PLANNING EVIDENCE PACK

Hillgrounds Road, Kempston - Energy Storage Facility

Incidents on record and planning decisions nearby, for a 0.2 MW battery energy storage site

APPLICATION NUMBER
25/00381/FUL

PLANNING AUTHORITY
Bedford

LOCATION
Between Pumping Staton And Kempston Swimming Pool 288 Hillgrounds Road Kempston, Bedford, United Kingdom

PACK REFERENCE
EIR-PACK-D-HILLGROUNDS-ROAD-KEMPSTON-ENERGY-STORAGE

DATA AS OF
29 October 2026

REVIEW STATUS
Made automatically for a decided application, free to read. Not desk-reviewed.

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Every figure in this pack comes from the register or the government planning database as they stood on 29 October 2026. Each numbered section names its sources, and every incident links to its entry page, which lists all sources.

At a glance

Hillgrounds Road, Kempston - Energy Storage Facility

GRID-SCALE BATTERY INCIDENTS IN THE UK

5

1 classed as major

Section 2

NEAREST UK INCIDENT

95 km

EIR-0109, East Tilbury, Thurrock, Essex

Section 2

NEAREST REFUSED SCHEME

20 km

Vicarage Farm, North Northamptonshire

Section 3

SCHEMES REFUSED WITHIN 40 KM

4

final outcome refused, of 13 sites with a refusal, withdrawal or appeal

Section 3

SCHEMES TAKEN TO APPEAL

2

2 granted on appeal

Section 3

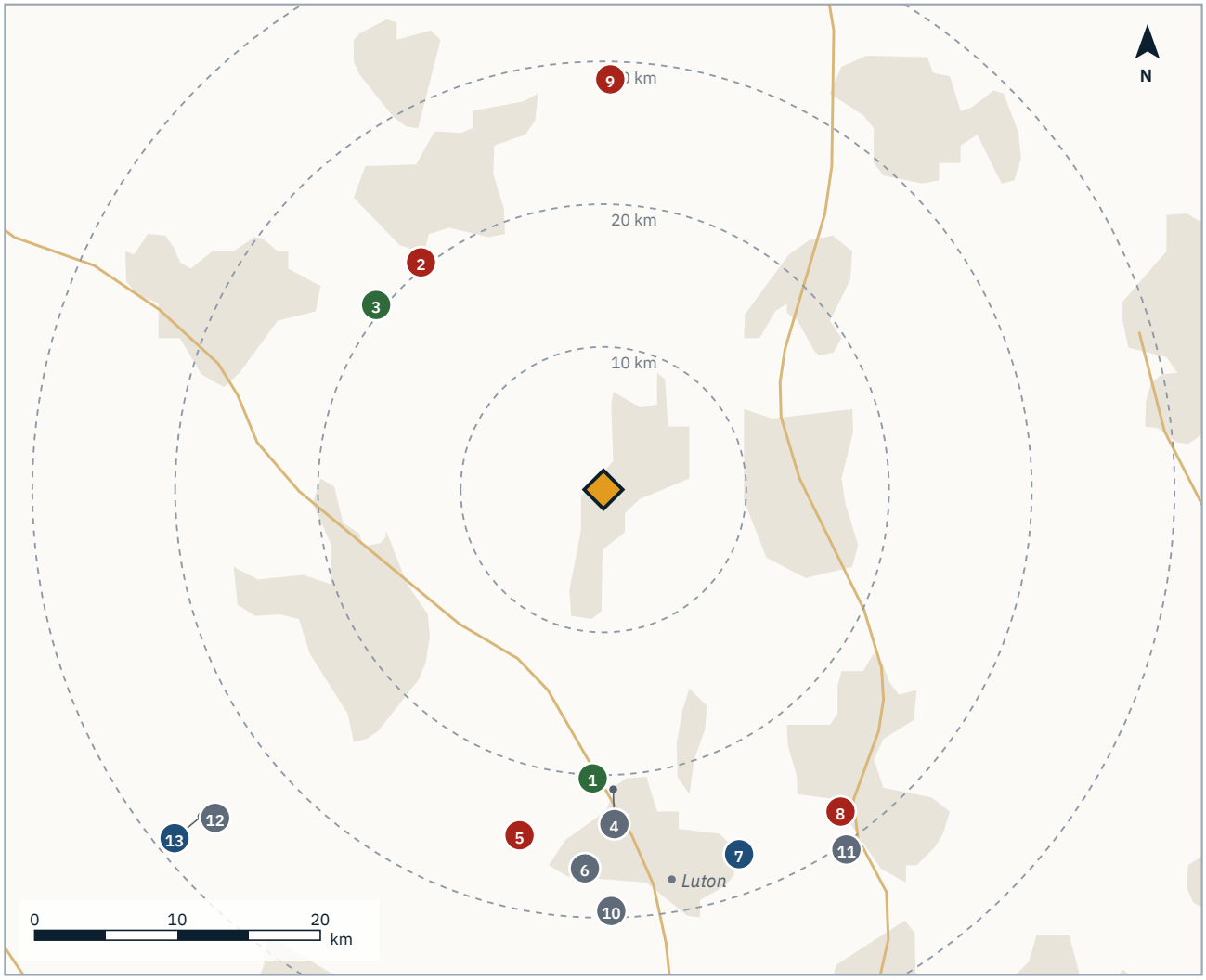
What the data shows

1. The register holds 5 incidents at grid-scale battery sites in the UK, 1 of them major. None lies within 50 km of the site. The nearest, EIR-0109, is about 95 km away.
2. Within 40 km, 13 battery energy storage sites have had an application refused, withdrawn or taken to appeal. Final outcomes: 4 refused, 5 withdrawn, 2 granted on appeal, 2 granted. The nearest refused scheme is Vicarage Farm, about 20 km away.
3. Worldwide the register holds 156 incidents at grid-scale battery energy storage sites in 18 countries; 136 involved fire or overheating. These are counts of published reports, not rates.

Counts are of incidents in the register, which is built from published reporting. They are not rates and not a complete census. Review: Made automatically for a decided application, free to read. Not desk-reviewed.

The site on a map

The site point, with every scheme within 40 km where an application was refused, withdrawn or taken to appeal (section 3), and every incident in the register within the frame. Numbers follow distance from the site. Schemes under 1 MW are not shown.



