

**EXTRAORDINARY PLANNING COMMITTEE – 28 FEBRUARY 2024**

Report of the Head of Planning

<b>REFERENCE NO – 23/503812/SUB</b>		
<b>PROPOSAL</b> Submission of Details to Discharge Requirement 3 of The Cleve Hill Solar Park Order 2020 - Battery Safety, Phase 2		
<b>SITE LOCATION</b> Land At Cleve Hill Graveney Kent ME13 9EE		
<b>RECOMMENDATION</b> Delegate to the Head of Planning to approve the Battery Safety Management Plan subject to Requirement 3 of the Development Consent Order.		
<b>APPLICATION TYPE</b> Approval of details relating to a requirement of a Development Consent Order		
<b>REASON FOR REFERRAL TO COMMITTEE</b> The Head of Planning Services has referred the application to Planning Committee given the large number of representations received and the significant concerns raised.		
<b>CASE OFFICER</b> Andrew Byrne		
<b>WARD</b> Boughton And Courtenay	<b>PARISH/TOWN COUNCIL</b> Graveney With Goodnestone	<b>APPLICANT</b> Cleve Hill Solar Park <b>AGENT</b> Envams Ltd
<b>DATE REGISTERED</b> 17/08/2023	<b>TARGET DATE</b> 10/01/2024	
<b>BACKGROUND PAPERS AND INFORMATION:</b> <a href="#">23/503812/SUB   Submission of Details to Discharge condition 3 - Battery Safety, Phase 2   Land At Cleve Hill Graveney Kent ME13 9EE (midkent.gov.uk)</a>		

**Common Abbreviations used in this report**

**DCO** - The Development Consent Order made on 28<sup>th</sup> May 2020 authorising the construction of the solar park and energy storage facility.

**NSIP** – Nationally Significant Infrastructure Project

**BESS** – Battery Energy Storage System

**BSMP** – Battery Safety Management Plan

**KFRS** – Kent Fire and Rescue Services

**HSE** – The Health and Safety Executive

**NFCC Guidance** – The National Fire Chiefs Council Battery Energy Storage Systems (BESS) Guidance

## **1. SITE LOCATION AND DESCRIPTION**

- 1.1 The site at Cleve Hill is a substantial area of land amounting to 491.2 Ha across the Nagden, Cleve and Graveney marshes on the coastline of The Swale. Other than a small section in the north east that falls within the administrative boundaries of Canterbury, the site is located in the parish of Graveney with Goodnestone.
- 1.2 Permission has been granted for a large-scale solar park on the site. This was approved by the Secretary of State as a Nationally Significant Infrastructure Project in 2020. A Development Consent Order (DCO) (2020 No.0000) was made on 28<sup>th</sup> May 2020, and came into force on 19<sup>th</sup> June 2020 and sets out the works comprising the authorised development, and a series of rights, requirements and provisions relating to the development.
- 1.3 The development is currently under construction.

## **2. PLANNING HISTORY**

- 2.1 18/503041/NSIP Consultation - Construction and Operation of Photovoltaic (PV) Electricity Generating and Storage. Development Consent Order made 28/05/2020
- 2.2 20/505493/SUB - Submission of Details to Discharge Requirement 10 of The Cleve Hill Solar Park Order 2020 - Archaeological written scheme of investigation. Approved 04.01.2021
- 2.3 21/506832/SUB - Submission of Details to Partially Discharge Requirements 8 and 14 of The Cleve Hill Solar Park Order 2020 - Fencing and other means of enclosure and Protected species to avoid impacts on water voles. Approved 24.02.2022
- 2.4 22/502676/SUB - Submission of Details to Discharge condition 8 – Phases of development. Approved 12.08.2022
- 2.5 22/502680/SUB - Submission of Details to Discharge Requirement 16 of The Cleve Hill Solar Park Order 2020 - Local skills, supply chain and employment. Approved 20.07.2022
- 2.6 22/503198/SUB - Submission of Details to Discharge Requirement 10 of The Cleve Hill Solar Park Order 2020 – Archaeology. Approved 12.08.2022
- 2.7 22/503259/SUB - Submission of Details to Discharge Requirement 12 of The Cleve Hill Solar Park Order 2020 - Construction Traffic Management Plan. Approved 09.09.2022
- 2.8 22/503313/SUB - Submission of Details to Discharge Requirement 2 Detailed Design and Requirement 8 Fencing. Approved 12.08.2022
- 2.9 22/503315/SUB - Submission of Details to Discharge Requirement 9 Surface and foul water drainage. Approved 12.08.2022
- 2.10 22/503361/SUB - Submission of Details to Discharge Requirement 11 - Construction Environmental Management Plan - of The Cleve Hill Solar Park Order 2020. Approved 09.09.2022
- 2.11 22/503467/SUB - Submission of Details to Discharge Requirement 5 of The Cleve Hill Solar Park Order 2020 -Landscape and Biodiversity Management Plan. Approved 12.08.2022

