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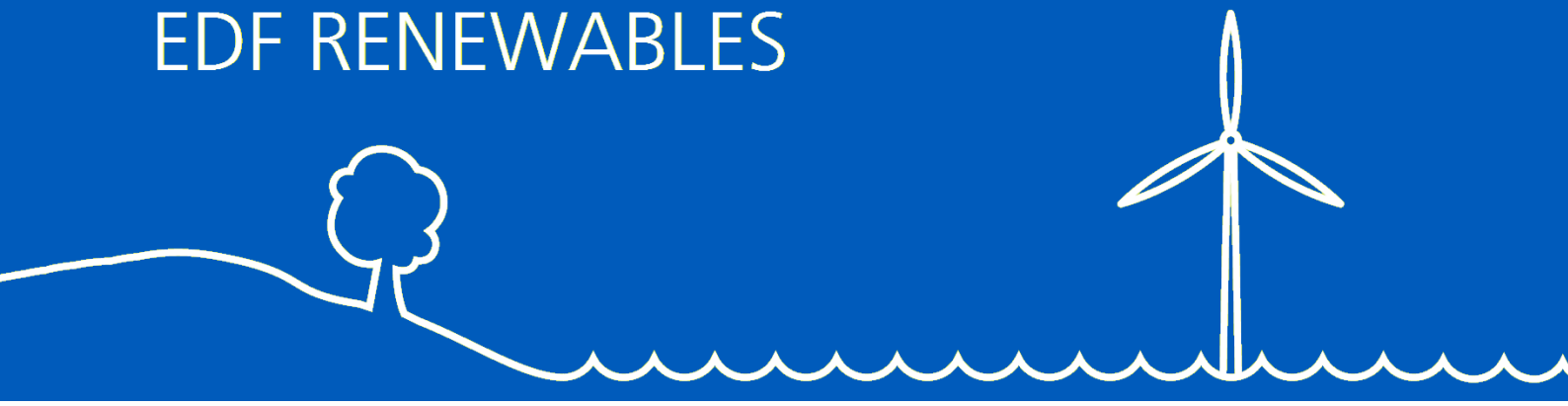

Swansea North BESS

Outline Battery Safety Management Plan

15th May 2025

DOCUMENT REFERENCE: SWA–EDF– Outline BSMP

EDF renewables

1 Introduction

1.1 Background

This Outline Battery Safety Management Plan (OBSMP) document outlines the key fire safety provisions, including measures to reduce fire risk, as well as fire protection measures and systems, for the proposed Battery Energy Storage System (BESS) scheme.

This OBSMP sets out the key regulations and guidance and provides a high-level outline of the safety related information requirements which will be provided in advance of construction of Swansea North BESS. The purpose of this OBSMP is to identify how the Applicant will use good industry practice to reduce risk to life, property, and the environment from this BESS site.

This OBSMP is a live document and will be developed and maintained during the life cycle of the scheme from procurement to decommissioning. The Applicant will consider new, or the latest guidance, technologies and good practices for battery fire detection and prevention as they develop in the UK and around the world. This will ensure integrated risk management is a fundamental element of all aspects of the facility.

This OBSMP seeks to formalise the Applicant's commitment to keep South and West Wales Fire Service up to date about the proposed BESS early in the development process. Consultation with the Fire & Rescue Service will be undertaken in line with the NFCC Grid Scale planning guidance.

1.2 General

This OBSMP document has been prepared by EDF Energy Renewables Limited (the Applicant) to accompany a full planning application for the Proposed Development known as Swansea North BESS to Swansea City & Country Council.

This document explains the safety standards and guidance relevant to BESS; explains the approach EDF take to fire safety at BESS sites to reduce risk on the maintenance and emergency response personnel, the environment and assets by reducing the likelihood and mitigating the consequences of any fire events during the operational life of the BESS. It then provides a site specific approaches to reducing fire risk.

EDF Renewables Limited are committed to liaising with Local Fire and Rescue Services and are engaging with South and West Wales Fire Rescue Service to be able to incorporate updates based on their guidance to the development engineering works for the site.

1.2.1 The Proposed Development

The Proposed Development is for the construction, operation, maintenance, and decommissioning of a Battery Energy Storage System (BESS) scheme. This would operate for a time limited period of 40 years, after which it would be decommissioned.

The Application Site ('the Site') is located on land at Abergelli Farm in Felindre (nearest postcode SA5 7NN), to the north-west of Morriston and the city of Swansea.

