



An
Coimisiún
Pleanála

Inspector's Report ABP-319518-24

Development	Battery Energy Storage Facility
Location	Dunnstown, Co. Kildare.
Planning Authority	Kildare County Council
Planning Authority Reg. Ref.	21608
Applicant(s)	Strategic Power Projects Limited.
Type of Application	Permission
Planning Authority Decision	Refuse
Type of Appeal	First & Third Party
Appellants	1. Strategic Power Projects Limited 2. Clementville Ltd
Observers	Listed in Section 7.3 of the report.
Date of Site Inspection	27 th May 2024 & 26 th May 2026
Inspectors	Karla McBride & Jim Egan

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1.0 Introduction

- 1.1. On 30th September 2022, An Bord Pleanála granted permission for planning application reference ABP-310841-21. The Board's decision was subject of judicial review (JR)¹.
- 1.2. By order of the High Court (2022 No. 1028 JR), perfected on the 8th March 2024, the Board's decision was quashed and remitted back to the Board for a fresh determination, with the Order stating that the remittal was to take effect from the point in time immediately following receipt of the last submission by the Board, dated 23rd August 2021.
- 1.3. Central to the court order was the finding that the Board had failed to engage in observations received with respect to water supplies for firefighting including a report by Fire Safety Consultant Dr Paul A. Christensen, which has been submitted with an observation to the applicant's first party appeal.
- 1.4. The previous file number (ABP-310841-21) has been replaced by the new file number, ABP-319518-24.
- 1.5. Following remittal, submissions / observations were invited from all relevant parties. The applicant's response included a revised layout to take account of new technology (in the form of a change from Lithium-ion to Lithium-iron batteries), and also to take account of a recently permitted house and stables to the east of the site. Supporting documentation included a Technical Report prepared by Fingleton White with respect to the Lithium-iron batteries. Supporting documentation including the Environmental Report was also updated to consider the 2023-2029 County Development Plan.
- 1.6. Having regard to the scale and nature of the amendments proposed and to the adoption of a new County Development Plan for the area, the applicant was requested to carry out new public notice, comprising site and newspaper notices.
- 1.7. Observations from third parties included a 'Lithium Iron Safety Letter' prepared by Dr Paul A. Christensen.

¹ Two Mile House Says No and Eleanor Wauchob v An Bord Pleanála

- 1.8. Considering the observations received by the Board including the various fire risk and safety reports, an expert Fire Safety report from AWN Consulting Ltd. was commissioned to consider the various submissions made post remittal.
- 1.9. Having regard to the Technical Note received from the expert Fire Safety Consultant, a Section 132 notice was issued requesting further information around the issues of fire risk, particularly the provision of firefighting water.
- 1.10. In response, the applicant carried out further amendments to the site layout plan to make provision for firefighting water and containment of spent firewater and also submitted a Fire Explosion Technical Note prepared by Fingleton White. Considering the nature of the amendments proposed, the applicant was requested to carry out further public notice, again comprising new site and newspaper notices.
- 1.11. Having regard to the nature of the applicant's response, including details around explosion modelling, AWN Consulting Ltd. was further engaged to examine the response and to advise accordingly. AWN Consulting Ltd. submitted a Technical Note to the Commission, dated 11th August 2026.
- 1.12. Following remittal, the case was assigned to Karla McBride, Senior Planning Inspector. Following Ms. McBride's retirement from An Bord Pleanála, I was the new Inspector assigned to the case. Prior to her retirement, Karla McBride completed this report up to and including Section 8.3 and I continued the report from that point on. I have reviewed all of the documentation, reports and submissions contained on the file, and my assessment has been made having regard to the information in its entirety.
- 1.13. An Bord Pleanála changed its name to An Coimisiún Pleanála on 18th June 2025. I use both names throughout this report depending on the specific reference and where each name is appropriate.

2.0 Site Location and Description

- 2.1. The site is located within a rural area at Dunnstown c. 6km to the southwest of Naas in and c. 3km to the east of Kilcullen in County Kildare. It is located to the east of the M7 and R412 and on the northwest side of the L6044 local road. There are several dwelling houses and agricultural buildings in the surrounding area. The Dunnstown

400kV substation is located to the immediate west of the site with access off the R412.

- 2.2. The lands are in agricultural use, the site boundaries are defined by trees and hedges and the lands are relatively flat. The site is located c. 3km to the north of the River Liffey, and c. 7km west of the Poulaphouca Reservoir SPA, and to the south of Harristown Common / Fen. The lands are not covered by any sensitive landscape designations although there may be features of archaeological and cultural heritage interest in the vicinity. Harristown House and Demesne are located to the south of the site.

3.0 **Proposed Development**

- 3.1. Construction of an enclosed battery energy storage system compound on a c.4.089ha site, comprising:

- 76 x battery storage units (each with associated containerised step-up transformer)
- 1 x containerised control room & 1 x containerised switch room
- 1 x containerised switchgear unit & CCTV cameras
- New site entrance off the L6044 and site access road
- Site access road extension to a proposed substation site (SID)
- All associated ancillary development works
- Operational lifespan of 35 years.
- 10-year permission requested.

Accompanying documents:

- AA Screening Report
- Environmental Report: -
 - EIA Screening
 - Landscape Plan
 - Biodiversity Management Plan

- Landscape & Visual Impact
- Cultural Heritage
- Traffic Survey
- Preliminary CEMP

4.0 Planning Authority Decision

4.1. Decision

Planning permission was refused for 3 no. reasons:

1. Premature pending a decision on the proposed adjacent SID supporting infrastructure (220kV substation).
2. Fire safety, lack of hard standing access routes for firefighting, inadequate separation distances between units & lack of a water supply; failure to address Fire Officers concerns in submitted documentation; and serious danger to the environment, injury to residential amenity & undesirable precedent.
3. Insufficient on-site wastewater treatment details, contrary to EPA Code of Practice as per Policy WW11; inadequate assessment of tonal & vibration noise, contrary to Policy PC7 (CDP 2017-2023) in relation to pollution control; and prejudicial to human health, injury to amenity & property devaluation.

4.2. Planning Authority Reports

4.2.1. Planning Reports

The Planning Officer recommended that planning permission be refused for 3 x reasons (refer above).

4.2.2. Other Technical Reports

Fire Officer: **Recommend refusal** as there are multiple fire issues that could prejudice public safety: -

- No hard standing access routes for fire vehicles.
- Inadequate separation distances between units.

- No Failure Mode analysis of various scenarios.
- No hazard analysis / risk assessment for fire and / or explosions.
- No consequence or dispersal models to indicate the impact of a fire or explosion on community.
- Unacceptable lack of water supplies: -
 - Fire may occur in other buildings.
 - Gaseous suppression systems don't have the ability to cool a fully involved battery below its auto-ignition temperature, there is a risk of explosion & a water suppression system should have been considered.
 - Copious water will be required to cool adjacent units if one is in thermal runaway.
- No details of cooling & ventilation systems.
- The referenced documents are not relevant to this type of development.
- No reference to NFPA 855 2020 which contains minimum requirements for mitigating hazards in Energy Storage Systems.
- Anomalies in application & AA Screening drawings which show the unit doors in different positions.

Environment:

Request FI in relation to: -

1. In the event of a chemical leak provide design details (incl. impermeable bunding systems) within which all battery storage units & chemical storage containers shall be sited (110% storage unit capacity).
2. Amend site layout plans to include all proposed staff welfare facilities to cater for waste & wastewater as per current EPA & HSA Regs & Codes of Practice.

Transportation: No objections subject to conditions.
Water Services: No objections subject to conditions.
Heritage Officer: No objections subject to conditions.
Area Engineer: No report.

4.3. Prescribed Bodies

HSE:

1. Incorrect recording of ER as EIAR & no formal EIAR Screening undertaken; inadequate public consultations & unsubstantiated conclusion that there are no community objections, when there are many; generally satisfied with Construction Management Mitigation; no objections subject to conditions (incl. no direct emissions to surface or ground water of any wastewater from the welfare facilities and drinking water should meet certified requirements).
2. Note the risk of fire (and human health) related to the use of Lithium-ion batteries for energy storage; references an explosion at a 2.16 MWh lithium-ion battery site in Surprise, Arizona and associated report which contains several recommendations (incl. remote gas monitoring, robust communications systems, emergency operational plan in conjunction with local fire service, signage that identifies potential hazards, incorporate adequate explosion prevention protection, & build in accordance to current safety standards); no mention in ER of remote gas detection as per report; no reference to review of recent failures and/or fires in similar installations in ER; note that the fire suppression systems will not use water & that there would therefore be no run off that could impact on ground or surface water quality.
3. Note no significant increase in hard standing areas with no resultant increase in run-off into surrounding water

bodies; use of SuDS for surface water drainage; & bund at the transformer unit to protect groundwater.

4. Concur that the project area is not a quiet area as per the EPA Guidance NG4; approves noise assessment methodology; and agrees that there will be no significant operational noise impacts.

5. Satisfied that there is adequate protection of Public Health from the proposed methodologies & mitigations.

6. Satisfied that 3rd party concerns have been adequately considered in the ER & mitigation measures; and no comment in relation to equine industry & visual impacts.

Conclusion: No objections subject to conditions. The PA should be satisfied that the applicant has reviewed the causes of any recently reported catastrophic events with regard to the technology & is implementing the most up to date good practice in managing the fire & failure risks. This should be incorporated into the Emergency Management Plan for the proposed development

DHLG&H:

No objection subject to archaeological monitoring.

Irish Water:

No objections subject to standard conditions.

An Taisce:

Concerns raised about fire risk, safety & emergency procedures; provide details of overall energy storage capacity (MWh); facility should be energy efficient so as not to dilute gains from renewables; and update Decommissioning Report to include safe battery disposal.

4.4. Third Party Observations

Some 172 letters received (incl. several from local groups & equine businesses) which raised the following collective concerns: -

- Inappropriate location for large scale lithium-ion storage facility.

- Industrial scale of development in rural area.
- Fire safety risks with potential catastrophic consequences (incl. thermal runaway and gas & toxic leaks).
- Inadequate capacity of Fire Service to deal with fires, no on-site water supply & no Evacuation Plan.
- Ground & surface water contamination (River Liffey & Curragh Aquifer).
- Interference with hydrological regime & pluvial flood risk.
- Impact on equine industry (incl. reputational damage, job losses & impact in tourism), and contrary to Dev. Plan Equine industry policy.
- Residential amenity impacts (disturbance, visual, noise, traffic & property).
- Community & recreational impacts (Camphill, sports pitches & quality of life).
- Noise impacts (incl. on human health, wildlife & equine industry).
- Traffic impacts, capacity constraints during construction & road safety.
- Environmental impacts (incl. biodiversity, protected species, loss of hedgerows, ecological food chains & proximity to Harristown Common).
- Cultural heritage impacts (incl. archaeology & protected structures).
- Visual impacts (incl. River Liffey) & contrary to Dev. Plan Landscape policy.
- Procedural & validation issues (public notices, availability of documents, inadequate public consultation).
- Premature pending consideration of proposed substation, project splitting & inadequate cumulative assessment.
- Lack of EU & National policy & premature pending national strategy.
- Inadequate environmental and traffic surveys & reports and NIS required.
- Miscellaneous (non-compliant with Waste Directives, lack of expertise, no decommissioning proposals, bond required, little job creation, risk of vandalism & cyber-attacks, doesn't produce green energy, high carbon footprint & possible SEVESO / COMAH project).

- One letter of support was received.

5.0 Planning History

Cases relevant to the subject site

ABP-310841-21: refers to a 2022 grant of a 10-year permission to Strategic Power Projects Limited for the construction of enclosed battery energy storage system. In March 2024 the Board's decision was quashed by the High Court and remitted back to An Bord Pleanála for a fresh determination, and it forms the basis for the current case.