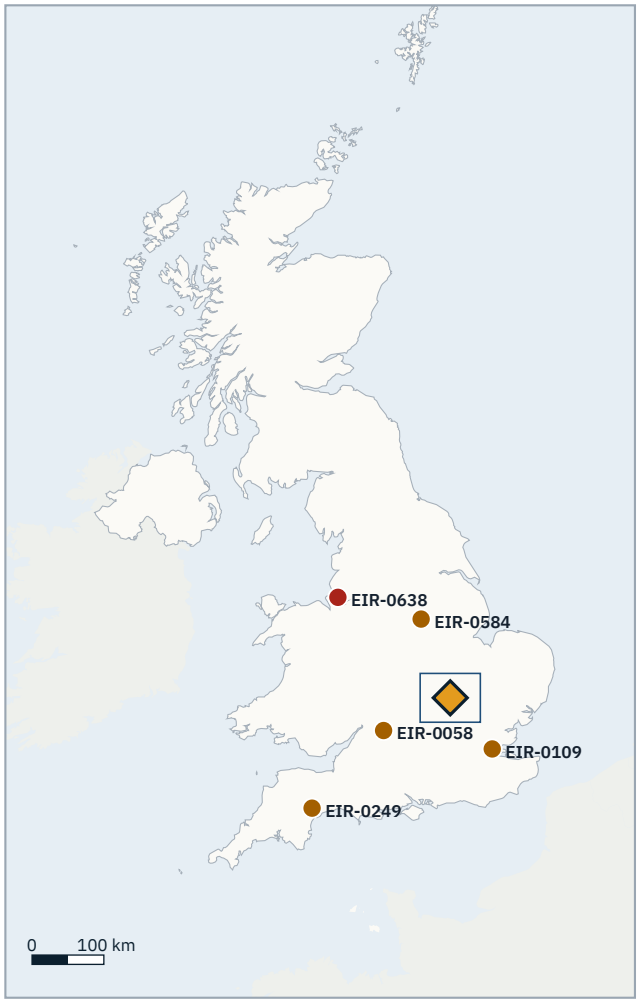
Site · Refused · Granted on appeal · Granted · Withdrawn · Pending or undecided · Incident
Built-up area · Major road

1 Toddington Services, Hipsey..., granted after resubmission, 20 km
2 Vicarage Farm, refused, 20 km
3 Grendon Lakes, Grendon, granted after resubmission, 21 km
4 Hillcrest, Church Road, withdrawn, 21 km
5 Bury Farm, Dickens Lane, refused, 25 km
6 Avenue Power, withdrawn, 27 km
7 Wandon End, granted on appeal, 27 km
8 St Ippolyts, refused, 28 km
9 Wood Lodge Farm, Huntingdon Road, refused, 29 km
10 Watling Street, Caddington, withdrawn, 30 km
11 Rush Green Motors, withdrawn, 31 km
12 Hogshaw Road, Granborough, withdrawn, 36 km
13 East Claydon Battery Energy Storage, granted on appeal, 36 km

Base map made with Natural Earth (naturalearthdata.com, public domain). Scheme points: Renewable Energy Planning Database, Department for Energy Security and Net Zero (Open Government Licence v3.0). Incident points: Energy Incident Register, mapped to a town or a site, never an address. Straight-line distances.

The site and the UK record

Each grid-scale battery incident in the UK that has a map point, against the site. Section 2 gives each one in full, with a note against the NFCC guidance.



Base map made with Natural Earth (public domain). The blue box is the area of the previous map.

UK grid-scale incidents

- **EIR-0109 · 95 km · 2025**
  Fire in single battery unit at Thurrock BESS under construction
- **EIR-0058 · 109 km · 2025**
  Fire in two battery containers at Cirencester Hybrid Solar Farm, Gloucestershire
- **EIR-0584 · 118 km · 2026**
  Fire in a battery container at Rufford Colliery BESS, Rainworth; owner attributes it to a short circuit in NMC cells (provisional)
- **EIR-0638 · 216 km · 2020**
  Explosion and prolonged fire at Orsted battery storage site in Liverpool
- **EIR-0249 · 258 km · 2026**
  Smoke and fire incident at Battery Box, Pinhoe Road, Exeter

Major · Significant · Minor

1 Key findings for this site

- The register holds **5** incidents at grid-scale battery sites in the UK, 1 of them major. Home, farm and business batteries are counted apart (9).
- The nearest is EIR-0109, Fire in single battery unit at Thurrock BESS under construction, about 95 km from the site.
- No recorded incident lies within 50 km of the site.
- 13 battery energy storage sites within 40 km have had an application refused, withdrawn or taken to appeal, 5 of them in Bedford. Final outcomes: 4 refused, 5 withdrawn, 2 granted on appeal, 2 granted. The nearest is Toddington Services, Hipsey Spinney - Battery Storage (granted after resubmission), 20 km away. 26 schemes under 1 MW are listed apart.
- 0 grid-scale incidents worldwide happened at sites between 0.1 and 0.4 MW.

Counts are of incidents in the register, which is built from published reporting. They are not rates and not a complete census.

2 Grid-scale battery incidents in the UK (5)

Nearest to the site first. Distance is a straight line from the site point to the place the entry is mapped to (a town or a site).

REFERENCE	YEAR	INCIDENT	FROM THE SITE	SEVERITY	MW
EIR-0109	2025	Fire in single battery unit at Thurrock BESS under construction	95 km	Significant	300
EIR-0058	2025	Fire in two battery containers at Cirencester Hybrid Solar Farm, Gloucestershire	109 km	Significant	23
EIR-0584	2026	Fire in a battery container at Rufford Colliery BESS, Rainworth; owner attributes it to a short circuit in NMC cells [provisional]	118 km	Significant	7
EIR-0638	2020	Explosion and prolonged fire at Orsted battery storage site in Liverpool	216 km	Major	20
EIR-0249	2026	Smoke and fire incident at Battery Box, Pinhoe Road, Exeter	258 km	Significant	

Each incident against the NFCC guidance

What the reporting says, set against the passages of the National Fire Chiefs Council guidance that fire service consultees cite. The guidance is advice to fire services, not law, and most of these sites were built before its current edition. The notes do not say a site broke it.

