

Site Specific Risk Engagement Document

Greenfields Farm, Thorney Edge Road, Bagnall,
Staffordshire ST9 9LA

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Crest Consultancy

Authored by: Gabby Heycock



Table of Contents

Purpose	3
Background	4
Fire Liaison Framework.....	6
Plan, Do, Check, Act.....	7
Site Specific Information	8
Consultation Record	11
Conclusion.....	12
App 1 BESS layout.....	13
App 2 Site plan	14
App 3 Wind Rose	15
App 4 Site location.....	16
App 5 Consultation details with Staffordshire FRS.....	17
App 6 Crest Consultancy	18

Purpose

1. This document is prepared by Crest Consultancy to support the overall consultation strategy for Greenfields BESS, Thorney Edge Road, Bagnall, Stoke-On-Trent. The Proposed Development consists of a Battery Energy Storage System and Substation with associated infrastructure and works, together with associated infrastructure and an underground cable connection to the existing National Grid Cellarhead Substation. This document has been produced to specifically engage the Fire Service as a key stakeholder.
2. This Site Specific Risk Engagement Document demonstrates how Enso Green Holdings X Limited has complied with Planning Practice Guidance and specifically details the engagement undertaken with Staffordshire Fire and Rescue Service (Staff FRS). A Detailed BSMP will be secured through a planning condition with the planning authority.

Background

3. Battery Energy Storage Systems (BESS) are an important contributor to a greener energy future and the protection of our climate. The applicant is committed to working with communities, landowners and all stakeholders, in this instance the DFRS, to deliver schemes that are supportive of their local environments.
4. Government is commitment to developing a flexible energy grid and their encouragement of battery storage is clear (see: Prime Minister's Ten Point Plan for a Green Industrial Revolution (November 2020), Energy White Paper (December 2020), Transitioning to a net zero energy system (July 2021) report and British Energy Security Strategy (April 2022). BESS are further supported by the Future Energy Scenarios with National Grid promoting their use on the system.
5. These all highlight there is no prohibition on new battery storage development on any safety ground within the UK, indeed, such schemes are actively encouraged by Government and National Grid.
6. The developer recognises that the storage of electricity can present a manageable risk and they are committed to that risk being 'as low as is reasonably practical' (ALARP).
7. In 2022 the National Fire Chief's Council (NFCC) produced guidance for FRS on grid scale BESS planning¹. The applicant is committed to an ongoing, open and transparent relationship with local Fire and Rescue Services where their developments are proposed. This NFCC guidance was, in August 2023, included within an update to the online Planning Practice Guidance (PPG) within the 'renewable and low carbon' topic.
8. The PPG "encourages" applicants and local planning authorities "to consider" the guidance produced by the NFCC. It is important to keep in mind the key qualifier at the start of the NFCC guidance, that it is only guidance, that every BESS installation will be different, that fire and rescue services should make a site-specific decision. The guidelines are only a "starting point" and cannot cover every eventuality or design, and that the "ultimate responsibility for the safe design and running" of a BESS rest with the operator ².

¹ <https://www.ukfrs.com/sites/default/files/2023-04/Grid%20Scale%20Battery%20Energy%20Storage%20System%20planning%20Guidance%20for%20FRS.pdf>

² NFCC guidance p2/10

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9. The PPG encourages Applicants and Local Planning Authorities to consult with their local fire and rescue service. That has been done here, with Staffordshire FRS and is demonstrated within this document.

Fire Liaison Framework

10. This site specific risk plan will be used to continue engagement with Staffordshire FRS. A Detailed BSMP will be secured through a planning condition as part of the planning submission.
11. Although it is not possible to supply full details on the BESS at this time, it is confirmed that the site will include the following layered protection approach as standard:
 - Detection system
 - Ventilation system
 - Suppression systems
 - Deflagrating panels
12. Confirmation of battery chemistry and battery form will be included in the Detailed BSMP in consultation with the Local Planning Authority and Staffordshire FRS.
13. The fire service will be considering their core legislative requirements, in addition to the NFCC BESS guidance when reviewing the BSMP:
 - The Fire and Rescue Services Act 2004 (sets out the responsibilities of Fire and Rescue Authorities (FRAs)).
 - The Building Safety Act 2022
 - Regulatory Reform (Fire Safety) Order 2005
 - Fire Safety Act 2021 and Fire Safety Regulations (England) 2022
 - Civil Contingencies Act 2004
14. The developer will ensure that the risk associated with the Greenfields Farm BESS is reduced to, 'as low as is reasonably practicable' (ALARP). The Plan, Do, Check, Act ³ approach is promoted by the Health and Safety Executive (HSE) as a way for business to deal with risk. It is ideally suited to this arrangement based on the multiple contacts and stages of engagement required as demonstrated in Table 1.