The Site Layout Plan illustrates the layout of the Proposed Development, key elements of which are summarised below:

- Battery storage facility comprising battery enclosures;
- Transformer and inverter combined units and other associated electrical infrastructure distributed throughout the Site;
- A customer substation comprised of a 33kV switchgear, LVAC switchroom, auxillary transformer, control room and extra-high voltage compound with 400/33kV transformer;
- Underground cabling to connect the batteries and inverters to the on-site substation and control room;
- Security fencing and CCTV towers mounted along the perimeter of the developable area;

- Active fire prevention and control measures built into the system design;
- Landscape planting, biodiversity enhancements and surface water attenuation measures (as part of the evolving design); and
- Temporary construction compound with site offices and welfare facilities for construction personnel and vehicular access from the public highway at Heol Penfidy (the C159).

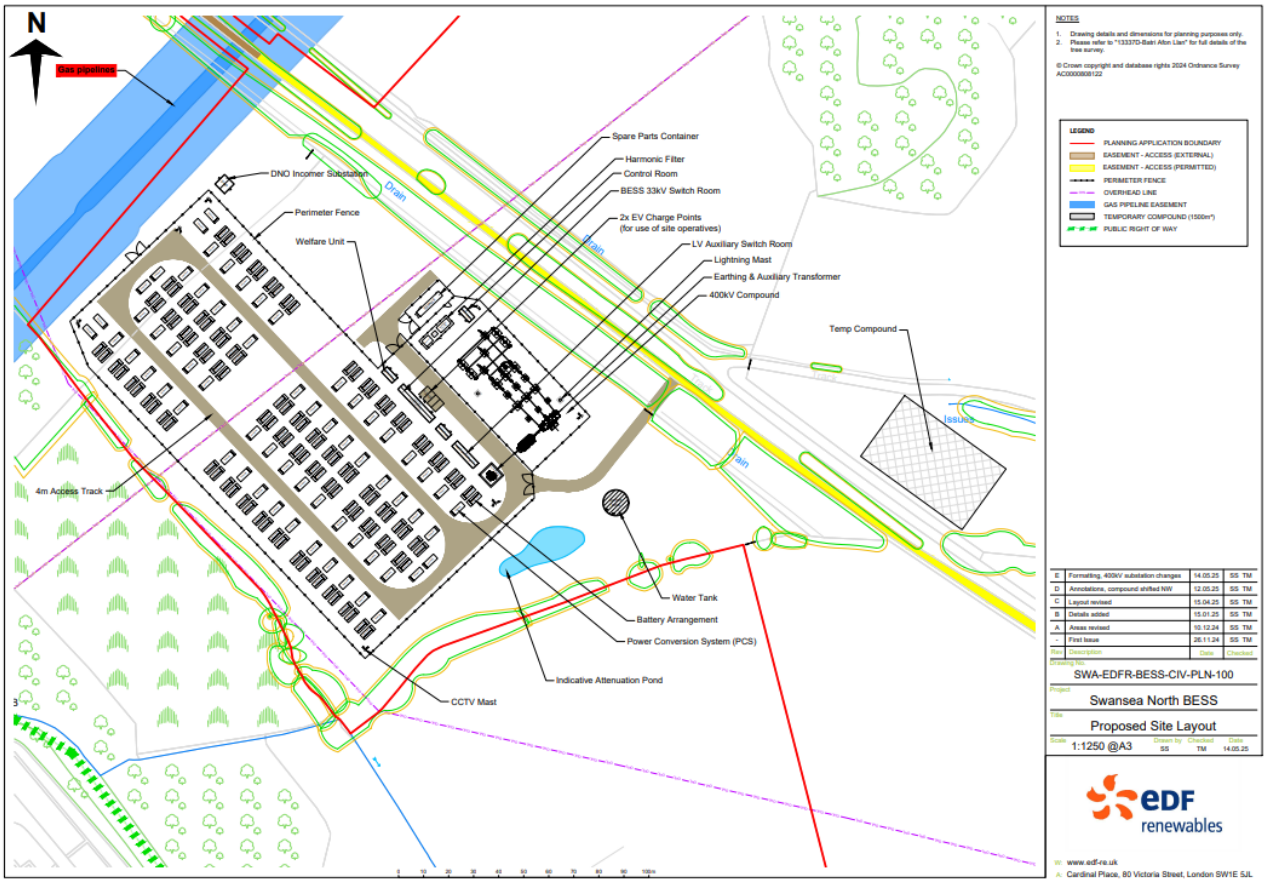

Figure 1: Proposed Site Layout

2 Standards and Codes

The measures outlined in Section 4 were developed using considerations from UK guidance, international best practices used in the wider EDF Group and applicable international standards.