EIR-0109 Fire in single battery unit at Thurrock BESS under construction

A cell fault in one container started the fire while the site was still under construction. The fire service said spacing between units and a reliable local water supply helped stop it spreading. Crews were on site for about 24 hours.

> *"The emergency response plan should assume that the fire will not spread beyond the BESS container of origin."*
> Section 12, Spacing between BESS, NFCC guidance (December 2025)

> *"Therefore, an additional on-site water supply must be accessible to fire and rescue services in the event of an emergency."*
> Section 14, Water supplies, NFCC guidance (December 2025)

> *"A standard minimum spacing between units of 6 metres is suggested unless suitable design features can be introduced to reduce that spacing."*
> Access between BESS units and unit spacing, NFCC first edition (Version 1.0, November 2022)

> *"As a minimum, it is recommended that hydrant supplies for boundary cooling purposes should be located close to BESS containers (but considering safe access in the event of a fire) and should be capable of delivering no less than 1,900 litres per minute for at least 2 hours."*
> Water Supplies, NFCC first edition (Version 1.0, November 2022)

Main source: energy-storage.news. All sources are on the entry page.

EIR-0058 Fire in two battery containers at Cirencester Hybrid Solar Farm, Gloucestershire

Two battery containers burned and crews stopped the fire reaching a third. More than 40 firefighters attended with high volume pumps. Residents were told to keep windows and doors shut and nearby roads were closed. The cause was not confirmed in the reporting. It bears on spacing, on bringing large volumes of water to a rural site, and on planning for neighbours and smoke.

> *"The emergency response plan should assume that the fire will not spread beyond the BESS container of origin."*
> Section 12, Spacing between BESS, NFCC guidance (December 2025)

> *"This should also take account of the ability of/anticipated time for the fire and rescue service to bring larger volumes of water to site (for example through the provision of High Volume Pumps)."*
> Water Supplies, NFCC first edition (Version 1.0, November 2022)

> *"The developer should produce a plan that identifies all sensitive receptors within a 1km radius of the site."*
> Site location, NFCC guidance (December 2025)

> *"The assessment should recognise that any incident may last several hours."*
> Site location, NFCC guidance (December 2025)

Main source: cotswoldjournal.co.uk. All sources are on the entry page.

EIR-0584 Fire in a battery container at Rufford Colliery BESS, Rainworth; owner attributes it to a short circuit in NMC cells

A fire in one battery container on 1 May 2026. The fire service was called at 05:21 and, according to the owner, the fire was put out "in short order" with no injuries. The owner said an initial investigation found the cause to be a short circuit in the site's NMC cells, a technology the fund says it has not used in any BESS bought since 2020 and was already augmenting. The entry rests on one trade report, so it is provisional. It bears on cell chemistry and on early fault detection that can isolate a battery remotely.

> *"From a safety perspective, it is noted that LFP batteries typically have better thermal stability (lowering the probability of thermal runaway) than NMC batteries, but not removing it."*
> Section 7, Battery chemistry (quoting the 2024 Frazer-Nash report for DESNZ), NFCC guidance (December 2025)

> *"An effective and appropriate method of early fault detection within the batteries should be in place, making it possible to immediately disconnect the affected battery/batteries remotely."*
> Section 8, Detection and monitoring, NFCC guidance (December 2025)

Main source: ess-news.com. All sources are on the entry page.

EIR-0638 Explosion and prolonged fire at Orsted battery storage site in Liverpool

The explosion happened before crews arrived. The fitted suppression system did not activate, the site was managed remotely from Denmark and that remote management did not alert the fire service when the alarm actuated, and crews said the risk information for the site was inadequate. Firefighting and monitoring took about 59 hours. The site was built before any NFCC guidance existed. The points it bears on in the current edition are explosion control, alerting the fire service, the limits of suppression, and planning for a long incident.

> *"BESS containers should be fitted with explosion protection or deflagration venting appropriate to the hazard and battery technology deployed."*
> Section 10, Explosion control (deflagration protection), NFCC guidance (December 2025)

> *"How will the BESS and associated equipment be monitored, and what is the process for alerting the fire and rescue service?"*
> Section 6, questions for the developer (Detection and monitoring), NFCC guidance (December 2025)

> *"The suppression system, regardless of type, will have little effect on a thermal event within the battery cell."*
> Section 9, Suppression systems, NFCC guidance (December 2025)

> *"The assessment should recognise that any incident may last several hours."*
> Site location, NFCC guidance (December 2025)

Main source: epri.box.com. All sources are on the entry page.

EIR-0249 Smoke and fire incident at Battery Box, Pinhoe Road, Exeter

Smoke came from the cabinet housing the grid connection, not from the battery modules, which the operator said were unaffected. The operator shut the batteries down and crews isolated the unit from the nearby substation. The capacity was not reported, so it may be below the 1 MWh the guidance covers. It bears on fire starting in equipment around the batteries, and on isolation points.

> *"Prevention of fire ignition on-site that could spread to BESS and associated infrastructure (for example, inverters, switchgear, and transformers)."*
> Section 2, Principles (principle 6), NFCC guidance (December 2025)

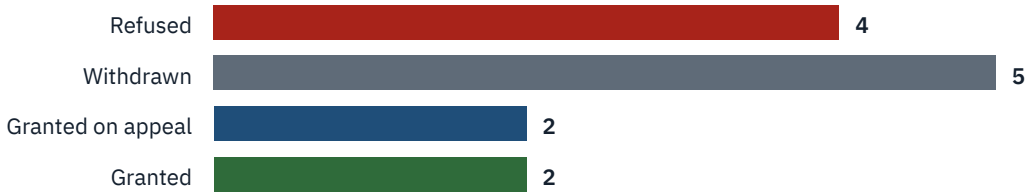
> *"Emergency shutoff or isolator locations"*
> Section 16, Outline battery safety management plan, NFCC guidance (December 2025)

Main source: bbc.com. All sources are on the entry page.