³ <https://www.hse.gov.uk/managing/introduction/how-to-manage.htm>

PLAN:	
	- Engage with Staffordshire FRS to ensure that their thoughts and feedback are considered; - Consider all available guidance and legislation; - Recognise the need to involve both operational firefighting officers and fire safety officers; - Establish positive relationships to support the exchange of information and the achievement of managing any risk to ALARP; - Identify joint priorities for the reduction of risk; - A BESS Safety Working Group to provide safety oversight; - Consider site specific conditions, what this means for risk and control measures; and - Look at the various stages and consider updates, site visits and the support of FRS awareness to support the reduction of risk to ALARP.
DO:	
	- Use this Site Specific Risk Engagement Document to prepare an Outline BSMP and engage further with the FRS to support their Emergency Preparedness; - Produce a Detailed BSMP in consultation with the FRS once the BESS technology has been confirmed, and submit the Detailed BESS to the LPA to discharge the Applicant's requirement; - Engage with FRS to support them in discharging their responsibilities within the Fire and Rescue Service Act (2004) Section 7 (2) (d) obtaining information to support firefighting. This could include site visits and the exchange of information and knowledge directly to firefighting staff, upon request; - Engage with the FRS at an operational level as well as engaging their Fire Protection departments to support the reduction of risk for responding operational staff; and - Identify the tasks, duties, responsibilities and members of the BESS Safety Working Group.
CHECK:	
	- Monitor the safety systems in place for their effectiveness; - Investigate any activations of monitoring, ventilation or suppression systems; - Monitor information to ensure that learning is universal and not isolated to site specific incidents; - Monitor and engage with industry and governmental updates, guidance and legislation to support our ALARP objective; - Initiate testing regimes for any safety equipment provided; - The BESS Safety Working Group will provide oversight and monitoring of safety systems and conditions; and - Complete annual reviews of the Risk Management Plan and engage the FRS in that review.
ACT:	
	- We will capture this process and approach within our Health and Safety Management Framework; - We will produce action plans where annual reviews of Management Plans identify either remedial or continuous improvement opportunities; and - The annual review of the Management Plan will act as the catalyst for the cyclical flow of the Plan, Do, Check, Act process. In addition to the annual review of safety events and near misses the release of research or legislative changes and national or international events would also result in the activation of the Check aspect of the model, leading to a cyclical flow review.

Table 1:

Site Specific Information

15. The NFCC guidance encourages that a site-specific approach is taken to each BESS, and provides guidance on the following considerations:

- Information requirements
- System design, construction, testing and decommissioning
- Detection, monitoring and suppression systems
- Site access
- Unit spacing
- Water supplies
- Signage
- Emergency plans
- Environmental impacts
- Recovery

16. This section reviews the NFCC guidance in line with the site-specific requirements of the Greenfields Farm BESS.

Information Requirements

17. Grid scale BESS forms part of FRS planning in accordance with arrangements required under section 7(2)(d) of the Fire and Rescue Services Act (2004). Site Specific Risk Information (SSRI) will be made available to crews in the form of an effective Emergency Response Plan which will form part of the Detailed BSMP. The Detailed BSMP will also include details of site access arrangements, such as key codes.

System Design, Construction, testing and decommissioning

18. Information on the proposed BESS will be provided as part of the BSMP. The BSMP will be provided to Staffordshire FRS and will set out the principles around system design, construction and testing mechanisms.

19. The Applicant will produce a Detailed BSMP in consultation with the FRS once the BESS technology has been confirmed. The Detailed BESS will be submitted to the Local Planning Authority to discharge the Applicant's requirement, Staffordshire FRS will be formally consulted by the Local Planning Authority as part of this process.

Detection, Monitoring and Suppression Systems

20. It is not possible to supply full details as these will be provided as part of the detailed design, procurement and pre-construction discussions, and secured as part of the Detailed BSMP. What can be confirmed at this stage is that the BESS site will include, in a layered protection approach:

- Detection system
- Ventilation system
- Suppression systems
- Deflagrating panels

21. The information on battery chemistry and battery form will be included as part of the Detailed BSMP, which will result in the formal re-engagement of Staffordshire FRS and the Local Planning Authority, within the planning regulatory framework, prior to development commencing on the BESS.

Site Access

22. The BESS has been designed to provide two separate access points into the site to account for opposite wind directions:

1. Access from the North-west – this is the main construction and operational access to the BESS from Thorney Edge Road.
2. Access from the East - provides an emergency access for FRS vehicles only (passing Greenfields Farm).