This document considers recommendations from the following best practice documentation in the UK and internationally:

- Grid Scale Battery Energy Storage System Planning – Guidance for FRS (NFCC)
- NFPA 855 – Standard for the Installation of Stationary Energy Storage Systems
- NFPA 68 – Standard on Explosion Protection by Deflagration Venting
- NFPA 69 – Standard on Explosion Prevention Systems
- NFPA 2010 – Standard for Fixed Aerosol Fire-Extinguishing Systems
- FM Global Property Loss Prevention Data Sheets 5-33
- UL9540A Testing Compliance

3 Fire Safety Methodology

The approach developed to minimise the fire risk at our BESS sites follows the Hierarchy of Controls as depicted in Figure 1. This approach is intended to ensure there are several barriers in place to 1) reduce the likelihood and 2) mitigate the consequences of any fire events during the operational life of an EDF-R BESS site. These controls are imperative to protecting maintenance and emergency response personnel, the environment and both EDF-R and 3rd-party assets.

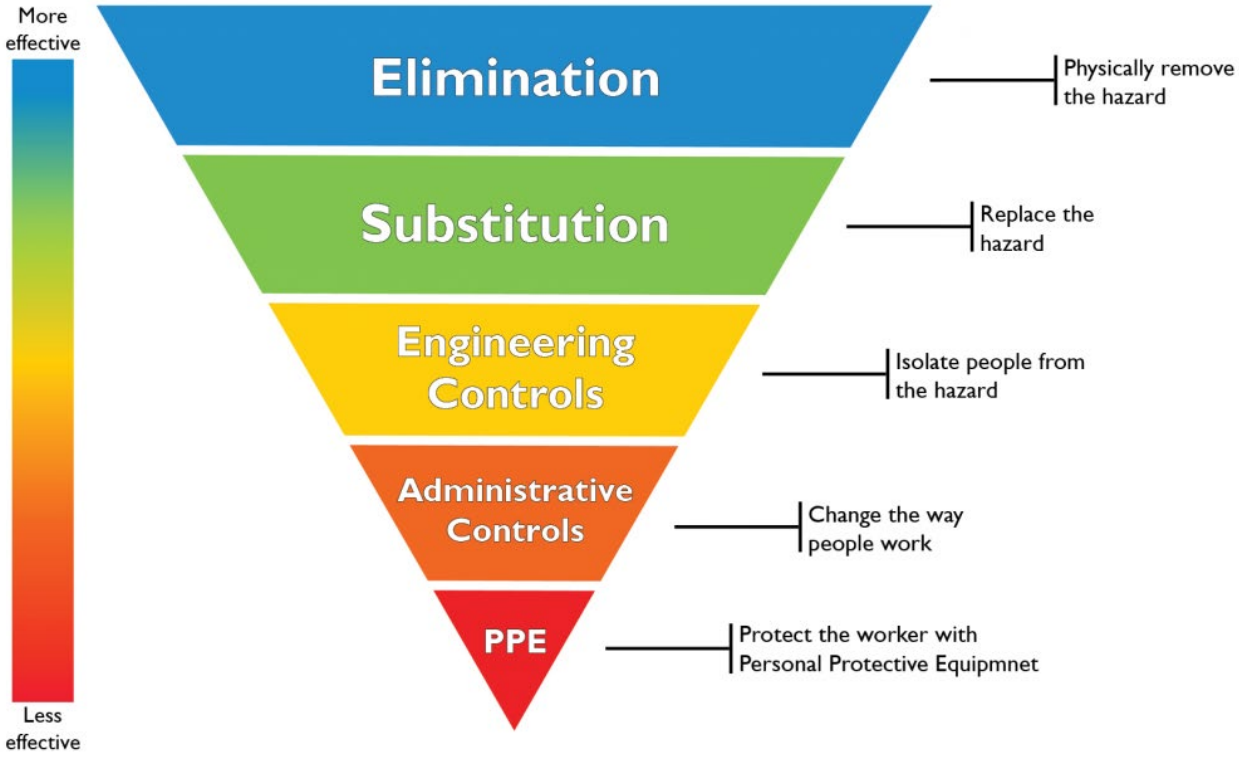

Figure 2: Hierarchy of Controls

4 Fire Prevention and Mitigation Measures

4.1 Elimination

Major Equipment Supplier (MES) Qualification and Selection

EDF-R utilises an extensive multiphase MES qualification process which evaluates the safety, quality control and assurance, testing, R&D and a range of other criteria for new and existing suppliers. Supplier factory audits are also a key component of the qualification process. A specific aspect for BESS suppliers is the testing and certification of their cell, module and BMS and the barriers designed within their equipment package to reduce the fire risks.

Testing of battery equipment per UL9540A – UL9540A reports (cell, module and unit) are required to be provided by the equipment supplier during the tender process – these are then reviewed by specialised EDF Energy engineers. EDF-R only accepts bids from suppliers that demonstrate no module-to-module propagation during testing. As an additional barrier of protection, EDF Research & Development (France) conducts its testing of cell related risks under abusive conditions to a greater analyse the off gases produced during cell venting under a thermal runaway event. The testing conducted by EDF RD provides a critical input in understanding the volume of off gases which are likely to be produced and adequate steps to mitigate the impacts.

