



**CLEARSTONE
ENERGY**

DARTFORD ENERGY HUB

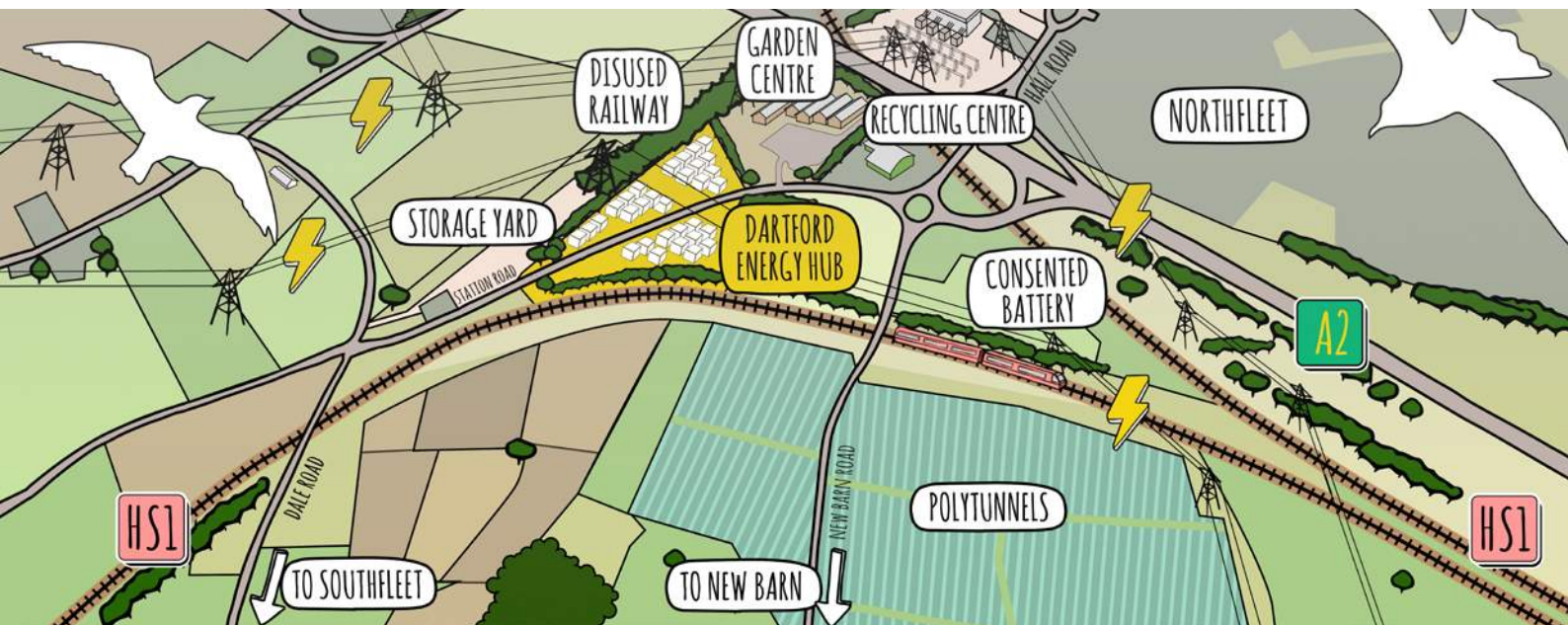
STATEMENT OF COMMUNITY INVOLVEMENT

Prepared by Clearstone Energy & 930 Communications
| December 2024 | Document Reference: R013

DARTFORD ENERGY HUB

Statement of Community Involvement on behalf of Clearstone Energy

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CONTENTS

1. Executive Summary	Page 4
2. Scheme Overview	Page 8
3. The Consultation	Page 10
4. Consultation Feedback	Page 16
5. Conclusion	Page 26
6. Community Benefit	Page 27
7. Appendices	Page 31

1. EXECUTIVE SUMMARY

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| <p>1.1 During October and November 2024, Clearstone Energy Ltd (“the Applicant”) conducted a programme of public consultation and stakeholder engagement with regards to its proposals for a Battery Energy Storage System (BESS) facility (“the Proposed Development”) on land off Station Road, Southfleet, Dartford (“the Site”) (see Figure 1).</p> <p>1.2 The aims of the consultation were:</p> <ul style="list-style-type: none">• To work with key local stakeholders before finalising designs to ensure that their requirements, priorities and concerns could be heard, resolved and acted upon in final designs; and• To raise awareness of the proposals within the wider local community and encourage feedback and suggestions for improvement. <p>1.3 The Applicant undertook a comprehensive programme of community engagement across traditional and digital communications channels that included a public exhibition on 5 November 2024 at Southfleet Village Hall on Dale Road in Southfleet, which was attended by 87 people. Separate sessions were held for elected representatives and near neighbours.</p> | <p>1.4 The Applicant offered to present to Southfleet Parish Council at their meeting on 4 November 2024, but this offer was declined on the grounds of impartiality.</p> <p>1.5 A pre-application briefing with Kent Fire & Rescue Service (KFRS) was also organised to gain feedback on safety elements in line with National Fire Chief Council (NFCC) Guidelines for Grid Scale Storage Planning.</p> <p>1.6 Key matters raised by local residents and stakeholders during pre-application consultation included:</p> <ul style="list-style-type: none">• Support and need – whilst some supported the proposal and design, and acknowledged the need for battery energy storage, others raised concerns and questioned the need.• Greenbelt land – whilst some thought it was an acceptable use of low-quality greenbelt land, others thought it was inappropriate development in the greenbelt and that special circumstances were not demonstrated.• Agricultural land/food security – whilst some supported the use of the land for battery energy storage (as it’s not used for crop production/ low quality), others were concerned about the loss of agricultural land and food production. |
|---|---|

- **Highways traffic** – whilst some welcomed the proposal to only route traffic directly from A2, others were concerned it would add to existing congestion caused in part by the recycling centre.
- **Public rights of way** – it was commented that people walk along Station Road, which is dangerous; footpath access from the garden centre to the west of the site would be welcomed.
- **Landscape and visual impact** – whilst some thought the location of the site and proposed planting plans would result in minimal visual impact, others were concerned about the visual impact on the village and character of a rural area.
- **Fire safety** – there was a desire to understand more about the safety risks posed by battery energy storage facilities and the Applicant's approach to ensuring safety.
- **Noise impact** – concern was raised about potential noise and assessment.
- **Biodiversity** – whilst some supported the biodiversity plans and gain, others were concerned about the impact on wildlife and fauna.
- **Community benefit** – queries and suggestions for projects and administration.

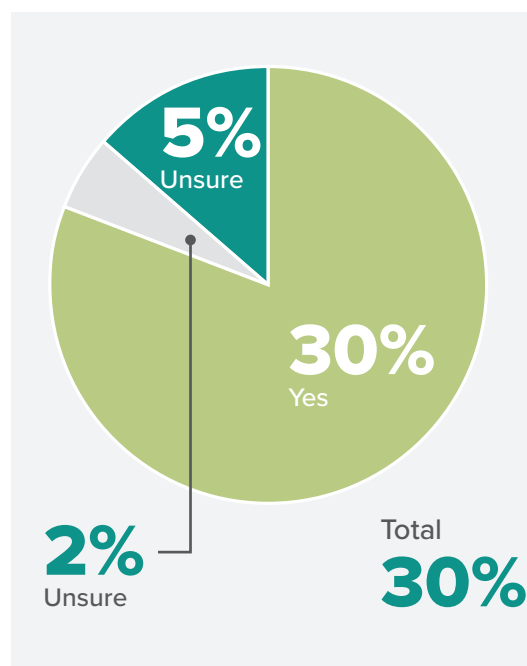
1.7

All of the issues raised, and the Applicant's responses, can be found in **Appendix 13**. In response to community input, the design of the scheme and accompanying planning application has been amended as follows:

- The planning application includes a site safety report providing a comprehensive review of the risks associated with battery energy storage systems, the potential impact on the local community and environment and the mitigation of risks within the project design.
- Emergency access within the site for Fire & Rescue Service personnel and vehicles has been improved by modifying access points to allow for responding traffic to park off of the road and by providing additional on-foot access between site sections.
- Landscaping proposals have been updated based on feedback from the local community on their use of the areas surrounding the site.
 - o New woodland planting - using local species - is proposed to contain views of the new infrastructure and make the boundaries of the site assimilate with the local landscape character.

- o Access points are designed as dog legs with close planting to reduce glimpsed views from Station road.
- o Infrastructure will be painted green to soften views where appropriate.
- o Biodiversity net gain proposals have been finalised and include recommendations on priority local species received from local residents.
- o The Construction Traffic Management Plan includes provisions to ensure that construction of the project would not further aggravate existing traffic issues on Station Road or disrupt local businesses.

- 1.8 Feedback forms completed during the consultation process showed that 30 out of 37 had found the communications approach and materials helpful in understanding the Proposed Development.



- 1.9 In summary, the Applicant undertook a comprehensive programme of public consultation, which successfully engaged local residents, elected representatives and key stakeholders. The feedback received has influenced the final scheme design submitted as part of the planning application.

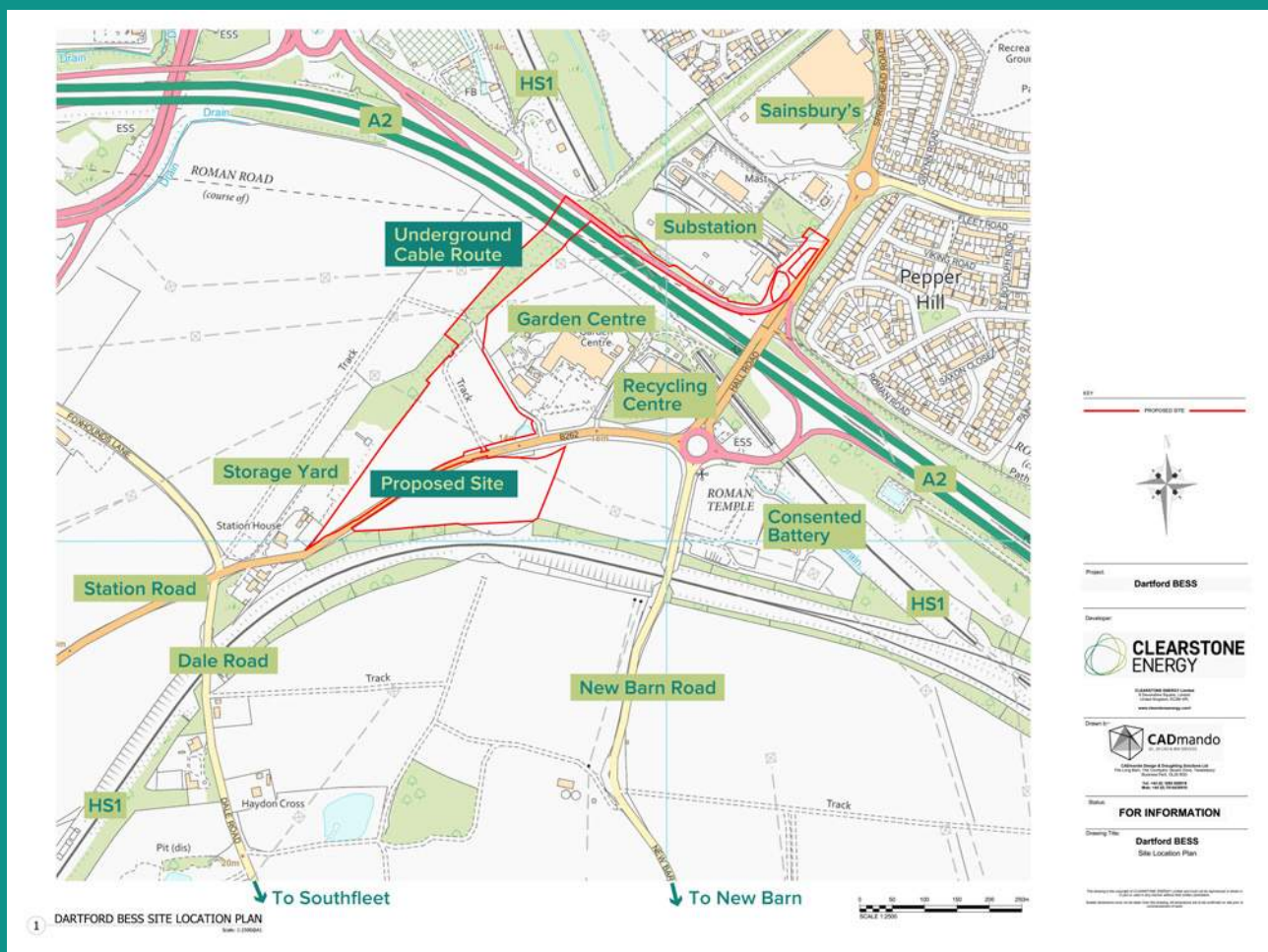


Figure 1: Site Location Plan

2. SCHEME OVERVIEW

- 2.1 The Site comprises approximately 9.4 hectares (ha) of land, including 5.4 ha designated for development. An additional 5.6 ha is allocated for offsite biodiversity enhancements.
- 2.2 The development of BESS capabilities in the UK is a key priority for responding to the globally declared climate emergency, by maximising the use of low carbon electricity generated by solar and wind farms across the UK and reducing the UK's reliance on gas-fired power plants to balance supply and demand on the electricity network.
- 2.3 BESS will provide the system flexibility and resiliency required to enable the transition from gas and coal-fired generation to wind and solar generated electricity. With coal and gas-fired generation, supply and demand are balanced at the generation level by turning power plants on or off to match demand. Wind and solar energy generation is weather dependent, which shifts the focus of system balancing on to the network.
- 2.4 BESS technology enables system balancing by storing excess energy available on the power system when supply outstrips the demand, such as at times of high solar radiance levels or high winds, for use at a later point in time when demand is higher than supply, typically around the morning and early evening peaks in end user demand.
- 2.5 The Proposed Development is a 300MW BESS project that would connect via underground power cables to National Grid's Northfleet Substation, located 350 metres north east of the proposed site. The substation plays a key role in supplying electricity to homes and businesses in Dartford, Gravesham and Sevenoaks Boroughs.
- 2.6 It would be capable of storing energy equivalent to up to two hours power for all the homes in Dartford, Gravesham and Sevenoaks Boroughs and provide increased security of energy supply for the local area. When operational it would displace 80,000 tonnes of CO2 emissions from gas-fired power plants each year. Equivalent to planting 4 million trees.



3. THE CONSULTATION

Consultation Objectives

- 3.1 The goal of the public consultation programme was to obtain feedback on the Proposed Development from local residents, their elected representatives and other key stakeholders, which could then be addressed before the submission of a formal planning application.
- 3.2 Feedback and consensus were sought in relation to both the material elements of the Proposed Development e.g. the layout design and also the non-material elements i.e. the preferred prioritisation of the annual £50,000 community fund offered to share the benefits of the Proposed Development with the local community.
- 3.3 Feedback from the Kent Fire and Rescue Service on the fire safety aspects of the design was also sought.

Consultation Approach

- 3.4 The consultation approach taken by the Applicant was informed by best-practice consultation and the guidance contained in the Dartford Borough Council's (DBC) Statement of Community Involvement (SCI) dated February 2021. DBC's SCI encourages pre-application consultation by developers and suggests activities including leaflets to residents, wider publicity and an in-person exhibition.

¹CO2 savings are benchmarked against the provision of power and/or Stability services to the grid from a Combined Cycle Gas Turbine power plant producing 450g / 0.45kg of carbon dioxide per kWh of electricity generated (corresponding to 0.45 tonnes of carbon dioxide per MWh). Annual CO2 savings are calculated based on the battery charging and discharging once a day for 300 days a year and displacing the need to source that power from a gas-fired peaking power plant.

²Based on the average adult tree capturing and storing 21 kg of CO2 per year.

Consultation Zone

- 3.5 The purpose of identifying a community consultation zone (CCZ) was to facilitate communications with properties potentially impacted by the project. Based on potential visual impact and/or impacts from construction traffic, all the properties located within three square miles of the site, which included the cable route to the Northfleet Substation, (the area shown in Figure 2) were included in the CCZ and received a consultation booklet (**Appendix 1**) by post. This totalled 993 addresses.

Elected Representatives

- 3.6 Elected representatives contacted about the proposal and consultation were based on the CCZ. These stakeholders, listed below, also received direct communication about consultation activities and the project:

- DBC Key cabinet members and political group leaders
- DBC Longfield, New Barn & Southfleet ward members
- Gravesham Borough Council (GBC) Northfleet & Springhead ward members
- DBC Development Control Board members
- Southfleet Parish Council
- KCC Division members for Dartford Rural and Northfleet & Gravesend West
- MPs for Dartford and Gravesham

Following a request from a member of the community, Longfield & New Barn Parish Council was also sent details of the consultation.

Wider Consultation

3.7 The wider population and other stakeholders were informed about the proposal and consultation activities via the following non-direct methods:

- Project webpage (**Appendix 2**);
- A press release (**Appendix 3**) resulting in articles on the following websites (**Appendix 4**):

Kent Messenger Kent Online - <https://www.kentonline.co.uk/dartford/news/plan-unveiled-for-enormous-battery-storage-facility-among-u-315398/>

BBC South East - <https://www.bbc.co.uk/news/articles/cm20ygv76k6o>

Kent Live - <https://www.kentlive.news/news/kent-news/one-countrys-biggest-battery-facilities-9688776>;

- A poster (**Appendix 5**) sent to Southfleet Parish Council and Longfield & New Barn Parish Council to display on their notice board, website and social media channels;
- An email to local interest groups (**Appendix 6**) listed in (**Appendix 7**).