3 Planning decisions on battery energy storage schemes nearby

Sites within 40 km of the site where an application was refused, withdrawn or taken to appeal, from the government's Renewable Energy Planning Database, those in Bedford first. Each row is one site: a refused scheme that was sent in again is one row, with every application listed. The final outcome is that of the latest application. Schemes under 1 MW are listed apart, below the table. Councils with a scheme in this radius: Bedford, Central Bedfordshire, Milton Keynes, Huntingdonshire, North Northamptonshire, North Hertfordshire, West Northamptonshire, Buckinghamshire, South Cambridgeshire, Stevenage, East Hertfordshire, Dacorum. The database does not record the reasons for a decision; the council's planning record does, under the application number.

Final outcomes of the 13 sites within 40 km



One count per site: the outcome of its latest application. "Granted" includes grants after an earlier refusal or withdrawal. Schemes under 1 MW (26) are listed apart and not counted here. Source: Renewable Energy Planning Database (Open Government Licence v3.0). The table below gives every site.

SITE	COUNCIL	APPLICATIONS	FINAL OUTCOME	MW	FROM THE SITE
Toddington Services, Hipsey Spinney - Battery Storage	Central Bedfordshire	CB/23/03787/FULL: submitted 4 Dec 2023, withdrawn 13 Feb 2024 CB/24/00414/FULL: submitted 15 Feb 2024, granted 6 Jan 2025	Granted after resubmission 2 applications	250	20 km
Hillcrest, Church Road - Battery Energy Storage	Central Bedfordshire	CB/24/02977/FULL: submitted 6 Nov 2024, withdrawn 17 Jan 2025	Withdrawn	50	21 km
Bury Farm, Dickens Lane - Battery Energy Storage System	Central Bedfordshire	CB/25/02044/FULL: submitted 21 Jul 2025, refused 29 Sep 2025	Refused	350	25 km
Avenue Power - Urban Reserve Flexible Energy Facility	Central Bedfordshire	CB/21/05568/FULL: submitted 11 Jan 2022, withdrawn 21 Feb 2022	Withdrawn	5	27 km
Watling Street, Caddington - Battery Storage	Central Bedfordshire	CB/23/03583/OUT: submitted 17 Nov 2023, withdrawn 18 Jul 2024	Withdrawn		30 km
Vicarage Farm - Battery Energy Storage System	North Northamptonshire	NW/25/00405/FUL: submitted 24 Jul 2025, refused 18 Dec 2025	Refused	50	20 km

SITE	COUNCIL	APPLICATIONS	FINAL OUTCOME	MW	FROM THE SITE
Grendon Lakes, Grendon - Battery Storage Facility	North Northamptonshire	NW/21/00623/FUL: submitted 15 Jul 2021, refused 30 Sep 2021 NW/22/00198/FUL: submitted 25 Mar 2022, refused 11 Jan 2023 NW/23/00360/FUL: submitted 29 Jun 2023, granted 29 Jul 2025	Granted after resubmission 3 applications	49.9 to 49.99	21 km
Wandon End - Solar Farm & Battery Storage	North Hertfordshire	22/03231/FP: submitted 5 Jan 2023, appeal granted 15 Jul 2025, granted 15 Jul 2025	Granted on appeal		27 km
St Ippolyts - Solar Farm & Battery Storage	North Hertfordshire	24/02455/FP: submitted 29 Jul 2021, granted 28 Jul 2025 22/00709/FP: submitted 13 Mar 2022, refused 22 Nov 2023	Refused 2 applications	12.5	28 km
Wood Lodge Farm, Huntingdon Road - Solar Farm	North Northamptonshire	NE/23/00858/FUL: submitted 12 Sep 2023, refused 4 Oct 2024	Refused	8.8	29 km
Rush Green Motors - Battery storage	North Hertfordshire	21/01860/FP: submitted 15 Jun 2021, granted 6 Oct 2021 24/00314/FP: submitted 23 Feb 2024, withdrawn 25 Mar 2025	Withdrawn 2 applications	50	31 km
Hogshaw Road, Granborough - Battery Energy Storage System	Buckinghamshire	24/03262/APP: submitted 17 Dec 2024, withdrawn 17 Mar 2025	Withdrawn	99	36 km
East Claydon Battery Energy Storage	Buckinghamshire	23/03875/APP: submitted 15 Dec 2023, refused 20 Dec 2024, appeal granted 11 Sep 2025	Granted on appeal	500	36 km

Under 1 MW, kept apart (26): Hillgrounds Road, Kempston (Bedford, refused, 0.0 km); Ridge Road, Kempston (Bedford, refused, 2.1 km); Abbeyfields Road, Elstow (Bedford, refused, 2.5 km); Allotment Gardens, Ridge Road (Bedford, refused, 3.1 km); Royle Gardens & Electricity Substation, Eastcotts Road (Bedford, refused, 3.6 km); Avon Drive, Highfield Residential Home (Bedford, refused, 4.2 km); Oakhill Place, High View (Bedford, refused, 4.4 km); Mowsbury Box (Bedford, refused, 4.6 km); Linmere Community Hall, Huckett Street (Central Bedfordshire, granted on appeal, 23 km); Olney Road, Harvey Drive (Milton Keynes, granted after resubmission, 15 km); Mowbray Green, The Leys (Milton Keynes, withdrawn, 17 km); Wolverton Road, Giffard Park Roundabout (Milton Keynes, new application undecided, 18 km); Brickhill Street, Heybridge Crescent (Milton Keynes, withdrawn, 19 km); Langland Road, Netherfield (Milton Keynes, refused, 20 km); Saxon Street, Dawson Road (Milton Keynes, withdrawn, 21 km); Dukes Drive, Princes Way (Milton Keynes, granted after resubmission, 22 km); Fingle Drive, Grafton Street (Milton Keynes, refused, 22 km); Paynes Drive & Linceslade Grove, Loughton (Milton Keynes, refused, 23 km); Whaddon Way, Shenley Road (Milton Keynes, refused, 23 km); Paxton Crescent, Ackroyd Place (Milton Keynes, withdrawn, 23 km); Wolverton Swimming & Fitness Centre, Addington Avenue (Milton Keynes, granted after resubmission, 24 km); Hodge Lea Lane, Hodge Lea (Milton Keynes, refused, 24 km); Stone Hill (Milton Keynes, withdrawn, 24 km); Snelshall Street, Tattenhoe (Milton Keynes, withdrawn, 26 km); Penvale Road (West Northamptonshire, withdrawn, 30 km); University Of Buckingham Campus, Energy Storage System (Buckinghamshire, withdrawn, 37 km).