Equipment Design and Site Operation

The design configuration of the BESS enclosures provides the first barrier provides a passive barrier of protection as the immediate threat to life of maintenance, emergency response and other personnel is avoided through physical space restrictions within the enclosures, thereby preventing access.

Exposure risks to personnel are further eliminated as the BESS site will operate unmanned with monitoring done autonomously through the onsite control systems in addition to 24/7 monitoring by a remote-control room.

4.2 Substitution

Transformers are an integral component of BESS sites, with coil and core insulation facilitated by oil. To reduce the fire risk in the event of a spill, a non-mineral oil which is less flammable is used as the insulating fluid.

4.3 Engineering Controls

The BESS enclosures feature several engineering controls ranging from passive barriers to active monitoring and detection systems. These measures are employed to further reduce the likelihood (pre-event) and consequences (post-event) of a fire at our BESS facility. These controls include:

1. BESS equipment specifications and installation guidelines
    a. All major equipment (BESS enclosures, power converting systems and inverter/rectifier transformers) is installed per the manufacturer's equipment spacing requirements for maintenance and safety clearances.
    b. Battery Management System (BMS) - provides early detection of potential cell failure which could result in a Thermal Runaway event. The critical cell is identified, automatically disconnected and isolated before further degradation and ultimately a Thermal Runaway event can be initiated. The BMS also provides cell and module over and under voltage protection, alert, and correction.

c. Cell Level Protection – protection provided at cell level which is also controlled by the BMS:
   i. Battery cells fitted with current interrupting devices (CIDs) which allow for automatic isolation of individual cells during an external short.
   ii. Overcharge safety device (OSD) – activated due to current interruption during over-charge.
   iii. Cells outfitted with a safety function layer through ceramic coating which is designed to suppress Thermal Runaway within the cell.

d. 1-hour fire-rated panels walls – 2-hour protection from one BESS enclosure to another. (back-to-back containers)

e. Flammable gas detectors (H_2 and CO) monitored by BMS with automatic shutdown capabilities.

f. Smoke Detector

g. Heat Detector

h. Siren and Strobe Alert

i. Fire Alarm Control Panel (FACP) – one unit per enclosure/row connected to a central BMS.

j. Aerosol protection to extinguish Class E fires in electrical components Electrical Fires. Intended for use on this classification of fire only, not designed to prevent or combat a Thermal Runaway event.

k. Deflagration panel(s) – designed to structurally fail at a lower pressure than the enclosure structure, reducing overpressure. Any blast overpressure of gases is directed upwards, and away from emergency personnel in the event of exhaust ventilation system failure or a failure to remove flammable gases at a satisfactory rate. to keep concentrations from reaching the explosive limit.

l. Ventilation System – sequenced after the Flammable Detectors are activated and signals the BMS of the presence of flammable gases. The ventilation system is designed to limit the maximum concentration of flammable gases to 25% of the lower flammable limit (LFL) of the total enclosure volume.

2. Firewater protection via a static water tank, hydrant, or other source with a capacity of at least 1900 L/hr for 2 hours (min 228m^3 of storage). The fire water is intended to provide exposure cooling to adjacent units and along the site boundaries to contain fire events within the BESS compound rather than direct water application on any ignited BESS unit. The provision of firewater stored on site shall be subject to consultation with South and West Wales Fire and Rescue Service.

3. Standard EDF site layout and separation distances:
   a. 30m separation distance (minimum) from the BESS site boundary and occupied building per NFPA 855
   b. 10m separation from combustible vegetation
   c. 3.5m BESS row separation (3.1m required per NFPA 855)
   d. 6.5m fire break between groups of equipment where possible
   e. 10m separation between the water tank and BESS nearest enclosure.

4. The proposed BESS solution has undergone large scale fire testing from the manufacturer and demonstrates that any fire event would be contained to BESS enclosure of origin.

4.4 Administrative Controls

EDF-R utilises internal procedures, stakeholder engagement and response planning to manage the residual risks which remain after the designed engineering controls.

Local Fire and Rescue Service Consultations

Early engagement with the local FRS forms a critical input during the development and early design phase of BESS sites. The process begins with consultation with local FRS during the initial site design which can provide further guidance to the development engineering works for the BESS site. The finalised designs and site layout cater to the equipment of the local FRS with provisions for site access, adequate turning circles and fire water capacity. EDF-R also facilitates site walkthroughs to ensure familiarisation once the site has been fully commissioned.