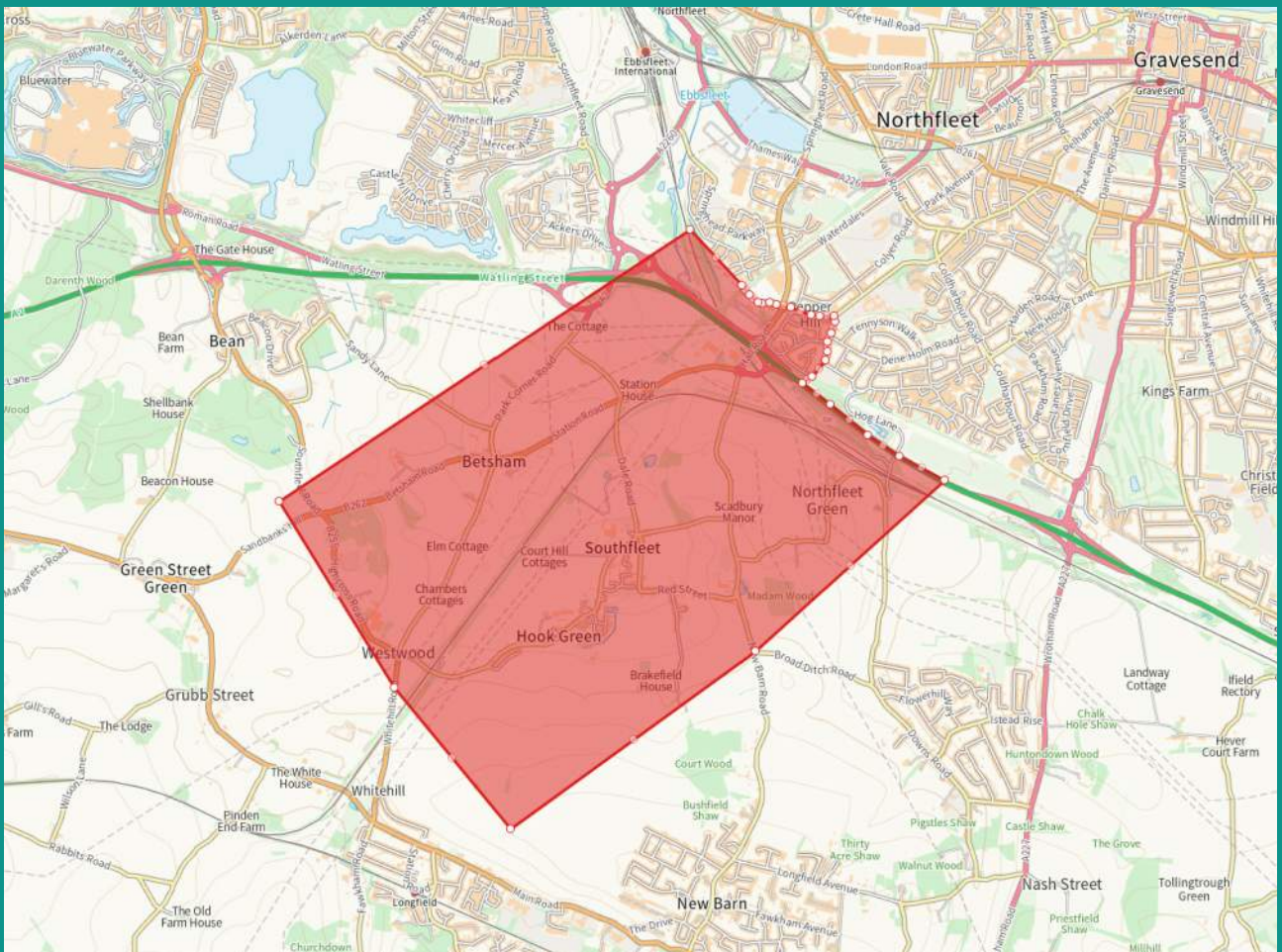


Figure 2: Community Consultation Zone

Consultation Overview

- 3.8 Engagement was supported by the printed consultation booklet and digital project webpage; both provided a non-technical overview of the proposed project, the consultation and planning process and how to take part in the consultation.
- 3.9 The consultation process was designed around three distinct engagement strategies:
- One-to-one engagement with elected representatives of the relevant local communities;
 - One-to-many engagement with local residents through postal and digital channels and a public exhibition; and
 - Engagement with Kent Fire & Rescue Service on design safety aspects.
- 3.10 One-to-one engagement commenced on 17 October 2024, when an introductory email (**Appendix 8**) and electronic copy of the consultation booklet was sent to elected representatives outlined in section 3.6, and local interest groups listed in **Appendix 7**.
- 3.11 The applicant held a Public Exhibition for the Proposed Development on 5 November 2024 (**Appendix 9**), providing the opportunity for the local community to meet with the project team, find out more about the project and provide their input. The Public Exhibition was advertised in the consultation booklet, project website, posters, press release and emails.
- 3.12 Separate sessions were offered to elected members and near neighbouring properties and businesses ahead of the exhibition opening to the public.



4. CONSULTATION FEEDBACK

Parish Council Engagement and Feedback

- 4.1 The Proposed Development falls within the administrative boundaries of Southfleet Parish Council.
- 4.2 The Applicant offered a presentation to Southfleet Parish Council ahead of its meeting on Monday 4 November (**Appendix 10**). The clerk thanked the Applicant for engaging with residents about the proposal, but declined a presentation on the grounds of impartiality, noting that parish council members may attend the exhibition as residents.
- 4.3 Following a request from a member of the community, Longfield & New Barn Parish Council was sent details of the consultation. Members of Longfield & New Barn Parish Council attended the councillor session at the exhibition, as outlined below.

Engagement with Local Councillors

- 4.4 Two elected representatives attended the councillor session at the exhibition, and four attended the public session:
- **Councillor Carol Gale** - DBC Cabinet Member for Climate Change and Natural Environment
 - **Councillor Steve Brown** - DBC ward member for Longfield, New Barn & Southfleet, DBC Development Control Board and Longfield & New Barn Parish Council
 - **Councillor Jeremy Kite** - DBC ward member for Longfield, New Barn & Southfleet, DBC Leader, KCC Division member for Dartford Rural and Longfield & New Barn Parish Council
 - **Councillor Jennifer MacDonald** - Longfield & New Barn Parish Council
 - **Councillor Dale Hawthorne** - Southfleet Parish Council
 - **Councillor Pauline Tester** - Southfleet Parish Council

- 4.5 Councillor Steve Brown did not comment due to his position on the DBC Development Control Board. Key matters raised by the other councillors included:
- **Support and need** – support for the project and acknowledgement of the need for BESS
 - **Site selection** – support for the location (close to the A2/Northfleet Substation/demand)
 - **Agricultural land** – support for the use of land for BESS – not used for crop production/low quality
 - **Agricultural land** – concern about the impact of energy projects on food security and request for further information about the agricultural productivity of the site
 - **Landscape and visual impact** – support for screening and planting plans/mitigation
 - **Biodiversity** – support for biodiversity plans and net gain
 - **Highways traffic** – concern that construction traffic would add to existing congestion caused by bin lorries queuing on Station Road to access Pepper Hill
 - **Greenbelt land** – protection of greenbelt land is important to the community and uncertainty that the proposal demonstrates special circumstances
 - **Cumulative impact** – concern about the number of battery energy storage schemes in the area.
 - **Community benefit** – questioned whether funding was high enough to have a meaningful impact
 - **Consultation** – query as to who has been notified about the consultation
 - **Consultation** – praise for how knowledgeable the project team was and their willingness to answer questions

Local Community Engagement and Feedback

- 4.6 One-to-many engagement commenced on 17 October 2024 with the mail out of the consultation booklet including an invite to the public consultation exhibition, and directions for engaging with the consultation. The consultation booklet was sent to 993 properties, as outlined in section 3.5.
- 4.7 The in-person public exhibition was held on 5 November 2024 at Southfleet Village Hall, Dale Road, Southfleet, DA13 9NX. In total, 87 local residents and elected representatives attended the event. They were presented with 15 display boards (**Appendix 11**) giving information about the Applicant, the Site and the concept design (Figure 3).
- 4.8 A project webpage was maintained from 17 October 2024 and can be viewed at www.clearstoneenergy.com/project/dartford (**Appendix 2**) The web page provides visitors with an overview of the proposals as well the opportunity to get in contact with the development team or leave feedback. There have been a total of 255 unique visitors to the public consultation web page.



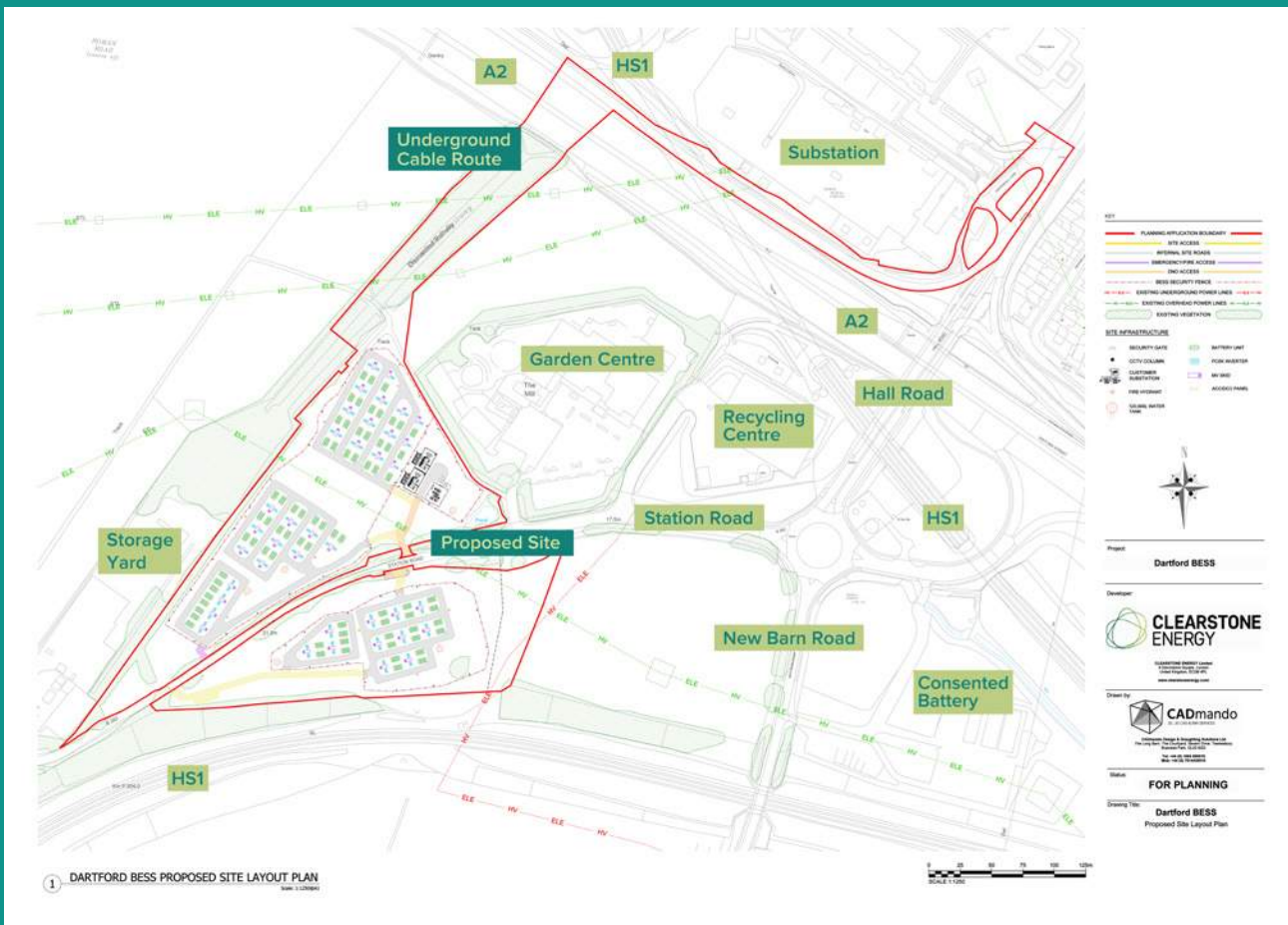
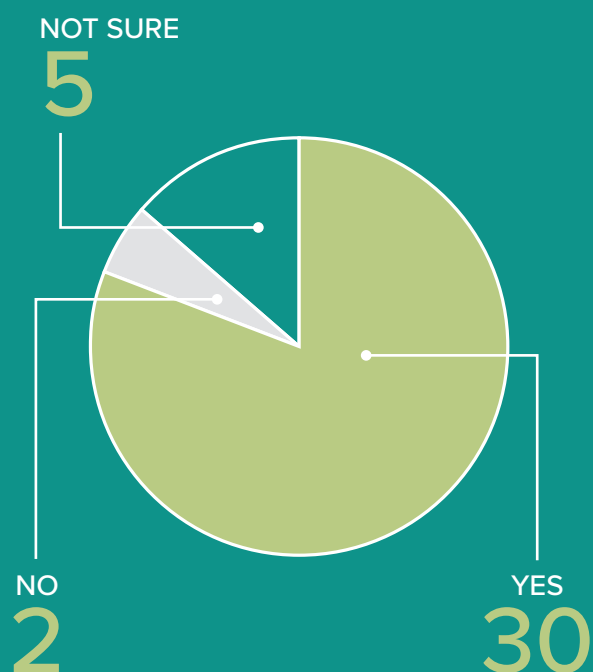


Figure 3: Concept Design: Presented at the Public Exhibition and included in the Booklet

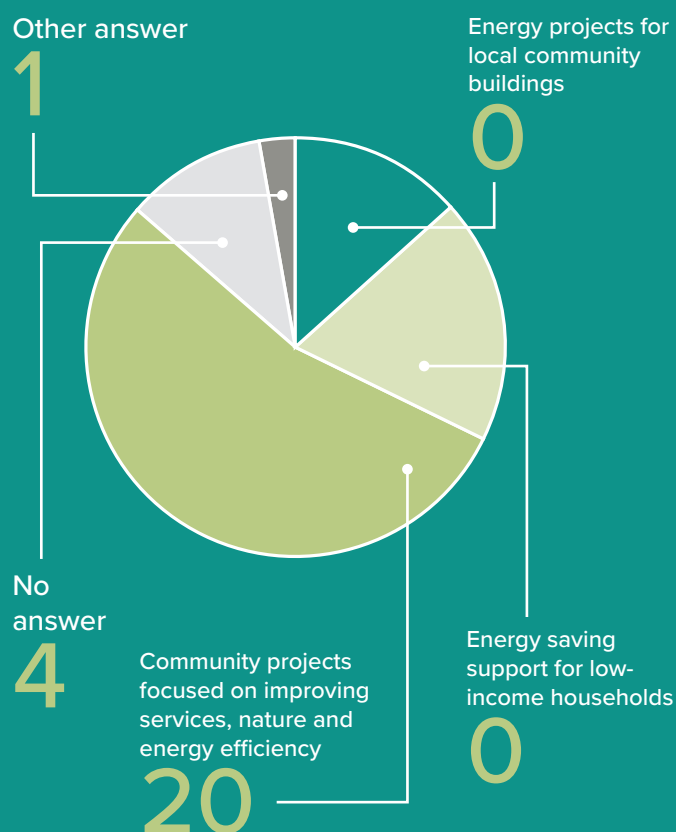
Feedback Forms and Online Questionnaire

4.11 In total, 37 pieces of feedback were received as a result of the online survey, postal feedback form and hard copy feedback form (**Appendix 12**) from the public exhibition, along with six emails/web form enquiries. The feedback form included two multiple choice tick box questions and a space for additional comments. The results are presented below.

Question one: Has this brochure/exhibition/website been helpful in understanding our proposal?



Question two: With regard to the three components of the community benefit scheme, which one would you prioritise?



Question three: Please use this space to provide any comments on the proposal. We would welcome your feedback on all aspects of the emerging design

Every form, bar four, contained additional comments. **Appendix 13** contains those comments in full, as well as the comments from those who made contact via email or the website contact form and verbal comments received at the exhibition. The table in **Appendix 13** also provides the Applicant's response. The key themes raised included:

- **Support and need** – whilst some supported the proposal and design, and acknowledged the need for battery energy storage, others raised concerns and questioned the need.
- **Site selection** – whilst some thought it was a good location (close to the A2/Northfleet Substation/existing development), others felt it was the wrong location and suggested alternative brownfield sites.
- **Greenbelt land** – whilst some thought it was an acceptable use of low-quality greenbelt land, others thought it was inappropriate development in the greenbelt and that special circumstances were not demonstrated.
- **Agricultural land/food security** – whilst some supported the use of the land for battery energy storage (as it's not used for crop production/low quality), others were concerned about the loss of agricultural land and food production.
- **Highways safety** – concern was raised about Station Road being dangerous and too narrow for

HGVs, and that traffic related to the project could reduce safety further.

- **Highways traffic** – whilst some welcomed the proposal to only route traffic directly from A2, others were concerned it would add to existing congestion caused in part by the recycling centre.
- **Public rights of way** – it was commented that people walk along Station Road, which is dangerous; footpath access from the garden centre to the junction between Station Road and Dale Road would be welcomed.
- **Cumulative impact** – concern about the number of battery energy storage schemes in the area.
- **Landscape and visual impact** – whilst some thought the location of the site adjacent to existing development and proposed planting plans would result in minimal visual impact, others were concerned about the visual impact on the village and character of a rural area.
- **Fire safety** – there was a desire to understand more about the safety risks posed by battery energy storage facilities and the Applicant's approach to ensuring safety.
- **Noise impact** – concern was raised about potential noise and assessment.
- **Biodiversity** – whilst some supported the biodiversity plans and gain, others were concerned about the impact on wildlife and fauna.
- **Operation and decommissioning** – questions about operation and decommissioning of the project.
- **Community benefit** – queries and suggestions for projects and administration.