ABP-310033-21: Pre-application consultation with Strategic Power Projects Limited for a 220kV substation and grid connection at existing Dunnstown 400kV substation. The Board decided that it constituted SID.

ABP-314320-22: Permission granted to Strategic Power Projects Limited for a solar farm on a c.129ha site at Swordlestown c. 5km northeast of the subject site. Currently subject to Judicial Review (H.JR.2024.0000431). Grid connection for same linking through the BESS site was subject to referral ref. ACP-323792-25, see below.

ACP-323792-25: Referral – the Commission determined that the excavation of trenches along public road, roadside margins and through private land and the laying of a 33KV underground cable over a c. 4.7km route, is development and is not exempted development. The route of the grid connection was shown to align along the northeastern edge of the BESS site. Applicant for the declaration was Strategic Power Projects Limited.

Land c. 1km to the south

ABP-318785-24: Permission granted for a solar farm on 6 x land parcels in the surrounding area (c. 246ha), following 2 x Third-Party appeals.

ABP-319252-24: Permission granted for a 220kV substation and grid connection adjacent to proposed development and Dunnstown 400kV substation (310033).

Land to the east / northeast

ACP-322016-25: Relates to a first party appeal against a refusal for a solar farm on a 128ha site in the townlands of Flemington South (Tonaphuca), Donode Big, Sillagh and Swordlestown South. No decision issued at the time of discharging this report.

Land adjoining to the northeast

P.A. Ref. 211506: Permission granted to Peter Dillon on 17/06/2022 for a detached bungalow, on site effluent treatment system & percolation area, surface water to soakaways, stable block comprising of 3 no. stables, barn/fodder store structure, recessed entrance and all associated site work. During a site visit, I observed that construction of the house had not yet commenced.

6.0 Policy Context

6.1. National Energy Policy

Climate Action Plan, 2025:

This Plan seeks to tackle climate breakdown, and it commits Ireland to a legally binding target of net-zero greenhouse gas emissions by 2050, and to reduce overall greenhouse gas emissions by 51% (75% for the electricity sector) and to meet up to 80% of electricity demand from renewables by 2030. The CAP aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022. CAP 2025 builds upon CAP 2024 by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings and it should be read in conjunction with CAP 2024. The Plan identifies the requirement for in the region of 25GW (incl. c.8GW from solar) of renewable generation capacity by 2030, and that the proposed pathway to emissions abatement includes a massive and rapid build-out of renewable generation capacity (wind & solar power generation technologies).

Climate Action and Low Carbon Development (Amendment) Act, 2021:

This Act establishes a framework to develop the transition towards a low carbon economy. It commits Ireland to the objective of becoming a carbon-neutral economy by 2050, reducing emissions by 51% by the end of the decade. Section

17 amends the principal act such that Section 15(1) requires consistency with the most recent approved climate action plan, national long term climate action strategy & national adaptation framework and approved sectoral adaptation plans.

National Planning Framework, First Revision, April 2025: seeks to shape future growth & development up to 2040. It aims to harness renewable energy potential, achieve a transition to a competitive, low carbon, climate-resilient & environmentally sustainable economy, and promote new energy systems & transmission grids based on renewables-focused generation systems (incl. solar energy).

National Energy Security Framework, 2022, addresses Ireland's energy security needs in the context of the war in Ukraine. It coordinates energy security work across the electricity, gas & oil sectors, and takes account of the need to decarbonise society & the economy, and of CAP targets to reduce emissions.

National Energy & Climate Action Plan 2021-2030: outlines Ireland's energy and climate policies in detail for the period from 2021 to 2030 and looks onwards to 2050. Under dimension Energy Security, the key objective is maintaining security of our energy system in the most cost-effective manner. This includes efforts to increase indigenous renewable sources in the energy mix (wind, solar & bioenergy).

6.2. **Other Relevant Policy**

Planning System and Flood Risk Management, 2009: seek to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere. It advocates a Sequential Approach and a Justification Test.

National Biodiversity Action Plan, 2023-2030: Ireland's 4th NBAP sets the biodiversity agenda for the period 2023 – 2030 and lists five Objectives which seek to promote biodiversity.

Waste Directive (2018/851/EC): This directive sets out the legal framework for waste management in the EU for the collection, transport, recovery and disposal of waste.

National Fire Chiefs Council (NFCC) Guidance for Grid Scale Battery Energy Storage Systems (BESS) – Fire and Rescue Services’, updated December 2025 (UK)

6.3. **Regional Policy**

Eastern & Midland Regional Spatial & Economic Strategy 2019-2031

The identified Regional Strategic Outcomes (RSOs) include:

9. Support the Transition to Low Carbon and Clean Energy.

Pursue climate mitigation in line with global and national targets and harness the potential for a more distributed renewables-focussed energy system to support the transition to a low carbon economy by 2050. (NSO 8 & 9).

Key Growth Enablers for the region include supporting rural areas by harnessing natural resources to develop renewables, recreation and tourism opportunities.

RPO 4.84 supports the rural economy and initiatives in relation to diversification, agri business, rural tourism and renewable energy so as to sustain the employment opportunities in rural areas.

7.9 Climate Change

NSO 8 is dedicated to achieving transition to a Low Carbon and Climate Resilient Society. The Strategy supports an increase in the amount of new renewable energy sources in the Region. This includes the use of wind energy, biomass, and solar photovoltaics and solar thermal, both on buildings and at a larger scale on appropriate sites in accordance with National policy and the Regional Policy Objectives outlined in this Strategy.

6.4. **Kildare County Development Plan 2023-2029**

Chapter 7: Energy and Communications:

EC P2: Promote renewable energy generation & associated grid infrastructure at appropriate locations to meet national objectives toward a net zero economy.

EC O2: Adopt an informed & positive approach to renewable energy proposals, having regard to the proper planning & sustainable development of the area, including community, environmental & landscape impacts and impacts on heritage.

EC O3: Support initiatives for limiting greenhouse gas emissions through energy efficiency and development of renewable energy sources which make use of the natural resources in an environmentally and socially acceptable manner.

EC P5: Promote the development of solar energy infrastructure.

EC O17 & O21: support solar energy development in appropriate locations.

EC O64: Support and safeguard the efficient and reliable supply of electricity to all homes and businesses in County Kildare.

EC O65: Support the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants* , Synchronous Condenser plants, and associated dispatchable power plants associated with high energy users, to facilitate planned growth and transmission/distribution of a renewable energy focused generation, at appropriate locations and in consultation with relevant stakeholders, where they are adjacent and/or proximate to the grid network.

* Footnote to Objective EC O65: Proposals for Battery Energy Storage Systems and Synchronous Condenser plants shall be subject to landscape, residential, amenity, human health, and environmental considerations. Such projects shall be subject to AA screening and where applicable, Stage 2 AA. The developments will have regard for protected species and provide mitigation and monitoring where applicable.

EC O66: Facilitate the delivery of necessary integration of transmission network requirements to allow linkages of renewable energy proposals to the electricity transmission grid in a sustainable and timely manner.

Chapter 9 Our Rural Economy Policy

RD P1: supports and promotes rural enterprises and appropriate expansion and diversification, including sustainable agriculture and renewable energy, at suitable locations, where they contribute to a low carbon and resilient economy.

RD O7: Supports the development of renewable energy production.

RD P4: supports & encourages continued development of the bloodstock & equine industry, seek to ensure appropriate environmental conditions for equine operations.

RD O15: encourages the expansion of the bloodstock industry by appropriately protecting the environment and amenity value of rural areas from encroachment by urban sprawl and incompatible development.

Chapter 11 Built and Cultural Heritage

AH P2 & AH P6: seek to protect & enhance archaeological sites, monuments and to protect, conserve and manage archaeological & architectural heritage.

AH O51: requires that applications consider landscape impacts & demonstrate that development has been designed to take account of landscape heritage resource.

Chapter 12 Biodiversity & Green Infrastructure

BI P1: seeks to protect & enhance of biodiversity and landscape features.

BI O1: seeks the preparation of Ecological Impact Assessments.

BI O2-7: seek to protect & enhance biodiversity (incl. green corridors, implementation of national biodiversity initiatives, & no net loss of biodiversity).

BI P2: contribute to maintaining or restoring the conservation status of all sites designated for nature conservation.

BI O9: avoid development that would adversely affect the integrity of any Natura site.

BI O10: requires AA Screening.

BI P4: seeks to protect plants, animals & bird species which are protected by law.

BI P5: identify & conserve locally important biodiversity sites.

BI P6: recognise the important contribution trees and hedgerows make to the county biodiversity resource climate mitigation, resilience and adaptation.

BI O26: seeks to prevent the removal of hedgerows.

BI O27: require the retention & appropriate management of hedgerows.

BI P7: recognise & promote inland waters, protect rivers, streams & watercourses.

BI O58: seeks to require the preparation of an Invasive Species Management Plan.

Chapter 13 Landscape, Recreation and Amenity

Eastern Transition LCA is of Medium sensitivity and has capacity to accommodate a range of uses without significant adverse effects on the appearance or character of the landscape. Table 13.3 identifies solar energy as being of high compatibility, although it doesn't reference battery storage facilities.

LR P1: seeks to protect & enhance the landscape.

LR O1: seeks to ensure the consideration of landscape sensitivity.

LR O2: requires a Landscape/Visual IA for Sensitive Landscapes.

LR O4: refers to local landscape features.

LR O10: recognises that the lowlands and transitional areas are made up of a variety of working landscapes, which are critical resources for sustaining the economic and social well-being of the county and include areas which are worthy of protection.

LR O14: seeks to maintain the visual integrity of Eastern Transition Lands which have retained an upland character.

LR O15: seeks to facilitate appropriate development in the Eastern Transition Lands, that respects the scale, character & sensitivities of the local landscape.

Chapter 6: Infrastructure & Environmental Services

IN O4 & O13: ensure that adequate water services will be available to service development prior to the granting of planning permission.

IN O18: discourage the provision of single house septic tanks & treatment plants to minimise the risk of groundwater pollution. Full compliance with the prevailing regulations and standards required (incl. EPA's Code of Practice for Wastewater Treatment & Disposal Systems Serving Single Houses (pe≤10)) will be required.

IN O66: Enforce and comply with ECs (Environmental Noise) Regulations 2018 by:

- Regulating and controlling activities likely to give rise to excessive noise (other than those activities which require regulation by the EPA)
- Requiring new developments and / or activities likely to give rise to excessive noise to install noise mitigation measures and monitors.

6.5. Natural Heritage Designations

The nearest European Sites are the Pollardstown Fen SAC (Site Code: 000396) c. 9.9km to the west, Mouds Bog SAC (Site Code: 002331) c. 9.3km to the northwest, and Poulaphouca Reservoir SPA (Site Code: 004063) c. 7.6km to the southeast.

The nearest Proposed Natural Heritage Area (pNHA) are the Liffey Valley Meander Belt pNHA (Site Code: 000393) approx. 3.8km to the southeast, Grand Canal pNHA (Site Code: 002104) approx. 4.1km to the northwest, Liffey Bank Above Athgarvan pNHA (Site Code: 001396) approx. 5.7km to the west, Curragh (Kildare) pNHA (Site Code: 000392) approx. 7.3km to the southwest, Pollardstown Fen pNHA (Site Code: 000396) approx. 10.1km to the west and the Mouds Bog pNHA (Site Code: 000395) approx. 9.4km to the northwest.