Development of Emergency Response Plan

An ERP will be developed for the BESS site in alignment with current UK civil response procedures using the bronze (operational), silver (tactical) and gold (strategic) command and control structure. The ERP will be informed by site-specific risks and detail the level of response required following activities such as the consultation with local FRS and other emergency services, the recommendations of the plume analysis and any other risk or impact assessments conducted. All EDF-R personnel deployed to the site will be adequately trained and act as tactical liaisons. Site-specific risk information will be available at the site entrance(s) to aid in response efforts.

Risk Assessments

EDF-R commissions a series of risk assessments with our BESS equipment suppliers. These risk assessments contain many of the engineering controls detailed in this document and are presented using the BowTie Methodology. This process allows us to have a global risk management approach across our sites and to ensure a level of standardisation among different equipment suppliers while also factoring in site-specific risks.

4.5 Personal Protective Equipment

All personnel on site whether during construction, commissioning or during operation will have the minimum PPE requirement necessary to be on site. In addition, there will be adequate signage detailing the required PPE for each site.

4.6 Section 2 – Site Specific Requirements

This section details any site-specific requirements which may be as a result of site constraints or engagement with the local FRS (South and West Wales Fire Service) which are not captured in Section 1.

Details
There are no site-specific requirements at this stage.

5 NFCC GUIDANCE REQUIREMENTS

5.1.1 Information Requirements

Before the commencement of construction and operation of the Battery Energy Storage System (BESS), various site-specific emergency response plans (SSERP's) will be developed. These plans will include detailed procedures and protocols, some of which will be prepared in consultation with Mid and West Wales Fire and Rescue to ensure alignment with their operational requirements.

It should be noted that these SSERP's are not a planning requirement, and, for reasons of safety and security will not be published as part of the BSMP.

NFCC Information Requirements	Planning Application Details
1. The battery chemistries being proposed (e.g. Lithium ion Phosphate (LFP), Lithium Nickel Manganese Cobalt Oxide (NMC)).	Lithium-Iron-Phosphate
2. The battery form factor (e.g. cylindrical, pouch, prismatic)	Prismatic
3. Type of BESS e.g. container or cabinet	Container
4. Number of BESS containers/cabinets	About 112
5. Size/capacity of each BESS unit (typically in MW/h)	1.5MW - 2.5MW
NFCC Information Requirements	**Planning Application Details**
6. How the BESS units will be laid out relative to one another.	Typically, 2 Containers per inverter and 1 inverter transformer.
7. A diagram / plan of the Site.	See the Site Layout Plan, in the accompany documents or Figure 1 for reference

8. Evidence that Site geography has been considered (e.g. prevailing wind conditions).	The prevailing winds are south-westerly, the Site has been designed with an internal ring road. There is the main access point from the southeast to be used during construction and operation. It is therefore unlikely that access to any enclosure or site equipment would be restricted in the event of an incident. The layout is designed considering the Sites natural topography and hence proposed the drainage feature at the lowest point on Site.
9. Access to, and within, the Site for FRS assets[1]	The site will be fully lined with gravel, with a 4-meter and 6-meter wide access track extending to the end of the site. Turning circles of radius 15m have been incorporated into the design. Additionally, the access roads are designed to support a "standard axle" load capacity, equivalent to that of a public road. This ensures they can accommodate equipment installation during construction and emergency vehicle access or equipment replacement during site operations.
10. Details of any fire resistant design features	The Battery Energy Storage System (BESS) enclosures are specifically designed to minimise the risk of fire propagation. Large scale fire-testing has been completed by the equipment supplier and demonstrates that any fire event would be contained to the enclosure of origin. In addition, each enclosure features a 1-hour fire-rated wall for back-to-back configurations. This means that if containers are placed back-to-back, it would require 2 hours of continuous burning for a fire to spread to the adjacent container. A 3.5-meter separation distance is maintained between rows of enclosures to further mitigate the risk of fire propagation.
11. Details of any: a. Fire suppression systems b. On Site water supplies (hydrants, EWS etc.)	The following safety features have been integrated into the Battery Energy Storage System (BESS) to mitigate fire risks, manage hazardous gases, and ensure operational safety: a. Aerosol Suppression System: Each enclosure is equipped with a thermally activated aerosol canister. When the internal temperature reaches a critical threshold, the canister