Engagement with Kent Fire & Rescue Service (KFRS)

- | | | | |
|------|--|------|---|
| 4.12 | Prior to preparing the Application, the Applicant appointed fire consultancy Joe Hassell Command (JHC) in an advisory role to co-design the site layout in accordance with NFCC and other relevant guidance, and to engage with Kent FRS to ensure that the emerging draft proposals reflected the FRS operational requirements. | 4.14 | Following a review of the documentation, KFRS provided a pre-planning response (Appendix 15) with requests for further clarification on water supplies, suppression systems and procedures for using the annunciation panels specified by the Applicant. |
| 4.13 | JHC contacted KFRS on 1 November 2024 to request a pre- application consultation on the project briefing with the Fire Engineering team to gain input on the Applicants approach to fire safety and draft site plans. The request was accompanied by a briefing pack that included: FRS briefing document (Appendix 14), Battery Safety Standards Report (Document Ref: R012a), draft Fire Strategy Plan (In Drawing Pack) and Sensitive Receptors Plan (In drawing pack). | 4.15 | In response, the site layout was updated to include an additional emergency water tank in the most northerly section of the site. An updated Fire Strategy Plan was sent to KFRS on 19 December 2024 alongside responses to questions raised in the pre-planning response (Appendix 16). |

Outcomes from Feedback on the Scheme

4.16 The engagement strategies ran concurrently until 19 November 2024. While some of those consulted supported the proposals and noted the need for battery energy storage, some raised concerns, which have been addressed in **Appendix 13**. The Applicant has comprehensive plans for a number of these issues – such as a noise impact assessment, a Landscape and Visual Impact Assessment and NFCC compliant site design and safety approach, which it hopes will provide reassurance that concerns are unfounded.

4.17 The planning application includes a site safety report providing a comprehensive review of the risks associated with battery energy storage systems, the potential impact on the local community and environment and the mitigation of risks within the project design.

- The planning application includes a site safety report providing a comprehensive review of the risks associated with battery energy storage systems, the potential impact on the local community and environment and the mitigation of risks within the project design.

- Landscaping proposals have been updated to screen potential views of the site from a series of locations mentioned by the local community:

Visitors to Millbrook Garden Centre are likely to experience a few limited glimpses of the proposed BESS scheme from the car park and access road. The proposed wooded planting along the site boundary with the car park and access road will help soften views of the scheme.

Users of the public footpath running north from Warren Road, Southfleet (DR132) may experience a few limited views of the scheme. However, the proposed planting along the eastern edge of the site will add to the well treed backdrop, and ensure the profile of the shallow valley form beyond the rail line is maintained.

Motorists and cyclists on Station Road are likely to experience views of the scheme through hedgerow gaps and new openings for the access roads. The proposals include new planting to help reinforce the linearity of the road frontages and help integrate the

scheme over time. Access points are designed as dog legs with close planting to reduce glimpsed views from Station road.

Where possible visible elements of the scheme will be painted in green to blend in with existing and new planting.

- The emergency access point to the northern section of the proposed site has been relocated and widened to provide a safe lay up area for fire engines off the public highway.
- A further emergency water tank has been added to the site design as requested by Kent FRS. This ensures that there is direct access to emergency water supplies across the whole site in the event that the fire hydrant system fails.
- Data on vehicle movements and traffic impacts provided by Millbank Garden Centre and Pepper Hill Recycling Centre has been used in the Construction Traffic Management Plan to schedule deliveries so that they do not add existing congestion on Station Road
- Seasonal footfall data from Millbank Garden Centre has been incorporated into construction traffic proposals to help mitigate the proposed development's impact on business operations.

- The Construction Traffic Management Plan includes provisions to ensure that construction traffic does not route to the site from the west in the event of congestion on or closure of the A2.
- Biodiversity net gain proposals have been finalised and include recommendations received from local residents such as a commitment to use native species in new planting.

4.18 A full Noise Impact Assessment has been included as part of the Planning Application.

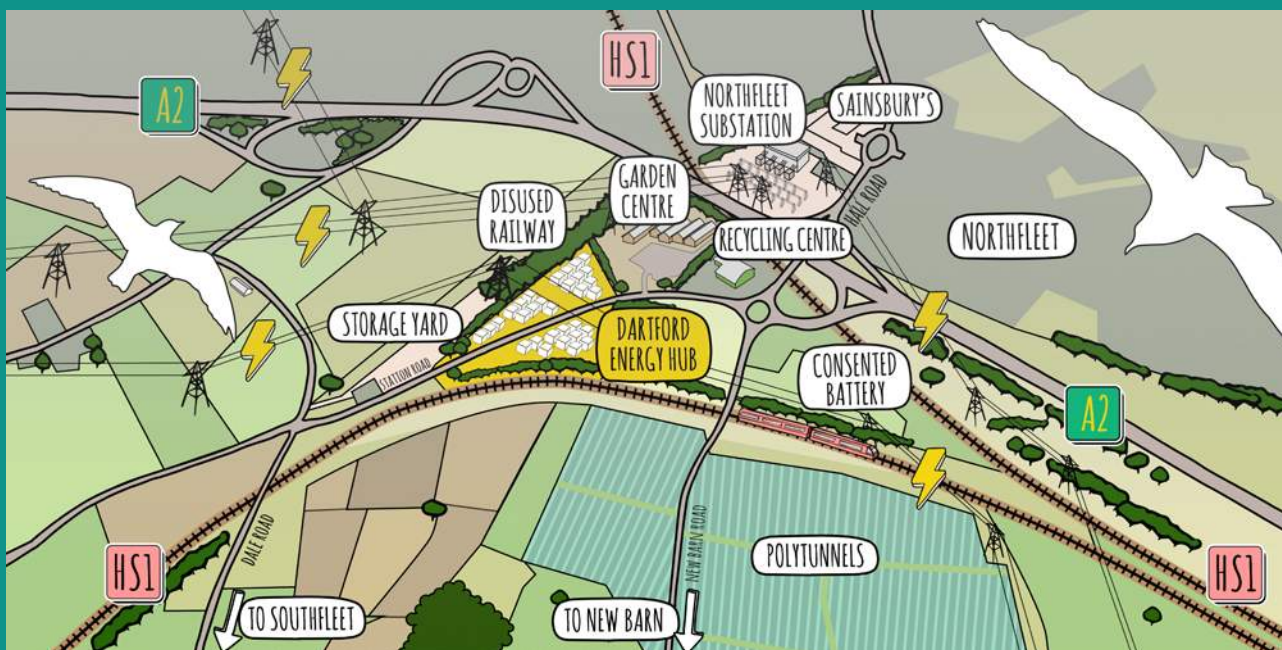
4.19 The provision of a permissive footpath connecting Millbank Garden Centre with the junction of Station Road and Dale Road was investigated by the Applicant in response to community feedback. Unfortunately this was not possible for a number of reasons including public liability issues and a lack of a feasible route connecting the footpath terminating by the garden centre to the northern side of Station House without significant impact on the mature treeline adjacent to Station Road.



Figure 4: Landscape Strategy Plan: Illustrating proposed new planting scheme

5. CONCLUSION

5.1 The Applicant undertook a comprehensive programme of public consultation, which successfully engaged with residents, their political representatives and other stakeholders and the feedback received has influenced the final scheme design and documentation submitted with the planning application.



5. COMMUNITY BENEFIT



SUMMARY OF FEEDBACK ON NON-MATERIAL ELEMENTS OF THE PROPOSED DEVELOPMENT

6.1 The community funding offer associated with the Proposed Development is a voluntary initiative from the Applicant and is offered to share the benefits of the Proposed Development with the residents of the local community in which it is located. The community funding offer is entirely separate to the Application and is not material or relevant to its determination. The offer is not contingent upon receiving local community support; nor is it necessary to make the Proposed Development acceptable in planning terms; and nor should it be relied upon as a reason to grant planning permission.

6.2 The Applicant's projects will help to deliver a low carbon future where the UK is self-sufficient in terms of low cost, dependable energy supplies. It is important to the Applicant that its projects also serve a local purpose and make a positive contribution to the local community in a way which delivers real benefits now for local people.

6.3 The offered annual £50,000 community fund proposed the following elements, which have been subject to public consultation:

- Energy projects for local community buildings;
- Energy saving support for low-income households; and
- Community projects focused on improving services, nature and energy efficiency.

6.4 As part of the consultation process, the Applicant has sought input from the local community and elected representatives on:

- How the offers can be tailored to the needs of the local community;
- How money should be allocated of across the three offers; and
- The preferred delivery mechanism for the offers.

6.5 The response to the Applicant's Community Funding Offer has been positive. 54% prioritised community projects, 19% voted for energy saving support, 13.5% prioritised energy projects for local community buildings, 10.5% did not give an answer and 3% suggested an alternative.

6.6 Suggestions for the community benefit fund were:

- A village public car park, including EV chargers
- Funding towards costs of the local church - tower repair / church bells
- Footpath / cycle access along Station Road
- Increase energy efficiency and decarbonisation of Sedley's CoE Primary School
- Solar panels for local village halls
- Solar panels for local residents
- Support of foraging projects

6.7 In terms of suggestions made on how the fund should be administered, a number of respondents requested that the money go into local projects not projects in the wider Dartford area.

6.8 Feedback gathered during the Public Consultation shows a clear preference for the Community Funding Offer to support local community projects. The Applicant is proposing to set up a Community Benefit Fund. Administration of the fund, including geographical scope, would be agreed in consultation with Southfleet Parish Council (SPC) and Dartford Borough Council (DBC). It is envisaged that the fund would support:

- Projects that benefit the local community and link to the environment and ecology, climate change and energy.
- Capital intensive projects that lead to reduced energy costs and carbon emissions for local community buildings

6.9 Following the appointment of an Administrator for the fund It is envisaged that an advisory board would be set up to oversee the fund and that this would include representatives from DBC, SPC and the Applicant. Together they would agree a geographical scope for funding with the intention that it focuses on the communities closest to the Proposed Development. The proposal will be finalised following the formal public consultation and consideration by DBC.

6.10 The Community Funding Offer is entirely separate to the Application and is not material or relevant to its determination. The Offer is not contingent upon receiving local community support.



6. APPENDICES

Appendix 1: Consultation Booklet

Appendix 2: Project web page

Appendix 3: Press release

Appendix 4: Press coverage

Appendix 5: Poster

Appendix 6: Email to local interest groups

Appendix 7: List of local interest groups

Appendix 8: Introductory email to elected representatives

Appendix 9: Public exhibition photos

Appendix 10: Introductory email to Southfleet Parish Council

Appendix 11: Public Exhibition Boards

Appendix 12: Feedback form

Appendix 13: Comments received via feedback form question 3, by email and verbally at the exhibition and the Applicant's response

Appendix 14: Briefing Document for Kent FRS

Appendix 15: Pre-Application Consultation Response from Kent FRS

Appendix 16: Applicants Response to Kent FRS

APPENDIX 1: CONSULTATION BOOKLET



**CLEARSTONE
ENERGY**

MODERNISING THE LOCAL ELECTRICITY NETWORK FOR A NET ZERO UK ENERGY SYSTEM



Dartford Energy Hub

MODERNISING THE LOCAL ELECTRICITY NETWORK FOR A NET ZERO UK ENERGY SYSTEM

Freepost

CLEARSTONE ENERGY

3. Please use this space to provide comments on the proposal.

We would welcome your feedback on all aspects of the emerging design shown in the brochure.

TO DO HERE

Interactions

To return your feedback form, please fold and put it in the post to us.

If you'd like more space to share your thoughts, send us an email or just write your comments below and drop them in an envelope with 'Freepost - CLEARSTONE ENERGY' written on the back.

Any queries or problems? Get in touch via dartford@clearstone-ewg.com

Invitation to a public consultation event on **Tuesday 5th November 2024** from **2:30-7:30pm** at **Southfleet Village Hall, Dale Road, Southfleet, DA13 9NX**

THE PROJECT

Clearstone Energy is proposing to develop Dartford Energy Hub - a 300MW battery energy storage facility at land off Station Road, Southfleet, Dartford.

The Dartford Energy Hub is an important electrical infrastructure project required to modernise the UK's electricity network and achieve a zero emissions UK electricity supply by 2035.

It would store excess electricity available when generation from wind turbines and solar farms is higher than demand, and release that energy back onto the grid when demand is higher than generation. This network flexibility is urgently needed as we continue to transition UK electricity generation from gas and coal fired power stations to renewable and low carbon sources.

The Dartford Energy Hub would connect via underground power cables to National Grid's Northfleet Substation, located 350 metres

north east of the proposed site.

The substation plays a key role in supplying electricity to homes and businesses in Dartford, Gravesham and Sevenoaks Boroughs.

The total site area is 11 hectares (ha) comprising 2.5 ha of development land and 5.5 ha of biodiversity enhancements. The site is:

- an infill site adjacent to existing commercial uses, including a recycling centre, garden centre and storage yard;
- the nearest developable site to National Grid's Northfleet Substation;
- low-quality land bisected by roads, railway lines and overhead powerlines.

The plan on the next page shows an example of what the final scheme could look like. With feedback gained from this public consultation, we will work up a final design for submission to Dartford Borough Council as part of our planning application for the project.

ENABLING THE TRANSITION TO A CLEAN, LOW COST AND SECURE ENERGY SYSTEM

Build for an era of coal and gas fired power stations, the existing UK electricity network needs upgrading to support the deployment of renewable, low carbon energy. The inflexibility of the network is adding costs to bills and failing to deliver the emissions reductions needed to prevent climate change.

In 2022, a lack of storage resulted in:

- 3.4 TWh** of electricity from wind turbines lost due to a lack of storage on the electricity grid
- 5 days of power** for the whole of the UK wasted
- £210 million** of payments to wind turbine operators for lost revenue
- £590 million** of payments to gas-fired power plants to generate electricity equivalent to that lost from wind turbines
- 1.3 million tonnes of CO₂** emissions from gas-fired power plants due to a lack of storage

Batteries solve one of the biggest challenges facing a low carbon, renewable energy powered electricity network.

Currently, gas power plants are turned on to supplement wind and solar energy supply and meet peak electricity demand between 7 and 8pm and 6 and 8pm.

Batteries minimise the amount of renewable energy we can use at home and reduce the number of times we need to turn on a gas fired power plant to meet peak demand. Saving money and reducing GHG emissions.

Weather dependent wind and solar energy farms often produce more energy than is needed to meet electricity demand overnight and at off peak times during the day.

With both supply and demand fluctuating across the day, batteries store energy when there's more than needed to meet demand and discharge it when there's less than needed.

CARBON TRACKER DATA (2022)

AN ENERGY HUB FOR DARTFORD

THE DARTFORD ENERGY HUB WOULD:



Be capable of storing energy equivalent to one hour of power for all the homes in Dartford, Gravesham and Sevenoaks Boroughs and provide increased security of energy supply for the local area.



Offer funding totalling £2 million over the project's 40-year lifetime to directly support local people and community projects.



Be built alongside existing rail, road and commercial development, with minimal impact on the local community.



Be constructed in line with the latest battery safety guidance in consultation with Kent Fire & Rescue Service.



Support the phasing out of UK gas-fired electricity generation, displacing 40,000 tonnes of carbon emissions each year, equivalent to planting 1.9 million trees.



Contribute to achieving Dartford Borough and UK climate change targets.

SUPPORTING DARTFORD BOROUGH COUNCIL'S NET ZERO STRATEGY

Dartford Borough Council declared a climate emergency in October 2019, recognising the serious impact of climate change. The Council has set its own target of reaching Net Zero by 2030 and has developed "Planet Dartford", a draft Net Zero Strategy (2023-2030) to tackle climate change and biodiversity loss. By maximising the availability of green electricity and delivering ecological enhancements this project would help achieve that target.

6

COMMUNITY BENEFIT

The Dartford Energy Hub project will offer £50,000 of funding annually (£2 million in total) to promote energy saving, community projects and tackle the cost-of-living crisis, including:

- Support for community projects focused on improving community services, enhancing nature and increasing energy efficiency.
- Renewable energy and energy efficiency retrofit projects for community buildings closest to the site.
- The implementation of energy saving measures for low-income households (9.1% of households in Dartford Borough are in fuel poverty).

Additionally, there will be an estimated £1,000,000 per year in business rates for reinvestment in local initiatives.

We are looking for input from local residents and community leaders to help identify the community initiatives that could most benefit from this funding.

If you have any suggestions please talk to us at the public exhibition on Tuesday 5th November or contact us by email at: dartford@clearstoneenergy.com or use the attached feedback form.



MINIMISING VISUAL IMPACT

Open views of the site are largely restricted to Station Road and the public footpath running between New Barn Road and Dale Road by the undulating topography of the area and existing development.

The planning application will be informed by a Landscape and Visual Appraisal, which will identify potential viewpoints and illustrate how views of the site will be screened by new planting and the bolstering of existing hedgerows.

The site plan on this page shows how the boundaries of the site would be screened by new planting.

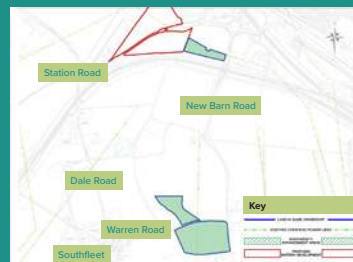
- 1 Tree and understory planting
- 2 Shrub and tree screening belt
- 3 Hedgerow gaps infilled
- 4 Retained hedgerow



8

IMPROVING NATURAL ECOSYSTEMS

It is estimated that Britain has lost around 50% of its biodiversity since the 1970s due to intensive farming, new housing and commercial development. The project would deliver a net gain in biodiversity in the local area.



The project would deliver a minimum 10% uplift in biodiversity through the ecological enhancement of an additional 5.5 hectares (13.5 acres) of land within Dartford Borough. The land that would be used for biodiversity enhancements is shown on the left. A small section is located to the east of the proposed battery development, with the majority located 700 metres south of the development site on two fields off Warren Road to the east of Southfleet village.