All battery energy storage applications within 40 km by database status: Awaiting Construction 62, Application Submitted 20, Application Refused 14, Revised 13, Application Withdrawn 13, Operational 8, Planning Permission Expired 5, Under Construction 4, Decommissioned 1. A "council record" mark means the council's own planning record shows a decision the government database did not yet have; the site page explains it. A "newer official status" mark means an official source (a council record or committee minutes, the Scottish Government or the Planning Inspectorate) shows a newer status than the

government database; the outcome uses it, and the row names the source and the day it was checked.

4 Every recorded incident within 50 km

Measured on a map from the planning record for Hillgrounds Road, Kempston - Energy Storage Facility. Every size of site is included here, so a home battery fire nearby is shown, marked as such. Entries are found by their map point only, never by matching words in the text. 3 UK entries have no map point yet and cannot be measured.

None within 50 km.

5 Grid-scale incidents at sites of a similar size

Sites between 0.1 and 0.4 MW, worldwide, newest first. Capacity is the site's, where the reporting gives it.

None in this range.

6 Lessons for a grid-scale site

The lessons written into the register's entries: every UK grid-scale incident first, then major grid-scale incidents elsewhere. No home battery lessons. Each is the register's reading of the published reporting, not a finding by an investigator.

1. BESS containers need verified automatic fire suppression that activates on detection, as the system here failed to actuate and allowed thermal runaway to continue. EIR-0638
2. A site monitored remotely must alert the local fire service as soon as its fire alarm actuates. Here the site was managed remotely by Orsted from Denmark, and that remote management did not alert the fire service when the alarm actuated. Orsted first contacted Fire Control at about 01:30, after the first crew had arrived at 00:57. EIR-0638
3. Site risk information must include BESS layout, chemistry and voltage so crews can plan defensive tactics before arrival, given the explosion and debris. EIR-0638
4. Grid connection cabinets at battery sites need routine thermal and electrical checks as well as the battery modules. EIR-0249
5. Operators should agree isolation steps with the network operator in advance so fire crews can act quickly. EIR-0249
6. Joint reviews with the network operator help separate grid faults from battery faults. EIR-0249
7. A short circuit in NMC lithium-ion cells can start a fire, so operators should fit detection systems able to isolate strings before thermal runaway spreads. EIR-0584
8. Battery management systems must be proven to detect abnormal cell voltage or temperature early, as the trigger for this short circuit was not stated. EIR-0584
9. Owners should publish cause findings after a BESS fire, as the owner did here, so other operators can check the same failure mode in their own fleets. EIR-0584
10. Lithium-ion battery container fires can spread between enclosures, so operators should verify separation distances and compartment barriers during design reviews. EIR-0058
11. Smoke from burning battery materials requires advance shelter advice for nearby residents at rural sites. EIR-0058

12. Unmanned hybrid sites need remote monitoring that identifies involved enclosures before crews arrive. EIR-0058
13. Containerised battery units must keep designed spacing during construction, as separation limited spread after a cell fault led to ignition. EIR-0109
14. Fire response plans and contacts must be agreed with local crews from the start of construction, as the site was evacuated and handed back after the fire. EIR-0109
15. Unenergised battery units remain a fire risk in the construction phase, so risk assessments must cover evacuation triggers and site handover. EIR-0109
16. Grid-scale storage in a single large building rather than separate containers requires review of total fire load and internal barriers to limit propagation between racks. EIR-0010
17. A pattern of repeated minor thermal events at a site should trigger a documented root cause review before adding further capacity. EIR-0010
18. Plan in advance for reignition during the days and weeks after the initial event, including continued monitoring and safe removal of damaged units. EIR-0010
19. Grid scale lithium ion battery fires can produce weeks of flare ups, so operators must plan for extended site security and monitoring after the initial event. EIR-0013
20. Cleanup of fire damaged lithium ion cells requires environmental monitoring and specialist disposal, so contracts and protocols should be ready before any incident. EIR-0013
21. Regulatory settlements after battery fires can impose months of reporting duties without fines, so emergency plans must allocate staff for ongoing compliance. EIR-0013
22. Co-located solar and battery sites need isolation plans that cover both electrical faults and thermal events together. EIR-0006
23. Evacuation plans for sites near schools and businesses must account for toxic smoke from lithium-ion events. EIR-0006
24. Water supply planning for co-located sites must cover sustained high volumes over multiple days. EIR-0006
25. NMC lithium-ion cells in a utility-scale BESS can produce flare-ups for days, so operators must plan for prolonged monitoring and exclusion zones after the first signs of thermal runaway. EIR-0001
26. A prior thermal event at the same BESS site raises the chance of repeat failure, so response plans must record and brief staff on that history. EIR-0001
27. NMC cells and high cell density increase propagation risk, so operators should verify that enclosure spacing and containment match the chosen chemistry in the safety case. EIR-0001
28. NOVEC 1230 fire-suppression gas combined with firefighting water at a BESS site can form PFPrA at 10,000 parts per billion, so operators should test suppression chemistry for persistent environmental byproducts before use. EIR-0643
29. Only 0.04 per cent of batteries burned at this modular containerised site, so insurers should verify that design limits fire spread compared with enclosed buildings. EIR-0643
30. Four water wells 2,500 feet from the plant were taken out of service after PFPrA detection, so operators must agree groundwater testing protocols with regulators in advance. EIR-0643
31. A lithium-ion battery at 95% state of charge releases large stored energy during fire, so operators should supply state of charge data to responders before any incident. EIR-0130
32. Opening a battery container after inert gas suppression can trigger thermal event and explosion, so

procedures must set safe stand-off distances before doors are opened. EIR-0130

33. Automatic fire suppression systems may fail to stop thermal runaway in lithium-ion containers once it starts, so operators should plan for remote isolation and long-duration response. EIR-0135
34. Critical data servers inside battery containers risk total data loss in a fire, so they should be placed in a separate enclosure. EIR-0135
35. Battery fires can last several days, so emergency plans must include sustained cooling and exclusion zones rather than short interventions. EIR-0135
36. A lithium-ion BESS fire may require robotic entry to assess gases before any person goes inside, so operators should arrange remote entry tools with the fire service in advance. EIR-0025
37. Sprinkler systems in battery storage buildings are designed for containment over many days, so plans must cover prolonged water supply, drainage and run-off control. EIR-0025
38. A prior explosion at a nearby battery site led to a defensive response here, so local fire services should embed earlier incident findings in pre-plans for similar facilities. EIR-0025
39. Liquid cooling system leaks in Megapack units can cause arcing in power electronics, so pressure test and inspect every circuit after installation before energisation. EIR-0012
40. SCADA mapping latency of around 24 hours during commissioning leaves new units unmonitored, so do not energise until full telemetry and alarms are verified active. EIR-0012