7.0 The Appeal

7.1. Grounds of First Party Appeal (Strategic Power Ltd.)

The applicant appealed against the planning authority's refusal on the following grounds, and the appeal submission was accompanied by several documents:

- **Accompanying documents:**
 - Grounds of Appeal Report
 - Fire Safety Report (EGAN)
 - Irish Water Pre-Connection Agreement
 - Visual Impact Assessment
 - Fire tender Autotrack Plan (Drg. No. P817)
 - List of Stud Farms (with separation distances)
- **Refusal Reason 1** - Battery Energy Storage Systems (BESS) are a complementary element in the electricity grid infrastructure that that allows greater renewable energy storage which facilitates meeting renewable energy targets and the decarbonisation of the energy system. There is no contradiction between the BESS and the substation/grid connection being considered

separately by the Board and the planning authority in the event that the substation/grid connection is determined to be a SID.

- **Refusal Reason 2** - The applicant engaged a Fire Safety consultant and liaised with several local authority sections. Only the Chief Fire Officer recommended refusal. The issues raised by the CFO could have been sorted out in a meeting or by a request for additional information. Fire risk is dealt with under a separate code. The matters raised by the CFO are not fundamental planning objections.
- **Refusal Reason 3** - In relation to wastewater treatment the application was accompanied by an Environmental Report which makes the point that foul water arising from staff facilities will be treated appropriately off-site by a licenced and monitored waste contractor. Expert advice also concludes that there would be no adverse impacts from noise or vibration.
- KCC validated the application. Availability of documents is a matter for KCC. Adequate public consultation was undertaken. Project is not premature pending a decision on the proposed sub-station which is subject to a different consent process (SID) and project splitting is not an issue. The various projects do not require EIA or AA & cumulative impacts will not arise.
- The NPF recognise that rural areas have a significant role to play in meeting future energy needs and BESS are an integral part of the renewable energy infrastructure. The site is within a Class 2 Medium Sensitivity Landscape area and the planning authority's reports conclude that there would be no unacceptable visual impacts. The planning authority did not conclude that the proposed development would adversely affect the equine industry in the area.
- The PA's comments in relation to noise from the proposed development are not based on KDP standards or any other accepted standards. The applicant used an appropriate noise measurement period of 60 minutes daytime and 15 minutes night-time. Vibration was discounted as an issue as, amongst other factors, vibration is designed out of storage batteries. Tonal noise output is expected to be well below ambient noise levels.

- EIA & AA were screened out; an environmental report & AA screening report were submitted; no liquids or other contaminants will be stored in the battery storage facility with no risk of ground/surface water pollution.
- No adverse impacts on biodiversity or Harristown Common anticipated.
- The application site is in Eastern Transition Landscape Area identified in the KCDDP & the PA has no concerns in relation to negative impact on the landscape; small section of roadside hedge will be lost at the entrance.
- PA did not consider that the project would negatively impact on the equine industry or the many stud farms in the area, the closest of which is c.2km.
- Transport Dept. did not have any road adequacy concerns.
- Fire safety issues are dealt with in the accompanying Fire Safety Assessment report. Project will be the subject of a Fire Safety Certificate process.
- ABP has granted permission for several similar energy storage projects.
- Low risk of water contamination as no liquids or other contaminants will be stored on site & bunding under the containers will protect groundwater from any potential leakages.
- Site is not in area prone to flooding & project will not contribute to flooding.
- Battery storage facilities are not an 'establishments' for the purposes of the Seveso Directive & therefore the COMAH Regulations do not apply.
- No evidence of property devaluation submitted. Project is c.700m from the GAA grounds and are not visible from it. CCTV cameras are proposed. Risk of cyber-attack is not a planning matter.
- Project is an integral element of renewable energy infrastructure. It is not a waste generating development and compliance with the Waste Directive is not required. The lithium batteries are recoverable at the end of their life.

7.2. **Grounds of Third-Party Appeal (Clementville Ltd.)**

A third-party appeal was received against the decision to refuse permission. The appeal acknowledged the planning authority's reasons for refusal however submitted

that there are substantial and significant additional reasons for refusal particularly relating to the impact of the development on the equine industry. Full grounds of appeal summarised as follows:

- Inadequate public notices. Failure to describe the nature & extent of the entire project (incl. substation). No details of battery storage floor area, battery types & chemical composition, or nature of grid connection. No details of or justification for the scale or purpose of the project, or the energy infrastructure that it would be connected to. Project splitting and EIA & AA required.
- Project is in the centre of the Kildare equine industry & close to Castlemartin Demesne (PS). Significant reputational damage and negative impacts on the wider equine industry locally & nationally. Vision for the Castlemartin stud is that it be based in a pristine environment.
- Material contravention of KCDP policies/objectives to promote the equine industry, protect it from incompatible development & risk of hazard.
- Inadequate consultations with and consideration of neighbouring residential, community and equine uses.
- Conflicts with EU Waste Directive in that the disposal of spent batteries has not been adequately considered. Proposed technology is unproven & subject to major accidents & release of toxic chemicals into the environment.
- Non-compliance with the requirements of the Habitats Directive & AA screening report is flawed.
- Fails to comply with the EIA Directive and comprises project splitting since it is part of a wider energy project which is not considered in the application.
- Close to the River Liffey & likelihood of an aquatic connection. Potential to undermine the WFD in preventing the deterioration of water quality status.
- Gives rise to unreasonable risk of fire hazard in a sensitive location close to residential & community areas, and equine industries.
- The environmental fire risks of BESS are not widely understood, and identification & assessment of fire risk should not take place post consent. Lithium-ion batteries are liable to catching fire because of Thermal Runway

- Overheating can lead to leakage & the release of sulphuric acid when it comes into contact with water. Difficult to control BESS fires, the company is relatively inexperienced & specialist construction techniques are vital to mitigate hazard incidents. Several world-wide examples of fires.
- Inadequate assessment of access requirements for emergency services and no evidence that the proposed fire suppressant measures will work.

7.3. Observers

Observations were received from the following: -

Local residents	Groups & businesses
Cllr Tracey O 'Dwyer	Philip Morrison Gale (Camphill Communities)
Michael Goeden & Caroline Lamb	Barry Mahon (Juddmonte Farms)
Hugh Dillon & Eleanor Wauchob	Anthony Byrne (Boleybeg Stud)
Caroline Treacy	Kildare South Fine Gael
Frank MacGabhann	Two Mile House GAA Club
Jennifer Cullen & Others	Two Mile House Says No
John O'Loughlin	Kildare Green Party

The Observations were accompanied by several documents, including: -

- Lithium Safety report by Dr Paul A. Christensen (summarised below)
- Traffic Impact Assessment report by Aiden Farrell (summarised below)
- Veterinary Medicine Equine report by Dr Celia Marr (summarised below)

The Observer's **collective concerns** are summarised as follows (except for John O'Loughlin):

- Absence of policy guidance & regulatory framework.
- Project splitting (separate application for a 220kV substation).
- Not a renewable energy project as it does not support any renewable energy infrastructure; proximity to EirGrid Node is not a critical requirement for BESS; and no consideration of carbon footprint.

- Environmental impacts have not been properly assessed & inadequate mitigation measures (incl. reliance on design & layout).
- Inadequate assessment of traffic impacts (incl. capacity & condition of local road network to accommodate construction machinery); inadequate site access for emergency vehicles; walkers will be endangered: & access to the GAA club will be compromised and request a TMP with no traffic after 5pm in the interests of child safety.
- Unacceptable visually intrusion in an attractive rural area.
- Negative impacts on human health, potential effects not fully considered, construction phase disturbance & operational noise pollution.
- Risk of fire, release of toxins & explosions in a residential area (several fires reported in international media), and no proper emergency & evacuation plan.
- Assessment of fire risk is a planning matter, particularly in relation to fire service access to project & water supplies for firefighting and control of toxic wastewater (contaminated fire-fighting water could adversely affect the Curragh Aquifer, River Liffey & water catchment for public water supply).
- Note that COMAH Regulations do not currently apply to BESS facilities in Ireland, power expert opinion submits that facilities over 25MWh should be, and risk of a major accident not considered in absence of an EIAR.
- Adverse impacts on local wildlife (incl. Marsh Fritillary butterfly & Lapwing) & Harristown Common wetlands inadequate AA Screening & no NIS submitted.
- Adverse impacts on local farms (incl. livestock) & property values.
- Project would negatively impact the equine industry (incl. Giltown & Castlemartin stud farms [protected in KCDP]), in terms of animal welfare, reputation & employment).
- Lack of expertise to manage this large-scale project; remote monitoring linked to risk of cyber-attack; and independent monitoring required.
- Inadequate consideration of decommissioning impacts including the disposal of lithium-ion batteries (c.10-year battery lifespan v 35-year permission).

- Inadequate community consultation & lack of information on risk profile.
- Camphill Communities has not expressed support for the project as claimed in the application; they currently use an access off the L6044 in the vicinity of the proposed a new entrance; safety of residents who use this road for recreation/walking will be compromised; & increased traffic may impede access for health care related vehicles to vulnerable residents.

The Lithium Safety report by Dr Paul A. Christensen is summarised below:

- Applicants appear to be unaware of essential details of Li-ion technology, and thermal runaway & its consequences (incl. vapor clouds & emergency response), and the proposed fire safety systems are not fit for purpose.
- Containers will hold 2 x 2kg CO₂ & 9kg dry powder fire extinguishers, which should not be used by untrained personnel (toxic gas & vapour clouds).
- No effect on a fire or cells in thermal runaway, CO₂ has no cooling effect & use of dry powder suggests confusion with lithium metal fires.
- If operated correctly & within design limits there should be no lithium metal present in the cells, and water is widely recognised as the only extinguishment recommended for Li-ion for battery fires.
- Exclusion of water means that the need for easy access to the site & movement within the site by emergency fire services has been neglected, and fire hydrants are essential.
- Shutting of the power will not prevent further increases in battery cell temperature; once a cell is in thermal runaway, chemical processes replace the electrochemical processes & breaking the circuit can only stop the latter.
- Query the quality of staff training & efficacy of any Emergency Response Plan formulated on flawed information.
- Unlikely that sufficient numbers of adequately trained fire fighters are available.

The Traffic Impact Assessment report by Aiden Farrell is summarised below:

- Inadequate Traffic Impact Assessment undertaken.
- Inaccurate construction traffic data for Phase 1 & 2.

- No breakdown of vehicle classes & volumes.
- Lack of consideration of vulnerable road users.
- No assessment of impacts on local road network or mitigation measures.
- No swept path analysis of larger vehicles or consideration of abnormal loads.
- Traffic generation, reduce road capacity & traffic safety.
- Inadequate access for emergency vehicles, substandard road width & lack of internal circulation space.

The Veterinary Medicine Equine report by Dr Celia Marr is summarised below:

- Release of Hydrogen fluoride (HF) from a Li-ion fire is a severe risk to horses.
- Horses have a higher lung surface area than humans & are vulnerable to the pathological effects of inhalation of toxins, which can be life-threatening.
- Particulate matter of any chemical origin can negatively impact airway health.
- More prone to developing inflammatory Airway Disease & other illnesses that affect respiratory function which are performance limiting.
- Kildare horses are kept at pasture and are at risk of disturbance (fire, smoke & fire brigade services) and musculoskeletal injury when panicked.
- Kildare is a major international producer of thoroughbred racehorses & project has major implications for surrounding stud farms.
- Australian fire (Geelong/Victoria) resulted in a vapor cloud with a 7km impact.
- Potential for a hazardous incident so close to over 20 x top breeding establishments will lead to a loss of confidence in keeping horse nearby.

An ***Observation*** was also received from ***John O'Loughlin***: -

- Lives nearby & notes the seriousness of climate emergency.
- Project is necessary for the storage renewable energy.
- Opposition to the project has been unnecessarily encouraged in the area.
- There is only a tiny fire risk arising from this project.