We anticipate that ecological enhancements will include scrub, grassland and tree-planting alongside wetland features. Proposals will be tailored to the natural characteristics of the local landscape and wildlife. We will be seeking input from local ecologists on priority wildlife species and existing nearby wildlife initiatives.

9

SITE SELECTION

CLEARSTONE ENERGY UNDERTAKES EXTENSIVE RESEARCH TO FIND SITE LOCATIONS WHICH MINIMISE ADVERSE IMPACTS ON LOCAL COMMUNITIES. THE SITE HAS BEEN SELECTED DUE TO IT BEING:

1. AN ACCEPTABLE USE OF GREEN BELT LAND

- Low-quality green belt land that is bisected by roads, railway lines and overhead powerlines, and is visually distinct from surrounding farmland.
- Primarily Grade 2 farm land, but existing infrastructure and topography makes it hard to farm so has historically been used for sporadic grazing not crop production.
- The use of the site for a battery energy storage facility would provide alternative routes of income, allowing the farmer to diversify their business and secure longer-term stability for the wider agricultural use and those who rely on it.
- History of commercial development on the parcel of land to the south of the A2 bounded by HSI railway lines.

2. A GOOD LOCATION FOR A SIGNIFICANT NET ZERO PROJECT

- An infill site adjacent to existing commercial uses including a recycling centre and storage yard.
- The nearest developable site to the point of connection at Northfleet Substation.

3. URGENTLY REQUIRED TO FUTURE PROOF THE LOCAL ELECTRICITY NETWORK FOR NET ZERO

- Northfleet Substation plays a key role in ensuring a reliable electricity supply for homes and business across Dartford and Gravesend, Orpington, Maidstone and Tunbridge Wells.
- The project is needed to modernise the local electricity network and future proof it for a UK electricity supply that will be primarily driven by renewable sources.

The proposed battery energy storage facility is a temporary installation. Unlike many other forms of development, such as housing or industrial units, there would not be a long-term loss of green belt land; planning permission is only sought for 40 years, after which the site would be decommissioned and all traces of the facility removed.

4. MINIMAL IMPACT ON THE LOCAL COMMUNITY

- There are no public rights of way or public access to the land.
- It is located away from local villages and residential areas.
- Construction traffic can route directly from the A2 to the site avoiding residential areas.

WHO WE ARE

Clearstone Energy is a leading British renewable energy project developer.

We are working with National Grid to develop solar generation and battery energy storage projects that are building a new UK energy system based on clean, low cost and renewable energy.

Since founding in 2016, Clearstone Energy has developed nine energy projects in the UK. Two are operational and seven are in or awaiting construction.

We believe that our projects can do more than energy generation and storage. They support the adoption of renewable energy and energy efficiency technologies in the communities that host them. They provide opportunities to build habitats for wildlife and contribute to the preservation of local ecosystems. They provide support for community energy projects.

We value your input and feedback in shaping this project proposal. Thank you.



Sam Thomson
Development Manager
Dartford Energy Hub

10

11

FAQS

WILL THIS BE A MAJOR CONSTRUCTION PROJECT?

No. Most of the components are prefabricated offsite rather than assembled in situ. On site construction would be restricted to the laying of access tracks and creation of level platforms for the battery containers to sit on. Prefabricated units would be craned into position ready for cabling and connection works. As such, project construction would take 6-9 months.

WILL THE PROJECT ADD TO TRAFFIC IN THE AREA?

Typically, there would be two to three HGVs a day bringing prefabricated units to the site during construction. Construction traffic would route directly from the A2 and Station Road to the site avoiding residential areas.

WILL THIS PROJECT CHANGE THE USE OF THE LAND?

No, there is a temporary 40-year use of the land, with batteries, other equipment and hard infrastructure removed at the end of the project and the land restored to previous agricultural use.

HOW SUSTAINABLE IS BATTERY TECHNOLOGY?

The lithium-ion batteries that would be used in the project are not reliant on scarce raw materials. There are established recycling processes for recovering the most common elements used in battery construction - iron, phosphate and lithium - for re-use.

HOW MUCH WILL THE PROJECT COST AND WHO WILL PAY FOR IT?

The project would cost approximately £100 million to build. If the project receives planning consent, Clearstone Energy would seek financing from a bank or investment fund to cover construction costs.

IS BATTERY ENERGY STORAGE SAFE?

All Clearstone projects must comply with the standards set out in our comprehensive Battery Safety Standards Plan. Our safety plan draws on best practice from UK's National Fire Chiefs Council (NFC) and the US's National Fire Protection Agency (NFPA). These standards cover all aspects of the project - technology, site design, installation, operation and emergency response plan - to ensure that it meets the highest safety levels.

ARE BATTERY ENERGY STORAGE SITES NOISY?

No - while the battery energy storage would generate some low-level electrical noise from the inverter, switchgear and fan equipment, this noise would not be perceptible beyond the site boundaries. To demonstrate this, a Noise Impact Assessment will be submitted as part of any future planning application.

WILL THERE BE LIGHTING ON SITE?

No, there will be no lighting on site.

WHAT TREES WILL BE PLANTED AND WHO WILL MAINTAIN THEM?

Clearstone Energy is working with an experienced team of landscape and ecology consultants who are currently finalising planting recommendations. Anything we plant would be native to the local area. We would also be responsible for maintaining planting across the lifetime of the project. This commitment would be part of any planning approval for the project.

HOW VISIBLE WOULD IT BE?

The maximum height of the battery units would be 3m. The substation building would have a maximum height of 13m and is located on the lowest section of the site to minimise visual impact. The boundaries of the site would be screened by new planting and the bolstering of existing hedgerows.

MEET US IN PERSON

We would very much like to talk to you about the Dartford Energy Hub project at our public consultation event on Tuesday 5 November 2024 from 2.30-7.30pm at Southfleet Village Hall, Dale Road, Southfleet, DA13 9NX.

KEEP IN CONTACT

Please visit www.clearstoneenergy.com/project/dartfordenergyhub where we will provide updates on this consultation and the project. For further information, please do not hesitate to email the project team at dartford@clearstoneenergy.com

TELL US WHAT YOU THINK

No-one knows a local area better than its residents and we would be grateful for your feedback to help us refine our proposals for Dartford Energy Hub.

We are particularly interested in your views on:

- The types of community benefits you would like to see supported by the Community Benefit Fund
- The visual screening requirements for the site

FEEDBACK FORM

To return your completed feedback form please tear it from the brochure and pop it in the post by 19th November 2024. Alternatively, you can take a picture of your completed form and send it via email to dartford@clearstoneenergy.com. There is also an online form on the project webpage.

Title:

Name*:

Address:

Postcode*:

Email:

Telephone:

* mandatory fields

1. Has this brochure been helpful in understanding our proposal?

☐ Yes ☐ No ☐ Not sure

2. With regard to the three components of the community benefit scheme, which one would you prioritise? (Please tick one option)

☐ Energy projects for local community buildings

☐ Energy saving support for low income households

☐ Community projects focused on improving services, nature and energy efficiency

CONTINUED OVERLEAF...

Please provide your contact details if you wish to be kept updated on the project. Any information provided will only be used for the purpose of the planning application to the Local Planning Authority and will not be disclosed with any third parties. Your contact details will not be listed on the planning application documentation.

12

13

14

15

34

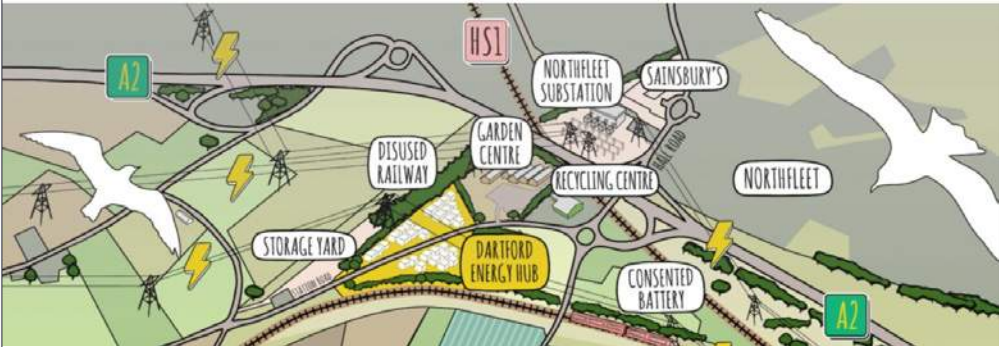
APPENDIX 2: PROJECT WEB PAGE

Website home page can be seen below:



Communities
Landowners
Land Agents
Our Projects
About us
Careers
Contact

Dartford Energy Hub | Public Consultation



Clearstone Energy is proposing to develop the Dartford Energy Hub — a 300MW battery energy storage facility — on land off Station Road, Southfleet, Dartford. This webpage provides an overview of the proposal so local residents can comment prior to the formal planning application being finalised and submitted.

The Dartford Energy Hub would store excess electricity available when generation from the UK's wind turbines and solar farms is higher than demand and release that energy back onto the grid when demand is higher than generation. This network balancing function is critical to ensuring a reliable electricity supply for local homes and businesses and currently fulfilled by gas-fired power stations.

The project would connect to National Grid's Northfleet Substation. As the grid supply point for homes and business across Dartford, Gravesham and Sevenoaks Boroughs, Northfleet Substation is a strategically important location for adding battery energy storage to the electricity grid. The project includes a comprehensive package of community benefits to ensure that the local community benefits directly from this local renewable energy project.



Capable of storing energy equivalent to 1 hour of power for all homes in Dartford, Gravesham and Sevenoaks Boroughs when fully charged



Would displace 40,000 tonnes of CO₂ emissions from gas fired power plants each year



Equivalent to planting 10 million trees

Dartford Energy Hub Impact

Latest News

17th October 2024

We are holding a public consultation event on **Tuesday 5th November** at Southfleet Village Hall, Dale Road, Southfleet, DA13 9NX. The project team will be on site from 2.30 — 7.30pm to talk through our proposals and answer your questions.

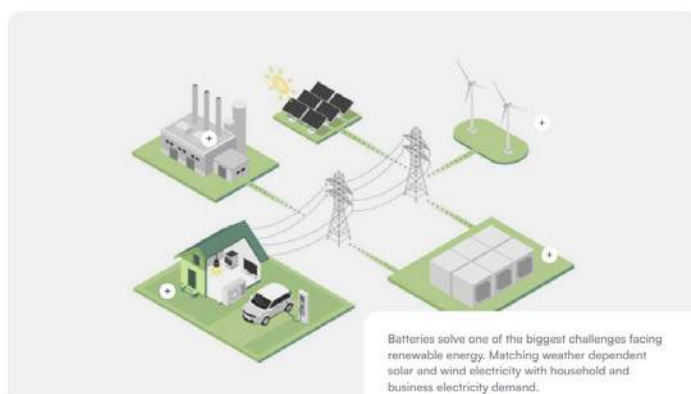
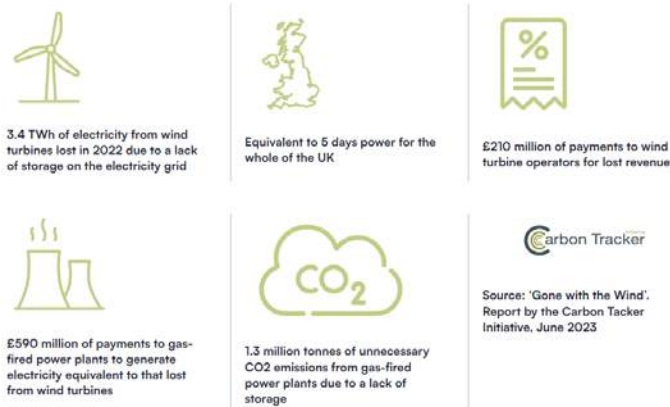
The pre-application consultation runs until **Tuesday 19th November**.

We'd love to get your feedback once you've read through our proposals. An [online feedback form](#) for the project can be found below.

[ONLINE FEEDBACK FORM](#)

THE CRITICAL ROLE OF BATTERY ENERGY STORAGE

Built for an era of coal and gas fired power stations, the existing UK electricity network needs upgrading to support the deployment of renewable, low carbon energy. The inflexibility of the network is adding costs to bills and failing to deliver the emissions reductions needed to prevent climate change.



Example Battery Storage Facility

The total site area for the project is fixed at 71 hectares with the battery facility accounting for 5.5 hectares. The site is located next to existing commercial development. Connection to the electricity grid would be via underground cables to NorthWest Substation on the north of the A2. The cable route would follow the path of a disused railway line to avoid disruption to local roads. The plan below shows an example of what the final scheme could look like. With the feedback gained from this public consultation we will work up a final design for submission to Dartford Growth Council as part of our planning application for the project.



COMMUNITY BENEFIT

The Dartford Energy Hub would generate £50,000 of funding annually to support community initiatives such as



Community led projects

Support for community projects focused on improving community services and facilities, enhancing nature and increasing access to open spaces.



Tackling fuel poverty

The implementation of energy saving measures for low-income households that help permanently reduce bills and carbon emissions. In Dartford Borough 9.3% of households are in fuel poverty.



Low carbon retrofits for local community buildings

Support for installations of solar panels, heat pumps and batteries at community buildings.

IMPROVING NATURAL ECOSYSTEMS

It is estimated that Britain has lost around 50% of its biodiversity since the 1970s due to intensive farming, new housing and commercial development. The project would deliver a net gain in biodiversity in the local area.



The project would deliver a minimum **10% uplift in biodiversity** through the ecological enhancement of an **additional 5.5 hectares (13.5 acres)** of land within Dartford Borough. The land that would be used for biodiversity enhancements is shown on the left. A small section is located to the east of the proposed battery development, with the majority located 700 metres south of the development site on two fields off Warren Road to the east of Southfleet village.

We anticipate that ecological enhancements will include scrub, grassland and tree planting alongside wetland features. Proposals will be tailored to the natural characteristics of the local landscape and wildlife. We will be seeking input from local ecologists on priority wildlife species and existing nearby wildlife initiatives.

SITE SELECTION

Clearstone Energy undertakes extensive research to find site locations which minimise adverse impacts on local communities. The site has been selected due to it being:



A good location for a significant net zero project

An infill site adjacent to existing commercial uses including a recycling centre and storage yard.



Urgently required to future proof the local electricity network for net zero

Northfleet Substation plays a key role in ensuring a reliable electricity supply for homes and business across Dartford and



A good location for a significant net zero project

An infill site adjacent to existing commercial uses including a recycling centre and storage yard.

The nearest developable site to the point of connection at Northfleet Substation.



Urgently required to future proof the local electricity network for net zero

Northfleet Substation plays a key role in ensuring a reliable electricity supply for homes and business across Dartford and Gravesend, Orpington, Maidstone and Tunbridge Wells.

The project is needed to modernise the local electricity network and future proof it for a UK electricity supply that will be primarily driven by renewable sources.



Minimal impact on the local community

There are no public rights of way or public access to the land.

It is located away from local villages and residential areas.

Construction traffic can route directly from the A2 to the site avoiding residential areas.



An acceptable use of green belt land

Low-quality green belt land that is bisected by roads, railway lines and overhead powerlines, and is visually distinct from surrounding farmland.

Primarily Grade 2 farm land, but existing infrastructure and topography makes it hard to farm so has historically been used for sporadic grazing not crop production.

History of commercial development on the parcel of land to the south of the A2 bounded by HSI railway lines.

MINIMISING VISUAL IMPACT

Open views of the site are largely restricted to Station Road and the public footpath running between New Barn Road and Dale Road by the undulating topography of the area and existing development.

The planning application will be informed by a Landscape and Visual Appraisal, which will identify potential viewpoints and illustrate how views of the site will be screened by new planting and the bolstering of existing hedgerows.

The site plan on this page shows how the boundaries of the site would be screened by new planting.

- 1 Tree and understorey planting
- 2 Shrub and tree screening belt
- 3 Hedgerow gaps infilled
- 4 Retained hedgerow



Further project detail

Project information

- 3 metre maximum height of batteries and associated equipment
- 13 metre maximum height of substation building
- Electricity grid connection by underground cable to Northfleet substation
- Temporary 40 year use with restoration to agriculture following

The right location

The Northfleet substation plays a key role in ensuring electricity supply to homes and businesses across Dartford, Gravesham and Sevenoaks Boroughs. Adding battery energy storage to the electricity grid here will increase the availability of renewable energy locally and provide greater security of supply.

The project would be built adjacent to existing rail, road and electrical infrastructure and commercial development with minimal impact on the local community.

Safe by design

The indicative site layout meets or exceeds safety standards set out by the UK National Fire Chief Council and US National Fire Protection Agency. Kent Fire & Rescue Service will be consulted at all stages in the development of the project. Please read this **blog** from Blesson Thomas, Head of Grid at Clearstone Energy, for more information on our Battery Safety by Design approach.

Frequently asked questions

Are battery energy storage sites noisy?	+
Is battery energy storage safe?	+
Will this project change the use of the land?	+
Who owns the land and what will happen to the remainder of the field that is not being used for the battery facility?	+
Will this be a major construction project?	+
How sustainable is battery technology?	+
Will the project add to traffic in the area?	+



Clearstone Energy is a leading independent developer of renewable energy and energy storage projects that increase the availability of clean energy and improve the resilience of the electricity grid.

We are working with National Grid to develop solar generation and battery storage projects that are building a UK energy system based on clean, low cost and renewable energy.

Our experienced team has a track record of developing successful renewable energy projects that are providing clean and reliable energy to communities across the UK.

Since founding in 2016, Clearstone Energy has developed eleven

Dartford Energy Hub

Statement of Community Involvement



Clearstone Energy is a leading independent developer of renewable energy and energy storage projects that increase the availability of clean energy and improve the resilience of the electricity grid.

