



Afon Wysg 2

Design & Access Statement

Proposed Battery Energy Storage System (BESS) on
land at Former Uskmouth Power Station, Newport

April 2025

Introduction

This Design and Access Statement (DAS) has been prepared on behalf of AW2 Energy Storage Ltd to support their planning application for a proposed battery energy storage system (BESS) on land at the former Uskmouth Power Station in Newport.

The proposal comprises ***“Removal of stored pulverised fuel ash (PFA) and the installation of a new battery energy storage system (BESS) with all associated drainage, infrastructure, engineering works and associated utilities connections”***.

This DAS has been prepared in accordance with the Town and Country Planning (Development Management Procedure) (Wales) Order 2012 (as amended), Planning Policy Wales (February 2024), Technical Advice Note 12: Design (March 2016) and Welsh Government Guidance on Design and Access Statements in Wales (April 2017).

The Welsh Government guidance indicates that the purpose of a DAS is to illustrate the process that has led to the development proposal and advises that the level of detail required depends on the nature, scale, and complexity of the application.



Site Context and Analysis

Site Location

Uskmouth Power Station site is located at the mouth of the River Usk in the south-east of Newport approximately 4km south of Newport city centre.

Uskmouth Power Station was historically made up of two power plants; Uskmouth A Power Station built in the 1940s and demolished in 2002, and Uskmouth B Power Station constructed in the late 1950s. The proposed BESS will be built on land associated with the former Uskmouth A Power Station.



Site Location



Site Context and Analysis



Aerial Image of the Former Uskmouth Power Station

Land Uses

To the immediate north is the Severn Power combined cycle gas turbine (CCGT) Power Station which was constructed in 2007 on the site of the former Uskmouth A power station and west of this is the Uskmouth National Grid Substation. To the south east is the former coal stockpile area and beyond this lies the RSPB Wetlands National Nature Reserve.

The wider setting of the Uskmouth Power Station site is industrialised with existing industry close by and across the River Usk. To the north east is the Liberty Steel plant and industrial estates stretching from the power station site to the A48 'Southern Distributor Road' dual carriageway. To the east is the Welsh Water Treatment works.



Site Context and Analysis

In terms of the BESS site itself, the site covers an area of approximately 4 ha with the eastern part of the site comprising land that is currently used for the storage of pulverised fuel ash.

The PFA storage area is bound by 2.4m high reinforced concrete walls. The western part of the site comprises a balancing pond.



Aerial Image of the Former Uskmouth Power Station



Site Context and Analysis

Access

The site is currently accessed via existing roads from the Power Station entrance from West Nash Road, leading to Nash Road and Meadows Road towards Newport with the M4 corridor beyond.

There are no public rights of way within the Power Station site. The Wales Coastal Path, running through the Newport Wetlands National Nature Reserve, is located approximately 170 m to the south of the Site.

The Site is situated within the designated Urban Boundary and is not covered by any statutory or non-statutory designations or assets that relate to biodiversity, landscape or cultural heritage. However, the site is near to four European designated sites, as follows: River Usk/Afon Wysg SAC and the Severn Estuary/Môr Hafren SAC, SPA and Ramsar site. The site also falls within 'The Levels' Archaeologically Sensitive Area.



The Application Site (outlined in red)