7 The NFCC guidance points consultees cite

Quoted word for word from NFCC, Grid scale energy storage system planning: Guidance for fire and rescue services (approved for publication in December 2025, replacing the first edition), checked on 8 October 2026. Many consultee responses still quote the first edition (Version 1.0, November 2022), so its figures are given too, marked as such.

Scope

> *"This guidance relates to battery energy storage systems (BESS) which are deployed in open air environments, with an energy capacity of one megawatt hour (MWh) or greater using lithium variant batteries."*
> Section 1, Scope, NFCC guidance (December 2025)

> *"Domestic BESS are outside the scope of this guidance."*
> Section 1, Scope, NFCC guidance (December 2025)

> *"As such, the fire and rescue service are not a statutory consultee in planning applications for BESS sites."*
> Section 4, Planning approval process, NFCC guidance (December 2025)

Spacing between units, and to buildings

> *"The emergency response plan should assume that the fire will not spread beyond the BESS container of origin."*
> Section 12, Spacing between BESS, NFCC guidance (December 2025)

> *"An initial minimum distance of 30m is proposed between BESS cabinets (or associated infrastructure such as transformers and switchgear) and occupied buildings, before considering any mitigation such as blast walls."*
> Section 12, Spacing between BESS, NFCC guidance (December 2025)

> *"A standard minimum spacing between units of 6 metres is suggested unless suitable design features can be introduced to reduce that spacing."*
> Access between BESS units and unit spacing, NFCC first edition (Version 1.0, November 2022)

Water for firefighting

> *"Therefore, an additional on-site water supply must be accessible to fire and rescue services in the event of an emergency."*
> Section 14, Water supplies, NFCC guidance (December 2025)

> *"Fire hydrants provided should achieve a flow rate of no less than 25L/sec at any hydrant on the site."*
> Section 14, Water supplies, NFCC guidance (December 2025)

> *"Where a flow of 25L/sec cannot be achieved, it would be prudent to provide an equivalent static supply of water on site that will provide for the same flow rate for a duration of 120 minutes. This equates to approximately 180,000L of water."*
> Section 14, Water supplies, NFCC guidance (December 2025)

> *"As a minimum, it is recommended that hydrant supplies for boundary cooling purposes should be located close to BESS containers (but considering safe access in the event of a fire) and should be capable of delivering no less than 1,900 litres per minute for at least 2 hours."*
> Water Supplies, NFCC first edition (Version 1.0, November 2022)

Detection, alerting and isolation

> *"An effective and appropriate method of early fault detection within the batteries should be in place, making it possible to immediately disconnect the affected battery/batteries remotely."*
> Section 8, Detection and monitoring, NFCC guidance (December 2025)

> *"How will the BESS and associated equipment be monitored, and what is the process for alerting the fire and rescue service?"*
> Section 6, questions for the developer (Detection and monitoring), NFCC guidance (December 2025)

> *"How the fire and rescue service will be alerted"*
> Section 16, Outline battery safety management plan, NFCC guidance (December 2025)

> *"Emergency shutoff or isolator locations"*
> Section 16, Outline battery safety management plan, NFCC guidance (December 2025)

Suppression and explosion control

> *"The suppression system, regardless of type, will have little effect on a thermal event within the battery cell."*
> Section 9, Suppression systems, NFCC guidance (December 2025)

> *"BESS containers should be fitted with explosion protection or deflagration venting appropriate to the hazard and battery technology deployed."*
> Section 10, Explosion control (deflagration protection), NFCC guidance (December 2025)

Access, neighbours and how long an incident lasts

> *"It is therefore preferable to have an alternative access point, taking account of the likely wind direction."*
> Section 11, Access (Site access), NFCC guidance (December 2025)

> *"The developer should produce a plan that identifies all sensitive receptors within a 1km radius of the site."*
> Site location, NFCC guidance (December 2025)

> *"The assessment should recognise that any incident may last several hours."*
> Site location, NFCC guidance (December 2025)

8 Questions to put to the applicant

Each question asks for information the guidance in section 7 says a battery site should have. It names where an application usually holds the answer, the passages it rests on, and the UK entries where the point came up. Asking for information does not say a scheme is unsafe; the same questions serve a council, a neighbour, or an applicant checking its own submission.

1. Spacing

What spacing does the layout show between battery units, and between the batteries, transformers and switchgear and the nearest occupied building? Does the emergency response plan assume a fire stays in the unit where it starts?

Where the answer usually is: The site layout plan and the outline battery safety management plan.
Rests on: Section 12, Spacing between BESS; Access between BESS units and unit spacing (first edition), quoted in section 7.
Where it came up in the UK: EIR-0058 (Fire in two battery containers at Cirencester Hybrid Solar Farm, Gloucestershire); EIR-0109 (Fire in single battery unit at Thurrock BESS under construction). Section 2 has the note on each.

2. Water

Where will water for firefighting come from: hydrants on the site and the flow they give, or a supply stored on the site, and for how long?

Where the answer usually is: The outline battery safety management plan, a water supply statement, or the fire and rescue service's comments.
Rests on: Section 14, Water supplies, quoted in section 7.
Where it came up in the UK: EIR-0109 (Fire in single battery unit at Thurrock BESS under construction). Section 2 has the note on each.

3. Detection and alerting

How will a fault inside a battery be detected, how will the fire and rescue service be alerted, and where are the emergency isolators?