We are working with National Grid to develop solar generation and battery storage projects that are building a UK energy system based on clean, low cost and renewable energy.

Our experienced team has a track record of developing successful renewable energy projects that are providing clean and reliable energy to communities across the UK.

Since founding in 2016, Clearstone Energy has developed eleven energy projects in the UK. Two are operational and nine are in or awaiting construction.

We believe that our projects can do more than energy generation and storage. They support the adoption of renewable energy and energy efficiency technologies in the communities that host them. They provide opportunities to build habitats for wildlife and contribute to the preservation of local ecosystems. They provide support for community projects.

Talk to us.

As project neighbours your views are really important to us. **Sam Thompson** is the Development Manager for the Dartford Energy Hub project.

You can email Sam at dartford@clearstoneenergy.com. Whether it's comments, feedback or questions we'd love to hear from you.



Following the public consultation

Once the public consultation closes on Tuesday 19th November, we will integrate your feedback into a final project plan and submit a formal planning application for the project to Dartford Borough Council. As local residents you will be asked for your comments, support or objections to the project as part of the planning application review process. Those living closest to the site will typically be contacted by letter by the Council when the planning application has been received.

We also send details of the planning application by email to those residents that we have email addresses for. If you would like us to do that for you please submit your email address here.

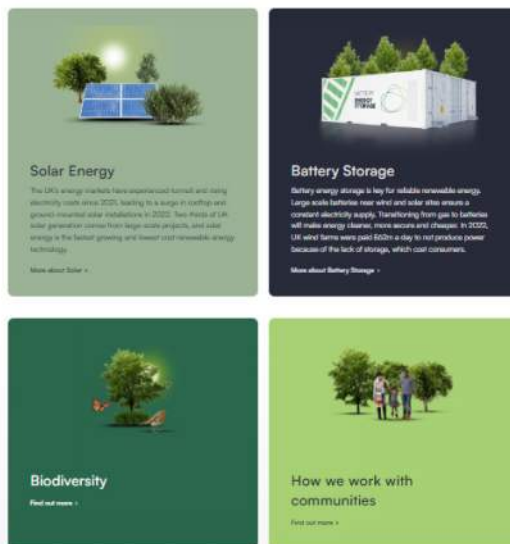
SEND ME PLANNING APPLICATION DETAILS

Name

Email

Send message

Find out more about our projects



8 Devonshire Square
London EC2M 4PL

Questions? We're here.
info@clearstoneenergy.com

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Site by Ronins

APPENDIX 3: PRESS RELEASE

NEWS RELEASE



28th October 2024

Plans Revealed for New Battery Storage Project That Will Power Dartford's Energy Future

Clearstone Energy has unveiled plans to develop a 300 megawatt (MW) battery energy storage facility on land adjacent to the A2, between Northfleet and Southfleet. The Dartford Energy Hub is a crucial net zero infrastructure project required to modernise the electricity network in support of the UK Government's Clean Power 2030 initiative.

The Dartford Energy Hub would store excess electricity available when generation from solar and wind farms is higher than demand and release that energy back onto the grid when demand exceeds generation from renewables. This would increase the availability of green energy for use in homes and businesses in Dartford and across North Kent and reduce the use of gas-fired power plants to meet daily peaks in electricity demand. Clearstone Energy expects to invest around £200 million into developing the project with an operational start date of 2028 and estimates that it would displace 40,000 tonnes of carbon dioxide emissions from gas-fired power plants each year.

Dartford Energy Hub's Community Commitment

Clearstone Energy is offering a comprehensive community funding package amounting to £50,000 a year - more than £2 million in total - to ensure that the local community benefits directly from the project. The community funding package includes renewable energy and energy efficiency retrofit projects for community buildings closest to the site, energy efficiency support for local people living in fuel poverty and support for community projects.

Public input sought to shape the project proposal

Dartford Energy Hub proposal is at the pre-application public consultation stage. The local community and elected representatives are being asked for their feedback on draft plans and the community funding package before the submission of a formal planning application.

There is a public exhibition at Southfleet Village Hall, Dale Road, Southfleet, DA13 on Tuesday 5 November (2.30 - 7.30pm) where local residents can meet the project development team. There is a project website at

www.clearstoneenergy.com/project/dartfordenergyhub

NEWS RELEASE



"Battery storage projects such as the Dartford Energy Hub will help us make the most of our wind and solar farms and reduce our reliance on gas fired power stations. They have a vital role to play in the UK achieving its climate change targets," said Sam Thomson, Development Manager at Clearstone Energy. "The project would be capable of storing energy equivalent to one hour of power for all the homes in Dartford, Gravesham and Sevenoaks Boroughs and provide increased security of energy supply for the local area. We are working to ensure that the project is sympathetic to the local area, from the site selection stage through the use of local plants for screening. We're looking forward to sharing our plans with local residents so we can maximise the project's benefits for everyone."

An Energy Hub for Dartford

Battery energy storage has a key role to play in reducing carbon emissions in Kent and across the UK by maximising the availability of renewable energy and reducing our reliance on fossil fuel power stations and imported fuels. When wind and solar generation is higher than household and business demand, such as overnight, the excess energy is used to charge the battery. When demand is higher than renewable energy generation, typically in the early evening, the battery discharges to balance supply and demand.

With little storage capacity in the UK, wind turbines are currently turned off when renewable energy generation is higher than electricity demand. According to the Carbon Tracker Initiative, this led to energy equivalent to five days' power for the whole of the UK being lost in 2022. Turning on gas fired power stations to make up for this lost energy added £590 million to energy bills and resulted in 1.3 million tonnes of carbon dioxide emissions¹.

With a storage capacity of 300 megawatt hours (MWh), the Dartford Energy Hub would reduce carbon dioxide emissions by 40,000 tonnes each year, equivalent to planting 1.9 million trees*.

Experienced, British energy project developer

With 12 large-scale battery projects under development, Clearstone Energy is an established, British-based energy company that is playing a leading role in the adoption of battery energy storage in the UK. Each project is strategically located to make the maximum contribution to

¹ Gone with the Wind, Carbon Tracker Initiative, June 15th 2023 (<https://carbontracker.org/britain-wastes-enough-wind-generation-to-power-1-million-homes/>)

NEWS RELEASE



the transition to renewable energy sources in the UK and Clearstone Energy works closely with local communities to design each project in a way that minimises local impacts.

- Ends -

Calculations:

CO² calculations based on the following -

- The stored energy capacity of Dartford Energy Hub is 300 MWh
- Dartford Energy Hub charges and discharges once a day for 300 days per year
- The energy stored and released by Dartford Energy Hub would otherwise be provided by gas fired power stations
- CO² savings are benchmarked against the provision of power and/or stability services to the grid from a Combined Cycle Gas Turbine power plant producing 0.45 tonnes of CO² per MWh of electricity generated
- An adult tree absorbs 21 kilogrammes (0.021 tonnes) of carbon dioxide per year
 - (<https://www.viessmann.co.uk/en/heating-advice/boilers/how-much-co2-does-tree-absorb.html>)
- Across one year, Dartford Energy Hub would store and discharge 900,000 MWh of renewable energy (300 days x 300 MWh)
- The CO² emissions associated with producing that energy from gas fired power stations is 40,500 tonnes (900,000 MWh x 0.45 tonnes)
- The number of adult trees required to absorb 40,500 tonnes of CO² is 1.93 million (40,500 / 0.021)

For more information:

Cyra Carley, Community Relations Team, cyra@930communications.com, 07932 625855

Simon Rothwell, Clearstone Energy, simon.rothwell@clearstoneenergy.com, 07769 747420

APPENDIX 4: PRESS COVERAGE

BBC Sign in Home News Sport Weather iPlayer Sounds

NEWS

Home | InDepth | Israel-Gaza war | War in Ukraine | Climate | UK | World | Business | Politics | Culture

England | Local News | Kent

Plan for energy storage facility on green belt



GOOGLE

The facility would be a temporary 40-year project built on agricultural land

Emily Sinclair **Daniel Esson**
BBC News, South East Local Democracy Reporter

9 November 2024

The public have been giving their opinions on plans for a new energy storage facility on the edge of a Kent village.

Clearstone Energy has suggested building a 300 megawatt (MW) battery storage unit on land in Southfleet, on the metropolitan green belt between Dartford and Gravesend.

The company said the new facility could store enough power for thousands of homes and would generate £50,000 of annual funding to the local community.

Jeremy Kite, leader of Dartford Borough Council, told the BBC that "food security is as important as energy security" and he was concerned the development would impact local agriculture.

Clearstone Energy has been running an online public consultation and is holding an event on Tuesday afternoon at Southfleet Village Hall to discuss plans.

The consultation closes on 19 November after which the firm will draw up its plans and submit them to Dartford council, according to the Local Democracy Reporting Service.



CLEARSTONE ENERGY SOUTHFLEET

Cornerstone Energy has proposed The Dartford Energy Hub which, if approved, would be operational by 2028

Mr Kite said "rural spaces need to be respected" and that areas such as Southfleet should remain the core of the country's agricultural production.

CLEARSTONE ENERGY SOUTHFLEET **TO NEW BARN**

Cornerstone Energy has proposed The Dartford Energy Hub which, if approved, would be operational by 2028

Mr Kite said "rural spaces need to be respected" and that areas such as Southfleet should remain the core of the country's agricultural production.

Clearstone Energy insists that building a new facility in this area is essential to increase renewable energy.

The firm said the unit would work with the nearby National Grid's Northfleet Substation on a temporary 40-year use of the land.

At the end of the project, the land would be returned to agricultural use, said Clearstone Energy.

The energy facility, according to the company, would replace 40,000 tonnes of carbon dioxide emissions from gas-fired power plants each year.

Mr Kite acknowledged the need for "greener energy" solutions yet he said it shouldn't be "at the cost of something else".

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News > Dartford > Dartford

One of country's biggest battery facilities could be built on edge of Kent village

The facility would be built on green belt land and would store enough power for hundreds of thousands of homes

By Daniel Esson Local Democracy Reporter
11:00, 5 Nov 2024

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All Clothing
F&F

Part of the area which could be occupied by the battery energy storage system at Southfleet (map)

Plans for one of the country's biggest energy storage facilities on the edge of a Kent village have prompted fears over its impact on the green belt.

The facility could store enough power for hundreds of thousands of homes, but some fear the development, described by opponents as "inappropriate" and "urban" in nature, would encroach upon the countryside.

Clearstone Energy is behind the proposals to build a massive battery energy storage facility south of Station Road, Southfleet, between Dartford and Gravesend.

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Dubbed the "Dartford Energy Hub", they argue it "is a crucial net zero infrastructure project" which is required to modernise the electricity network.

The facility will be built on land adjacent to the A2, the scheme's masterminds say they will be investing £200 million into the project, as well as £50,000 a year for the local community, including "energy efficiency support" for local people living in fuel poverty and support for community projects.

The battery energy storage facility will be able to store a maximum of 300 Megawatts (MW) of power - which Clearstone say is enough to power every home in the boroughs of Dartford, Gravesend, and Sevenoaks for one hour.

The system would connect to the nearby Northfleet substation, and according to the developers, will displace the equivalent carbon of planting 1.9 million trees.

Sitting so close to Bexley in outer London, large parts of Dartford Borough, including around

Southfleet, are in the metropolitan green belt, where it's harder to get planning permission.

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by latexia

Southfleet Parish Council has consistently objected to previous applications for battery storage units in the areas on the grounds of "inappropriate development in the Green Belt".

Most recently Energy firm EcoDev submitted a planning application for a battery energy storage system capable of storing enough energy to power more than 124,000 homes off Foxhounds Lane.

A decision was meant to be made on that bid in July, but the council's target deadline has been pushed back to November 29, with no decision made yet.

Dartford council leader Jeremy Kite, who represents Longfield, New Barn and Southfleet, believes such developments need to be in places that are "more urban".

"Clearly there's a need to see if there are energy uses to ensure that we have energy security," he told the Local Democracy Reporting Service (LDRS). "Once agricultural and rural land is lost, it is lost forever. Companies working to improve our energy supplies must look to the creation of new infrastructure on land that is genuinely suited to the use."

"I am sure planning members will look thoroughly at any application but I'm clear that rural villages and agricultural communities deserve to be protected so that they can serve our country's food needs long into the future. These sorts of developments, that I consider to be urban developments, they need to be sited in places that are more urban."

At 300MW, the infrastructure dwarfs other comparable facilities, and would be one of the largest in the country.

The battery energy storage system planned for Cleve Hill solar farm at Graveney, near Faversham - one of the biggest solar arrays in the whole country - will store only 150MW. The project won planning permission despite massive opposition on the basis it would power more than 100,000 homes. But it has since materialised the plant will not benefit new homes, and will instead supply supermarkets.

The largest storage system currently running is the 198MW Pillswood facility in East Yorkshire, with the largest under construction at Monk Fryston, North Yorkshire, weighing in at 320 MW. However, the largest proposed is in Granborough, Buckinghamshire, where in February plans were submitted for a 500 MW facility.

A map of the area and the proposed battery energy storage system at Southfleet (Image: Clearstone Energy)

Clearstone Energy has not yet submitted a planning application to Dartford council and is still consulting on its plans. Click here to find out more.

Once the public consultation closes on Tuesday, November 19, the firm says it will integrate feedback into a final project plan and submit a formal bid.

Those living closest to the site will typically be contacted by letter by the council when the planning application has been received. The firm says that if the project is given the green light they hope to see the facility operational by 2028.

There is a presentation from the firm at Southfleet Village Hall from 2.30pm until 7.30pm today (November 5), where residents can hear the proposals in more detail.

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Clearstone plans for one of country's biggest battery facilities at Southfleet, near Dartford

Daniel Esson, Local Democracy Reporter
 desson@thekmgroupp.co.uk
 Published: 16:45, 04 November 2024 | Updated: 11:57, 05 November 2024

Plans for one of the country's biggest energy storage facilities on the edge of a Kent village have prompted fears over its impact on the green belt.

The facility could store enough power for hundreds of thousands of homes, but some fear the development, described by opponents as "inappropriate" and "urban" in nature, could encroach upon the countryside.



The land off Station Road where the facility could be built is designated as green belt. Picture: Google

Clearstone Energy are behind the proposals to build a massive battery energy storage facility south of Station Road, Southfleet, between Dartford and Gravesend.

Dubbed the "Dartford Energy Hub", they argue it "is a crucial net zero infrastructure project" which is required to modernise the electricity network.

Planning to occupy land adjacent to the A2, the scheme's masterminds say they will be investing £200million into the project, as well as £50,000 a year for the local community, including "energy efficiency support" for local people living in fuel poverty and support for community projects.

The battery energy storage facility will be able to store a maximum of 300 Megawatts (MW) of power - which Clearstone say is enough to power every home in the boroughs of Dartford, Gravesham, and Sevenoaks for one hour.

The system would connect to the nearby Northfleet substation, and according to the developers, will displace the equivalent carbon of planting 1.9 million trees.



Podcast: Anger as Church Street Playing Field in...

10:00

18:30

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Sitting so close to Bexley in outer London, large parts of Dartford Borough, including around Southfleet, are in the metropolitan green belt, where it's harder to get planning permission.

Southfleet Parish Council has consistently objected to previous applications for battery storage units in the areas on the grounds of "inappropriate development in the Green Belt".

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"Once agricultural and rural land is lost, it is lost forever.

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APPENDIX 5: POSTER

PUBLIC CONSULTATION

Dartford Energy Hub

Clearstone Energy is proposing to develop Dartford Energy Hub - a 300MW battery energy storage facility at land off Station Road, Southfleet, Dartford.