7.4. Response to appeals

First Party response to Third Party

- Public notices adequately provide a brief description of the project; substation & grid connection are subject to separate applications; precise details of battery capacity depend on procurement.
- All principal dimensions & separation distances are provided in the drawings.
- Project splitting is not an issue as the BESS is not a Schedule 5 EIA project & Environmental report & AA Screening had regard to cumulative impacts.
- Although BESS has potential to serve future renewable energy projects it is a stand-alone project to support EirGrid's emergency response strategy to avoid power outages.
- AA Screening had regard to totality of the project (incl. substation & grid connection).
- Very low risk of an incident on the site which will be contained within the containers as per the Fire Safety report.
- AA not required, not located within or adjacent to a European site, but within 15km of 7 x sites (c.9-14km) which do not have direct connection to the site.
- No threat to achievement of WFD Good Status in the River Liffey which is located c. 2.3km (overland) & c.4.5km (aquatic) from the site.
- Battery storage units will be bunded, transformers will contain bio-degradable oils & any fires will be managed without water, minimal earthworks (CEMP).
- Comprehensive Fire Safety report submitted with the appeal which describes the Fire Safety Certification procedure & addresses the CFO's concerns.
- Environmental Report adequately details the sensitive receptors in the vicinity including stud farms (12 within 5km, varying sizes & nearest is c.2km away).
- No evidence submitted that project will undermine the economic viability of stud farms or cause reputational damage, and 3rd Party's stud farm is excess to 5km from the site which is located beside an existing 220kV substation.

- Public consultations included meetings with local residents, businesses & Camphill Community before the application was lodged, and radio interviews & media articles after submission.
- Several other large scale energy storage facilities have been permitted including c.169 containers outside Shannonbridge village (21/295).
- No breeding stud farms within 2km of site & water is not required as a fire safety precaution with no potential for ground or surface water pollution.
- Fire Safety report confirms that any potential incident will be contained within the site and that an Evacuation Plan is not required.
- Strategic Power Projects Ltd. is an established renewable energy company which has partnered with Gresham House Plc. which has a proven track record in developing & operating renewable energy & BESS assets, and it is the largest owner & operator of battery storage projects in the UK.
- Decommissioning details provided in the application & appeal documents.
- Project will not materially contravene Policy EQ1 with no adverse impacts on equine industries anticipated.
- Policy ECD22 (hazardous substances & public health) does not apply as the project is not a COMAH or Seveso type development.

Third Party response to First Party

The submission was accompanied by the following documents: -

- Copy of Lithium Safety Report by Dr Paul A. Christensen
- Copy of Veterinary Medicine Equine Report by Dr Celia Marr
- Report by Des Leadon Irish Equine Centre
- Unsustainable grounds of appeal & highlights the risk to the security of energy supply & national transmission line given proximity to Dunnstown substation.
- Proposed fire safety systems are not fit for purpose.
- Application / Appeal should be invalidated:
 - Inadequate description to the totality of the project in public notices.

- Non-compliance with P&D Regs (Arts. 22 & 23).
- No sustainable grounds to undermine the PA's reasons for refusal.
- Substantive additional reasons to refuse permission that acknowledge potential impacts on the equine industry: -
 - Risk of major accident given proximity to Dunnstown substation with resultant impacts on human health, environment & electricity supplies.
 - Incompatible development within a rural area characterised by equine industries which would suffer operational & reputational damage.
 - Material contravention of CDP policy to promote the equine industry & protect it from incompatible development & risk of hazard.
 - Non-compliance with requirements of the Waste Directive 2008/98 & inadequate consideration of battery disposal.
 - AA Screening report is fundamentally flawed.
 - Adequate EIA screening is precluded by project splitting.
 - Unacceptable fire risk & public health hazard.

The ***Lithium Safety*** report by Dr. Paul A. Christensen is summarised above.

The ***Veterinary Medicine Equine*** report by Celia Marr, is summarised above.

The Report by Des Leadon, Irish Equine Centre, is summarised below:

- Project impacts on c.32 stud farms in the immediate locale.
- Located within the heart of Ireland's Bloodstock industry.
- International competitors will use this to create irreversible anxiety.
- Significant adverse impacts on reputation, investment & employment.

Planning Authority:

- No further comments.

Prescribed Bodies:

- No further submissions.

7.5. Further correspondence - following High Court remittal

First Party Appellant (Strategic Power Projects Ltd.)

- Design & layout revised to take account of the following:
 - New adjacent sensitive receptor.
 - New County Development Plan.
 - Technological advances for BESS.
 - ABP determination that adjacent proposed 220kV substation is SID.
 - ABP decision to grant permission for a solar farm at Swordlestown.
- The submission was accompanied by the following documents: -
 - Revised plans for design & layout of BESS
 - Addendum AA Screening report
 - Addendum Environmental report
 - Technical report for CATL EnerOne BESS units (*Fingleton White*)
- New adjacent sensitive receptor comprises a dwelling house & small stable block permitted by KCC under 21/1506; site belongs to 3rd party appellants; PA assessments did not reference the appeal site & proposed BESS; house located 85m & 145m from site boundary & nearest container in revised layout.
- BESS application & appeal assessed under previous CDP that has been replaced by CDP 2023-2029 which contains more targeted climate change policies to support the provision of electricity supplies (EC O64 & EC O65).
- Changes in the design & chemistry of batteries have allowed for enhanced safety by using Lithium Iron Phosphate (LFP) as opposed to the original Lithium-Ion batteries; LFP use overcomes the fire & safety issues that were the focus of Dr. Christensen's report, which also suggested that LFP chemistry isn't as high risk; LFPs have greater storage capacity, need smaller storage space & cover less of the site, which in turn allows for a greater separation distance with the recently permitted adjacent house.

- ABP has since determined that the adjacent proposed 220kV substation is SID (310033) and that an application should be made directly to the Board.
- KCC & ABP decided to grant a 35-year permission for a solar farm at Swordlestown (same applicant) which will connect to the SID substation; case currently on Judicial Review.
- Revised design & layout: -
 - Planning application site remains unchanged.
 - Project elements lie within the W half of the original BESS compound.
 - Remaining compound area will be grassed & planting (except access).
 - Similar MW capacity but slightly larger (222MW v 212MW).
 - House located 85m & 145m from site boundary & nearest container.
 - New 3m earthen berm with planting along NE boundary of cabinets.
 - Similar orientation & layout of cabinets in the W half of the compound.
 - Revised cabinets are 2.2m high & 0.4m lower than original containers.
 - No adverse residential or visual amenity impacts.
- Conclusion of the original AA Screening report remain valid, with no adverse impacts on the integrity of any European sites.
- The response to the various issues raised in the JR application have been addressed and no new issues raised.

Third Party Appellant (Clementville Ltd.)

The submission was accompanied by the following documents: -

- Previously submitted reports.
- Statement of Grounds
- First Party grounds of appeal are unsustainable & should be dismissed.
- Previous Board decision quashed due to its failure to adequately engage with submissions related to water supplies for firefighting (incl. expert reports).

- Fire-fighting and fire safety & risk are acknowledged as key planning issues and not just a technical matter for fire safety certification, and Irish Water did not confirm water availability for firefighting purposes.
- Fire hazard risk to security of energy supply given proximity to Dunnstown 220kV substation.
- Fire safety systems are not for purpose & fail to provide water fire-fighting capacity or emergency access infrastructure.
- Reasons for refusal acknowledge potential impacts on equine industry.
- Inappropriate works in a rural area & reputational damage to equine industry.
- Material contravention of CDP (protect equine industry & risk of hazard).
- Non- compliance with Waste Directive & final disposal of batteries.
- AA Screening flawed & no regard to toxic water run-off in the event of a fire.
- Adequate EIA Screening is precluded by project splitting.
- Non-compliance with WFD & Water Policy Regulations as there is no mitigation to prevent toxic run-off in the event of a fire to watercourses.
- Previous documents and reports re-submitted.

Observers

Further Observations were received from the following: -

Local residents	Groups & businesses
Hugh Dillon & Elanor Wauchob Jennifer Cullen & Others	Barry Mahon (Juddmonte Farms) Two Mile House Says No Kildare Green Party

The Observers raised several new concerns: -

- New CDP contains several policies to protect the environment & biodiversity.
- Material contravention of several CDP objectives.
- More comprehensive assessments now required: -
 - Ecological Impact Assessment

- Bat Survey
- Hydrological Assessment
- EIA & AA
- Note inadequate engagement with submissions in relation to water supplies for firefighting, emergency access & examination of risk (incl. expert report).
- Note inadequate consideration of fire risk, toxic emissions and adverse effects on human health, public safety & animal welfare (incl. horses).

Planning Authority

- No further comments.

Prescribed Bodies

- No further submissions.

7.6. Further correspondence – response to First Party (Strategic Power Ltd.)

Third Party Appellant (Clementville Ltd.)

- No further submissions.

Observers

Further Observations were received from the following: -

Local residents	Groups & businesses
Hugh Dillon & Eleanor Wauchob Jennifer Cullen & Others Caroline Treacy	Barry Mahon (Juddmonte Farms) Two Mile House Says No

The Observers reiterated and/or elaborated on their previous submissions.

Hugh Dillon & Eleanor Wauchob raised the following additional concerns in relation to the proposed revisions of the design and layout of the project: -

- No reason to change objection, undertook extensive research & permission should be refused.

- LFPs have been in operation since the mid-1990s, they were referenced in Dr. Christensen's report, and they are a form of Lithium-ion battery.
- LFPs present a greater a greater flammability hazard even though they show less occurrence of flames in cell thermal runaway tests.
- Dr. Christensen's report references 2 x explosions at BESS plants that involved LFP cells & raises concerns that the delayed ignition of LFP cells may facilitate explosion over fire.
- LFP batteries are more hazardous in respect of explosion & toxicity of gas & reference to their non-combustible nature is incorrect as they have gone into thermal runaway when abused.
- Cathode structure of LFP batteries collapses at around 310C and not 230C.
- Aerosol suppression systems (potassium nitrate or carbonate) have no cooling ability to control thermal runaway and can give rise to vapor clouds.
- Reliance on the large-scale fire test UL9540A is insufficient to rule out incidences occurring as it does not assess the entire system; developers test was not done at installation level; majority of failure events were in UL9540 certified cells (2020 – 2023); and BESS fires are caused by a wide variety of other actions & not just cell failure (which need to be assessed).
- Developer is in error to rely on UL9540A testing at cellular level to claim the elimination of fire, thermal runaway, explosion & vapor cloud risk, and to rely on an aerosol suppression system and no water to control thermal runaway.
- Also, in error to not to have proper access for firefighting vehicles, decreasing distances between units & requirement of the deflagration system to stay closed during suppression.
- Reliance on CATL battery cabinets with a 1-hour fire wall rating is not secure.
- Firefighting water was eventually used in cool surrounding batteries & prevent spread in thermal runaway in BESS failure events (Australia & California).
- Re-emphasise lack of regulation & remote monitoring is unacceptable.

- Note installation of a fire & smoke system but no gas detection system which is required under IFC 1207.5.4.
- There should be no exemptions to providing firefighting water, given the lack of regulation, the concerns raised by the CFO & the sensitive location.
- At least 2 x access points should be provided to account for wind conditions.
- Inadequate testing & monitoring for a variety of toxic gases & chemicals.
- Emergency Evacuation Plan required for local residents & horses.
- No reference to adjacent Harristown Common Stud & no consultations.
- Adverse impacts on future occupants of adjacent recently permitted house.
- Contravention of current CDP policies to protect the equine industry.