Site Context and Analysis

Ecology and Biodiversity

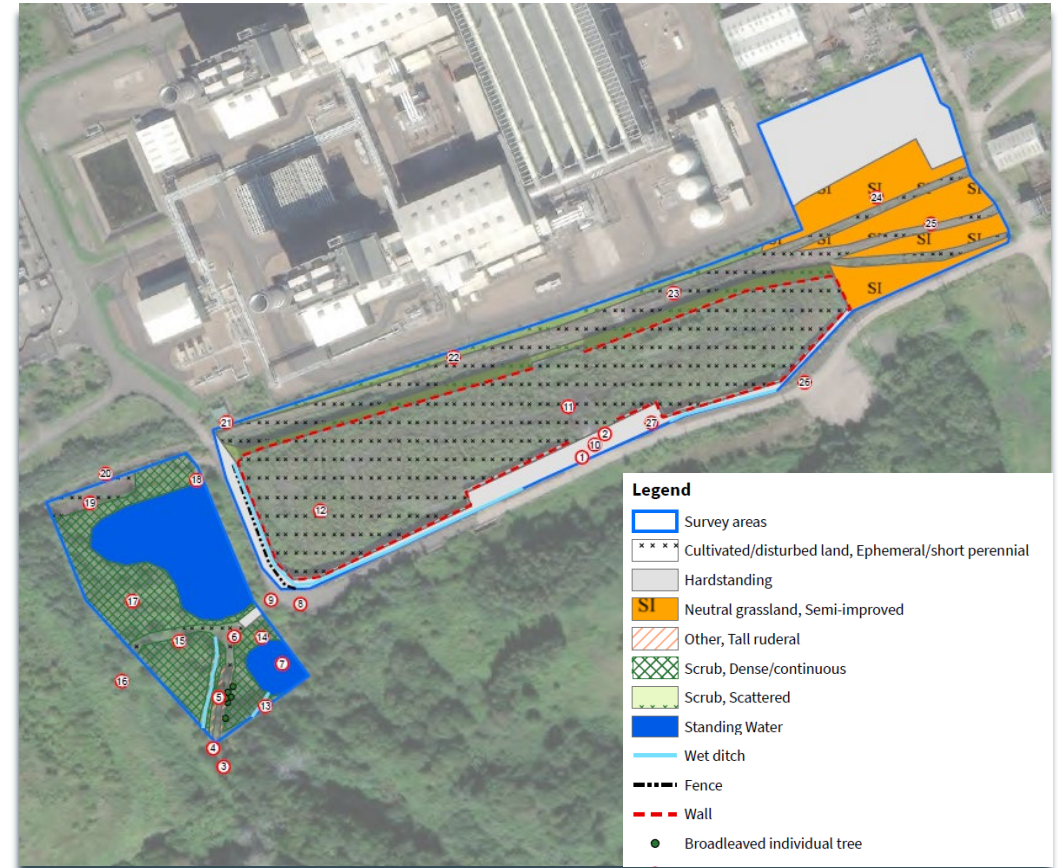
The Newport Wetlands National Nature Reserve is located adjacent to the sites southeastern boundary. It is designated for birds and for certain fish species of national importance.

230m to the north, south and west of the site is The Usk River, which is designated as a SAC. There are several other designations within 3km of the site, such as the Severn Estuary SPA, SAC and Ramsar.

The eastern part of the site comprises of mainly cultivated/ disturbed land, Ephemeral/short perennial, hardstanding and Neutral grassland, Semi-improved. The western part of the site comprises of standing water , scrub, dense/continuous and a few individual broadleaved trees.

A wet ditch runs along the southern boundary of the eastern part of the site with another wet ditch located in the southwestern part of the site.

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Habitat Plan



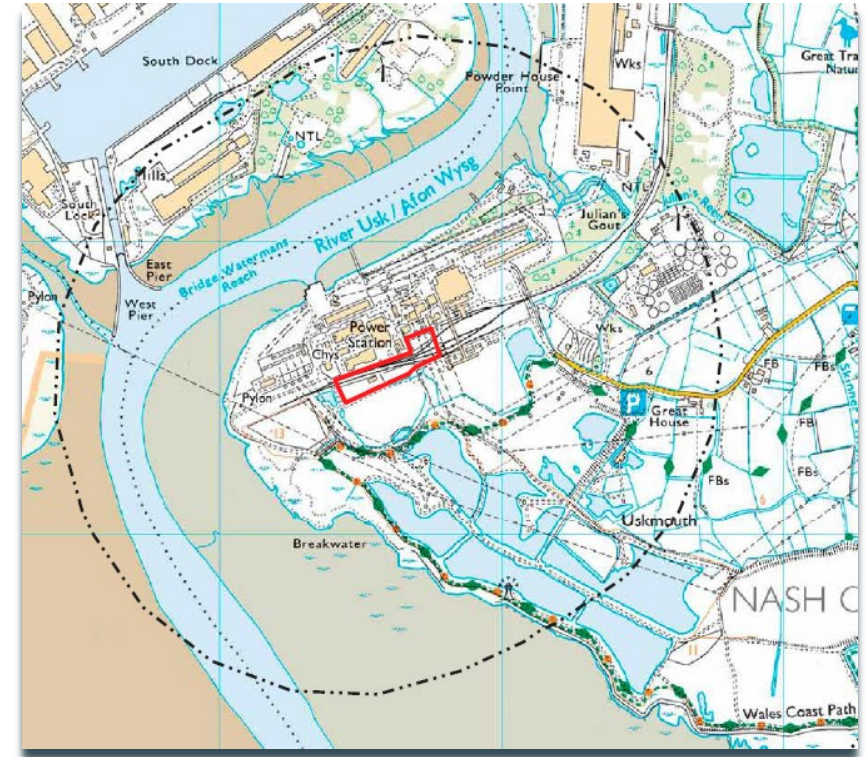
Site Context and Analysis

Watercourses and Drainage

Ground levels are highest in the east of the site at approximately 9m AOD. Generally, the ground descends in a southern direction, with the lowest ground levels at approximately 8.14m AOD.