- 2.12 22/503471/SUB - Submission of Details to Discharge Requirement 13 - Special Protection Area Construction Noise Management Plan. Approved 09.09.2022
- 2.13 22/503472/SUB - Submission of Details to Discharge Requirement 15 - Operational Noise, Phase 1. Approved 12.08.2022
- 2.14 22/503473/SUB - Submission of Details to Discharge Requirement 7 -Public rights of way diversions. Approved 12.08.2022
- 2.15 22/503474/SUB - Submission of Details to Discharge Requirement 14 - Protected Species. Approved 05.09.2022
- 2.16 23/503805/SUB - Submission of Details to Discharge Requirement 15 - Operational Noise, Phase 2. Approved 13.10.2023
- 2.17 23/503809/SUB - Submission of Details to Discharge conditions 2 and 8 - Detailed Design and Fencing, Phase 2. Pending Consideration

### **3. PROPOSED DEVELOPMENT**

- 3.1 The Development as authorised in the DCO is for up to two generating stations with a combined gross electrical output capacity of over 50 megawatts. The DCO splits the development into 9 main elements, listed as Work No.1 to Work No 9. For the purposes of this report the key elements are summarised as follows.
- 3.2 Work No 1 authorises a ground mounted solar photovoltaic generating station – i.e the solar array and related inverters, transformers and circuits.
- 3.3 Work No 2 authorises **either**
  - a) An energy storage facility with gross storage capacity over 50 Megawatts comprising energy storage and other related works; **or**
  - b) An extension of the ground mounter solar photovoltaic generating station in Work No.1
- 3.4 The bold text is used to highlight to Members that Work No 2 is authorised as either an energy storage facility or as an extension to the solar array authorised under Work No 1. It is a matter for the applicant whether they develop the site in accordance with option a) or option b).
- 3.5 Work No 3 authorises a substation with related development to connect works No 1 and No 2 with the existing substation at Cleve Hill (i.e. to enable the energy created by the solar farm to enter the National Grid).
- 3.6 The applicant proposes to construct an energy storage facility as authorised under Work No 2 (a). Energy storage is defined in the DCO as “equipment used for the storage of electrical energy”. The energy would be stored in a 150 MW / 300M Wh battery facility. The application states that the site design allows for this storage to be expanded to up to 350 MW / 1400 MWh in the future, although this does not form part of the current proposal.
- 3.7 Schedule 1, Part 2 of the DCO sets out a series of requirements that the development must adhere to, which are similar to planning conditions. This includes requirements for various further matters of detail to be submitted for approval by the relevant planning authority.
- 3.8 The battery storage facility is proposed to be contained within a large compound area to the south of the site and adjacent to the existing electricity substation. The detailed location and

design of the wider compound, incorporating an earth bund, flood protection, switchgear building, and electrical compound has been approved by the Council under 22/503313/SUB. The compound is sited approximately 100 metres to the north of a collection of buildings at Cleve Hill Farm and which include some employment premises. The closest residential dwellings are those at Crown Cottages, to the south of the buildings at Cleve Hill Farm and approximately 220m from the compound.

- 3.9 The battery storage facility would be located within the approved compound and would comprise of 96 enclosures, each containing 40 x Lithium Ferro Phosphate battery modules measuring 6058mm x 2438mm x 2896mm. The enclosures would be arranged in a uniform manner on the west side of the compound. The design and layout of the enclosures within the compound relating to the battery energy storage system is subject to a separate requirement under the DCO.
- 3.10 Requirement 3 of the DCO relates specifically to the requirement to submit a battery safety management for approval, and states –
- 3.** *(1) Work No. 2(a) must not commence until a Battery Safety Management Plan (“BSMP”) has been submitted to and approved by the relevant planning authority.*
- (2) The BSMP must prescribe measures to facilitate safety during the construction, operation and decommissioning of Work No.2(a) including the transportation of new, used and replacement battery cells both to and from the authorised development.*
- (3) The BSMP must accord with the outline battery safety management plan.*
- (4) The relevant planning authority must consult with the Health and Safety Executive and Kent Fire and Rescue Service before determining an application for approval of the BSMP.*
- (5) The BSMP must be implemented as approved.*
- 3.11 This application seeks approval for a Battery Safety Management Plan in accordance with Requirement 3 of the DCO.