Where the answer usually is: The outline battery safety management plan.
Rests on: Section 8, Detection and monitoring; Section 6, questions for the developer (Detection and monitoring); Section 16, Outline battery safety management plan, quoted in section 7.
Where it came up in the UK: EIR-0249 (Smoke and fire incident at Battery Box, Pinhoe Road, Exeter); EIR-0584 (Fire in a battery container at Rufford Colliery BESS, Rainworth; owner attributes it to a short circuit in NMC cells); EIR-0638 (Explosion and prolonged fire at Orsted battery storage site in Liverpool). Section 2 has the note on each.

4. Explosion control

What explosion protection or deflagration venting will the units have, and what is the fitted suppression system expected to do?

Where the answer usually is: The equipment specification or the outline battery safety management plan.
Rests on: Section 10, Explosion control (deflagration protection); Section 9, Suppression systems, quoted in section 7.
Where it came up in the UK: EIR-0638 (Explosion and prolonged fire at Orsted battery storage site in Liverpool). Section 2 has the note on each.

5. Neighbours and access

Which sensitive receptors within 1 km have been identified, is there a second way in for fire engines, and does the plan allow for an incident lasting several hours?

Where the answer usually is: The outline battery safety management plan, the emergency response plan and the transport or access statement.
Rests on: Site location; Section 11, Access (Site access), quoted in section 7.
Where it came up in the UK: EIR-0058 (Fire in two battery containers at Cirencester Hybrid Solar Farm, Gloucestershire); EIR-0638 (Explosion and prolonged fire at Orsted battery storage site in Liverpool). Section 2 has the note on each.

6. The fire and rescue service

Has the applicant engaged the local fire and rescue service, and has the planning authority had its comments?

Where the answer usually is: The planning file: consultation responses, or the applicant's statement of engagement.
Rests on: Section 4, Planning approval process, quoted in section 7.

7. Battery chemistry

Which battery chemistry is proposed?

Where the answer usually is: The design and access statement or the equipment specification.
Rests on: Section 7, Battery chemistry (quoting the 2024 Frazer-Nash report for DESNZ), quoted in section 7.
Where it came up in the UK: EIR-0584 (Fire in a battery container at Rufford Colliery BESS, Rainworth; owner attributes it to a short circuit in NMC cells). Section 2 has the note on each.

Conditions to ask for, if permission is granted

A consultee can ask the planning authority to attach conditions to a permission, whatever its view of the scheme. These follow the guidance in section 7. The planning authority decides which conditions to attach and

how they are worded.

1. Before construction starts, a battery safety management plan in line with the NFCC guidance, approved by the planning authority after consulting the fire and rescue service. (Section 16, Outline battery safety management plan; Section 4, Planning approval process)
2. Before the batteries are first energised, the firefighting water supply set out in that plan installed and working. (Section 14, Water supplies)
3. Before the site operates, an emergency response plan shared with the fire and rescue service, saying how it will be alerted and where the isolators are. (Section 6, questions for the developer (Detection and monitoring); Section 16, Outline battery safety management plan; Site location)
4. The site built to the approved layout, keeping the spacing shown between units and to occupied buildings. (Section 12, Spacing between BESS)

Making a response count

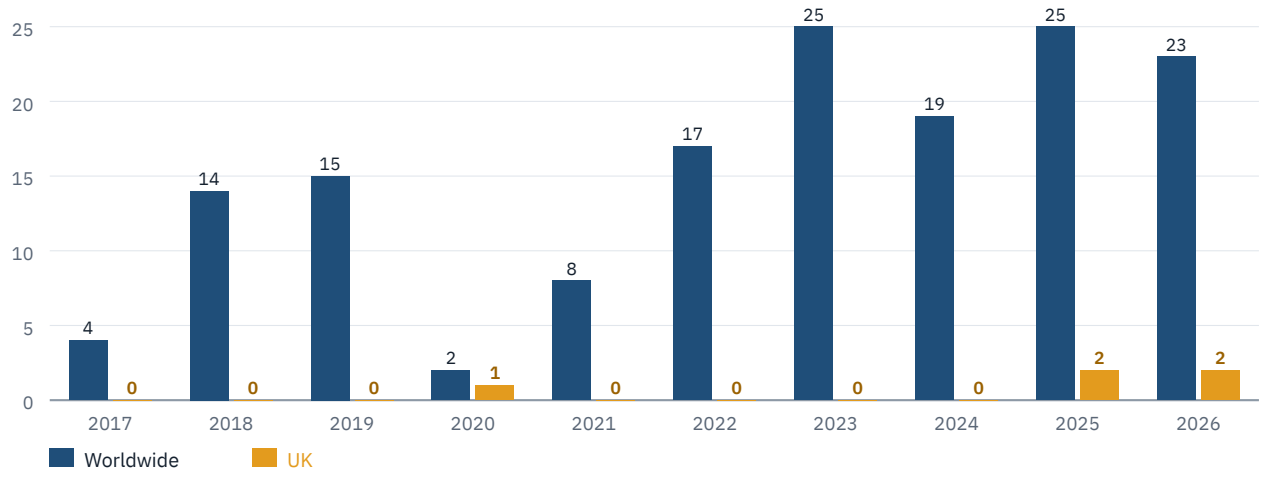
- Tie each point to a document in the application, a passage of guidance, or a recorded incident. A planning officer can weigh a specific, sourced point more easily than a general concern.
- Ask for information, or for conditions. A planning officer can act on both.
- Keep to matters a planning authority can weigh, such as safety, access and the effect on neighbours.
- Quote the guidance and the entries with their citations (section 11 has paragraphs ready to paste).

Information only. It is not legal, planning or fire safety advice.

9 Worldwide context

156 incidents at grid-scale battery energy storage sites in 18 countries; 136 involved fire or overheating and 17 are classed as major. 33 further entries are home, farm or business batteries, or not battery failures, and are not counted here.

Grid-scale incidents by year: worldwide and UK



Counts of grid-scale incidents in the register by the year they happened; 4 earlier entries are not shown. More recent years hold more entries partly because more is reported and found online. A rising count is not, by itself, a rising rate. The same figures are in the table below.