We are holding a public consultation for the community to have their say on the proposals on:

Tuesday 5th November 2024
2.30pm -7.30pm at Southfleet Village Hall,
Dale Road, Southfleet, DA13 9NX

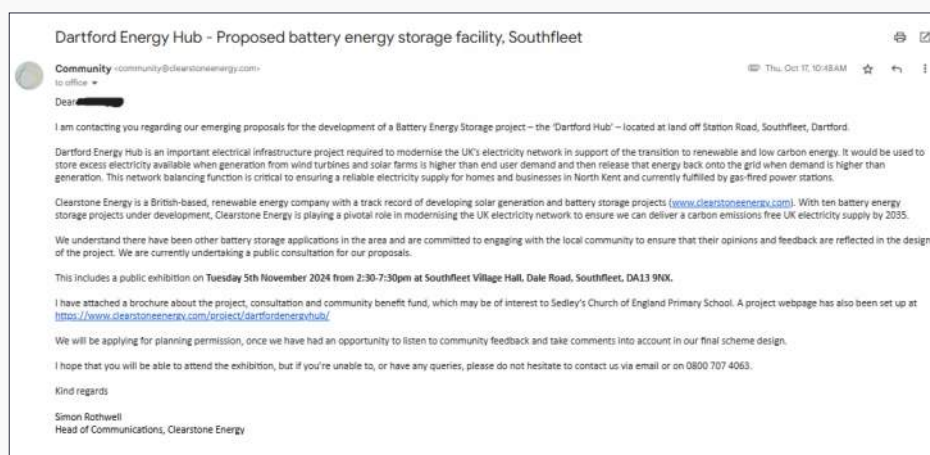


For more information on the project please visit:
www.clearstoneenergy.com/project/dartfordenergyhub

Or contact the project team at:
dartford@clearstoneenergy.com

APPENDIX 6:

EMAIL TO LOCAL INTEREST GROUPS

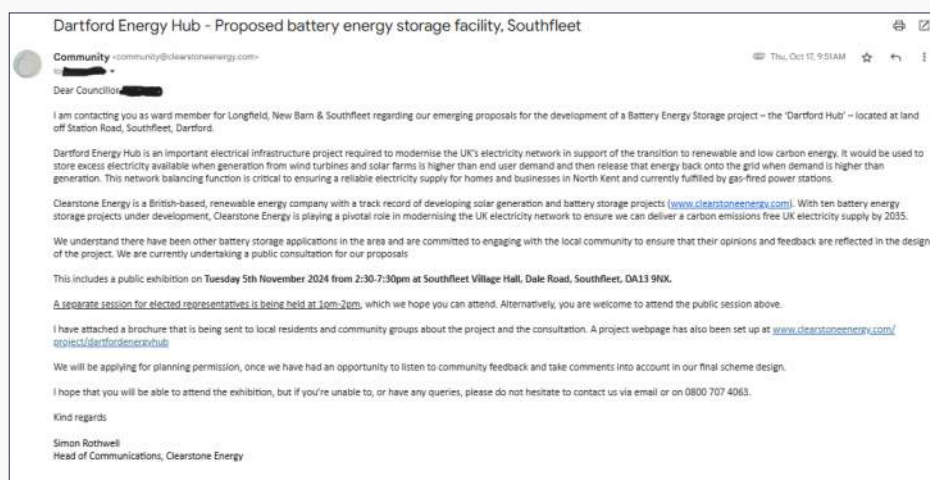


APPENDIX 7: LIST OF LOCAL INTEREST GROUPS

Dartford Friends of the Earth
Kent Climate Action Coalition
Ecology Island - North Kent Mind
Sedley's Church of England Primary School
Girlguiding - Darnley Division
5th Northfleet Scout Group
Betsham Cricket Club
Southfleet Cricket Club
Southfleet Gardeners' Society
Southfleet Allotments

APPENDIX 8:

INTRODUCTORY EMAIL TO ELECTED REPRESENTATIVES

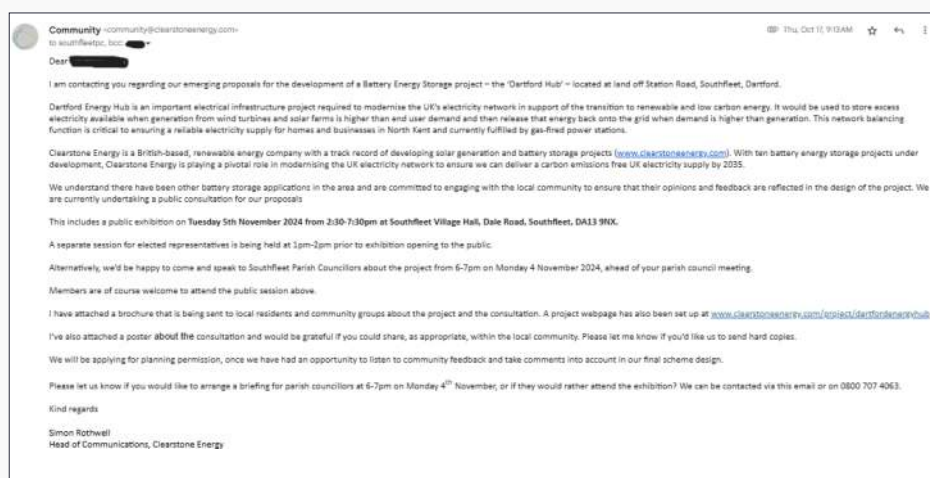


APPENDIX 9: PUBLIC EXHIBITION PHOTOS



APPENDIX 10:

INTRODUCTORY EMAIL TO SOUTHFLEET PARISH COUNCIL



APPENDIX 11: PUBLIC EXHIBITION BOARDS



APPENDIX 12:

FEEDBACK FORM

DARTFORD ENERGY HUB



FEEDBACK FORM

Please complete this feedback form and leave it with us, or take it away and post it back to us in an envelope with 'FREEPOST CLEARSTONE ENERGY' written on the front. You don't need any further address or stamp.

WEBSITE & EMAIL address

Please return your completed questionnaire by **TUESDAY 19 NOVEMBER 2024**

Title:

Name*:

Address:

Postcode*:

Email:

Tel:

* Mandatory field for verification purposes

Q1. Has this exhibition been helpful in understanding our proposal? Yes ☐ No ☐ Not sure ☐

Q2. With regard to the three components of the community benefit scheme, which one would you prioritise?
(Please tick one option)

- ☐ Energy projects for local community buildings
- ☐ Energy saving support for low-income households
- ☐ Community projects focused on improving services, nature and energy efficiency

Q3. Please use this space to provide any comments on the proposal.
We would welcome your feedback on all aspects of the emerging design.

Thank you

Please provide your contact details if you wish to be kept updated on the project. Any information provided will only be used for the purpose of the planning application to the Local Planning Authority and will not be disclosed with any third parties. **Your contact details will not be listed on the planning application documentation.**

APPENDIX 13: COMMENTS RECEIVED VIA FEEDBACK FORM QUESTION 3, BY EMAIL AND VERBALLY AT THE EXHIBITION AND THE APPLICANT'S RESPONSE

Comments received via feedback form question 3, by email and verbally at the exhibition and the Applicant's response.

THEME	THEME	APPLICANT'S RESPONSE
Support	Support for the project.	Thank you for your comment.
Design	Well designed and well thought through.	Thank you for your comment.
Need	Acknowledgement of need for this and similar projects.	Thank you for your comment.
	Queries about role of battery storage in the energy transition, need and urgency.	Battery storage is needed to balance weather dependent generation from solar and wind farms with household and business demand for electricity. Battery storage is vital to achieving the UK Government's ambition to make Britain "a clean energy superpower" by 2030. Published on 5 November 2024, the ' Clean Power 2030 ' target is the foundation for the bigger goal of the UK achieving net zero carbon emissions by 2050. To reach this ambitious target, Clean Power 2030 outlines the need to increase UK battery storage capacity from 5GW to 23GW by 2030.
Site selection / location	Good location - e.g. close to A2/Northfleet substation/demand.	Thank you for your comment.
	Wrong location	Storage needs to be located near demand, and Dartford represents a large – and growing – area of demand. The Applicant undertakes extensive research to find site locations that minimise adverse impact on local communities. The site has been selected due to it being:

THEME	THEME	APPLICANT'S RESPONSE
		1) An acceptable use of green belt land • Low-quality green belt land that is bisected by roads, railway lines and overhead powerlines, and is visually distinct from surrounding farmland. • Primarily Grade 2 farmland, but existing infrastructure and topography make it hard to farm so has historically been used for sporadic grazing, not crop production. • The use of the site for a battery energy storage facility would provide alternative routes of income, allowing the farmer to diversify their business and secure longer-term stability for the wider agricultural use and those who rely on it. • History of commercial development on the land to the south of the A2 bounded by HS1 railway lines. 2) A good location for a significant net zero project • An infill site adjacent to existing commercial uses including a recycling centre and storage yard. • The nearest developable site to the point of connection at Northfleet Substation. 3) Urgently required to future proof the local electricity network for net zero • Northfleet Substation plays a key role in ensuring a reliable electricity supply for homes and business across Dartford and Gravesend, Orpington, Maidstone and Tunbridge Wells. • The project is needed to modernise the local electricity network and future proof it for a UK electricity supply that will be primarily driven by renewable sources.

THEME	THEME	APPLICANT'S RESPONSE
		4) Minimal impact on the local community • There are no public rights of way or public access to the land. • It is located away from local villages and residential areas. • Construction traffic can route directly from the A2 to the site avoiding residential areas. There are very few brownfield sites in this area, and they are usually located close to many residential properties. The nearby brownfield designated sites all arguably have greater impact than the site being proposing. The brownfield to the north of the A2 is all amongst the town and so is unsuitable. There is an area to the west of HS1 but this area is overlooked by many properties. Also, the use of brownfield land for battery storage isn't commercially viable; battery storage developers are priced out of brownfield sites by residential, commercial and industrial developers.
Green belt land	Acceptable use of green belt (low quality). Appreciated the special circumstances argument and that it was the best option if brownfield sites weren't available; better than Foxhounds Lane site.	Thank you for your comment.

THEME	THEME	APPLICANT'S RESPONSE
	Inappropriate development in the greenbelt / special circumstances not demonstrated. Concern 'low quality' greenbelt label would lead to further greenbelt subsequently becoming 'low quality' due to its proximity to new BESS.	This is low-quality green belt land that is bisected by roads, railway lines and overhead powerlines, and is visually distinct from surrounding farmland. The land search process has identified that a significant amount of land within Dartford Borough Council is greenbelt and therefore unavoidable when finding suitable sites to host battery energy storage facilities. The battery energy storage facility has been designed to integrate into the surrounding area as appropriately as possible. The boundaries of the site would be screened by new planting and the bolstering of existing hedgerows. The proposed battery energy storage facility is a temporary installation. Unlike many other forms of development, such as housing or industrial units, there would not be a long-term loss of greenbelt; planning permission is only sought for 40 years, after which the site would be decommissioned, all traces of the facility removed and the land restored to previous agricultural use. In terms of very special circumstances, in addition to the above, there are strong local and national policies demonstrating the need for renewable energy projects and storage in order to tackle climate change and meet the targets for net zero carbon emissions by 2050. Dartford Energy Hub aligns with these policies and would also provide increased security of energy supply for the local area.
Agricultural land / food security	Support use of land for BESS - not used for crop production / low quality	Thank you for your comment.

THEME	THEME	APPLICANT'S RESPONSE
	Concern loss of agricultural land (sheep grazing) / loss of food production.	The proposed development is primarily on Grade 2 farmland, but existing infrastructure and topography make it hard to farm, so it has historically been used for sporadic grazing, not crop production. The soil quality is not good, despite being a decent grade overall. The grading of the land is archaic and not representative of what can and cannot be grown on the land today. The use of the site for a battery energy storage facility would provide alternative routes of income, allowing the farmer to diversify their business and secure longer-term stability for the wider agricultural use and those who rely on it. Whilst the preference is to always develop on land not classified as BMV, development on BMV land may not be precluded when there is a lack of alternative sites at lower Grades across the borough, and a lack of realistic alternatives with readily available grid connection. The planning application will be informed by an Agricultural Land Classification (ALC) Report, which analyses the ALC grading at the site and the impact of diversifying the landowner's business. While the ground is fairly high value, its ability to be farmed is heavily hampered by the railways and powerlines that quarterise the development area from the rest of the landowners' farms. The proposed development would not pose a threat to food security. One of the biggest risks to food security is the changing climate. In 2023, we saw further effects of climate change.

THEME	THEME	APPLICANT'S RESPONSE
		In 2023, we saw further effects of climate change. The UK's hottest June on record caused unprecedented deaths of fish in rivers and disturbed insects and plants, and the world's average temperature reached a new high for the third time in a week. By storing renewable energy, Dartford Energy Hub would help towards tackling climate change. Dartford Borough Council declared a climate emergency in October 2019, and the Council recognises the impacts of climate change include the loss or reduction of agricultural land.
	Land has been used as a successful Pick Your Own (PYO) for years.	The PYO operation was undertaken by the previous landowner and wasn't sustainable as a business, especially as PYO largely went out of fashion and didn't have much footfall, and so the land was sold. Furthermore, the land was exhausted by the strawberries and so productivity started dropping off. The battery energy storage facility would allow the regeneration of soil quality, ensuring the availability of high-quality agricultural acreage for the future. There would be a temporary 40-year use of the land, with batteries, other equipment and hard infrastructure removed at the end of the project and the land returned to agricultural use. The low-intensity regime of a battery energy storage facility allows the regeneration of soil quality, ensuring the availability of high-quality agricultural acreage for the future.

THEME	THEME	APPLICANT'S RESPONSE
Highways - safety	Station Road is dangerous and too narrow for HGVs. Concern the project would reduce safety further. Concern that higher hedgerows for screening would reduce visibility of oncoming traffic.	The Applicant has undertaken a Road Safety Audit and Transport Assessment and would undertake a Construction Traffic Management Plan prior to the commencement of development, which will be reviewed by the Highways Authority. Once agreed, it would form a condition of any planning permission and would be implemented during the construction phase. The aim of the CTMP is to reduce the impact of the construction phase on the highway network.
Highways - traffic	Station Road is frequently congested, due to 1) Bin lorries queuing for the recycling centre entrance and 2) Congestion on the A2/Dartford Crossing diverting traffic onto country lanes/rat running. Requests for co-ordination of construction traffic to ensure existing congestion is not added to. During the construction of Pepper Hill Recycling Centre, there were traffic lights that were disruptive to the Garden Centre's business.	The Applicant is working with local businesses to understand their peak periods and would look to co-ordinate construction traffic to ensure existing congestion not added to. The Applicant is working with the Garden Centre to understand and minimise impacts, and would look to minimise the time temporary traffic lights would be in place.
	Proposal to only route traffic directly from A2 was welcomed.	Thank you for your comment.

THEME	THEME	APPLICANT'S RESPONSE
Public rights of way	People walk down Station Road, which is dangerous. Footpath access from the garden centre to the west of the site would be welcomed.	Comment noted. This suggestion has been noted and the Applicant is looking into options.
Cumulative impact	Concern about the number of BESS schemes in the area.	The planning application will be informed by a Landscape and Visual Appraisal, which will include a cumulative assessment. The proposed development has been designed to minimise any potential cumulative impact. The design utilises existing vegetation and includes new planting to reduce potential visibility from local properties.
	Query as to whether the proposal is an alternative to the Foxhounds Lane BESS scheme.	This is a separate, and additional, application to the one in Foxhounds Lane.
	Query as to why there are multiple storage projects locally rather than one single project.	At the end of October 2024, National Energy System Operator (NESO) was formally commissioned by the Government to produce Great Britain's first Strategic Spatial Energy Plan (SSEP), formally marking a significant shift towards more strategic and coordinated energy planning to accelerate and optimise the transition to clean, affordable and secure energy.
	Clearstone scheme better placed/designed than Foxhounds Lane, but don't want multiple BESS schemes.	The SSEP will set out a strategic blueprint for GB's energy system, addressing the spatial requirements for future electricity generation and storage infrastructure. Its overarching goal is to create a coordinated approach to energy planning, ensuring that the transition to low-carbon energy is both efficient and aligned with national goals for net zero by 2050.

THEME	THEME	APPLICANT'S RESPONSE
	Other developments (e.g. new estate) in the area.	The Applicant cannot comment on other developments or applications within the local authority.
Precedent	Sets precedent for future developments. Concern that the development of BESS projects (taken as a whole) will open up further development south of the A2.	
	Proposal to only route traffic directly from A2 was welcomed.	
Planning policy	No coherent policy on BESS development in the area. Other similar schemes have been refused.	
Landscape and visual impact	Support for screening and planting plans / mitigation. The site is not overlooked and already has some good screening.	Thank you for your comment.
	Visual impact on the village / area. Detrimental impact on the character of a rural area. Planting - would take years to mature / use mature shrubs and trees.	The application is accompanied by a Landscape and Visual Impact Assessment and photomontages, which will assess the visual impact of the proposed development, and the mitigation measures proposed to minimise harm.

THEME	THEME	APPLICANT'S RESPONSE
Fire safety	Appreciated information and assurances from the fire consultant at the exhibition.	Thank you for your comment.
Cumulative impact	Concern about fire risk and safety.	The risk of a BESS fire safety incident here in the UK is very low, and within the range of acceptable levels as set by the Health Safety Executive (HSE). The Applicant has been developing BESS projects since 2019. In that time, it has gained significant expertise in health and safety matters relating to power projects including BESS. Its Battery Standards report is a commitment to complying with relevant UK and international standards and guidance relating to safe BESS construction and operation. The Applicant has also employed two additional external consultants - one a retired Deputy Chief Fire Officer and the other a battery safety testing specialist - to advise on battery system design, site design matters, fire safety and support on liaison with the KFRS.
	Concern about potential health risks. Concern about air pollution from fire incidents.	The Applicant has undertaken a plume modelling study to assess the air pollution impact from a worst-case scenario of a full battery unit fire. The study used emissions data collected from full burn tests on BESS units. It demonstrated that hazardous conditions are restricted to within 5 metres of the affected unit and toxicity levels reduce to safe levels after 30 metres.
	Pepper Hill Recycling Centre has a history of significant fires.	This has been taken into consideration and will be part of the Emergency Response Plan for the project.

THEME	THEME	APPLICANT'S RESPONSE
Noise impact	Noise from the OHLs is already noticed by local residents; concern the project will add to it. Noise impact assessment - measurement points will need to be carefully chosen to reflect community activity e.g. the garden centre car park, footpath to west of the site.	The Battery Energy Storage System will generate some low-level noise from its cooling system, this is predominantly related to air movement rather than mechanical noise. The Applicant has appointed InAcoustic as our Noise Consultants to undertake a full noise assessment to inform the scheme's design, which will be submitted as part of the planning application. Operational noise is expected to be limited to within the site boundaries and will be mitigated as appropriate.
Biodiversity	Support for biodiversity plans and gain	Thank you for your comment.
Groundwater	Concern the aquifer below the site has not been considered and there is a spring on the opposite side of the A2 from the site at Springhead.	The Applicant will provide a full fire safety assessment as part of the planning application for the project this will included a section examining the risks of water contamination - including water sources - and their mitigation.
Drainage	The drain on the road constantly silts up, which leads to the surface water flow being directed into the Millbrook Garden Centre car park.	The Applicant has undertaken a drainage strategy, and the site has a gentle slope away from Garden Centre to ensure the proposed development did not add to the existing issue.