#### **4. CONSULTATION**

- 4.1 Members will note that Requirement 3 specifically states that both the Health and Safety Executive and Kent Fire and Rescue Services must be consulted on the BSMP. Given this specific requirement, the responses from these organisations are set out in full below.

##### **Kent Fire and Rescue Services**

###### Original comments (dated 6<sup>th</sup> October 2023)

- 4.2 *The plans provided show development of a Battery Energy Storage System (BESS) to comprise Lithium-ion batteries.*
- 4.3 *Please be aware that the principles discussed within this planning consultation should not be used as precedent for justification for future developments. Each BESS is unique and should be evaluated on its own merit.*

###### *Planning Decision*

- 4.4 *Kent Fire Rescue Service (KFRS) has no authority to approve or decline planning permission for BESS (Battery Energy Storage Systems) sites. This decision, in the majority of cases, lies with the Local Authority, or National Infrastructure Planning. KFRS will endeavour to provide consultation during this process, however there is no statutory requirement to do so.*

*Information requested and received will be able to support our observations during planning process, but also provide a basis for design/build stage. For this reason, KFRS would encourage early engagement and continued dialogue throughout the planning stage, design & build and occupation process. Additional information is therefore requested at this stage.*

*Consultation Observations*

- 4.5 *Thank you for providing the additional information as requested in our previous correspondence. The plans and reports provided have been reviewed. Subject to adherence to the comments made during the consultation including that of the Battery Safety Management Plan and associated water hydrant plan, it appears the risks outlined both within NFCC guidance and our previous meetings have been suitably mitigated within the design. I therefore do not require any supplementary information and have no additional comment to make at this stage.*

*Air Quality Report*

- 4.6 *Please be aware an air quality report was provided although it has not been considered as part of this consultation as it is outside the scope of KFRS to make comment.*

*Fire Safety Advice*

- 4.7 *Further advice and guidance on all fire safety matters for business and residential premises is available on our website [www.kent.fire-uk.org/business](http://www.kent.fire-uk.org/business)*

*Important points about this consultation*

- 4.8 *Currently, no British Standard (BS) or Approved Document (AD) specifically addresses the installation of BESS. Importance is therefore placed on evidence-based justification to support the design. In lieu of this the following guidance has been adopted to provide the basis for our observations.*
- National Fire Chiefs Council (NFCC) published guidance: Grid Scale Battery Energy System Planning, Guidance for FRS – published April 2023\**

*\*Please note that this detailed document should not be considered as a fully comprehensive specification; but should be used to provide a framework for consultation. Each BESS site should be assessed individually and addressed on a case-by-case basis. The contents of this guidance utilise academic study, international standards, case studies and industry guidance to support professional judgement.*

Further Comments (dated 19/12/23)

- 4.9 *Having reviewed the updated information referenced in the email below, as well as having seen the comments and recommendations made by Paul Gregory, I can confirm that KFRS remain satisfied with the proposals and that our position remains unchanged. Please let me know if you require any further detail.*

Further comments (dated 16/01/24)

- 4.10 In response to specific queries and concerns raised by officers and third parties, KFRS provided further advice in relation to testing, design, use of suppression systems, site access, spacing between BESS units, distance to site boundaries and occupied buildings, risk management, emergency response plans, recovery plans, and adequacy of water supply. This detailed response is attached as Appendix 1 to this report and Members will note that KFRS are satisfied with the details provided. The response also refers specifically to NFCC Guidance and states –

4.11 *I would like to turn to the function of the National Fire Chiefs Council (NFCC) Battery Energy Storage Systems (BESS) guidance. BESS installations are classed as infrastructure. KFRS has no authority to approve or decline planning permission for BESS sites. This decision, in the majority of cases, lies with the Local Authority, or National Infrastructure Planning. KFRS will endeavour to provide consultation during this process, however there is no statutory requirement to do so. The NFCC guidance has been developed as a way of promoting consistency around fire service requirements at BESS sites. It is not a requirement for fire services to provide rigid adherence to the guidance, as each BESS site will be different and therefore should be assessed in its own context. KFRS has had good engagement from Cleve Hill Solar Ltd and has used the NFCC guidance as an initial basis for discussions. KFRS makes safety issues associated with lithium-ion batteries, including BESS, a high priority. We have spent significant time understanding these issues and, in this case, applying that understanding to the Cleve Hill BESS site. We remain satisfied with the proposals detailed in the Cleve Hill BSMP (December 2023, revision B).*