YEAR	WORLDWIDE	UK
2026	23	2
2025	25	2
2024	19	0
2023	25	0
2022	17	0
2021	8	0
2020	2	1
2019	15	0
2018	14	0
2017	4	0
Earlier	4	

STAGE OF LIFE	INCIDENTS	SHARE
Commissioning	15	10%
Normal operation	110	71%
Maintenance	1	1%
End-of-life	1	1%
Not stated	29	19%

More recent years hold more entries partly because more is reported and found online. A rising count is not, by itself, a rising rate.

10 Kept apart: other battery entries in the UK (9)

Home, farm and business batteries, concerns raised where nothing failed, and events at battery sites that were not battery failures. NFCC's grid-scale guidance does not cover home batteries ("Domestic BESS are outside the scope of this guidance."), so they are listed here and not in the tables above.

REFERENCE	YEAR	INCIDENT	COUNTRY	KIND OF SITE
EIR-1520	2026	Fire in home battery storage system connected to solar panels	United Kingdom	Home battery
EIR-0681	2026	Gas leak at Cockenzie battery storage site under construction [provisional]	United Kingdom	Not a battery failure
EIR-0462	2025	Mini battery storage system ignites garden shed fire in Wickford, Essex [provisional]	United Kingdom	Home battery
EIR-0459	2025	Domestic fire reported to have prompted a safety warning about solar battery storage [provisional]	United Kingdom	Home battery
EIR-1514	2024	Garage fire destroys solar panels in Southgate, with a battery storage fault suspected [provisional]	United Kingdom	Home battery
EIR-1400	2023	Solar panel and battery fire at a bungalow on Anglesey [provisional]	United Kingdom	Home battery
EIR-2173	2023	Solar battery smoke prompts fire crew response at Denton home	United Kingdom	Home battery
EIR-1537	2021	Garage fire from overheated solar batteries in South Woodham Ferrers [provisional]	United Kingdom	Home battery
EIR-0023	2018	Battery storage site commissioned without on site fire water provision, concern raised before any incident	United Kingdom	Concern, no incident

11 Using this pack

Paragraphs you can paste into a planning statement or a consultee response. They are neutral, use only figures from this pack, and each carries its citation. Please keep the citation with the text.

Incidents in the UK

The Energy Incident Register, a public record built from published reporting, lists 5 incidents at grid-scale battery energy storage sites in the UK as of 29 October 2026, 1 of them classed as major. The nearest to the site is EIR-0109 (Fire in single battery unit at Thurrock BESS under construction), about 95 km away in a straight line.

Source: Energy Incident Register, planning evidence pack EIR-PACK-D-HILLGROUNDS-ROAD-KEMPSTON-ENERGY-STORAGE, section 2, data as of 29 October 2026. Entry EIR-0109: https://energyincidentregister.com/incident/eir-0109/

Planning decisions nearby

The Renewable Energy Planning Database records 13 battery energy storage sites within 40 km of the site where an application was refused, withdrawn or taken to appeal. Their final outcomes are: 4 refused, 5 withdrawn, 2 granted on appeal, 2 granted. The nearest refused scheme is Vicarage Farm (North Northamptonshire, application NW/25/00405/FUL), about 20 km from the site.

Source: Department for Energy Security and Net Zero, Renewable Energy Planning Database (Open Government Licence v3.0), as grouped by site in Energy Incident Register planning evidence pack EIR-PACK-D-HILLGROUNDS-ROAD-KEMPSTON-ENERGY-STORAGE, section 3, data as of 29 October 2026.

Status of the fire service guidance

The National Fire Chiefs Council guidance for fire and rescue services on grid scale energy storage planning states: "As such, the fire and rescue service are not a statutory consultee in planning applications for BESS sites." It also states: "An effective and appropriate method of early fault detection within the batteries should be in place, making it possible to immediately disconnect the affected battery/batteries remotely."

Source: NFCC, Grid scale energy storage system planning: Guidance for fire and rescue services (approved for publication in December 2025, replacing the first edition), Section 4, Planning approval process and Section 8, Detection and monitoring. https://nfcc.org.uk/our-services/building-safety/grid-scale-energy-storage-system-planning-guidance-for-fire-and-rescue-services/

Worldwide context

Worldwide, the Energy Incident Register lists 156 incidents at grid-scale battery energy storage sites in 18 countries as of 29 October 2026. Of these, 136 involved fire or overheating and 17 are classed as major. The register counts published reports of incidents; the figures are not failure rates.

Source: Energy Incident Register, planning evidence pack EIR-PACK-D-HILLGROUNDS-ROAD-KEMPSTON-ENERGY-STORAGE, section 9, data as of 29 October 2026.

12 How this pack was made and checked

1. The register is built from published reporting: news, fire service statements, regulators and court records. Each entry lists its sources on its own page. Entries marked provisional rest on thinner sourcing and are rechecked.
2. Grid-scale or not: an entry is grid-scale unless its reporting describes a home, farm or business battery, or an event that was not a battery failure. The rule is the same for every pack.
3. Distances are measured from the site point (the planning record for Hillgrounds Road, Kempston - Energy Storage Facility) to each entry's map point, which is a town or a site, never an address.
4. Planning decisions come from the government's Renewable Energy Planning Database (Open Government Licence v3.0), with corrections where a council's own record shows a later decision.
5. **Desk review.** The EIR editorial desk checks each bought pack within 2 working days (Monday to Friday) of the order:
   a. The site point and planning authority match the planning record, or the details the buyer gave.
   b. Each UK incident is a separate event, not one fire written twice, and sits in the right table: grid-scale sites in the main table, home, farm and business batteries apart.
   c. Each UK grid-scale incident has a note, and every quoted passage matches the NFCC text at the link given.
   d. The three nearest planning decisions match the council's own planning record.
   e. The distances to the nearest incidents look right on a map.
   f. Nothing in the pack comes from a confidential submission or names a private person.
6. If anything needs changing, the desk makes a new version and emails the link. Every version is fixed and dated, and earlier versions stay available at the same link. The method is at energyincidentregister.com/pack-method.
7. Information only. It is not engineering, fire safety or legal advice. See the disclaimer.

How to cite: Energy Incident Register, planning evidence pack EIR-PACK-D-HILLGROUNDS-ROAD-KEMPSTON-ENERGY-STORAGE, data as of 29 October 2026, energyincidentregister.com.

A correction to any entry is free for anyone: corrections. Questions about this pack: editor@energyincidentregister.com.