The remaining **Observers** raised the following additional concerns in relation to the proposed revisions of the design and layout of the project: -

- Continued lack of public consultation & community engagement.
- New CDP contains policies related to the assessment of battery storage projects (EC O19 & O65).
- Inadequate noise assessment.
- Potential effects on a European site should be considered.
- Inadequate risk assessment (water, temperature, toxic gas & explosions).
- No reference to Swordlestown solar farm & relationship to BESS.
- No data for the change in capacity of the BESS in MWhr under revised plans.
- Increased density related to size increase & reduced footprint is material.
- Any resultant changes in the substation design require consideration (SID).
- Flawed EIA & AA Screening, NIS required, inadequate wintering bird surveys & lack of consideration of Harristown Common wetlands.
- LFP is a type of Lithium-ion battery, possibility of thermal runaway remains, batteries are combustible, various safety measures can fail & no regulation.

- Non-compliance with Fire Code Compliance & NFPA 855 (incl. scale, separations, maximum stored energy threshold, hazard mitigations, fire & explosion testing & monitoring, gas detection & accessible fire hydrants); and inadequate testing for several toxic gases.
- Firefighting water & emergency vehicle access required; assess impacts of contaminated fire water on waterbodies; & prepare emergency response plan.

Planning Authority:

- No further comments.

Prescribed Bodies:

- No further submissions.

7.7. Further correspondence - following readvertisement

Third Party Appellant (Clementville Ltd.)

- No further comments.

Observers

Further Observations were received from the following: -

Local residents	Local residents	Groups & businesses
Jennifer Cullen Emma Dillon Peter Dillon Laura McDermot Susanne Quinn Anouska O'Brien Tara Lawlor Sinead Morrissey Philip, & Emeare Mallon Hugh & Ann Cowley	Brendan & Jacinta Colivet Joan O'Reilly Donal Knight Deirdre Brett Tom Dowling Dr. Mariann Kay & Dr. Des Leadon Martin Flinter & Maureen Roche Flinter Evelyn, Jennifer & Vivien Cullen	Annette O'Callaghan (Yeomanstown Stud) Peter O'Reilly (Irish Thoroughbred Breeders Association)

Most of the Observers submissions elaborated on their previous submissions / observations to KCC and ABP, and some raised the following additional concerns in relation to the proposed revisions of the design and layout of the project: -

- Note increase in storage capacity & amended layout.
- Lithium iron batteries are same as / similar to lithium-ion batteries & technology is not new.
- Fire risk & safety still not adequately addressed.
- Note continued absence of firefighting / cooling water.
- Procedural errors.

Emma Dillon (represented by FPLogue Solicitors) raised the following concerns:

The submission was accompanied by the following documents: -

- Correspondence with ABP about access to the file
- Grid Scale Battery Energy Storage System planning – Guidelines for FRS (UK National Fire Chiefs Council), 2023
- Letter from Dr. Paul Christensen
- Battery Storage Guidelines Note 1: Battery Storage Planning (2019)
- Battery Storage Guidance Note 2: Battery Energy Storage System Fire Planning & Response (2020)
- Inadequate access to case file; incomplete case file at KCC (incl. original Fire Safety report, revised plans & Addendum AA not available).
- ABP should not have accepted revised plans & particulars for a modified development post remittal; breach of ABP's concession; and no jurisdiction.
- Purpose of remittal is to restart the procedure so that a legal error can be corrected (i.e. failure to engage with submissions related to water supplies for firefighting) and not to allow the developer to modify the project; ABP erred in directing public notice & further public observations on the modified project.
- Developer is also confined to its grounds of appeal (incl. fire safety is not a matter for ABP & should be handled through the Fire Cert process); developer cannot introduce a new ground of appeal on this issue on remittal; and ABP cannot decide on revised / modified proposal.

- Modified proposal not circulated to Kildare Fire Service; serious concern given the serious issues it raised about the original application.
- Submission of modified project may indicate acceptance of Fire Safety Report.
- Lithium iron battery technology is not new nor a recent tech advancement, it and has been around for decades.
- Changes are not minor and could not have been advanced post decision via S.146A(1)(b)(iii) as claimed by the applicant.
- Applicant's Fingleton White report is hard to understand & referenced standards are not publicly available; inference that if individual components meet accepted standards, then the entire system is compliant & safe and therefore firefighting water is not required, is without scientific foundation.
- Lithium iron batteries may be less likely to catch fire, but it is still possible, and compliance with standards does not eliminate the possibility of accidents.
- Compliance with the US NFPA 855 is not independently certified; it requires a permanent source of water for fire protection unless there is a waiver from the "Authority Having Jurisdiction" which has no Irish equivalent; Aerosols do not produce cooling, they are less effective than water & their use is not best practice, as per UK National Fire Chiefs Council & other guidance.
- Unclear if ABP has independent expertise to engage with expert reports.
- EIA Screening & Schedule 7A information required; Screening Report does not include information of thermal runaway & hazardous gas emissions or effects on Harristown Commons pNHA & it omits details of the substation.
- Addendum AA report is not publicly accessible by ABP or KCC; non-compliance with obligations under Birds & Habitats Directives to establish individual conservation objectives & measures for all Annex 1 birds, regularly occurring migratory species not listed in that annex & their habitat; therefore, ABP lacks the required information to carry out AA Screening & AA.
- Request that the planning permission be quashed.

The Lithium Safety letter from Dr Paul A. Christensen is summarised below:

- Harder to ignite LFP (lithium-iron) batteries & volume of vapour cloud is less.
- Still have considerable charge capacity (0.4-1.4 L/Ah) which equates to 400/kWh.
- LFP batteries have ignited or exploded: -
 - The only BESS fatalities occurred with LFP (3 in Beijing, 2021).
 - Several incidents involving grid scale LFP BESS (US & EU)
 - The high hydrogen & ethane concentrations in the vapour cloud from LFP batteries renders the explosion hazard more severe, in terms of Lower Explosion Limit, laminar flame velocity, maximum explosion overpressure & explosion index.
 - Whilst adopting a controlled burn strategy is currently the accepted approach to grid-scale BESS incidents, the availability of water is still critical to the firefighting response.
 - Water will be needed to cool the surrounding fire load (incl. adjacent containers) and fog out fumes or vapour cloud, given the proximity to nearby houses.
 - BESS explosions could compromise neighbouring properties or set fire to vegetation.
 - The UK perceive the availability of water to deal with fires as essential.

Planning Authority:

- No further comments.

Prescribed Bodies:

- No further submissions.

8.0 Further information

8.1. Background to further Information request

As previously summarised, the Board's original decision to grant planning permission was quashed by the High Court and the appeal case was remitted back for renewed consideration. The parties were invited to make submissions following this remittal. The concerns raised in several of the Observer's original submissions were reiterated. The Applicants' response included a revised layout which took account of a recently permitted house and stables to the east of the site (21/1506), and a revised battery energy storage system (BESS) to take account of new technology (incl. Lithium-iron batteries). A new County Development Plan has been adopted, and the original application was assessed under the previous 2017 to 2023 Plan as opposed to the current 2023 to 2029 Plan. Having regard to the scale and nature of the amendments proposed and to the adoption of a new County Development Plan for the area, I considered that the proposed amendments constituted significant new information that should be readvertised in the interest of natural justice. The resultant submissions raised a similar range of concerns as before.

Following review of the application and appeal documentation, including the various fire risk and safety reports, and the observations received by the Board, I recommended that an expert Fire Safety Consultant was required in order to assist with my assessment of this appeal case. The main issue in relation to fire safety is whether firefighting / cooling water is required in the event of an incident that could give rise to thermal runaway. There are two expert reports on the file from the applicant, and one expert report from the observers along with an addendum letter, which reached different conclusions in relation to the need for firefighting / cooling water. The report from the Council's Chief Fire Officer recommended refusal of permission for several fire safety reasons (incl. the absence of firefighting water, inadequate access for emergency fire tender vehicles, and insufficient separation distances between the battery storage containers and the need for an explosion risk assessment).

Having regard to the complex and technical nature of this appeal case, and particularly the fire safety issues raised, an expert Fire Safety consultant from AWN Consulting Ltd. was engaged to examine the fire risk and fire safety aspects of the proposed development, along with the submitted reports, and to advise accordingly.

The Consultant's brief required the following: -

1. Assess the suitability of the fire safety systems proposed by the applicant for the development (both as initially proposed and as subsequently modified) and specifically the absence of water as an extinguishant.
2. Review the Chief Fire Officer's Report (KCC) and provide specific comment on the main conclusions reached in this report.
3. Review the 4 x documents received by the Board from the applicant and the observers, and comment on the assumptions and methodology used and conclusions reached in each: -
 - a. Lithium Safety Report – Dr Paul A. Christensen
 - b. Fire Safety Report – EGAN
 - c. Technical report for CAT: EnerOne BESS – Fingleton White
 - d. Lithium Safety Letter - Dr Paul A. ChristensenReports a and b relate to the project as originally submitted to the planning authority for a ***lithium-ion*** battery storage project. Reports c and d relate to the revised proposal for a ***lithium-iron*** battery storage project subsequently submitted to ABP.
4. Advise on conditions to be included to address any likely main effects, or matters requiring additional information which may form part of an FI request.
5. Prepare a written report providing a synopsis of matters and main conclusions.

8.2. Consultant's Review

AWN Consulting Ltd. submitted a report entitled "Review of Proposed Battery Storage Project at Dunnstown" to the Board (copy contained in Appendix 1 of my report) which provided an overview of: -

- Battery Energy Storage Systems (BESS):
 - Battery chemistry
 - BESS designs
 - BESS safety systems
 - Design standards
- Hazards of BESS:
 - The main hazard is thermal runaway, and a review of recent research shows that fires involving lithium-ion cells must be cooled to terminate the thermal runaway process and that water is the agent of choice. Although the fire risk may be less for lithium-iron cells, water is still required as the agent of choice, as demonstrated by recent accidents.
- Response to the ABP Brief (as summarised in section 4 above).
 - No water supply is proposed and experience of actual BESS fires indicates that water is the only method for managing a thermal runaway fire; the UK National Fire Chief 's Council Guidance states a minimum of 1,900 litres per minute of water for 2 hours, should be provided; and that it is reasonable to conclude that water is therefore required to deal with a thermal runaway BESS fire.
 - Failure mode analysis and hazard analysis appears to have been carried out in the Fingleton White report; explosion modelling has not been carried out (as noted in the CFO's report) and is required; dispersion modelling is not required as HF or HCN is not expected to be generated; and firefighting water is required.

- Review of documents:
 - Lithium Safety Report (Dr Paul A. Christensen): agree with main points; note that the studies relate to fluoride battery chemistry (Lithium-ion) and that the revised proposal is for LFP batteries (Lithium-iron).
 - Fire Safety Report (EGAN): relatively generic; several incorrect statements; and a lack of understanding of a Lithium-ion BESS fire.
 - Technical Report for CAT: EnerOne BESS (Fingleton White): detailed report; local fire service is responsible for the firefighting strategy; UK guidance recommends water for controlling a thermal runaway.
 - Lithium Safety Letter (Dr Paul A. Christensen): agree with statements which are evidence based.

- Conclusions reached and recommendation:
 - BESS is a relatively new technology and emergency responders are learning from actual incidents that have occurred at both Lithium-ion and Lithium-iron battery storage facilities.
 - A condition should be included that:
 - Firefighting water (to UK Guidance standards) be provided.
 - Fire water retention to retain water be included in the project.
 - Explosion Risk modelling should be undertaken.

(UK National Fire Chief's Council (NFCC) Grid Scale Battery Energy Storage System Planning - Guidance for the FRS (Fire & Rescue Services) which states that provision should be made for BESS units to provide 1,900 litres of water for 2 hours, as a minimum).