### **The Health and Safety Executive**

(Response undated but received by the Council on 11/10/23)

- 4.12 *Thank you for your recent correspondence about the Battery Safety Management Plan for Cleve Hill Solar Park. Although the Development Consent Order indicates that HSE should be consulted in relation to a Battery Safety Management Plan (BSMP), HSE does not provide comment on such plans. HSE is a consultation body, for the purposes of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and section 42 of the Planning Act 2008, providing public safety advice in respect of proposed NSIPs.*
- 4.13 *HSE's role as a statutory consultee in the planning process is set out on the Planning Inspectorate website. HSE has agreed with the Planning Inspectorate that Advice Note 11 Annex G will be amended to further clarify the position regarding BSMP.*
- 4.14 *For large scale BESS, there are statutory requirements for dutyholders to notify the Fire and Rescue Service to inform their emergency response planning. It would be for the Home Office or the local Fire and Rescue Services to provide further information on this.*
- 4.15 *The Health and Safety at Work Act places legal duties on employers to manage risks to employees and anyone else who may be affected. There is a robust regulatory regime to cover the risks associated with BESS. Of relevance are the Dangerous Substances and Explosive Atmospheres Regulations 2002 which set out minimum requirements for the protection of workers and others from fire and explosion risks; the Electricity at Work Regulations 1989 which require precautions to be taken against the risk of death or personal injury from electricity in work activities; and The Management of Health and Safety at Work Regulations 1999 which require risks to be assessed and appropriately managed.*
- 4.16 *The fundamental principle of health and safety law is that those who create risks are best placed to control them. Designers, installers, and operators all have a duty to ensure this is the case. HSE expects the dutyholder to assess the specific situation and implement necessary control measures, to manage the risks identified.*
- 4.17 Officer note – as is evident from the above response, the HSE advise that they do not comment on such plans. Officers have contacted the HSE (by email dated 10/01/24) to seek further clarification on this, but no further response has been received. In addition,

officers have also contacted the Planning Inspectorate (as the Examining Authority) to raise concern that the HSE are specifically required to be a consultee under the DCO, but are unable to provide comments. The Planning Inspectorate state that they are unable to advise on this matter and would encourage the Council to seek its own advice.

4.18 **The Port of London Authority** has no comments to make on the application

4.19 **KCC Highways** do not raise any highway implications related to the proposal.

## 5 REPRESENTATIONS

5.1 Although there is no requirement to carry out a formal notification process with such applications, given the known high level of concerns raised by the local community regarding the battery storage, notification letters were sent to parish councils and local residents.

5.2 **Graveney with Goodnestone Parish Council** – Object to the application. The parish council response received on 26<sup>th</sup> September 2023 is a substantial document and can be viewed in full on Public Access using the link at the top of this report. It includes the following summary of their objections –

*Of the various plans that fall within the scope of this DCO, the Battery Safety Management Plan is clearly the most technically demanding but it is also the one that carries the risk of precipitous impact to human life and the environment should a material risk crystallise. Battery technology is changing and advancing at reasonable pace; indeed, a number of characteristics of this plan have been changed, including the battery chemistry itself. Data and evidence points are emerging about the real-world consequences of inadequate safety plans and these learnings must clearly be considered, requiring the highest level of specialised technical expertise and input in order to fully evaluate the suitability of the safety measures proposed. We are aware that, to date, some of this data has yet to be provided to the consulted experts that have requested it and this will undoubtedly have had a bearing on their considerations. We urge that proven safety of the community, its habitants, wildlife and environment are the paramount factors in the decision-making process together with realistic and very thorough plans that would be put into execution should a major issue occur. These requirements must be placed higher than either timescale or cost. Pending the above, we therefore object, in the strongest possible terms, to the discharge of these requirements.*

5.3 **Hernhill Parish Council** - Object to the application (response received 28/09/23), on the basis that there was not sufficiently robust information provided and planning details in relation to an emergency response strategy, which was a concern given the size and scale of the battery needed for such a large solar farm and could have serious implications if anything should go wrong in and around the battery storage site.

5.4 **Dunkirk Parish Council** - Object to the application (response received 3<sup>rd</sup> October 2023) also noting the detailed comments provided by CPRE and the Faversham Society raising concerns of any accidents on its parishioners. The objection is due to there being insufficient detail backed up by technical reports and responses in relation to a safety plan. For a battery facility of this size, there also needs to be a detailed evacuation plan which would require involvement from KCC and Highways for which there currently do not appear to be any responses. There is also potentially a flooding impact due to the amount of water that would be required to mitigate any fire, which will require addressing. In addition, there is the potential for munitions' danger caused by blast damage to the Richard Montgomery Wreck, which also needs addressing.