23. The BESS includes unobstructed roads for FRS vehicles in all weather conditions with the inclusion of both passing and turning places suitable for fire service vehicles.

24. The layout of the BESS is shown in Appendix 2.

Unit Spacing

25. The layout of the internal access roads ensure that every unit can be accessed directly, allowing for laying and movement of hose lines and, as such, access will be free of restrictions and obstacles.

26. The presence of High Voltage DC Electrical Systems is a risk to Staffordshire FRS and their location can be identified and exclusion zones applied as part of the Detailed BSMP.

27. The units are laid out in rows, with a spacing of at least 6m between the units. The final provisions of separation distances will be provided as part of the Detailed BSMP once the battery chemistry has been confirmed.

28. There are no occupied buildings within 100m of the BESS and no combustibles will be stored adjacent to the units. All vegetation within and surrounding the BESS will be managed to ensure there will be no encroachment into the BESS compound.

Water Supplies

29. Water supplies will be situated on site through provision of water tanks. The size and capability of the tanks provide the required minimum of 1900 litres of water per minute for at least two hours (228,000 litres).

30. Design and installation will ensure transferability of the water between the sets of tanks. Firefighting equipment of hose lines and a ground monitor will be provided in close proximity to the tanks for use by firefighting staff.

31. The provision of more than one tank provides contingency if, for any reason, water could not be obtained from one of the tanks.

Signage

32. Signage will be installed on the access gates into the BESS compound, detailing:

- Relevant hazards posed
- The type of technology associated with the BESS
- Suppression systems fitted
- 24/7 Emergency Contact Information

33. The signs will be legible at night from 30m from the site boundary.

Emergency Plans

34. An emergency plan will be included in the Detailed BSMP. This will include arrangements for alerting the emergency services, immediate remote actions and the incident response from the BESS Operator. Staffordshire FRS will be consulted on the draft detailed BSMP, including the emergency response plan, to ensure a collaborative and integrated approach is achieved.

Environmental Impacts

- 35. Suitable environmental protection measures will be provided as part of the wider BESS design. This includes systems for containing and managing water runoff from the BESS and takes into consideration the potential for water application rates in line with the NFCC guidance.
- 36. The site is located within a flood zone. Surface water management and mitigation measures will be included in the Flood Risk Assessment which will accompany the planning submission.

Recovery

- 37. A post-incident recovery plan will be included as part of the Detailed BSMP.