c. Smoke or fire detection systems (including how these are communicated) d. Gas and/or specific electrolyte vapour detection systems e. Temperature management systems f. Ventilation systems g. Exhaust systems h. Deflagration venting systems	releases a suppression compound into the enclosure. The canister is designed to store double the volume of aerosol required to match the enclosure's air volume and is optimized for Electrical Fires. b. On-Site Water Tank: A 228 m^3 water tank is proposed on-site in compliance with National Fire Chiefs Council (NFCC) guidance to support firefighting efforts. c. Fire Detection and Alarm Systems: Each BESS container is internally fitted with a photoelectric smoke detector and externally mounted siren and strobe alerts. These are networked to a Fire Alarm Control Panel (FACP), which is connected to the Battery Management System (BMS) and Energy Management System (EMS) for remote monitoring. Each row of enclosures is equipped with a UL-listed or EN 54-compliant FACP, which networks smoke detectors for centralized monitoring. FACPs across rows can be integrated and monitored remotely. d. Gas Detection System: Each enclosure is equipped with CO and H_2 sensors: CO sensor: Detects carbon monoxide at levels of 300 ppm. H_2 sensor: Detects hydrogen at 5% of the Lower Flammability Limit (LFL). A Programmable Logic Controller (PLC) aggregates sensor data from each enclosure and transmits it to the Supervisory Control and Data Acquisition (SCADA) system. Alarms and warnings include metrics for temperature, humidity, H_2, and CO levels. e. Liquid Cooling System: Enclosures are liquid-cooled and equipped with temperature sensors that communicate with the SCADA system. If overtemperature conditions are detected, the BMS receives an alert and initiates corrective actions to stabilize the system. f. and g. Ventilation System: The enclosure's ventilation system is triggered by the H_2 sensor to maintain safe gas concentrations. In testing, the system demonstrated the capacity to limit the flammable gas concentrations to 25% of the LFL within the enclosure. h. Deflagration Panel: Each BESS enclosure is fitted with a deflagration panel compliant with NFPA 69. These panels are designed to structurally fail at a pressure lower than the enclosure's threshold, directing any blast overpressure upwards and away from emergency personnel. This feature mitigates the risk of explosions and ensures responder safety.
12. Identification of any surrounding communities, sites, and infrastructure that	The nearest residential properties are located more than 200 meters from the Battery Energy Storage System (BESS). The scheme has been design with a buffer to the nearby 400kV OHL.

may be impacted as a result of an incident.	
13. Testing	The Applicant will ensure that all equipment used in the Battery Energy Storage System (BESS) complies with stringent safety standards and codes referenced in this report. Specifically, the equipment will have successfully passed the UL9540 testing process, which evaluates fire propagation risks at the cell, module, and container levels. This rigorous testing ensures that the design meets international benchmarks for fire safety and performance. Additionally, BESS equipment will undergo testing at the cell, module, and rack levels in accordance with UL9540A, a complementary test standard that provides detailed evaluations of thermal runaway risks and fire propagation behaviour. This ensures a robust assessment of safety across all critical components. The procurement process further strengthens the safety framework by acting as an additional barrier. Bids will only be solicited from vendors who can demonstrate: • A comprehensive testing and safety program. • Certification of compliance with UL9540A standards. This approach guarantees that only equipment meeting the highest safety and reliability standards is used in the development, enhancing both operational safety and long-term reliability.
14. Design	The typical design of Battery Energy Storage Systems (BESS) incorporates a range of safety and operational features at the battery module level, ensuring robust performance and risk mitigation. These features include: • Battery Management System (BMS): Monitors and controls critical battery conditions such as temperature, voltage, and current to ensure safe operation. • Overcurrent and Overvoltage Protection: Prevents electrical damage to the battery system by limiting excessive currents and voltages. • Ventilation System: Reduces the accumulation of off-gases by ensuring adequate airflow within the battery enclosure. • Temperature Management System: Maintains appropriate operating temperatures to enhance performance and prevent overheating. • Emergency Shutdown System:

	Disconnects the battery from the grid and halts further charging or discharging in the event of an emergency, minimizing risks. • Isolation System: Provides protection against electrical hazards and prevents the risk of electrical shock during operation or maintenance. • Ground Fault Protection: Detects and responds to ground faults, ensuring safe system operation and minimizing electrical risks. • Internal Safety Features: o Overcharge safety devices to prevent damage from excessive charging. o Passive separation of internal components to minimize the spread of thermal events. o Venting devices to safely release pressure or gases in abnormal conditions. • Thermal Monitoring: Tracks temperature variations across the system to identify potential issues and enable pre-emptive corrective actions. These measures have been implemented to enhance the safety, reliability, and operational efficiency of the BESS, ensuring compliance with industry standards and best practices.
15. Detection and monitoring	The scheme incorporates advanced monitoring systems designed to detect abnormal operations and initiate a safe system shutdown before issues escalate. These monitoring systems operate independently of the primary control systems and equipment, ensuring unbiased detection and response to potential abnormalities. **Key Safety Features** To enhance safety and mitigate risks, the following measures have been implemented: • Thermal Management: Automated power consumption controls and cut-out functionality activate when parameters exceed safe limits, reducing the likelihood of thermal events. • Cell Health Monitoring: Continuous monitoring of individual cell health includes self-checking alarm statuses to prevent thermal runaway. The Battery Management System (BMS) can isolate individual cells if thermal runaway is detected.