5.5 **Dunkirk Parish Council** (further response received 17<sup>th</sup> January 2024, following submission of a revised BSMP) - *continue to object to this application. The original comments made by the Parish Council on the 3rd October still stand. Since those comments additional information has become available. Particularly including the comments made on the 4th January by the Barrister Group on behalf of The Faversham Society in light of the applicant's amended Safety Management Plan. Dunkirk Parish Council support the comments made in that letter by the Barrister Group and the continued concerns raised concerning the poor quality of the Battery Management Plan submitted that fails to address previous concerns raised.*

5.6 **Boughton under Blean Parish Council** – *Object (response received on 2<sup>nd</sup> November 2023) - the application as submitted does not contain enough detailed information to make an informed decision and the Parish Council requests that further information be made available before Swale Borough Council makes any consideration for a decision on the application. The application has not provided for an evacuation plan/policy in relation to an emergency response, which is of significant concern to the surrounding areas extending beyond Graveney to Boughton under Blean. There is no consideration within the supporting documentation for the ecological damage in the surrounding area in the event of a battery fire, including potential flooding and pollution of water. There are concerns with regard to the volume of water available in the event of a battery fire. The supporting documentation notes that there is enough water to cool the batteries but does not evidence that there is enough water to be able to put out a fire. There are highway safety concerns regarding a response time for emergency services to travel toward a battery fire at the site, given that the highway infrastructure consists of rural lanes which are narrow in part and surrounding main roads, offset by the volume of traffic that would exit the area at the same time. A build-up of traffic resulting in being in a static location at the time of a fire could pose a threat to personal health. The Parish Council endorses the views as submitted by the Faversham Society. The Parish Council requests that Swale Borough Council give consideration to delaying making a decision until there is appropriate legislation in place. The Parish Council requests that if Swale Borough Council is mindful to make a decision, that the matter is taken to the Planning Committee for further consideration before a decision is made.*

5.7 91 representations objecting to the scheme were received following the first consultation exercise. This includes representations from various groups and societies including GREAT (Graveney Rural Environmental Action Team), The Campaign to Protect Rural England (CPRE) and The Faversham Society as well as from individual households. The representations can be viewed in full on Public Access using the link at the top of the report. The comments are summarised as follows –

- The current proposal is substantially different to that presented to the examination / inquiry
- This is an extremely complex safety matter and Swale Borough Council should seek expert advice from a recognized authority
- The BESS is opposed on the grounds of the risk of fire or explosion for what would be one of the largest such installations in the world.
- Li-ion batteries are well known for fires and explosions, including circa 65 fires and explosions in grid-scale BESS across the world to date, primarily in installations less than 2 years old.
- As well as fires, confirmed vapour cloud explosions have occurred in locations including Liverpool, Belgium and Arizona



- Lithium Ferro Phosphate batteries have a worse risk of Vapour Cloud Explosion than other battery types
- The batteries would be contained within modular cabinets rather than shipping containers, with greater challenges to suppress fire and a greater risk that cabinets would be allowed to “burn out”, with increased likelihood of fire spreading to nearby cabinets and of explosion
- Lack of legislation or regulation relating to Lithium-ion batteries
- Lithium-ion batteries may be liable to a requirement for Hazardous Substances Consent before planning approval. No evidence that the applicant has applied for such consent.
- Failure to accord with new national guidance for Fire and Rescue Services on Grid Scale BESS
- Lack of adequate spacing between cabinets
- The BSMP significantly underestimates the amount of water required to deal with battery fires appropriate to the scale of the Cleve Hill Solar Park
- The application does not deal with unanswered questions from KFRS
- Endangerment to the lives of people in the village of Graveney and surrounding area
- Worst-case scenarios and modelling has not been used
- Impact upon the health and safety of local residents
- Lack of information regarding the evacuation of villagers and the primary school
- Impact of narrow roads being blocked
- The development requires an Industrial Installations Permit from the Environment Agency, and this should be obtained before the BSMP is approved
- Future expansion of the BESS of up to 350MW/1400 MWh contravenes the DCO which allowed a maximum of 700 MWH
- Lack of consultation with Kent Police
- Unacceptable for the HSE not to provide comments
- Contravention of Modern Slavery Act
- Lack of regulation in battery manufacture
- The number of battery containers is unclear
- Lack of information relating to on-site emergency presence, number / type of fire extinguishers in mobile emergency stations, container specification to house defective modules, the location of temporary replacement battery storage areas
- Lack of information to deal with thermal runaway
- Lack of appropriate access in the event of an emergency
- Evidence of battery fires relating to e-scooters and electric cars demonstrates lack of safety
- Cleve Hill will be the largest BESS in the UK and requires full and exact disclosure of all facts, which are lacking in the BSMP
- The applicant has an alternative option to use the area for solar array rather than energy storage
- Lack of a construction emergency response plan or an operational emergency response plan
- The findings of the Hoare Lea Battery Failure Plume Assessment are questionable
- Lack of detailed information on fire suppression and detection
- Capacity of outlet tanks to deal with firewater runoff is not specified
- Concern regarding remote monitoring
- Lack of minutes of consultation meetings
- Lack of input from key agencies
- Impact on vulnerable people in the event of a fire / explosion, including school children, the elderly, and people in the local community who live in unconventional accommodation such as caravan parks and farm workers
- Lack of funding and resources for local hospitals to cope in an emergency
- Road capacity, and impact of additional traffic from significant development on the ability