In relation to watercourses, there are no NRW Main Rivers or Ordinary Water Courses crossing the site. However, the Usk River is located circa 230m to the west of the site and there is a series of drainage channels and reens situated southeast of the development which are the Caldicot and Wentlooge levels.

There is currently a flat concrete slab beneath the PFA stockpiles that fall gradually towards the south of the AW2 site where the existing concrete conduit channels are situated. The concrete conduit channels direct the surface water runoff towards a primary settlement tank, then conveyed via a connection pipe beneath the carriageway to the final settlement tank.



Nearby Watercourses



Planning Policy Context

The Development Plan comprises Future Wales – the National Plan 2040 (published February 2021) and the Newport Local Development Plan 2011-2026 (adopted January 2015). Material considerations include national policy in the form of Planning Policy Wales (PPW).

Future Wales – the National Plan 2040

Future Wales The National Plan 2040 (FW) was published in February 2021 and sets out the national development framework for Wales outlining the direction for development to 2040.

With regard to renewable energy, *“Our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, means we are well placed to support the renewable sector, attract new investment and reduce carbon emissions.”*



Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure states *“the Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications, decision makers must give significant weight to the need to meet Wales’ international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.”*



Planning Policy Context

Newport Local Development Plan (LDP)

Objective 2 – Climate Change. To ensure that development and land uses in Newport make a positive contribution to minimising, adapting to or mitigating against the causes and impacts of climate change, by incorporating the principles of sustainable design, changes to travel behaviour, managing the risks and consequences of flooding, and improving efficiency in the use of energy, waste and water. The adopted LDP policies of relevance are as follows:

SP1 Sustainability

SP3 Flood Risk

SP9 Conservation of the Natural, Historic and Built Environment

SP18 Urban Regeneration

GP1 General Development Principles – Climate Change

GP2 General Development Principles – General Amenity

GP3 General Development Principles – Service Infrastructure

GP4 General Development Principles – Highways and Accessibility

GP5 General Development Principles – Natural Environment

GP6 General Development Principles – Quality of Design

GP7 General Development Principles – Environmental Protection & Public Health

CE6 Archaeology

CE8 Locally Designated Nature Conservation & Geological Sites

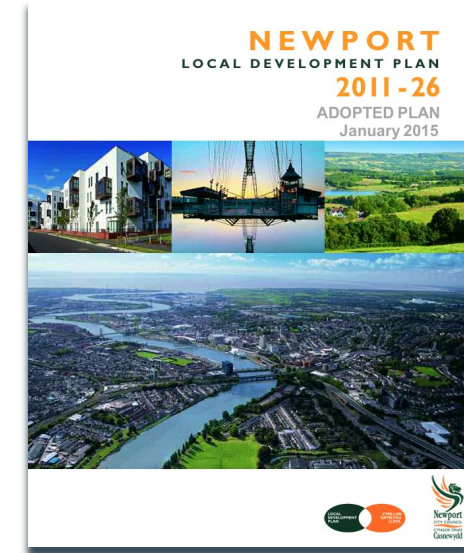
CE9 Coastal Zone

CE10 Renewable Energy

T2 Heavy Commercial Vehicle Movements

T4 Parking

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SP1 Sustainability requires proposals to make a positive contribution to sustainable development by concentrating development in sustainable locations on brownfield land within the settlement boundary. Proposals will be assessed as to their potential contribution to inter alia:

- i) The efficient use of land
- ii) The reuse of previously developed land in preference to greenfield sites
- iii) Reducing energy consumption, increasing energy efficiency and use of low and zero carbon energy sources
- iv) Minimisation, re-use and recycling of waste
- v) Minimising the risk of and from flood risk, sea level rise and the impact of climate change

SP3 Flood Risk – Newport’s coastal and riverside location necessitates that development be directed away from areas where flood risk is identified as a constraint and ensure that the risk of flooding is not increased elsewhere. Development will only be permitted in flood risk areas in accordance with national guidance. Where appropriate a detailed risk assessment will be required. Sustainable solutions to manage flood risk should be prioritised.

SP9 Conservation of the Natural, Historic and Built Environment – the conservation, enhancement and management of recognised sites within the natural, historic and built environment will be sought in all proposals.