	• Intelligent Rack Management: Load balancing across the entire battery pack ensures optimal performance and reduces localized stress. • Automated Battery Cooling Systems: Equipped with fail-safe mechanisms, these systems respond dynamically to temperature variations, preventing overheating. • Real-Time Data Monitoring: Continuous monitoring of both internal cell data and external weather conditions enhances situational awareness and enables proactive risk management. Emergency Stop Mechanisms: Both remote and local emergency stop systems are available for immediate system shutdown in critical situations. • Thermal Protection Bulkheads: Internal bulkheads provide 1-hour thermal passive protection to contain and delay fire propagation. • Fire Detection Systems: Custom-designed to detect hydrogen (H_2) and carbon monoxide (CO) as early indicators of cell failure. Standard heat and smoke detection systems are also employed to provide a comprehensive approach to fire detection. • Fire Suppression Equipment: System-level aerosol-based fire suppression equipment is integrated, meeting the requirements of NFPA 855, NFPA 69, NFPA 68, and NFPA 2010. These measures collectively mitigate potential hazards, ensuring a timely and effective response to abnormal situations or fire incidents. They significantly enhance the overall safety and risk management of the BESS.
16. Suppression systems	Each BESS enclosure is equipped with a thermally activated aerosol canister designed to combat Electrical Fires effectively. When the internal temperature reaches a critical threshold, the canister is triggered, releasing a suppression compound throughout the enclosure. • Key features of the suppression system include:

	• Double Aerosol Capacity: The canister stores aerosol at twice the volume of the enclosure's air capacity, ensuring sufficient coverage to suppress fires effectively. Thermal Activation: The system is designed to respond automatically when temperatures reach pre-defined safety thresholds, minimizing response time. For additional details on suppression systems, including integration with fire detection measures, please refer to Row 11 above.
17. Deflagration prevention and venting	Each BESS enclosure is equipped with deflagration panels designed in accordance with NFPA 69. These panels are engineered to structurally fail at a pressure lower than the enclosure's overall structural rating, providing a controlled venting mechanism. Key features of the deflagration panel include: • Explosion Mitigation: The panel prevents catastrophic failure by venting excess pressure, mitigating the risk of an explosion. Blast Direction: Overpressure from the blast is directed upwards and away from emergency response personnel, ensuring their safety during an incident. For further details, including its integration with other safety systems, refer to Row 11.
18. Access	In accordance with National Fire Chiefs Council (NFCC) guidance, the site has been designed to ensure safe and efficient access for emergency services under various conditions. Key access features include: • Perimeter Access Roads: Internal ring road to facilitate vehicular approach at any point on site, allowing provision for strategic firefighting • Access Roads: o 4-meter-wide roads capable of accommodating fire service vehicles, including in adverse weather conditions. o No extreme grades to facilitate smooth and safe vehicle movement. • Unobstructed Facility Access: All areas of the facility are designed to remain unobstructed, allowing emergency responders to reach critical locations without delay. • Turning Areas for Emergency Vehicles:
19. Access between BESS units and unit spacing	The proposed 3.5-meter spacing between enclosures in this scheme exceeds the 3.1-meter separation recommended in NFPA 855. This distance is significantly greater than the 1.5meter separation recently

	updated in the FM report, which the National Fire Chiefs Council (NFCC) had previously referenced for its spacing requirements. In addition, 6.5m separation has been incorporated where a row of six or more banks of equipment would have been installed.
20. Distance from BESS units to occupied buildings and site boundaries	The nearest residential properties are located more than 200m from the BESS compound. A 5m buffer is maintained between the perimeter fence and the closest BESS enclosures while a buffer of 15m and greater is maintained between the BESS enclosures and the property boundary.
21. Site conditions (Sites should be maintained in order that, in the event of fire, the risk of propagation between units is reduced.)	The BESS will be maintained by skilled personnel to ensure optimal performance and functionality at all times. Maintenance activities will be conducted at least twice a year, consisting of: • Major Maintenance Periods: Comprehensive inspections of all system components, including the Battery Management System (BMS), fire suppression systems, and cooling equipment, to ensure proper functionality and compliance with safety standards. • Minor Maintenance Periods: Routine visual inspections, system diagnostics, and the rectification of non-critical issues to maintain operational reliability. All maintenance activities will adhere strictly to site safety rules and be carried out in accordance with the Original Equipment Manufacturer (OEM) guidelines. Risk assessments will precede all work to ensure the safety of personnel and equipment. **Site Safety and Fire Prevention Measures** • The areas surrounding the BESS equipment will be finished with gravel and regularly maintained to remain clear of vegetation or materials that could contribute to the spread of fire. • The proposed vegetation screening has been set back by a minimum of 10 meters from the BESS, in alignment with National Fire Chiefs Council (NFCC) guidance. This setback minimizes the risk of fire propagation and enhances site safety. By adhering to these measures, the BESS will operate safely and efficiently, ensuring its long-term reliability and compliance with industry best practices.
22. Water supplies	The site features a proposed 228 m³ water tank, designed to deliver a flow rate of 1,900 litres per minute (lpm) for a duration of 2 hours, in accordance with National Fire Chiefs Council (NFCC) guidance. The