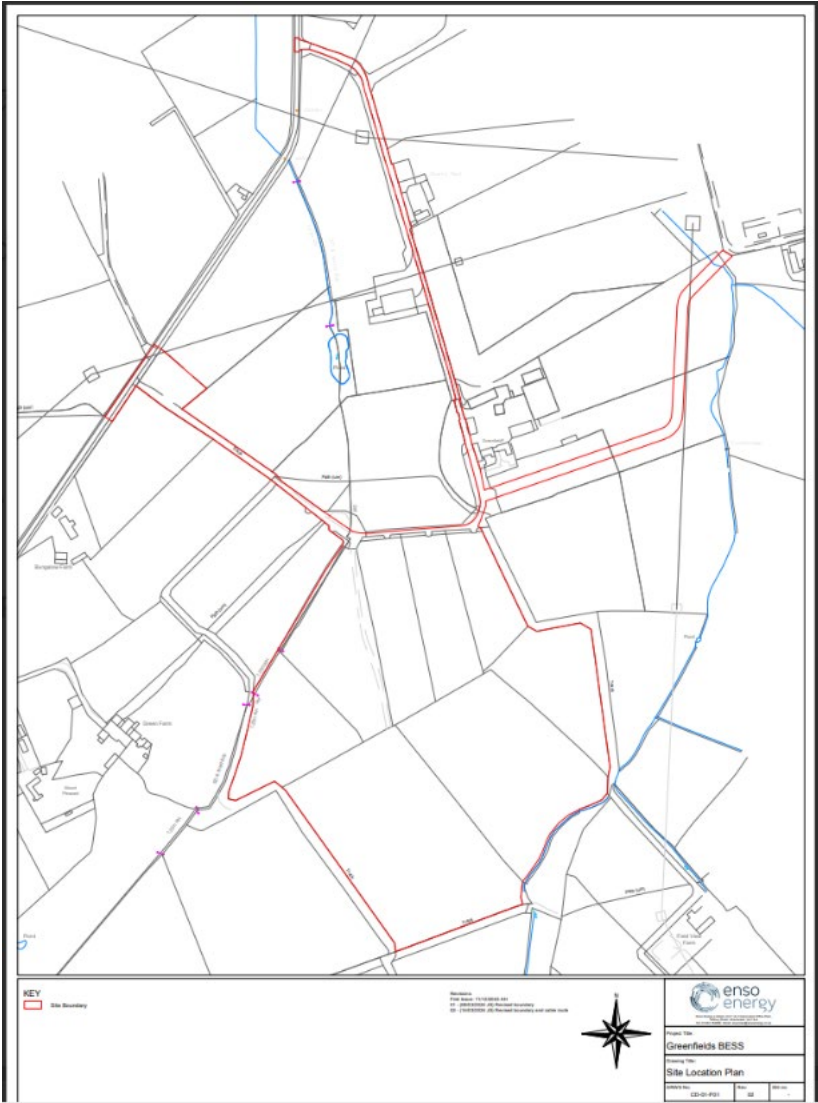
Conclusion

38. The developer will commit to the following activities:

- On-going engagement and communication with Staffordshire FRS including, where requested, site visits for the purposes of increased knowledge and understanding for emergency responders;
- Consultation on the draft Detailed BSMP
- Direct engagement with Operational Responders from Staffordshire FRS;
- The provision of comprehensive on-site information to support the safe management of any emergency event; and
- The holistic management of risk at the site through the use of the Plan, Do, Check, Act approach within an overall health and safety framework.

39. The PPG addresses fire safety by encouraging applicants and local planning authorities to consult with their local fire and rescue service which has been done here with Staffordshire FRS.

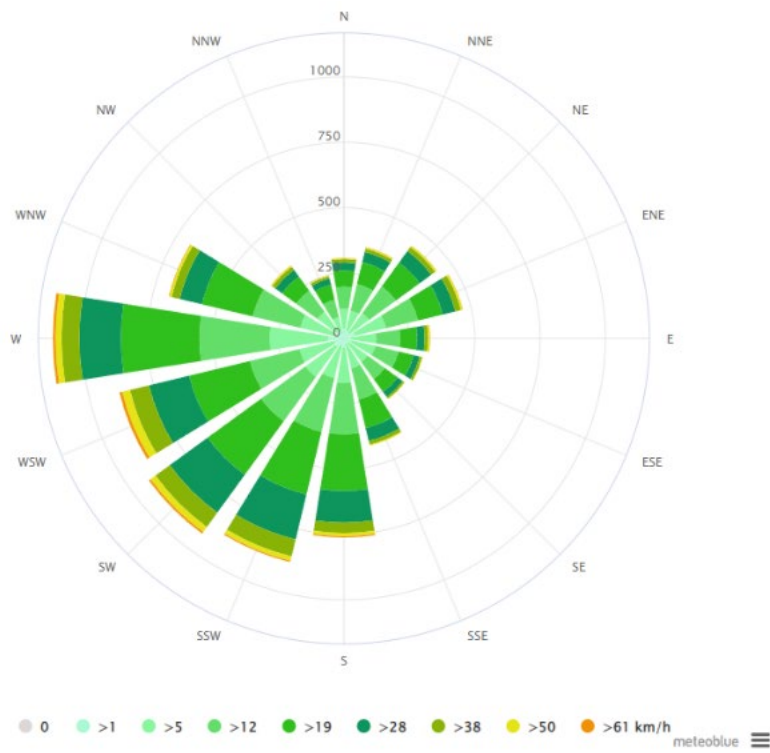
Appendix 1



Appendix 2



Appendix 3



Appendix 4



Appendix 5

Date	Method of contact	Who	Purpose	Outcome
23/07/24	Email	Gabby Heycock to Staffordshire FRS	Initial contact and to request the allocation of a fire safety officer	Response from SFRS asking for the exact address
23/07/24	Email	Gabby Heycock to Staffordshire FRS	Provision of BESS address	N/A
07/08/24	Email	Staffordshire FRS, Thomas Tait, to Gabby Heycock	Request to complete BESS questionnaire	N/A
27/08/24	Email	Completion of questionnaire back to SFRS	Completion of questionnaire as requested	N/A
27/08/24	Email	Gabby Heycock to Thomas Tait, Fire Safety officer	Provision of the SSRED	To be followed up with a phone call

Appendix 6

Crest consultancy

Enso Energy have commissioned Crest Consultancy based on their Fire Sector knowledge and expertise.

Gabby Heycock was an Area Manager with Oxfordshire Fire and Rescue Service, working at a strategic level for eleven years. During that period he was responsible for the Fire Protection department and also the creation of their current Community Risk Management Plan which involves the identification of risk and the allocation of resources to reduce the identified risks. Gabby also worked at a national level as part of the NFCC working group on Community Risk Management Planning.