SP18 Urban Regeneration – Proposals will be favoured which assist the regeneration of the area, particularly where they contribute to inter alia reuse of vacant, underused or derelict land.

GP1 General Development Principles – Climate Change – development proposals should, inter alia:

- i) Be designed to withstand predicted changes in local climate and to reduce the risk of flooding on site and elsewhere by demonstrating where appropriate that the risks and consequences of flooding can be acceptably managed, including avoiding the use of non-permeable hard surfaces;
- ii) Be designed to minimise energy requirements and incorporate appropriate renewable, low or zero carbon energy sources, including on site energy
- iii) Be designed to reuse or recycle existing construction materials present on the site



GP2 General Development Principles – General Amenity –

Development will be permitted where, as applicable inter alia:

- i) There will not be a significant adverse effect on local amenity, including in terms of noise, disturbance, privacy, overbearing, light, odours and air quality;
- ii) The proposed use and form of development will not be detrimental to the visual amenities of nearby occupiers or the character or appearance of the surrounding area;
- iii) The proposal seeks to design out the opportunity for crime and anti-social behaviour;
- iv) The proposal promotes inclusive design both for the built development and access within and around the development.

GP3 General Development Principles – Service Infrastructure –

Development will be permitted where, as applicable inter alia:

- i) Necessary and appropriate service infrastructure either exists or can be provided;
- ii) In areas served by the public foul sewer, there is capacity for the development within the system or, if not, satisfactory improvements are provided by the developer.

GP4 General Development Principles – Highways and Accessibility –

development proposals should inter alia:

- i) Provide appropriate access for pedestrians, cyclists and public transport in accordance with national guidance;
- ii) Be accessible by a choice of means of transport;
- iii) Be designed to avoid or reduce transport severance, noise and air pollution;
- iv) Make adequate provision for car parking and cycle storage;
- v) Provide suitable and safe access arrangements;
- vi) Design and build new roads within private development in accordance with the highway authority's design guide and relevant national guidance;
- vii) Ensure that development would not be detrimental to highway or pedestrian safety or result in traffic generation exceeding the capacity of the highway network.

GP5 General Development Principles – Natural Environment –

Development will be permitted where, as applicable, inter alia:

- i) The proposals are designed and managed to protect and encourage biodiversity and ecological connectivity, including through the incorporation of new features on or off site to further the UK, Welsh and/or Newport biodiversity action plans;



- ii) The proposals demonstrate how they avoid, or mitigate and compensate negative impacts to biodiversity, ensuring that there are no significant adverse effects on areas of nature conservation interest, and protecting features of importance for ecology;
- iii) The proposal will not result in unacceptable impact on water quality;
- iv) There would be no unacceptable impact on landscape quality;
- v) The proposal includes an appropriate landscape scheme, which enhances the site and wider context including green infrastructure and biodiversity networks.

GP6 General Development Principles – Quality of Design – good quality design will be sought in all forms of development. The aim is to create a safe, accessible, attractive and convenient environment. The following fundamental design principles should be addressed, inter alia:

- i) Context of the site: all development should be sensitive to the unique qualities of the site and respond positively to the character of the area;
- ii) Access, permeability and layout: all development should maintain a high level of pedestrian access, connectivity and minimise noise pollution;
- iii) Preservation and enhancement: where possible development should reflect local character but avoid inappropriate replication of neighbouring architectural styles.

- iv) Scale and form: new development should appropriately reflect the scale of adjacent townscape.
- v) Materials and detailing: high quality, durable and preferably renewable materials should be used to complement the site context.
- vi) Sustainability: new development should be inherently robust, energy and water efficient, flood resilient and adaptable, thereby facilitating the flexible re-use of the building.

GP7 General Development Principles – Environmental Protection and Public Health – development will not be permitted which would cause or result in unacceptable harm to health because of land contamination, dust, instability or subsidence, air, heat, noise or light pollution, flooding, water pollution, or any other identified risk to environment, local amenity, or public health and safety.



CE6 Archaeology – development proposals will normally be required to undertake an archaeological impact assessment before the proposal is determined:

- i) Where groundworks and/or the installation of services are proposed within the archaeologically sensitive areas of inter alia The Levels, or;
- ii) Within other areas of recognised archaeological interest.

CE8 Locally Designated Nature Conservation and Geological Sites – proposals affecting locally designated sites will only be permitted where:

- i) There would be no overall loss of the nature conservation resource for which the site has been designated;
- ii) There would be no significant adverse effect on the geological interest of the site;
- iii) Appropriate mitigation or compensatory measures can be achieved.