THEME	THEME	APPLICANT'S RESPONSE
Operation	Query about the amount of carbon emissions used to produce and operate the BESS.	The project will lead to a reduction of approximately 40,000 tonnes of CO2 emissions every year, which during its lifespan will overwhelmingly offset the energy generation emissions used to manufacture the BESS and decommissioning. The carbon emissions from BESS sites are much lower over their lifecycle than fossil fuel alternatives, including their embodied emissions.
	Query as to how battery technology works.	Battery energy storage facilities store excess electricity available when generation from wind turbines and solar farms is higher than demand, and release that energy back onto the grid when demand is higher than generation.
Decommissioning	Concern that once developed the land won't be restored again. Concern about contamination of land after removal.	The BESS does not contain any permanent infrastructure and is entirely reversible at the end of its operational lifetime and the land can be returned to its previous use. After the lifetime of the project, the BESS will be decommissioned by a specialist recycling company. A decommissioning bond will be set up and maintained throughout the lifetime of the project. It will be index linked to account for inflation. The land will be reinstated to its original form.
Consultation	Positive comments about the consultation, appreciation for consulting with the community and praise for how the project team answered questions.	Thank you for your comment.

THEME	THEME	APPLICANT'S RESPONSE
	Query as to who has been notified about the consultation.	Publicity of the consultation was wide and proportionate. As outlined in section 3, the leaflet was sent to 993 properties deemed potentially impacted by the proposal. Further publicity was undertaken to reach the wider community, which included sending a poster to the parish councils, a press release resulting in articles in the local media, a website and emails to local groups and elected representative.
	Request to send details of the consultation to Longfield and New Barn Parish Council. Consultation materials only convey the benefits and do not provide ability to object.	Following a request from a member of the community, Longfield & New Barn Parish Council was sent details of the consultation. The consultation materials provided a fair and accurate summary of the proposals. The feedback form provided space for open comments on the proposal.
	Request for copies of the brochure and exhibition boards.	Requests were fulfilled during the consultation period.
Community benefit	Welcomed community fund.	Thank you for your comment.
	Suggestions for the community benefit fund.	Thank you for your suggestions.
	No benefit to the local community in Betsham and Southfleet.	The Dartford Energy Hub project will offer £50,000 of funding annually (£2 million in total) to support: • Energy projects for local community buildings; • Energy saving support for local low-income households; • Local community projects.

THEME	THEME	APPLICANT'S RESPONSE
	Queries about the management and geographic scope of funding - perception that DBC would direct funding north of the A2.	Additionally, there will be an estimated £1,000,000 per year in business rates for reinvestment in local initiatives.
	Scepticism as to if community benefit fund would actually be delivered.	Further discussions will take place prior to allocation of the funds for the community benefit scheme.
Property values	Concern the development would decrease property value.	Property value is subjective and can be affected by a range of factors. There is no firm evidence on whether UK renewable energy projects do or do not affect house prices. Potential impact on local properties have been assessed as part of the preparation of the planning application and design changes and mitigation measures have been adopted where appropriate to minimise any potential impacts.
Developer profit	Profit generating exercise only benefiting shareholders.	The fact that landowners and developers make a profit from battery energy storage facilities is not a valid criticism. Companies need to make profits in order to remain viable. Carefully developed battery energy storage schemes can have many benefits, not just to the developer and owners, but to local communities, national energy security and global environmental protection. The private companies are only enacting government policy that it has chosen to deliver using the private sector. Profit has to be a part of why companies are involved otherwise they wouldn't do it.

APPENDIX 14: BRIEFING DOCUMENT FOR KENT FRS



DARTFORD ENERGY HUB - FRS BRIEFING DOCUMENT

FRS: Kent Fire & Rescue Service
PROJECT: Dartford Energy Hub
DATE: 25th October 2024
KEY CONTACT: Joe Hassell, JHC - Joe@joe Hassellcommand.co.uk

KEY PROJECT INFORMATION	
Project	Dartford Energy Hub
Developer	Clearstone Energy
Location	Land adjacent to Station Road Station Road Gravesend DA13 9PA TQ 61696 72104
Size	300MW/300 MWh
BESS Manufacturer	To be confirmed closer to construction (2026 for 2028 operational go live)
Battery Chemistry	LFP (Lithium iron phosphate battery)
Designer	Clearstone Energy, with support from - Joe Hassell, JHC - operational fire safety consultant - AECOM and BST&T - technical fire safety consultants

Choice of BESS OEM

Clearstone Energy has not yet selected a provider of battery equipment for the project. Construction is likely to commence in 2027, and the procurement of BESS providers is expected to take place in early 2026. By that time, there will likely have been advances in battery technology, resulting in the latest BESS offering improvements in both performance and safety systems.

The battery equipment provider ultimately selected for the project will comply with current safety regulations and guidance at the time of specification. These will be shared for final



endorsement by Dartford BC, in collaboration with Kent FRS, through the submission of a Battery Safety Management Plan (BSMP). We will be requesting that the development and approval of the BSMP in advance of construction is a condition of planning consent.

The planning application will include an indicative site design based on the Gridsolv Quantum BESS from Wärtsilä. This system is being deployed at a number of UK BESS projects and being specified by the Applicant for projects with near-term construction dates.

The Gridsolv Quantum BESS is a lithium iron phosphate (LFP) system and complies with all relevant BESS safety guidance, test certifications and codes. It is considered to be the market leader for safety. It is referred to in the information provided below to illustrate the level of supporting information and testing data that would be provided to Dartford BC and Kent FRS as part of the Battery Safety Management Plan.

A major factor in Clearstone Energy choosing to work with Wärtsilä is that it has conducted a series of full-scale burn tests of the Gridsolv Quantum BESS and undertaken further Fire Dynamics Simulation (FDS) modelling to understand the potential outcomes from a thermal runaway event.

Thermal event / deflagration

- How will the proposed BESS perform in the event of a thermal event / deflagration and what proactive / reactive systems are proposed to mitigate this?

The chosen BESS will be designed to inhibit the propagation of thermal runaway between individual cells within a battery unit. If propagation between cells does occur, the design of the battery unit enclosures and separation between battery units will ensure that a thermal event is contained within the affected battery unit. In this scenario the BESS is designed to undergo a steady, controlled burn consuming all cells within the battery unit over a period of 4 - 5 hours. The fire would typically burn for a further 4 hours as the plastic cell casings are consumed.

Cell, module and unit level test results will be provided as part of the BSMP to support this approach and the proposed separation distances between battery units.

The primary concern is to avoid a thermal event in the first place and, when operational, battery units will be continuously monitored for signs that a thermal runaway event could be about to take place or is taking place. The Battery Management System (BMS) will monitor battery cells for raised temperatures and other indications that a cell may be about to fail. The fire detection solution will be a fully addressable system (as per NFCC guidelines) integrating detectors including carbon monoxide, smoke, heat and hydrogen.



If a potential thermal runaway event is detected, the affected battery unit will be automatically isolated from the BESS power system. Additionally, Cell and module casings will inhibit propagation between cells within the battery unit while the battery unit cooling system will work to reduce temperatures within the unit.

Each battery unit will include a NFPA 69 compliant flammable gas ventilation system. If cells are producing offgas, the ventilation system will be capable of preventing gas volumes exceeding 25% of the Lower Explosive Limit (LEL) within the enclosure to reduce the risk of a deflagration / explosion. Performance testing of the ventilation system would be provided as part of the Battery Safety Management Plan.

The battery unit enclosures will also integrate a NFPA 68 compliant deflagration panel which, in the event that ventilation systems fail, will mitigate the explosion risk, provide for additional structural integrity if a deflagration does occur and direct flames away from first responders and other battery units.

- How will the thermal event be contained to the BESS of origin without the radiant heat to others?

The thermal event will be contained to the BESS of origin through a combination of heat resistant battery unit enclosures and physical separation of battery units. Battery enclosures will have a minimum 4-hour fire rating. Separation distances between battery units will be no lower than the minimum distances recommended by the BESS manufacturer. Manufacturers' recommendations will be supported by full-scale burn testing of units and/or heat flux modelling using a platform such as Fire Dynamics Simulator (FDS).

As an example, the Wärtsilä Gridsolv Quantum BESS units shown in the indicative site plan are designed to be installed and connected together in rows (often referred to as strings) containing a maximum of 8 units with a separation of 10cm between units. Battery unit enclosures have a one hour fire rating and the manufacturer recommends a minimum spacing of 3 metres between strings of battery units. These recommendations are supported by outcomes from full scale free burn tests conducted by the Energy Safety Response Group in February 2023 and further FDS modelling undertaken by the Fire and Risk Alliance. Burn tests were conducted without fire service intervention to reflect a controlled burn approach to managing a battery unit fire.



- How has the performance of the BESS in a thermal runaway event influenced site design?

The Indicative Site Layout is based on Wärtsilä Gridsolv Quantum BESS units. Wärtsilä recommends a minimum spacing of 3 metres between strings of units and a maximum of 8 units in each string. The indicative layout has a maximum of 3 units in each string and provides for a spacing of 4 metres between strings of batteries.

The deflagration panels for the Wärtsilä Gridsolv Quantum BESS units are on the top of the enclosures so battery units are not stacked.

Site plans

- What are the assumptions about active firefighting, within the emergency response plan and what measures are in place to reduce the scale of an incident?

Assumptions are that a controlled burn approach would be taken in the event of a thermal runaway incident within a battery unit on the site. Active firefighting is not recommended due to the risk of water contacting energised battery cells and evidence that direct water application within units can prolong a battery unit fire.

Minimum spacing between battery units will be based on manufacturers guidance and conform to NFCC guidance to minimise the risk of fire propagating between units. Similarly, areas within 10 metres of a battery unit will be surfaced with tarmac, concrete or crushed aggregate to restrict vegetation growth and no combustible materials will be stored on site.

- What is the provision for firefighting access to, around and within the site?

Access for Fire Service vehicles is in accordance with B5, Approved Document B of the Building Regulations. The access gates have a minimum width of 3.1m, the road has a minimum width of 3.7m, the minimum turning circle between kerbs is 16.6m, the minimum height clearance is 3.7m and the minimum carrying capacity is 18 tonnes.

The site is split into northern and southern sections by Station Road. Each section has both primary and emergency access points from Station Road to ensure that the site is accessible regardless of the location of a BESS unit fire. Primary access points are to the east of the site and emergency access points to the west.



The site is separated into plateaus to account for the west to east sloping topography of the site, with three levels in the northern section and two levels in the southern section. Each plateau has a perimeter road. Access roads between plateaus are designed to ensure that there are no extremes of gradient. All access roads are 4.5 metres wide and surfaced with crushed gravel. A swept path analysis will be provided to demonstrate the suitability of site access and roadways for KFRS vehicles that would attend a fire incident

There is the possibility that a fire in a BESS unit close to the road access point to a plateau could prevent vehicles from accessing the plateau. It is proposed that on-foot access with hoses between plateaus be provided through the inclusion of steps or ladders where appropriate to safely traverse between site levels.

- Are the incident assumptions realistic? What is the role of the FRS at an incident? Are they realistic? What is the expectation of the FRS in terms of the fire strategy at a thermal event?

The incident assumptions will be based on the results of battery unit fire testing and subsequent FDS (or similar) modelling.

KFRS personnel attending a thermal incident at the site would be advised by a BESS Subject Matter Expert (SME) who would be trained and certified by the equipment manufacturer. As per NFPA 855, the SME will fall under the Unified Command structure where they will collaborate with members of the FRS to safely manage the incident.

Upon arrival, KFRS personnel will contact the BESS SME to obtain a status briefing which would provide a snapshot of existing conditions and lead to the following set up actions:

- *Accountability of ALL site personnel:* Only essential employees should be allowed into the site during emergency conditions.
- *Staging of apparatus:* All apparatus should be staged uphill/upwind on arrival. Scene size-up will determine apparatus placement.
- *FRS Exclusion Zone:* Establish a 30.5m exclusion zone around the involved BESS. This is a conservative method employed in parallel with an explosion protection system (NFPA 68 and NFPA 69) to ensure the safety of FRS personnel operating at the scene.



- **Public Exclusion Zone:** Establish a 61m exclusion zone around the involved BESS for members of the general public. This has been established as a safe distance to ensure that the local community are not put at any risk from smoke or toxic gases from a BESS fire. It may mean temporarily closing local footpaths and Bullen Lane.

Based on full scale BESS burn testing conducted to date, it is assumed that the fire would burn steadily for around 8 - 9 hours. Attending FRS personnel would monitor conditions within the involved unit and adjacent units using diagnostic information accessed via annunciation panels (referred to as first responder panels in plans) and only adopt defensive firefighting tactics - boundary cooling of adjacent units - if data suggests there is a risk of propagation between units.

Conditions within the involved BESS unit and adjacent units should be captured and recorded in 15-minute intervals for trending analysis. Data would include enclosure temperatures, cell temperatures with focus on cells/modules surrounding the troubled modules, state of charge and H2 gas detection. The involved BESS unit should also be evaluated with a thermal imaging gun and compared with an uninvolved BESS unit for benchmarking purposes.

Each battery unit would be equipped with a dry pipe water sprinkler system. Once the battery cells have burned out and the unit is de-energised (typically after 4-5 hours) then the KFRS team may decide, in consultation with the BESS SME, to charge the unit sprinkler and extinguish the remaining fire, which will be primarily plastic cell casings.

Water supply / Suppression systems

- What is the type, purpose and effect of any fire suppression system installed?

Battery unit enclosures will be fitted with a dry-pipe water sprinkler system as standard. This is controlled by attending first responders with guidance from the SME. Latest guidance from manufacturers and NFCC recommends against using the water sprinkler to directly tackle a BESS fire, due to the risk from contacting electrified components, and instead to use as a means of extinguishing a BESS unit fire once the batteries have burnt out and it is safe to apply water to extinguish what is at that point primarily a plastics fire. The local FRS would charge the water sprinkler using onsite water supplies and pumped vehicles. Connections for each BESS unit sprinkler system will be a minimum of 25 metres from the BESS unit to enable the local FRS to connect safely.



Any suppression system proposed for the final site design will comply with NFCC guidelines and be appropriate to the BESS unit ultimately selected for the project. It will be subject to approval by KFRS as part of the battery safety management plan.

- What is the purpose of the water supply provision on site? Boundary cooling / defensive firefighting or active suppression?

The purpose of on site water supplies is to support a boundary cooling / defensive firefighting approach to managing a thermal event.

A system of water hydrants fed by static water tanks and pump will be installed as an Emergency Water Supply (EWS). The water hydrants will be installed at 45M radius coverage in line with approved document Part B Fire Safety. Hydrants will be fitted at all Primary and Emergency site access points. Water tanks will be distributed across the site with direct hose access provided for redundancy.

Tanks will be sited at least 10 metres away from any battery unit, in line with NFCC guidance. Both northern and southern sections of the site will have an individual water total supply of 228,000 litres and be capable of delivering no less than 1,900 litres of water per minute (lpm) for at least 2 hours, as per NFCC guidance. Fire hydrants will be compliant with BS9990 and BS3251 and capable of delivering a minimum 25 litres per second flow rate as per draft Updated NFCC guidance.

If system diagnostic data suggests there is a risk of propagation between battery units through heat induced thermal runaway then defensive firefighting tactics would be used to reduce internal temperatures within adjacent units. Tactics would include directly applying water spray to adjacent units using adjustable firefighting branches (nozzles) or deploying defensive spray plates that form a water curtain between the affected unit and adjacent units. These boundary cooling tactics would likely be applied intermittently in 15-minute application periods with temperature changes measured between application periods. The potential exists to contact energised electrical components in battery enclosures so fog patterns and water stream strategies will be agreed by KFRS and BESS SME.

Water requirements for boundary cooling will vary depending on branch/spray plate manufacturer, with likely application rates per water jet/ spray plate used between 450-800 litres per minute. If the involved battery unit is in the middle of a row (or string) and cooling is required for two adjacent units this equates to a maximum of 1,600 litres per minute, or 96,000 litres per hour if boundary cooling is applied continuously.

Factors such as wind speed and direction will influence the temperatures reached in adjacent units so two hours of continuous boundary cooling is used as a conservative estimate. At 1,600 litres per minute, two hours of continuous boundary cooling would



require 192,000 litres of water to be available on site. If boundary cooling is applied intermittently with 15-minute application periods followed by 15-minute non-application periods to monitor temperature changes then 192,000 litres of water would suffice for four hours of boundary cooling.

This is in line with the draft version of the updated NFCC Guidance released in July 2024 which reduces its guidance to a minimum of 180,000 litres.

BESS design

- What is the size, quantity and capacity of each BESS unit?

The BESS manufacturer and system specification will be confirmed closer to the construction date of 2027, likely to be 2026. Full details will be provided as part of the Battery Safety Management Plan (BSMP) and subject to approval by Dartford Borough Council and KFRS.

The Wartsila Gridolv Quantum unit included for reference in the indicative site plan uses prismatic lithium iron phosphate (LFP) cells. Each cell has a nominal capacity of 306-amp hours (Ah) and a nominal voltage of 3.2 volts (V). Each battery unit enclosure measures 2.1m (w), 3.3m (d) and 2.5m (h). Up to eight enclosures can be installed in a row (also referred to as a string) and interconnected to achieve the desired energy storage capacity. The indicative site layout is designed with rows of three battery enclosures.

Each battery unit has a nominal capacity of 1.33 MWh. There are a total of 216 battery units equating to a total storage capacity of 300MWh.

- Is the BESS design appropriate for the weather at the proposed location i.e. prevention of water ingress and impact of temperature range on cooling systems?

The selected BESS will be suitable for weather conditions on site. Information will be provided as part of the BSMP.

- Does the applicant / developer have relevant competence and experience in the field of BESS design and deployment on the scale of the proposed development?

Clearstone Energy has been developing BESS projects since 2019 and gas fired power stations since 2016. In that time, it has gained significant expertise in health and safety matters relating to power projects including BESS. Two of our smaller BESS projects (50MW) are about to start construction. We have gained planning permission for a further two projects (200MW and 400MW respectively) and have a further five BESS projects (150 - 400 MW) either in the planning system or soon to be submitted.



We have employed external consultants to advise on battery system design, site design matters, fire safety and support on FRS liaison for our BESS projects.