- of emergency vehicles to access the site
- Proximity of site to the populations at Faversham, Seasalter and Whitstable
- The Council must seek professional advice on the application
- Impact on ecology and SPA/RAMSAR site
- Inadequate measures in relation to cyber security / cyber attack
- Key information is missing from the BSMP
- Lack of protocol detail
- Transportation route of batteries to and from the site, including recycling / removal of defective batteries
- Lack of emergency / escape plans for villagers
- Impacts upon local infrastructure, including railways lines, the Swale Estuary, the Thanet Way, and Saxon Shore Way
- The suggested future expansion of the BESS would make this an entirely different application and would require significant redesign of the site layout and bund, and significantly increase the potential for thermal runaway incidents and explosions.
- LFP batteries are more subject to explosion risk than other types. No explosion hazard analysis has been provided by the applicant.
- No evidence that full account has been taken of the forensic engineering analysis available, including the sites at Arizona, Liverpool, Moorabool and Beijing. This is expected in the NFCC Guidance.
- Likelihood of a single cell failure in the BESS increases in proportion to total size. This is a greater risk on a large system such as Cleve Hill, as is the maximum possible scale of a BESS accident.
- The BSMP and Hoare Lea report are inadequate to judge the dangers and risk to life of airborne pollutants from a possible BESS fire.
- The proposed aerosol type automatic fire suppression system is not specified and could be dangerous

5.8 Following the submission of a revised BSMP, a further notification process was undertaken and 26 further representations were received, including representations from GREAT and from barristers representing the Faversham Society. The comments received are summarised as follows –

- Concern regarding appointment of the consultant used by the Council and the independence and level of expertise set out in the consultant's report
- Issues remain unresolved, including the need for measures relating to increased risk of explosions from LFP batteries, the need for Hazardous Substances Consent, container spacing, possible future expansion of the BESS, failure to consider world-wide experience of BESS failures under the NFCC Guidance, failure to consider the possibility of multiple simultaneous fires, failure to consider or reference the Atkins Report in respect of airborne hazards, serious undersizing of fire water, failure to provide details of fire suppression system
- Redacted information within the consultant's report
- The re-notification has taken place over the Christmas period and lack of time for responses to be made
- Concerns raised by third parties including The Faversham Society have not been addressed
- The decision on Cleve Hill battery storage has relevance and significance for other BESS developments elsewhere in the country
- The BSMP remain incomplete and lacking detail
- The revised BSMP still fails to accord with NFCC Guidance
- The report draws almost exclusively on American experience and not developments close to population centres as is the case here

- The BESS is a business model to sell energy at higher prices
- The use of Lithium-ion batteries goes against advice from many experts