CE9 Coastal Zone – development will not be permitted in the coastal area of adjoining the tidal river unless:

- i) In the undeveloped costal areas such development is required to be on the coast to meet an exceptional need which cannot reasonably be accommodated elsewhere;

- ii) The area is not itself at risk nor will the proposed development exacerbate risks from erosion, flooding or land instability.

Development which requires a coastal location should be sited within the developed coastal zone.

CE10 Renewable Energy – renewable energy schemes will be considered favourably, subject to there being no over-riding environmental and amenity considerations. The cumulative impacts of renewable energy schemes will be an important consideration.

T2 Heavy Commercial Vehicle Movements – developments which generate heavy commercial vehicle movements will be favoured in those locations which allow access to a railway line, wharf or dock. Where it can be demonstrated this is not appropriate, locations readily accessible to strategic and principal routes will be favoured.

T4 Parking – Development will be required to provide appropriate levels of parking, within defined parking zones, in accordance with adopted parking standards.



The Application Proposals

The Vision

SAE is the owner, developer and operator of the former Uskmouth Power Station site now known as the Uskmouth Sustainable Energy Park (USEP).

The former power station site has been home to electricity generation for over 50 years but the way electricity is generated and used is changing and SAE and the Uskmouth site is proud to be leading that change.

SAE is transforming Uskmouth into one of the largest Battery Energy Storage sites in the UK to help support the energy transition to Net Zero while ensuring vital energy security and facilitating the increase of renewables.

Jessica Morden MP for Newport East, commented:

"The growth of Newport's economy as a key player in the industries of the future will depend on access to power, and, when fully realised, SAE's Uskmouth site will play a key part in that, storing and generating clean, renewable energy that could be fed directly into the grid to power data centres and the city's semiconductor cluster. As what will probably be the biggest battery storage site in the UK, this is yet another area where Newport is leading the way."

*Uskmouth Sustainable
Energy Park ("USEP") –
facilitating the expansion of
renewable power and
supporting the development
of data centres and the AI
revolution in Newport.*



The Application Proposals

Use

AW2 Energy Storage Ltd are proposing to develop a battery energy storage system (BESS). Battery energy storage systems are facilities that store energy generated from renewable sources, such as solar and wind, during periods of low demand. This stored energy can then be released back into the grid when it is most needed, such as during times of peak demand.

Battery energy storage systems facilitate grid stability as energy storage can allow significant increase in intermittent renewable generation from wind and solar onto the electricity system by enhancing the balance of supply and demand. This location has the advantage of being in close proximity to the electrical grid and features an existing substation on-site.



Image of a BESS Facility



The Application Proposals

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Character

Layout

The proposed site layout comprises two main elements: the battery compound in the central and eastern part of the site; and the substation and operational buildings in the western part of the site.

The proposed development would comprise the following elements:

- Laying out of containerised battery storage units along with associated inverters mounted on concrete slabs/piers.
- Installation of a HV substation, security fence with access gates, 2 x O & M buildings and PCS & MV skid containers.
- Underground cabling to connect the BESS to the proposed on-site substation;
- Laying out of a hard surfaced site access into the BESS substation and battery compound from the internal road network as well as uncompacted gravel as a surface cover between the containerised units and equipment.
- A short underground cable route to connect the BESS to the existing National Grid substation located to the north west via an existing access track.



Proposed Layout



Character

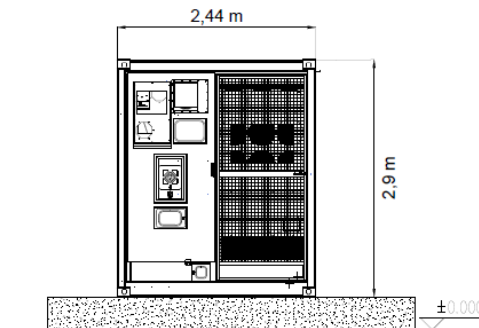
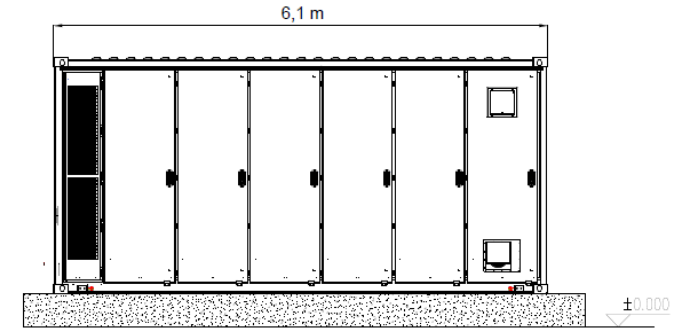
Amount, Scale and Appearance

The application site measures approximately 4 hectares however the area which will be occupied by the BESS compound and associated electrical infrastructure will only account for circa 2.1 hectares of this. The remaining area will be utilised for landscaping, access, drainage and the underground cable route.