Joe Hassell Command - Joe Hassell (founder of Joe Hassell Command (JHC)) is a recently retired senior fire officer who completed 31 years of service in both Essex and Devon and Somerset. Joe has extensive experience at all levels of command and retired as the Deputy Chief Fire Officer of Devon and Somerset Fire and Rescue Service in 2022. Joe is a highly experienced and qualified fire and rescue commander, trainer and assessor, with experience at all command levels dealing with various complex emergencies and major incidents. JHC was established as a training and consultancy company in 2023. JHC provides advice on operational fire fighting matters and manages consultation with local FRS teams.

AECOM - AECOM is a global infrastructure consulting company with deep expertise in BESS technologies, site design, risk assessment and mitigation. AECOM co-authored Clearstone Energy's Battery Safety Standards Report.

BST&T Consultancy Services - BST&T is an independent battery safety and testing consultancy which has worked on the safety aspects of lithium-ion battery applications since 2015. It is actively engaged with a number of leading BESS providers on testing programmes and undertaking safety planning for a number of large-scale BESS facilities in the UK. BST&T co-authored Clearstone Energy's Battery Safety Standards Report and provides advice on BESS selection and site design.

- What are the arrangements for ongoing monitoring of the BESS and what is the response time for onsite technical assistance in the event of an incident?

The BESS will be remotely monitored 24/7. The Battery Management System (BMS) will monitor battery cells for raised temperatures and other indications that a cell may be about to fail. The fire detection solution will be a fully addressable system (as per NFCC guidelines) integrating detectors including carbon monoxide, smoke, heat and hydrogen. Alerts generated by the BMS and alarms will be automatically assigned to a SME (described earlier) who will alert KFRS if required and work remotely with the KFRS team dispatched to the site to manage the incident.

Response times for onsite technical assistance will be specified as part of the BSMP for approval by KFRS.



Annunciation

- What remote annunciation panels are available for monitoring an event from the site?

A fully addressable fire alarm system will be installed on site, accessible by fire service personnel through a first responder panel. The master digital display will be located at the access point to the lowest plateau on the north section of the site (the largest plateau) with four further repeater panels located across the site. Panel locations are included in the fire strategy plan.

- What data is available from these remote annunciation panels?

The first responder panels will provide live information on the location of the affected battery unit; the status of battery modules and fire suppression systems within the cabinet; and temperature data for that cabinet and adjacent cabinets so that FRS personnel can monitor and deploy defensive firefighting tactics if required to manage the situation.

Environmental receptors

A sensitive receptors plan is provided in line with the draft update to NFCC guidance.

Prevailing wind for the location is from the West South West direction. Existing plume modelling studies suggest that the hazard posed by toxic gases produced by a single battery unit fire (concentrations above the Immediate Danger to Life and Health threshold) is confined to the immediate surrounds of the battery unit, less than 12.5 metres. At 30 metres concentrations have fallen below the short term workplace exposure limits (15 minutes) as specified by the UK Health and Safety Executive. While at 60 metres concentrations have fallen below the long term 8 hour exposure limits which are the safe exposure limits for the workplace in the UK.

- The nearest publicly accessible space is the Millbrook Garden Centre car park located 30 metres east of battery units at its closest point
- The entrance / exit from the garden centre car park is located 85 metres east of battery units
- Pepper Hill Community Recycling centre is located 210 metres west of battery units
- The nearest educational or care facility is Dale Mount and Dale Lodge, assisted living residences, located 500 metres south west of the site
- The nearest residential property is 140 metres to the west of the site



There is a risk that local water sources and water supplies could be contaminated by fire water run off from a fire event. Taking a controlled burn approach to managing a fire incident will reduce the possibility that water will be used to manage an incident and it should also be noted that in a range of previously documented global BESS thermal runaway incidents, water runoff from FRS boundary cooling has not contained significant levels of pollution.

However, each of the two sections of the Site is designed with a drainage system capable of containing a minimum of 228,000 litres of water in addition to surface water runoff already in the system from a 48-hour rainfall event.

The drainage system uses the voids in the layers of aggregate underlying the Site to collect and direct water towards soak away points. The aggregate layer will be lined with an impermeable membrane, capable of resisting chemical concentrations and temperatures potentially generated by fire-water runoff.

Penstock valves will be positioned at the outlet from the drainage system to the soakaways to enable the system to be closed in the event of a fire. A tanker take off valve will be included before each penstock valve to enable contained water to be tankered away for treatment if tests show that it is contaminated.

In the event of a fire, the penstock valve is used to close the drainage system and contain water on site. Once the fire has been extinguished water will be tested for contamination and either taken away by tanker for treatment or released through the drainage system.

APPENDIX 15:

PRE-APPLICATION CONSULTATION RESPONSE FROM KENT FRS



To
Joe Hassell Command (JHC)
On behalf of
Clearstone Energy

Contact
Jon Tuttlebury
Direct line
01622 212421
Email
FET@kent.fire-uk.org

Our ref
CAS-246582
Your ref
N/A
Date
11 Nov 2024

FAO: Joe Hassell

Dear Joe,

Pre-planning consultation

Re: Land adjacent Station Road, Southfleet, Kent, DA13 9PA .

This pre-planning consultation is for a Battery Energy Storage Site (BESS) with total storage capacity of 300 MWh. Please be aware that the principles discussed within this pre-planning advice letter should not be used as a precedent for justification for future developments. Each Battery Energy Storage Site (BESS) is unique and should be evaluated on its own merit.

Kent Fire Rescue Service (KFRS) has no authority to approve or decline planning permission for Battery Energy Storage Systems (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. Information requested and received will be able to support our observations during the planning process, but also provide a basis for design/build stage. I acknowledge that KFRS are also learning and developing along with this evolving area of technology & approaches to risk mitigation at BESS sites.

Documents provided at pre-planning stage.

- Battery Safety Standards Report
- Site Plan with related NFCC Guidance
- Sensitive Receptor Site Plan
- FRS Briefing document aligned to new draft NFCC Guidance

Confidential Information

Information requested by KFRS will be used to both aid in the design process and influence the emergency response at an incident. It is acknowledged that some specific details may be commercially sensitive, and the information provided is kept in confidence throughout the consultation process.

**Building Safety, Fire Engineering Team, Canterbury Fire Station, Upper Bridge Street,
Canterbury, Kent, CT1 2NH. FET@kent.fire-uk.org 01622 212421**



Specific Planning Observations

BESS Consultation Overview

Due to the potential hazards of BESS; careful consideration to the design, layout and management is required. Past BESS incidents, both within the UK and abroad, must be considered and all efforts made to ensure safe practices both during daily use and emergency response, for workers, emergency service personnel and the public alike.

Water supplies

I note that your provision of fire-fighting water supply is based on the draft version of the NFCC Grid scale guidance document. The quoted water volumes in your 'FRS briefing' document will require some further review in due course. Consideration for the provision of firefighting water should be with regard of the current requirements until the draft version has been formally released as a guidance document. In addition, where on site water provisions are also proposed to support the container sprinkler system (for end-stage container suppression) higher volumes will be required.

I note there are no water tanks in the upper (most northerly) section of the plan drawings, with two tanks being in the westerly/upper section. This would require pumping of water of a considerable distance into the upper section to support the fire hydrants. Please confirm if a tank will be provided to the upper section. Please also confirm how the water tanks will be replenished i.e. via a permanent water feed into the proposed site. According to our records there are no fire hydrants within 300 metres of this site.

However, I note from paragraph 4.5.5 of the 'Corporate Battery Safety Standard' document that water supply requirements will be fully agreed with the FRS. Certainly further discussion should be had to find a reasonable approach

Gaseous Fire Suppression

I note there is no commentary in the briefing document with regard to internal "gaseous" suppression systems, designed to deal with other potential fires other than those originating from an event of thermal runaway. Please confirm if this will be present in the final design.

Battery testing criteria

Evidence-based testing criteria that your proposed BESS installation meets the fire safety requirements should be provided for such installations. We are happy to discuss and review this with yourself or your clients design team when you have finalised the procurement of your battery technology.

**Building Safety, Fire Engineering Team, Canterbury Fire Station, Upper Bridge Street,
Canterbury, Kent, Ct1 2NH. FET@kent-fire-uk.org 01622 212421**



Fire Management Plan (FMP) and Emergency response Plan (ERP)

As noted in your briefing and outline battery safety document a finalised Battery Management Safety Plan (BMSP) and Emergency Response Plan (ERP) will be provided with the planning application or towards project completion. These documents should reflect the client's intent of designing and installing the site in line with the NFCC Grid Scale BESS guidance and other international design codes and industry best practise. I am cognisant that some key features of the design may not be currently finalised due to evolving technology and/or procurement of equipment. As such these "evolving documents" are required to assist KFRS in helping your design team develop a finalised BMSP and robust ERP.

Annunciation Panels

I note the provision of on-site first responder panels in your FRS briefing document, further discussion is required with regard to the expectation of crews operating this equipment and interpreting readings. With no training and limited knowledge of this equipment this may inhibit effective monitoring in the event of fire. I note that a Subject Matter Expert (SME) will also be in attendance at an incident therefore, please confirm that monitoring of such annunciation panels will be the responsibility of the SME. Alternatively, suitable awareness training should be provided to KFRS crews.

Important points about this consultation

Currently, as you are aware 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***
- **Department for Energy Security & Net Zero: Health and Safety Guidance for Grid Scale Electrical Energy Storage Systems- Published March 2024***

*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.

I would like to thank you again for your early engagement and in advance for your engagement throughout the planning process. KFRS advice is non-statutory but given in good will to protect the lives and safety of the public and emergency responders.

Building Safety, Fire Engineering Team, Canterbury Fire Station, Upper Bridge Street, Canterbury, Kent, CT1 2NH. FET@kent.fire-uk.org 01622 212421



If you require any further advice, please contact this office using the details above. Please be aware that the Building Safety office hours are 09:00-17:00 Monday to Friday

Yours sincerely,

Jon Tuttlebury

Jon Tuttlebury BSc (Hons) AIFireE
Trainee Fire Engineer

Building Safety, Fire Engineering Team, Canterbury Fire Station, Upper Bridge Street,
Canterbury, Kent, Ct1 2NH. FET@kent.fire-uk.org 01622 212421

APPENDIX 16:

APPLICANTS RESPONSE TO KENT FRS



BESS Project - Pre-planning Consultation

Date: 18 December 2024
Project: Dartford Energy Hub
Address: Land adjacent Station Road, Southfleet, Kent, DA13 9PA
Developer: Clearstone Energy
Developer Contact: Joe Hassell (Joe Hassell Command)
Kent FRS Contact: Jon Tuttlebury
Stage: Response to initial feedback/queries from Kent FRS

Dear Jon

Thank you for the prompt review of the pre-planning consultation materials submitted in support of the proposed Dartford Energy Hub project. I am responding to your initial feedback and queries. We will also be submitting a full site safety report as the planning application for the project which will go into further detail on some of the points you raised in your response, such as the role of the BESS Subject Matter Expert in incident response. .

Water supplies

- *Will a tank be provided in the upper (most northerly) section of the site?*

Response: We have updated the site plan to include a tank in this section of the site.

- *Ensure that water supplies are in line with current NFCC guidelines*

Response: We can confirm that both the northern and southern sections of the site will each have a minimum of 228,000 litres of emergency water supply stored in tanks on the site. Water supplies will be accessed through a network of fire hydrants. This provides a minimum of 1,900 litres of water per minute for 2 hours, as specified in the current NFCC guidelines.

- *How will water tanks be replenished?*

The draft Emergency Response Plan is based on the provision of adequate onsite emergency water supplies to manage a worst-case scenario of a single battery unit fire. The worst-case scenario assessment will be supported by the results of full-scale burn testing undertaken by the BESS manufacturer ultimately selected for the project. Water tanks would be refilled by tanker once it is safe to do so following a fire incident. Kent FRS would be consulted as part of the creation of the Emergency Response Plan, which would be subject to approval by Dartford Borough Council before construction can start, as part of the wider Battery Safety Management Plan (BSMP) developed for the project.



- *Ensure that there is additional water supply for the container sprinkler system for end-stage container suppression*

Response: We can confirm that an additional water provision will be made for the container sprinkler system. This will be specified at the detailed design stage of the project when a BESS manufacturer is selected for the project and based on manufacturer testing/guidance.

Gaseous Fire Suppression

We can confirm that the BESS technology selected for the project would include as standard the means of extinguishing an electrical fire to prevent propagation to the battery cells. As you suggest, today, this is usually achieved with a gas-based suppression system. Many manufacturers are now taking a proactive approach by physically separating electrical power conversion systems from battery cells within battery energy storage system (BESS) cabinets... Kent FRS would be consulted on BESS technology selection and integrated suppression systems as part of the development of the BSMP.

Battery testing criteria

Thank you for the opportunity to discuss and review battery test data at the procurement stage of the project. Clearstone Energy mandates that our BESS suppliers have conducted full scale burns testing of BESS cabinets to demonstrate the efficacy of safety systems and to support manufacturers guidance on safe spacing between battery cabinets. In our view, modelling from cell, module or rack level testing is not adequate to provide assurance.

Until very recently, few suppliers had conducted comprehensive testing. Wartsila has completed such testing, which is why we use the Wartsila Quantum BESS for our indicative site layout plans and preliminary emergency response planning. We will include test results for the Wartsila Quantum BESS as part of our planning application to demonstrate the level of testing evidence we intend to provide as part of the BSMP.

We are pleased to see that more BESS manufacturers are now conducting full scale testing in addition to UL9540a lab tests.

Fire Management Plan (FMP) and Emergency response Plan (ERP)

To clarify, we will only share the outline of the FMP and ERP plans at the planning application stage, as final decisions regarding the selection of a competent BESS technology have not yet been made. . We are committed to working collaboratively with



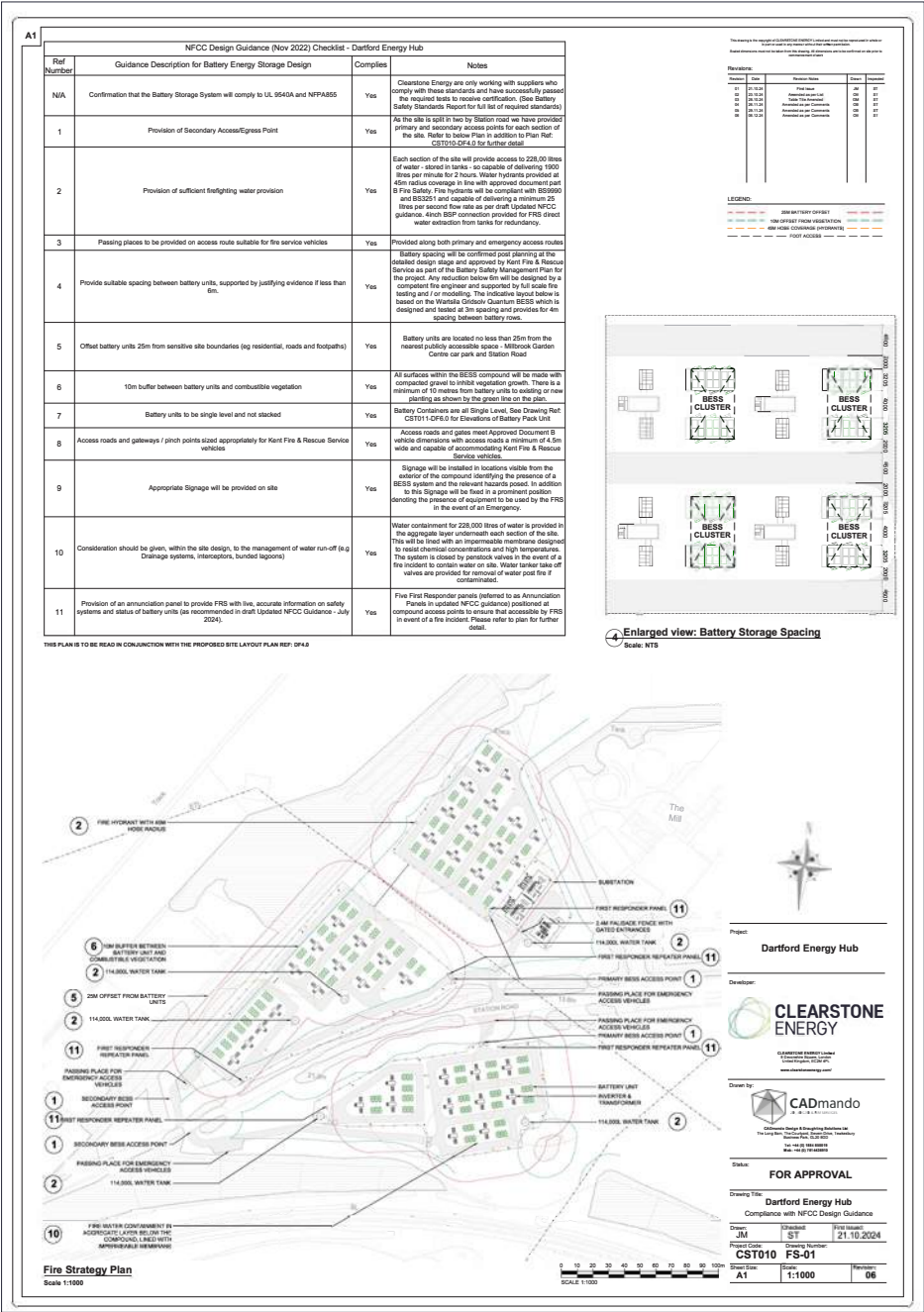
Kent FRS in the selection of a BESS technology for the project and the consequent development of final fire safety plans.

Annunciation Panels

As you say, the BESS Subject Matter Expert assigned to an incident would take the lead on interpreting fire alarm data and advising attending FRS teams. However, we would also provide training to Kent FRS personnel as part of the Emergency Response Plan.

Kind regards

Joe Hassell





DARTFORD ENERGY HUB

Statement of Community Involvement on behalf of Clearstone Energy