. Therefore in the planning balance the proposed development is considered acceptable and should be granted planning permission in accordance with the statutory presumption as set out in Section 38(6) of the Planning and Compulsory Purchase Act 2004.