The measurements for the buildings and structures are as follows:

- Each battery unit will measure 6.1m by 2.44m and 2.9m high.
- The HV substation compound will measure 45m by 102m.
- Each O & M building will measure 19.4m by 8.9m and 4.4m high.
- The PCS & MV skid containers will measure 12.2m by 2.4m and 2.9m high

The proposed development is consistent with the existing character and does not propose any structure taller than the existing main Uskmouth Power Station building or any other structure in the vicinity, many of which are much taller or more substantial in terms of scale.



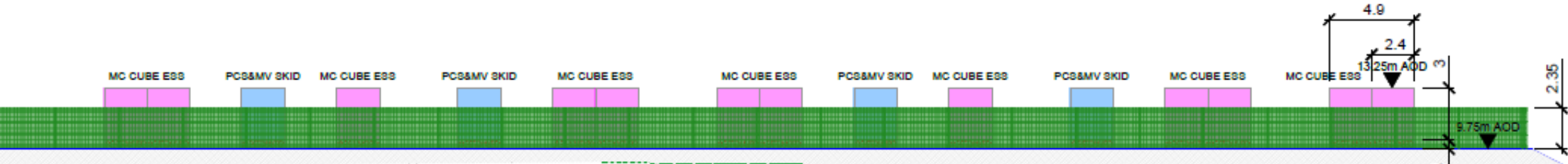
Proposed Elevation of Containerised Battery Unit



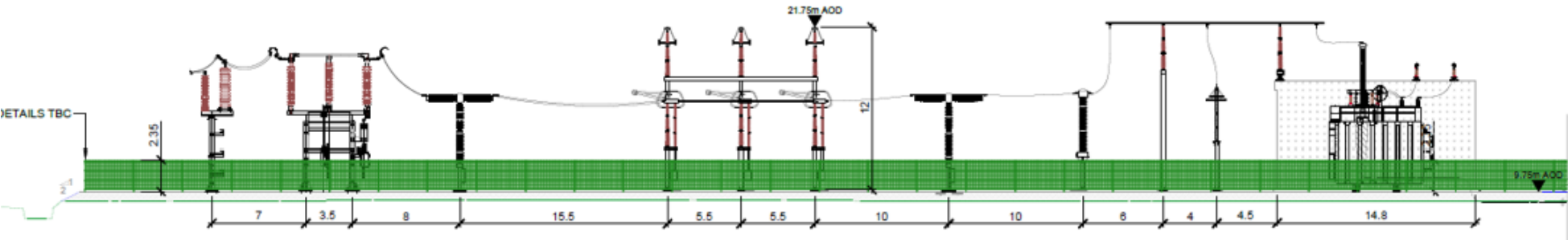
Character

Amount, Scale and Appearance

The location of the proposed development is an existing industrial site which already benefits from electrical infrastructure, making it an ideal location to support the energy storage development. The proposed development will also secure significant, long-term investment in this underused urban industrial site. The proposed development is consistent with the existing character of the wider site and does not propose any structure taller than the existing main Uskmouth Power Station building or any other structure in the vicinity, many of which are much taller or more substantial in terms of scale.