Other concerns:

The site is located to the west of the Poulaphouca Reservoir SPA which is designated for two species of bird (Greylag Goose & Lesser Black-backed Gull). The application was accompanied by a Stage 1 AA Screening report which concluded that no adverse effects would occur, and that preparation of a Natura Impact

Statement (NIS) was not required. However, concerns have been raised that some of the birds recorded foraging in the surrounding area may be SCI species for this SPA. Further assessment of likely significant effects on this SPA and its SCI species is therefore required in terms of assessing potential adverse effects, including but not limited to, disturbance and loss of foraging habitat.

The AWN report recommends the on-site provision of water as the NPCC standards. Having regard to the need for large quantities of water in the event of a fire, the potential impacts of contaminated run-off on ground and surface water bodies requires consideration in both the planning and environmental assessment, and in the AA Screening and NIS assessment. Although it is acknowledged that firefighting water may evaporate in the early stages of firefighting, this may not be the case in the later stages, and any potential impacts or effects, along with any proposed mitigation measures, requires detailed examination.

Having regard to the need for large quantities of water in the event of a fire, the applicant should liaise with Kildare County Council and Irish Water in relation to any proposed connection to the public water supply, and any resultant effects on public water supplies should be assessed.

8.3. Further Information request

A section 132 notice, dated 26th May 2025, was issued to the applicant requesting the following further information:

1. The Board notes that Battery Energy Storage Systems (BESS) are a relatively new technology and that emergency responders are learning from actual incidents that have occurred at both Lithium-ion and Lithium-iron battery storage facilities. The Board further notes that water is the agent of choice in the event of an incident to extinguish fires and to control thermal runaway, and that BESS facilities may carry a risk of explosion. The applicant shall submit the following information:
 - a. Details of how firefighting water will be provided. This should be to the UK National Fire Chief's Council (NFCC) Grid Scale Battery Energy

Storage System Planning - Guidance for the FRS (Fire & Rescue Services), which states that provision should be made for BESS units to provide 1,900 litres of water for 2 hours, as a minimum.

- b. Details of how firefighting water will be sourced and / or retained within the proposed development site.
 - c. Explosion Risk modelling should be undertaken.
2. Having regard to the need for large quantities of water in the event of a fire, the potential impacts of contaminated fire water run-off on ground and surface water bodies requires consideration in both the planning and environmental assessment, and in the AA Screening and NIS assessment. The applicant shall submit a detailed assessment of all potential impacts and effects, along with any proposed mitigation measures.
3. The applicant shall submit a revised Appropriate Assessment Screening report and Natura Impact Statement, which assess the potential adverse effects arising from the proposed development on European Sites located within the Zone of Influence of the project, including the Poulaphouca Reservoir SPA (Site code: 004063) to the East of the site. Further assessment is required in terms of examining potential adverse effects, including but not limited to:- species disturbance; loss of foraging habitat; and damage to foraging habitat and prey species by means of ground or surface water contamination.
4. Having regard to the need for large quantities of water in the event of a fire, the applicant should liaise with Kildare County Council and Irish Water in relation to any proposed connection to the public water supply. The capacity of the public water supply to service the proposed development in line with FI request no.1 (a) above should be ascertained, and any resultant adverse impacts on public water supplies for nearby settlements should be assessed.

8.4. **Applicant's response to further information request**

Further information received from the applicant on the 23rd June 2025. A response to each item is summarised below.

1. The provision of firefighting water, water storage and explosion risk modelling.

Response:

In the first instance, the applicant maintains the position as set out in the Fingleton White Expert Technical Report, received by An Bord Pleanála on 29th May 2024 as part of the applicant's submission following remittal of the case from the High Court. The position is that water is not considered to be the agent of choice in the event of a fire related / thermal runaway incident, and furthermore that any agent, including water, deployed externally to the BESS unit would not be capable of penetrating its enclosure. On this basis, the applicant invites the Commission to consider the original design option. Whilst the applicant is not explicit as what version is being referred to, I can only assume that the 'original design option' referred to in this context relates to the amended layout as submitted to An Bord Pleanála on the 29th May 2024, which includes a change from Lithium-Ion batteries to Lithium Iron Phosphate (LFP) batteries, consolidation of battery modules and a greater setback of same from the northeast boundary, but does not include firefighting water supply or drainage infrastructure to retain spent firewater.

However, in an effort to address the concerns of An Bord Pleanála, the applicant responds to Item 1 of the S. 132 notice as follows, with reference made to an Engineering Report, Second Addendum to the Environmental Report and amended drawings (P804 Rev. P, P808 Rev. P, P81 Rev. P 7 and P818 Rev. P), all of which accompanied the response, noting that the first addendum to the Environmental Report was submitted following remittal.

a. Details of how firefighting water will be provided.

An above-ground firewater storage tank will be provided on-site with a capacity to store 250 cubic metres (250,000 litres) of water, providing in excess of the

recommended 228,000 litres (1,900 litres of water per minute for two hours). The tank would be maintained at capacity and connected to an on-site hydrant.

b. Details of how firefighting water will be sourced and / or retained within the proposed development site.

Water supply to fill the on-site tank would be sourced either from public mains on the Dunshane / Johnstown Road (L6044) or tankered onto the site, the latter also being an option under the UK National Chief's Council (NFCC) Grid Scale Battery Energy Storage System Planning – Guidance for the FRS (Fire & Rescue Services). The tank would be filled over a period of time under either scenario prior to commencement of the use of the BESS facility. With respect to mains supply, the applicant submitted a pre-connection enquiry to Uisce Eireann (copy enclosed), however a response from Uisce Eireann was not received at the time the applicant was submitting the S. 132 response.

The applicant outlines a drainage strategy to collect stormwater and firewater. The batteries would be located on an impermeable and bunded asphalt surface. The make-up of the surface is further explained under section 4.1 of the Engineering Report with details shown on drawings P817 Rev. P and P818 Rev. P. Stormwater would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank. The tank is sized to cater for the recommended water supply for firefighting (228,000 litres, based on 1,900 litres per minute for two hours) plus 30% buffer to account for rainfall during a fire event, thus a total capacity of 300,000 litres. Firewater would be held in the tank until emptied by a licenced contractor.

In summary, the response to the S. 132 notice includes revised plans to include the following:

- Above ground water tank with a capacity of 250,000 litres
- 75mm diameter water pipe connection to the existing public mains on the Johnstown Road.

- BESS compound to be upgraded to comprise a concrete kerbed / bunded impermeable asphalt surface.
- Surface water drainage infrastructure to include a petrol interceptor.
- Surface water infiltration basin with a capacity of 1,330,000 litres
- Underground firewater retention holding tank with a capacity of c. 300,000 litres

c. *Explosion Risk modelling should be undertaken.*

Attachment A of the applicant's response contains a Fire Explosion Technical Note prepared by Fingleton White. The technical note outlines that the proposed battery to be used, being the CATL BESS, has undergone and passed independent third-party testing in accordance with UL 9540A 4th Edition Standard for Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems, tested at cell, module and rack levels. The technical note further outlines that the tests demonstrate that when thermal runaway was intentionally induced, no external flaming occurred, no flying debris or explosion was triggered, no re-ignitions were observed during post-test monitoring and the battery module did not release sufficient gas to require deflagration venting. The technical note concludes therefore that the CATL battery racks are compliant with NFPA 855 and NFPA 68 without the need for deflagration venting.

Notwithstanding the above, the technical note acknowledges the potential for a catastrophic failure of a CATL BESS cabinet and refers to a Technical Note prepared by Atkins for the Health and Safety Executive for Northern Ireland (HSENI), titled *Technical Note: Hazard Assessment of Battery Energy Storage Systems*, which sought to assess the potential overpressure wave that may result from a BESS fire.

Using the findings of the HSENI technical note the applicant's own (Fingleton White) technical note concludes that based on the size of each proposed CATL BESS cabinet and associated internal rack, a residual vapour space of 1.5 cubic metres is present within each cabinet which would potentially generate a blast radius of between 10 and 21 metres based on a 70-mbar overpressure wave.

A representative map is included showing a 21 metre blast radius in the context of the site.

Referring to the submitted Fingleton White technical note, the applicant's response cover letter concludes that the theoretical blast radius is at a considerable distance from the nearest receptors and therefore in the event of an overpressure incident, the theoretical blast radius will not adversely effect the receptors in the vicinity of the site.

2. Revised planning, environmental and AA Screening assessments which address any potential water contamination concerns

For clarity, the application as originally lodged with Kildare County Council included an Environmental Report and AA screening report. As part of a submission to An Bord Pleanála following the high court remittal the applicant, as part of its submission to ABP, submitted an addendum to both the Environmental Report and AA screening report. And as part of its response in June 2025 to the S. 132 notice, the applicant submitted a second addendum to both the Environmental Report and AA screening report.

The second addendum to the Environmental Report considers the impact of the introduction of a water supply and drainage infrastructure and comprises updates to ER chapter 5 (project description), chapter 6 (Biodiversity), chapter 7 (water), chapter 8 (noise) with consideration also given to chapter 4 (planning policy), chapter 9 (landscape and visual), chapter 10 (cultural heritage) and chapter 11 (material assets – traffic).

The applicant concludes that it is anticipated that the introduction of firefighting water storage and stormwater drainage infrastructure, considered in tandem with the design amendments made following remittal, will not have a significant direct, indirect or cumulative effect on the local environment during construction or operational stages, subject to implementation of the stated mitigation measures.

The second addendum AA screening report concluded that the findings of the original and first addendum AA Screening Reports remain valid, with no adverse impacts on the integrity of any European sites. The second addendum

report includes reference to bird and winter bird surveys carried out on the site (see Technical Note – Wintering Bird Survey Results – addendum report, submitted as part of the s. 132 notice), including a survey carried out on 9th April 2025 the purpose of which was to confirm that the extent and quality of habitats present on site and the potential ecological receptors on site had not changed from the previous assessment.

The applicant has also submitted a Water Framework Directive (WFD) Screening Report, a report which was not submitted previously. The WFD screening report concludes that due to the absence of a pathway between the site and surface waterbodies within the 2km study area, there would be no deterioration in surface water quality as a result of the proposed development, and on that basis, there are no surface waterbodies screened in for further consideration.

The WFD screening report also considers groundwater bodies within 2km of the site. The Curragh Gravels East groundwater body lies beneath the site whilst the Kilcullen groundwater body is located to the southeast however also extends under the Curragh Gravels East groundwater body. The Waste Facility (W0014-01) groundwater body is identified to the southwest. The WFD report identifies a direct hydrological connection between the site and the Curragh Gravels East groundwater body, an indirect hydrological connection with the Kilcullen groundwater body and due to the expected flow direction of underground water, no hydrological connection with Waste Facility (W0014-01) groundwater body.

The WFD Screening Report concludes that due to the implementation of a CEMP at construction stage and drainage strategy at operational stage, including containment of firewater, the proposed development will not result in the deterioration of any surface or ground waterbody.

3. Revised AA Screening report / NIS, which assess the potential adverse effects arising on any nearby European sites

The second addendum to the AA Screening Report concludes that the addition of firefighting water and drainage infrastructure will not give rise to any

significant direct, indirect or cumulative effects during the construction or operational phases of the proposed development.

4. Liaison with Kildare County Council and Irish Water in relation to any proposed connection to the public water supply and assess any potential adverse effects on public water supplies.

The applicant refers to the public water mains on the Dunshane / Johnstown Road as an option for water supply to fill and maintain the water tank. In this regard, the applicant's response also includes a copy of an Uisce Eireann pre-connection enquiry form, dated 10th June 2025, however due to time constraints for submitting information to An Coimisiún Pleanála, the applicant did not include any correspondence from Uisce Eireann in response to the pre-connection enquiry.