	water supply system will be developed in consultation with Mid and West Wales Fire and Rescue Service (MWWFRS) to ensure compliance with operational requirements. Key considerations include: • Collaboration with MWWFRS: MWWFRS will provide input to determine the if water storage onsite is appropriate. If deemed appropriate, input will be sought on the placement of outlets and connection points, ensuring effective access during emergencies. Following installation, MWWFRS will assume responsibility for ownership, operation, and maintenance of the water supply system. • Strategic Tank Placement: The water tank will be strategically located to ensure suitable emergency access and is positioned upwind of the BESS compound to minimize risks associated with exposure to smoke or hazardous gases during a fire event. • Weatherproof Enclosures: All related equipment will be housed in enclosures with an IP55 rating, providing protection against dust ingress and water jets, ensuring reliability in adverse environmental conditions. These measures ensure that the water supply system is accessible, reliable, and fully aligned with emergency response and operational needs.
23. Signage	The site will feature appropriate signage designed in compliance with relevant Electrical Regulations to ensure clarity and accessibility for both the public and emergency services. The control room's 24/7 emergency telephone number will be prominently displayed for contact in case of emergencies. **Signage Details** The signage will include the following information: • Relevant hazards posed by the BESS. • The specific technology associated with the BESS. • Information about the suppression systems installed. • Emergency contact details, available 24/7. **Signage Specifications**

	• Signs placed on the exterior of buildings or enclosures will be sized to ensure they are legible at night from 30 meters or from the site boundary, whichever is nearer. • Signage placement and size will prioritize visibility and usability for emergency responders and other stakeholders. **Regulatory Compliance** Where the total quantity of dangerous substances on-site exceeds 25 tonnes, compliance with the Dangerous Substances (Notification and Marking of Sites) Regulations 1990 (NAMOS) will be considered and implemented as necessary. These measures ensure that the site's signage is effective, informative, and compliant with regulatory requirements, supporting safe and efficient operations.
24. Emergency Plans	Comprehensive Risk Management Plans will be developed to address potential incidents and ensure preparedness across all stages of the project. These plans include Emergency Response Plans (ERPs) tailored to both the construction and operational phases. **Construction Phase Emergency Response Plan** The appointed principal contractor will draft a Construction Phase Emergency Response Plan (ERP) before construction begins. This plan will outline the procedures and key steps to be followed in the event of an incident, focusing on mitigating risks and ensuring safety during construction activities. **Operational Emergency Response Plan** Upon project completion, an Operational ERP will be developed, containing all critical information and resources required to manage an incident. Key elements of the plan include: • Hazard Identification: Early identification and assessment of potential hazards. • Contact Information: A directory of key services and personnel • Command, Control, and Communication (C3): A clearly defined command and control structure based on the UK civil response framework, incorporating bronze (operational), silver (tactical), and gold (strategic) levels of management. The Operational ERP will align with: • UK Emergency Services JESIP Principles: Ensuring interoperability among responding services. • HMG Emergency Preparedness Guidance: Compliance with government standards for emergency planning.

	• HSE and EA Standards: Meeting health, safety, and environmental requirements for emergency response. This plan will be shared with MWWFRS to ensure coordination but will not be made publicly available for safety and security reasons. **Additional Risk Management Plans** In addition to the ERP, the principal contractor will draft other Risk Management Plans to address: • Health and Safety (H&S). • Environmental considerations. • Quality assurance. • Traffic management. These plans collectively ensure a robust framework for managing risks, minimizing impacts, and protecting personnel, the environment, and surrounding communities throughout the project lifecycle.
25. Environmental Impacts	The environmental impacts of the Battery Energy Storage System (BESS) are addressed in a comprehensive suite of documents submitted in support of the planning application. These documents ensure that all potential environmental effects are thoroughly assessed and mitigated where necessary.
26. Recovery	In the aftermath of any incident, a comprehensive investigation and report will be conducted. This process will include input and feedback from the Original Equipment Manufacturer (OEM) and will focus on: • Root Cause Analysis (RCA): Identifying the underlying causes of the incident to prevent recurrence. • Lessons Learned: Documenting insights and recommendations to improve safety measures, operational protocols, and emergency response plans. A full description of the recovery process, including the safe disposal of damaged equipment, will be prepared before the commencement of construction. This ensures that all recovery activities are planned, managed, and executed in accordance with industry standards and best practices.