Proposed Elevation of BESS Compound



Proposed Elevation of BESS Substation



Movement To, From and Within the Development

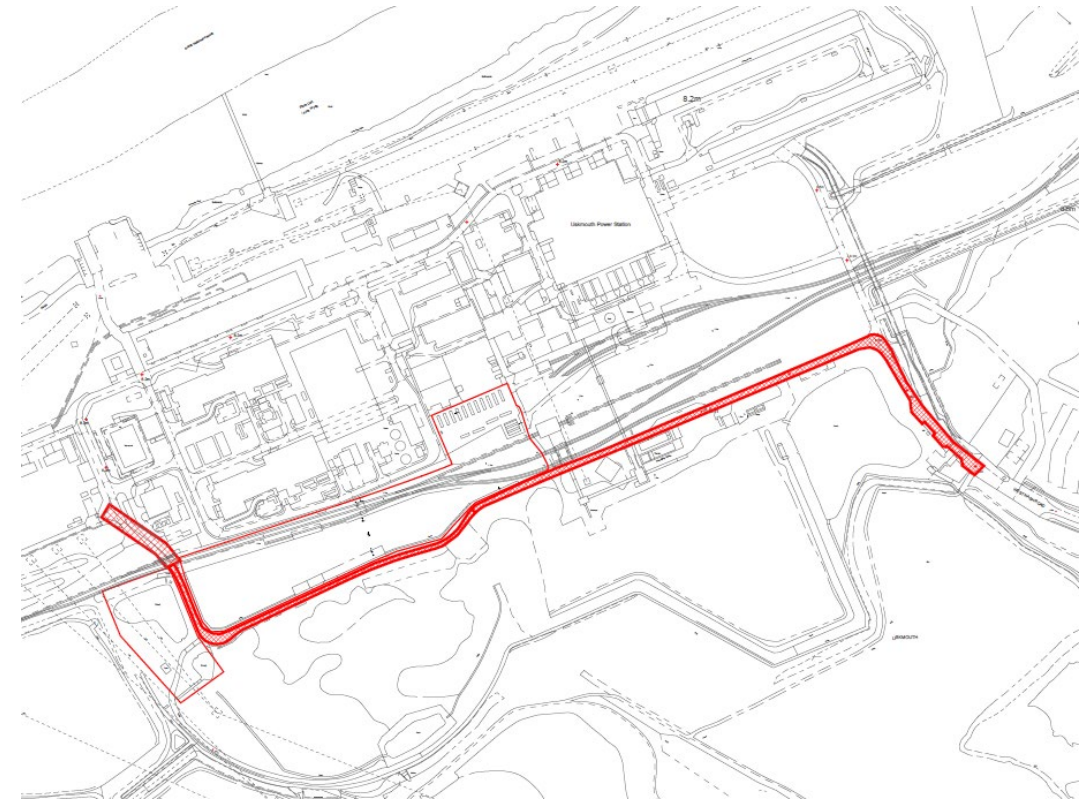
Access

The former Uskmouth Power Station is accessed from West Nash Road, a single carriageway road. It is understood that there is no recorded history of any issues associated with the former use of this access route during the operation of Uskmouth Power Station.

The site has one entrance accessed via 24/7 manned security gatehouse. The planned development involves no new access routes, pedestrian routes or cycle ways.

Within the Uskmouth site two access points into the BESS compound are proposed, one at the eastern boundary and one at the western boundary. The access points are served from the existing access road within the Uskmouth site, which travels to the south and west of the application site. This route will serve vehicular access to and from the new development via West Nash Road to the east.

The access roads within the wider Uskmouth Power Station will be mostly unchanged, except for vehicular access into the BESS compound.



Site Location Plan with main access



Movement To, From and Within the Development

Construction Traffic

It is anticipated that the construction of AW2 BESS will generate 20 staff vehicle movements per day, 30 HGV movements during the export of PFA and typically 18 HGV movements per day during construction period from 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 hours on a Saturday (half of these HGV movements given a shorter working day on a Saturday). There will be no construction vehicle movements at any time on Sundays or on public or bank holidays.

Operational Traffic

Once the project has been completed and commissioned the operational traffic to site would be minimal and for maintenance only.



Landscaping

The Landscape Strategy for the site illustrates the key landscape design concepts, the retention of valuable habitats, and the enhancement of green infrastructure features which have guided the preparation of the landscape proposals:

- Retention, enhancement and protection of existing vegetation along boundaries and alongside ponds.
- Creation of buffers to boundaries, ditches and ponds, between sensitive boundary habitats and development footprint.
- Some native shrub planting along site boundaries to help screen and filter views of the proposed development. Species chosen will be native species of local provenance.
- Creation of areas of species-rich grassland in site margins around the BESS installation.
- Ecologically sensitive working practices as precautionary measures to protect species that may be utilising the site.
- A suitable buffer established around the root protection zone of each tree to be retained.



Landscape Strategy



Maintenance and Management of Landscaping

The Landscape Ecological Management Plan (LEMP) sets out the management and maintenance of the proposed development over the operational phase of the BESS development.

The existing habitats identified as of value within the site will be retained and protected during the construction and operational phase of the development. Following decommissioning, the new areas of habitat that have been created will be retained.

The maintenance and management objectives of the proposals and enhancements are to ensure the overall design concepts are achieved and the planting is established.