The applicant states that the water tank would be filled prior to the commencement of use of the BESS site, and filled at a rate that would not place pressure on the public water supply. The applicant also refers to the option to tanker in water, noting that a typical tanker can carry c. 20,000 litres of water, on the basis of which the applicant estimates that 13 to 14 trips would be required to fill the 250,000 litre tank.

8.5. Public responses to circulation of further Information

The further information received was considered to be significant, and it was circulated to the various parties to the appeal for comment and readvertised as significant new information.

Observers

Observations were received from the following parties when the further information was initially circulated to the various parties to the appeal (last date for observations was 2nd September 2025).

Local Residents	Groups & Businesses
Donal Knight Anthony Byrne Deirdre Brett Hugh Dillon and Eleanor Wauchob	Eleanor Wauchob c/o Two Mile House Says No Annette O'Callaghan (Yeomanstown Stud) Mariann Klay and Des Leadon (Swordlestown Little Stud)

Tara Lawlor Hugh and Anne Cowley Caroline Treacey	Peter Dillon (Harristown Commons Stud, which adjoins the appeal site to the northeast and on which the observer has planning permission for a new dwelling)
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The Observers' **collective concerns** are summarised as follows:

- The further information does not resolve critical deficiencies in firefighting strategy, water supply, runoff containment and protection from toxic gas emissions and explosions.
- Further information downplays the hazards, risks and impact of the development and fails to address the risk of thermal runaway in Lithium Iron Phosphate (LFP) batteries.
- Minimal provision with respect to on-site water supply and contaminated water storage, falling short on NFCC's emphasis on prolonged cooling and real life events.
- Uncertainty around the ability to maintain a water supply and failure to consult with local authority or Uisce Eireann. Dunnstown is supplied from a holding tank on Mullacah Hill with a capacity of 46,000 litres and filled with an electric pump, distributed locally via a domestic sized pipe, thus not suitable as a water supply for the BESS site.
- Ignores learnings from previous BESS fire events, including Otay Mesa (2024) and Escondido (2024)
- Explosion risk modelling fails to address vapour cloud explosion risks from thermal runaway in LFP batteries, noting that UL9540A does not test for vapour cloud scenarios.
- Aerosol Suppression Systems are single-discharge and ineffective against reignition or prolonged events. Sparks or heat from aerosol activation can ignite LFP vapour clouds, escalating to explosions.
- Absence of deflagration allows huge build up of potentially explosive gas. Absence of gas detectors, as opposed to smoke and fire detector.

- The developer's reliance on CATL EnerOne BESS, UL 9540A testing carried out on cell, module and rack level to eliminate all risk of fire, explosion, thermal runaway and toxic gas release are useful but do not guarantee that a hazardous incident could not occur.
- Residents, centres of population and community uses within close proximity on the downwind side, potentially exposed to toxic gas during fire events. International guidance increasingly discourages siting of BESS projects near schools, sports facilities or vulnerable populations. No evacuation plan.
- Potential pollution of ground and surface waters during a fire event, including contamination of private wells, water supplies and adjoining wetlands of local and national importance.
- Second Addendum to AA Screening Report is flawed, based on superficial hydrological modelling and optimistic assumptions about low fire risk and ignores toxic runoff pathways to Pollardstown Fen SAC via the Curragh aquifer. NIS should be required.
- Similar risk not considered in the submitted Water Framework Directive screening.
- Applicant has failed to address the impact on the Greylag Goose and Lesser Black Backed Gull.
- Project splitting and need for EIA to consider cumulative impact associated with the BESS along with a substation and other solar farms in the area.
- Winter Bird Survey limited to site and Dunshane Common, excludes Harristown Common – national importance, candidate NHA, Annex II species like March Fritillary and underestimates impacts on red-listed birds such as the Lapwing. One vantage point was used for winter bird surveys, whereas best practice recommends 6 vantage points over 6 days.
- The Disturbance of rural amenity by reason of noise and light pollution.
- Challenges for emergency response during fire event, including single access point, no ring road arrangement and no provision for vehicular turning.

- BESS is incompatible with equine industry – fire hazards and toxic emissions could jeopardise horse health and global reputation of Kildare’s equine industry.
- BESS conflicts with Kildare CDP policy in respect of environmental protection, rural amenity and equine compatibility.
- Amended proposal, including new drainage infrastructure, water tank, retention basin, impermeable surface and modification to battery type and quantity, represents a significant departure from the original design and in the absence of a new application to Kildare County Council, limits public engagement and transparency. The new design impact visual amenity (water tank) increase flood risk (large area of asphalt, large underground holding tank, and detention basin within infiltration tests), increase explosion risk (LFP batteries due to higher hydrogen levels of gas released during a thermal runaway).
- Risk of thermal runaway during the transit of BESS units.
- Disruption when batteries need to be replaced, noting life expectancy of lithium batteries is 7 to 10 years.
- No decommissioning plan and concern regarded restitution of the land to a former agricultural state after the BESS use ceases.

Observations were received from the following parties when the further information was readvertised as significant new information (submission period of 4 weeks beginning on 25th November 2025), noting that a number of parties submitted a second observation following initial circulation.

Local Residents	Groups & Businesses
Deirdre Brett Tara Lawlor Hugh and Anne Cowley Caroline Treacey Marie Cowley Margaret and Bosco Cowley Aidan and Deirdre Farrell Pat McLoughlin Debbie O'Neill and Colm Diver Mariann Klay	Eleanor Wauchob, with 406 no. signatures Peter Dillon (Harristown Commons Stud, which adjoins the appeal site to the northeast and on which the observer has planning permission for a new dwelling) Susanne Quinn (Broadfield Stud) Martin Flinter and Maureen Roche Flinter (Harristown Manor Stables) Tom Dowling (Harristown Manor Stables) Evelyn, Jennifer and Vivien Cullen (Middlelane Farm)

The Observers' **collective concerns** are summarised as follows, noting that I will not repeat those concerns already listed above.

- No community engagement.
- No information on substation.
- No review of the noise assessment as recommended by Kildare County Council and no acoustic impact assessment of the amended proposal.
- Kildare County Council has confirmed its decision to refuse permission.
- Despite the passage of time, no confirmation from Uisce Eireann that sufficient water supply is available.
- EIA screening failed to account for risk of thermal runaway.
- No evidence of insurance cover for risks associated with BESS such as thermal runaway and toxic gas release.
- No alternative site considered.
- Current proposal comprises significant changes that materially diverge from the original application, transforming the process into a new proposal, thus undermining the fairness of first-instance assessment at local authority level.
- No regulatory oversight of grid-scale BESS facilities.

Note: The observations appeal includes several other documents in the form of appendices, including academic papers which are available on the file. I confirm that these have been considered as part of the assessment of this appeal case.

8.6. **Planning Authority**

Response received on 2nd September 2025 notes various correspondence including the applicant's response to the s. 132 notice and reaffirms its decision to refuse permission.

8.7. Prescribed Bodies

Having regard to the nature of the amendments made to the application, particularly the proposal to introduce a water supply, the Commission issued a notice under Section 132 of the Planning and Development Act 2000 (as amended) on 28th May 2026 to Uisce Eireann. The purpose of the notice was to request information from UE on the feasibility of connection to a public water mains and capacity of same for the purpose intended by the applicant. A response from UE was not received within the statutory time allowed.

8.8. Consultant's Review of S. 132 Response

Having regard to the nature of the applicant's response, including details around explosion modelling, the expert Fire Safety consultant from AWN Consulting Ltd. was further engaged to examine the response and to advise accordingly.

The Consultant's brief required the following: -

- 1. Assess the suitability of the fire safety systems proposed by the applicant for the development, having regard to the applicant's response to the s. 132 notice.*
- 2. Review and comment on the assumptions and methodology used and conclusions reached in the Fire Explosion Technical Note prepared for the applicant by Fingleton White, submitted in response to the s. 132 notice.*
- 3. In the event that the information provided is deemed satisfactory from a fire safety perspective, advise on conditions to be included if considered necessary.*
- 4. Prepare a written report providing a synopsis of matters and main conclusions.*

The Consultant's report is summarised below:

AWN Consulting Ltd. submitted a Technical Note to the Commission, dated 11th August 2026, which seeks to address the Commission's brief (copy contained in Appendix 2 of this report) The main points made in the technical note can be summarised as follows:

- With regards the Fingleton White report on explosion risk modelling:
 - The HSE NI Technical Note on Hazard Assessment of Battery Energy Storage Systems is considered an acceptable reference document to use as it was independently prepared by Atkins Consulting Engineers for the HSE NI and bases its findings on case studies and the analysis of actual accident events at BESS installations.
 - The predicted explosion contour to 21m around the site boundary using the 70mbar explosion overpressure value is considered suitably conservative as 70 mbar is considered a suitable external contour and is the overpressure contour predicted to lead to the partial demolition of houses – it is noted that no houses exist within the contour.
 - AWN are satisfied that the report as submitted assesses the explosion related impacts from the proposed development and demonstrates there are no significant effects.

- With regards the Malone O'Regan Engineering Planning Report, specifically in respect to the provision of firefighting water and containment of firewater run-off:
 - The UK National Fire chiefs Council (NFCC) Grid Scale Battery Energy Storage System planning – Guidance for FRS (Fire and Rescue Services), 2023 recommends water supply at 1900 litre/minute flow rate for a 2 hour period. The proposed on-site storage capacity for 250m³ of firefighting water meets and exceeds the recommended capacity.
 - The 2023 guidance was subsequently updated in 2025 and the requirement for fire hydrants was clarified to achieve a flow rate of no less than 25 litres per second (or 1,500 litres per minute) and noted that if that rate cannot be achieved, an equivalent static supply of approximately 180,000L is required to provide that flow rate for 120 minutes.
 - AWN are of the opinion that the volume of fire fighting water proposed by the applicant (1,900 litres per minute for at least 2 hours) is suitably conservative and is appropriate.
 - It is not clear how the 300 m³ volume capacity of the firewater run-off underground holding tank has been calculated and whether or not it

includes for the surface area which will be draining to the firewater retention tank. The tank capacity needs to be sufficient to cater for the fact that a fire could occur while it is raining, and the firewater retention tank would overflow in that event if sufficient allowance has not been made for that rainfall. A condition is recommended to be included on any grant of permission which requires the tank to be designed to include for the 1 in 100 year rainfall event with a 30% climate change allowance.

- With regard water framework directive:
 - It is noted that groundwater will be protected in the event of a fire event by virtue of the diversion valve and retention tank. AWN would agree with this statement provided the retention tank capacity is redesigned to retain rainfall which may occur during a fire event.