## 6. ASSESSMENT

- 6.1 It is important that Members are clear about the nature of the application under consideration. The solar park at Cleve Hill has been approved by the Secretary of State, and as part of that approval (i.e through the granting of a DCO), the option of installing an energy storage system on the site has also been authorised. The specific location of the energy storage system within the area identified as “Work No 2 and 3” to the north of Cleve Hill Farm accords with the works plan certified by the Secretary of State. Although the detail of these works are subject to Requirements within the DCO, the principle of both the solar farm and provision of an energy storage system within the solar farm in the location as shown is already authorised under the DCO. It is not within the Council's powers to refuse an energy storage facility on the site as that is permitted under the DCO. What Members are specifically tasked to consider is the acceptability of the Battery Safety Management Plan, as has been submitted pursuant to Requirement 3 of the DCO.
- 6.2 It is well documented that the topic of battery storage and safety was of significant concern to the local community during the NSIP examination process. The Examining Authority's report assesses the issue of safety and security in Chapter 8.7, with particular focus on battery safety. The report concludes (paragraphs 8.7.65 and 8.7.67) that safety risks can be managed and mitigated. Likewise, the Secretary of State's Decision letter and Statement of Reasons sets out their position on safety and security. The relevant sections of both the Examining Authority's Recommendation Report and the Secretary of State's Decision letter and Reasons are provided as Appendices 2 and 3.
- 6.3 Members will appreciate that the matter of battery storage and safety, particularly for an installation on the scale of Cleve Hill Solar Park is a highly specialist topic. For this reason, the Council has employed a specialist battery storage and safety expert, BST&T Consultancy Services, to advise on the Battery Safety Management Plan submitted to the Council under Requirement 3 of the DCO. In addition, and as a key expert consultee on fire safety, the advice from Kent Fire and Rescue Services has been given significant weight in the assessment of this application. The inability of the HSE to provide advice is clearly unhelpful.
- 6.4 Following review and advice from BST&T Consultancy Services, the BSMP has been amended to provide further clarification and additional detail. The report from BST&T Consultancy Services on the revised BSMP is attached in full at Appendix 4 to this report, as is the CV for the consultant. It advises that:
- The review was undertaken against the criteria set out in Requirement 3 of the DCO
  - The BSMP accords with the outline BSMP and incorporates the latest safety standards and best practice guidelines
  - The BSMP prescribes measures to facilitate safety during the construction, operation and decommissioning of Work No.2(a), including transportation of new, used and replacement battery cells to and from the authorised development
  - That requested information has been provided to KFRS and that KFRS raise no objection to the BSMP
  - The BESS manufacturer CATL has certified and tested the EnerC+ system to all requisite current safety and test standards. The final UL 9540 certification of the BESS enclosure is expected to be obtained in Q1 2024.

- The EnerC+ BESS system and fire and explosion protection systems conform to NFPA 855 (2023) standards and incorporate additional levels of monitoring and controls which are considered to be best practice.
- The site design and BESS system conform to UK National Fire Chiefs Council guidelines (2023), any deviations from these guidelines are agreed with KFRS
- The developer will undertake additional site-specific risk analysis reviews once the contractor is appointed, these include site specific consequence modelling for first responders, HAZOP / Hazid operations peer review, Fire Protection System sign off, etc. This post-consent, pre-construction work is normal, and in line with current industry expectations and best practice.

- 6.5 A number of concerns regarding the report have followed since it was put in the public domain. The following points provide clarification in relation to these concerns –
- The Faversham Society originally recommended Professor Christensen as a consultant for the Council to use. Professor Christensen was unable to undertake the work, but he recommended 2 consultants, one being BST&T Consultancy Services
  - BST&T Consultancy Services have confirmed that they do not have a conflict of interest in carrying out this work. Whilst they do work for developers, they have not worked for the developer involved with the Cleve Hill Solar Farm.
  - The BST&T report has been published in unredacted form following criticism that redacted elements were contained in part of the report first published online.
  - The BST&T report identifies amendments recommended to the applicant by BST&T and incorporated into Revision B of the BSMP. Whilst such dialogue and amendments were undertaken directly between BST&T and the applicant (rather than via the planning officer), officers do not raise concern at this given the highly technical and specialist nature of battery safety and management.
- 6.6 A number of common themes have also been raised by third parties in objection to the BSMP, and further commentary on this is provided below.
- 6.7 Lack of a detailed evacuation plan for the local community and school – the BSMP is primarily for the identification, assessment and management of risks on the site. The BSMP stipulates that the developer and operations and maintenance contractor will liaise with local emergency services to plan and review the Emergency Response Plans (ERP). Officers are satisfied following advice from BST&T Consultancy and KFRS that the preparation and review of these Emergency Response Plans provides an appropriate method to address off-site evacuation in an emergency event
- 6.8 Insufficient Firewater storage – KFRS advise - *“The NFCC guidance states 1,900 lpm for a minimum of 2 hours. The BSMP states that this will be delivered via on site tanks and a hydrant network. This ensures enough water is immediately available to implement a boundary cooling strategy and confine the fire to the unit of origin. Over the 2-hour period we are able to, should we need, bring in additional water supplies from further afield. There is no requirement for 4 hours in the guidance and we do not feel that there is a need to impose such a requirement”*.
- 6.9 Flooding and ecological damage from contaminated water – The BSMP sets out that the compound comprises an impermeable bunded area and that firewater would be held within penstock outlets within the compound, which can then be treated or safely removed.
- 6.10 Inadequate information on testing of the batteries – KFRS advise *“Page 8 (3.7, para 31) details the specifications of the batteries to be used. This includes reference to the compliance standards for the batteries at both cell, module, and container levels. The NFCC guidance makes reference to compliance with UL9540A and this has been confirmed within*

*the BSMP.*” Table 3 (P21) of the BSMP lists the BESS compliance standards. The BST&T report confirms that the CATL EnerC+ system is certified and tested to all requisite safety and test standards.