Retained Scrub and Ponds

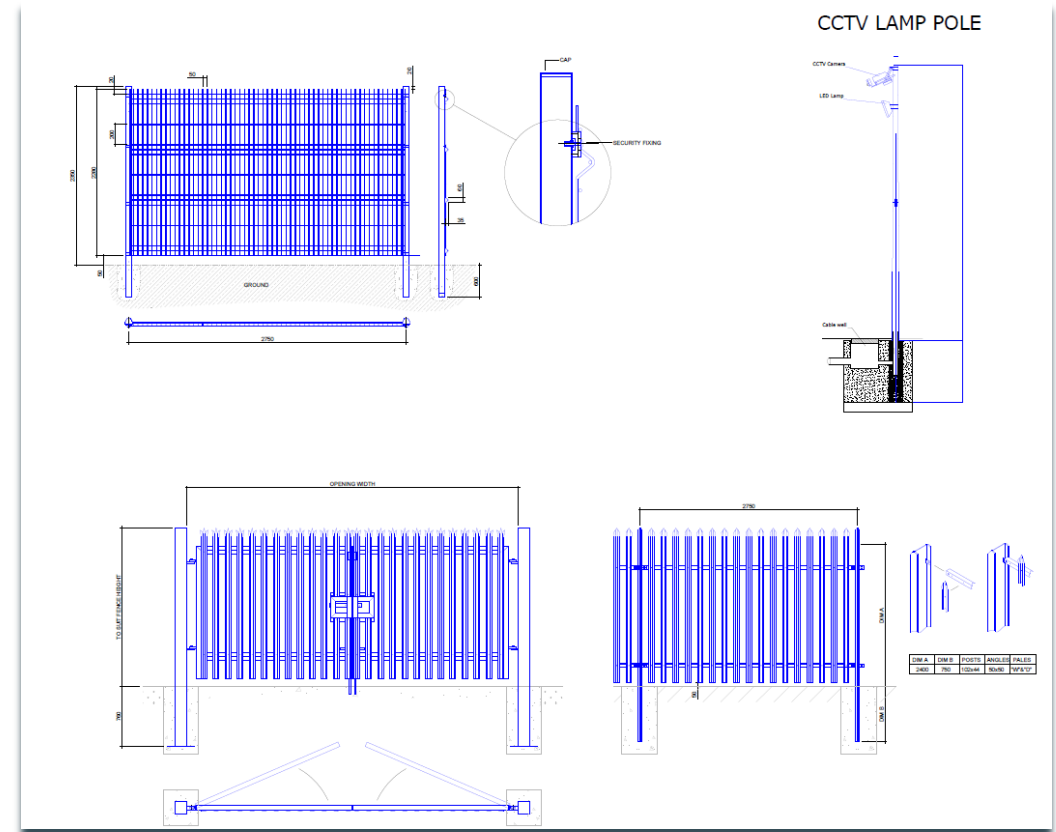


Community Safety

The Uskmouth site has one entrance accessed via a 24/7 manned security gatehouse. Safety and security is of the highest importance, and this would be maintained during the operational phase of the AW2 BESS.

The wider site boundary treatments will not change as a result of the proposals and community safety will be ensured through the continued security and safety measures in place at the site.

Around the BESS site itself a 2.4m high palisade security fence is proposed with access gates to the compound entrance from the internal road network along with CCTV.



Security Fence and CCTV



Environmental Sustainability

The site is located within the urban boundary and comprises previously developed brownfield land, meaning that the proposal meets the requirements of local and national planning policy regarding the efficient use of land and the preference for reusing previously developed land.

The proposed BESS development will support renewable energy generation, reduce energy wastage and support the transition to a low carbon economy. BESS developments can improve energy security by ensuring a more balanced and reliable supply of electricity. BESS development therefore has an important role to play in the energy network and will supplement the electricity grid during periods when the supply of energy may have fallen below optimum levels for any reason.



Conclusion

This Design and Access Statement has been prepared in support of a full planning application for the installation of a battery energy storage system, with associated works.

The proposal seeks to bring vacant, underutilised land within Uskmouth power station site back into beneficial use for the storage of energy, supporting national objectives to make effective use of land and support renewable energy projects. Overall, the proposal will bring significant sustainability, environmental and economic benefits, whilst resulting in no adverse impacts on highways, landscape and visual effects, ecology, biodiversity, flood risk, ground contamination, air quality and fire safety.

Care has been taken in the design of the proposed development to avoid unacceptable environmental and amenity impacts. Additionally, the project will implement a scheme for landscape and biodiversity enhancements, as outlined in the Indicative Landscape Masterplan.

The temporary and reversible nature of the development will allow for the site to be restored in the future.