- 6.11 Lack of detail on design of the BESS – KFRS advise *“The BSMP provides suitable information on page 8 regarding the type of product being installed, size, number of modules and racks, and automatic systems for us to be able to make an informed assessment of the type of installation being proposed.”*
- 6.12 Adequacy of suppression system – KFRS advise *“Gaseous suppression systems have become standard on many BESS. There is value in these systems if used to extinguish fires not involving cells (e.g. wiring) and to prevent heat from these fires causing cells to enter thermal runaway. They are not effective on cells in thermal runaway. Our (and the NFCC’s) concern lies around the potential to create a delayed vapour cloud explosion that deploying these gaseous systems in the wrong circumstances can have. The system is designed to ensure discharge of the suppression system will only take place in the event of an electrical fire and not a thermal runaway event. There are manual overrides to activate or isolate the system. Additionally, the units are fitted with deflagration venting to NFPA 69 standards to reduce the risk from a vapour cloud explosion. We are satisfied that this system will not adversely affect our chosen fire fighting strategy.”* The BST&T report also confirms that the BESS enclosure integrates a dry pipe sprinkler system which can operate in conjunction with the gas exhaust system which could further reduce the risks of a deflagration occurring during a thermal runaway event.
- 6.13 Site access for emergency vehicles – KFRS advise *“In addition to the main vehicular access gate, the site is provided with pedestrian access gates. In the very unlikely event of us not being able to use the main access gate, we do have the capability of providing a fire fighting capability utilising portable pumps and equipment via the pedestrian access gates. Page 7, para 26 of the BSMP states “Access roads and vehicular access gates have been sized to ensure the largest vehicle required to enter and exit the facility unrestricted post construction. The layout also ensures unrestricted access to the local fire department in a fire event”. We will work with Cleve Hill Solar Ltd to ensure this is achieved for our range of fire engines. Having examined the layout of the proposed carriageways within the site, and the layout of the local road network, we do not foresee an issue with access and movement for our vehicles. We have procedures for marshalling our fire engines effectively to ensure that any locations with restricted access are well planned for. We will work with the site throughout to ensure that access is available and we will test these arrangements.”*
- 6.14 Unit spacing between battery modules – KFRS advise *“The spacing guidelines in the NFCC guidance relate to distances between BESS units in order to reduce the risk of unit to unit propagation. The BSMP states that distances between these units will be greater than or equal to 6 metres (para 22). This is a requirement that is often challenged by developers and far exceeds other international requirements but which, in this case, we are pleased to have seen Cleve Hill Solar Ltd accept.”*
- 6.15 Distance from BESS units to occupied buildings and site boundaries – KFRS advise *“Mitigation includes deflagration venting and mechanical fan extraction. These greatly reduce the risk of a vapour cloud explosion. Additionally, the location of the site away from population centres, as well as features like the site bund, reduce the risk considerably. We are satisfied with the distances proposed.”*
- 6.16 The need for Hazardous Substances Consent - The Control of Major Accident Hazards Regulations 2015 (COMAH) apply to dangerous substances as classified by the Classification, Labelling and Packaging Regulations 2008. The Government has made clear that Lithium-ion batteries are considered to be articles, rather than substances, and are therefore outside of

the scope of the COMAH. In any event, it is considered that any future need to obtain further consents should not prevent approval of the BSMP as planning decisions should assume that these regimes will operate effectively (paragraph 194 of the NPPF).

## **7 Conclusion**

- 7.1 Officers recognise the significant concerns that have been raised against this application for approval of a Battery Safety Management Plan. Officers have taken advice from a specialist consultant on this highly technical topic and also given significant weight to the detailed comments and advice received from KFRS. On the basis of this advice it is considered that the BSMP as revised is acceptable and that this detail pursuant to Requirement 3 of the DCO is approved.

**RECOMMENDATION – That the Battery Safety Management Plan pursuant to Schedule 1, Part 2, Requirement 3 of the Cleve Hill Solar Park Order 2020 is APPROVED**