9.0 **Assessment**

The main issues arising in this case relate to the following:

- Final Design Proposal
- Principle of development
- Visual amenity
- Residential amenity
- Fire Risk, Emergency and Water Supply
- Impact on the Equine Industry
- Traffic and Vehicular Access
- Cultural Heritage
- Biodiversity
- Drainage, Flood Risk and Water Quality
- Procedural Issues
- Other Matters
- Environmental Impact Assessment (EIA) Screening

- Appropriate Assessment (AA) Screening
- Water Framework Directive (WFD) Screening

9.1. Final Design Proposal

- 9.1.1. The proposed development is for the construction of a Battery Energy Storage System (BESS). For clarity, my assessment is based on the Final Revised Proposal, as submitted to ABP on 23rd June 2025 in response to the s. 132 notice, circulated to all relevant parties and subject to public consultation. The cover letter accompanying the applicant's s.132 response provides clarity around the quantity of batteries proposed, outlining that proposal would comprise 598 no. non-walk-in cabinets contained across 39 no. BESS Banks, as opposed to the use of 40ft containers to store the batteries as shown as part of the original application.
- 9.1.2. The application also includes a single storey switch and control room building, transformer compound, new entrance on the local road together with new internal 4m wide access road, water storage tank, drainage including infiltration basin and underground firewater holding tank, car parking, landscaping, lighting, security fencing, CCTV, and associated site works. During the construction phase, a temporary contractor's compound will be located within the car parking area, comprising toilets, office, store, dry room and canteen.
- 9.1.3. The site, with an area of c. 4.089ha, of which c. 0.88ha covers the BESS compound, is located in a rural area with the closest urban settlement being the village of Two Mile House c. 1.6km to the northwest and the southern environs of Naas town c. 4.3km to the north. The site itself and immediate environs comprises farmland, with wetland to the north / northwest, and the existing Dunnstown substation facility further west. The local road network, particularly along the Dunshane Road to the east of the site, is heavily developed with rural housing.
- 9.1.4. The proposal includes the construction of a new entrance on the Dunshane Road / L6044 and a new access track of hardcore construction extending west / northwest to the BESS compound and continuing to provide indicative access to a proposed substation within the same landholding (noting that the substation is subject to a future SID application). The track would be c. 410m in length to a point where it serves the BESS compound and would, in effect, continue to a full length of c. 690m

for providing access to a proposed substation. Dwg. no. P804, Rev. P shows that the access road where it extends beyond the BESS compound towards the proposed substation site is colour shaded differently, suggesting that the access road beyond that point would form part of the SID application.

- 9.1.5. The BESS is designed to provide system support services to the electricity grid, noting the location of the existing Dunstown 400kV substation to the west, identified by the applicant as being a key transmission node in the national grid.
- 9.1.6. The applicant is proposing to use CATL EnerOne BESS units (Lithium-Iron). The Technical Report prepared by Fingleton White and submitted by the applicant in response to the s. 131 notice post remittal provides technical details on the CATL EnerOne BESS units. The report includes that the BESS is a non-walk-in battery cabinet, with each cabinet made up of a collection of battery cells which are arranged into modules, which in turn are arranged into racks. These racks are packaged within the cabinet along with associated equipment including a Battery Management System (BMS) and a thermal management system that provides active cooling and heating to the internal BESS components.
- 9.1.7. The report outlines that each cabinet can hold 8 no. modules and each module can contain 52 no. battery cells. The submitted Fingleton White report on explosion risk modelling, received as part of the s. 132 notice response, outlines that each cabinet stores 0.372 MW, equating to a total capacity of c. 222 MW (598 no. cabinets x 0.372 MW).
- 9.1.8. The Technical Report prepared by Fingleton White provides details on fire code compliance, and in the absence of Irish or EU standards, refers to the 2021 International Fire Code and 2023 NFPA 855, Standard for the Installation of Stationary Energy Storage Systems.

9.2. **Principle of Development**

- 9.2.1. I have considered the proposed facility in the context of national and regional and planning policy. The relevant policy is set out under Section 5 of my report above. I am satisfied that the proposal, which is for storing renewable energy adjacent to a electricity transmission system, is consistent with national regional and local policy, subject detailed assessment.

- 9.2.2. In particular, I note in the government document entitled 'Electricity Storage Policy Framework for Ireland (2025)' where it is stated under Section 3.8 that 'the next challenge, beyond the immediate term, is to ensure the development of sufficient electricity storage systems to meet the third Carbon Budget. To do so, it is the view of the Irish Government that large quantities of electricity storage are required to be added to the electricity grid in the near-term (2030-2040)'. The document goes on to say that Electricity Storage Systems (ESS) have an important role to play in facilitating several CAP and Sectoral Emissions targets, including supporting onshore and offshore wind and solar generation energy targets for 2030 (see Page 8 of the Framework for specific targets).
- 9.2.3. In relation to local policy, I note that Policy EC P2 of the CDP promotes renewable energy generation and associated grid infrastructure at appropriate locations to meet national objectives toward a net zero economy, whilst Objective EC O65 supports the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants. A footnote to Objective EC O65 outlines that proposals for Battery Energy Storage Systems shall be subject to landscape, residential, amenity, human health, and environmental considerations, including AA.
- 9.2.4. Therefore, relevant national, regional and local planning policy supports and facilitates appropriate levels of renewable energy generation, including the provision of battery storage infrastructure, to meet renewable energy targets and to facilitate a reduction in CO2 emissions in accordance with EU and national legislation, policy and guidance.
- 9.2.5. In summary, I conclude that the use of the land for a battery energy storage system is acceptable in principle, subject to meeting other relevant planning and legislative considerations and requirements, which are addressed below.

Reason for Refusal No. 1

- 9.2.6. I note the planning authority, in its first reason for refusal, considered the application to be premature pending approval of the proposed 220kV substation.
- 9.2.7. In the first party appeal, the applicant accepts consent is needed for both the BESS and substation to allow the overall project to proceed, however argues that they are subject to separate consent processes which can proceed in tandem. At the time that

the first party appeal was lodged, the pre-application consultation request in respect of the substation was with ABP. The applicant suggested that if ABP determined that the substation was SID, then an application through that process could be commenced within a short time period, potentially allowing a decision on the BESS and substation projects to, in theory, closely align.

- 9.2.8. I note that a determination under ref. ABP-310033-21 that the substation constituted SID was issued to the perspective applicant in January 2022 and that a SID application for same has yet to be lodged.
- 9.2.9. Notwithstanding, whilst there may be a functional relationship in that the BESS is dependent on the substation, I consider that there are no planning grounds to support a position that a BESS could not be assessed in isolation of a grant of permission for the substation and thus on its own merits, nor would be assessed any differently if the substation was already approved.
- 9.2.10. As outlined above, BESS facilities are supported by national and local planning policy, noting specifically CDP Objective EC O65 which supports the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants.
- 9.2.11. I consider that the only issue of planning relates to EIA screening in the context of project splitting and cumulative impact. As set out under section 9.13 of my report, there is, in my view, no automatic requirement for EIA with respect to the BESS facility and there is also no requirement for a screening determination. I also note that a 220kV substation is not a class of development for the purposes of EIA. As such, purely from an EU directives perspective, and with reference to the O’Grianna v An Bord Pleanála judgement, I consider that the projects can be considered separately.
- 9.2.12. Notwithstanding the above, and as noted in section 9.13 of my report, the applicant’s Environmental Report, along with the first and second addendum to same, examine the proposed substation in the context of cumulative impact, which, in my view, provides a reasonable basis of considering the cumulative environmental impact of the two elements of the one project, notwithstanding the separate application processes and both not being a class of development for the purposes of EIA.
- 9.2.13. On the basis of the above, I do not consider that consideration of the BESS application, nor approval of same, would be premature pending an approval of the

substation. In my view, the application is acceptable in principle and due to the passage of time, the planning authority's first reason has fallen away.

9.3. Fire Risk, Emergency and Water Supply

- 9.3.1. The planning authority's second reason of refusal related to fire safety, specifically lack of hard standing access routes for firefighting, inadequate separation distances between units and lack of a water supply, failure to address Fire Officers concerns in submitted documentation and serious danger to the environment, injury to residential amenity and undesirable precedent.
- 9.3.2. I would note that fire safety in Ireland is governed by Part B of the Building Regulations, thus a different code to planning legislation. However the Building Regulations relate to building design as opposed to whether there is a significant fire or explosion risk from a proposed development.
- 9.3.3. The third-party appeal and observations received at the various stages of the application / appeal process have voiced serious concerns around the issue of fire risk and the associated impact on the local area. These are summarised above under Sections 3.0, 6.0 and 7.0 of my report.
- 9.3.4. The referral response by the Chief Fire Officer of Kildare County Council to the application as originally lodged is referenced by many of the observers. The CFO recommended refusal on a number of grounds, most notably no hard standing access routes for fire vehicles, inadequate separation distances between units, no Failure Mode analysis of various scenarios, no hazard analysis / risk assessment for fire and / or explosions, no consequence or dispersal models to indicate the impact of a fire or explosion on community, unacceptable lack of water supplies, no details of cooling and ventilation systems.
- 9.3.5. The applicant and observers have also submitted expert reports in support of their respective position with regards fire risk and management of same, submitted as follows, in chronological order:
- Fire safety report titled 'Battery Storage System as a Safe Method of Storing Renewable Power' (with respect to Lithium-Ion batteries) prepared for the applicant by Mr. Leonard Egan and submitted with the first party appeal.

- Lithium Safety Report (with respect to Lithium-Ion batteries) prepared by Dr Paul A. Christensen, submitted with an observation to the applicant's first party appeal.
- Technical report prepared for the applicant by Fingleton White Engineers with respect to the revised BESS proposal (Lithium-Iron batteries) and formed part of the applicant's submission to the s. 131 notice following remittal.
- Lithium Iron Safety Letter (with respect to Lithium-Iron batteries) prepared by Dr Paul A. Christensen, submitted with an observation to the applicant's submission to the s. 131 notice following remittal.

9.3.6. ABP engaged the services of an external consultancy, AWN, to provide an independent expert opinion on the suitability of the fire safety systems proposed by the applicant for the development (both as initially proposed and as subsequently modified) and specifically the absence of water as an extinguishant, also to review the Chief Fire Officer's Report (KCC) and provide specific comment on the main conclusions reached in this report, and to review the four abovementioned expert documents received by ABP. The report received from AWN is entitled 'Review of Proposed Battery Energy Storage Project at Dunnstown' and is dated 13th May 2025. A full copy of the document is provided as Appendix 1 at the rear of this report.

9.3.7. Following a review of the AWN report and of the information received from the applicant and observations on same, it was considered that the concerns were well grounded and as such ABP issued a s.132 further information request to the applicant. In response, the applicant submitted a Fire Explosion Technical Note prepared by Fingleton White, along with other documentation including an Engineering Report, Second Addendum to the Environmental Report and amended drawings (P804 Rev. P, P808 Rev. P, P81 Rev. P 7 and P818 Rev. P). AWN was again asked to review the further information received including the Fire Explosion Technical Note. A further report was received from AWN, entitled 'Review of Additional Information Submitted in Response to Section 132 Notice with regard to proposed Battery Energy Storage Project at Dunnstown', and is dated 11th August 2026. A full copy of the document is provided as Appendix 2 at the rear of this report.

9.3.8. For the convenience of the Commission and to avoid complicating the matter, I will concentrate my assessment on the revised proposal submitted post remittal and

further amended in response to the s. 132 notice, which comprises the use of Lithium-Iron batteries and more specifically, CATL EnerOne BESS units.

- 9.3.9. I have reviewed the various technical reports submitted by the applicant including those prepared by Fingleton White, and I consider that the documents provide a comprehensive evaluation and review of the potential for fire hazard and fire risk as part of the proposed development. I have also reviewed and considered the expert reports submitted on behalf of observers to the appeal.
- 9.3.10. I also confirm that the AWN Reports have been used to assist in my assessment of this appeal case.

Fire / Hazard Identification and Mitigation

- 9.3.11. I note that the Technical Report prepared by Fingleton White (submitted following remittal) on behalf of the applicant identifies the principal risks and fire hazards associated with the BESS facility. This includes thermal or electric stresses, fire, thermal runaway and fire propagation, gas emissions and explosion.
- 9.3.12. The Fingleton White report provides details on fire code compliance with respect to the CATL EnerOne BESS, and in the absence of Irish or EU standards, refers to the 2021 International Fire Code and 2023 NFPA 855, Standard for the Installation of Stationary Energy Storage Systems. Table 3 of the Fingleton White report provides a summary of the fire code compliance, with reference to both 2021 International Fire Code and 2023 NFPA 855, whilst Table 4 through Table 18 provide further compliance information on each item listed.
- 9.3.13. Of particular note, and a concern raised by observers, is that the separation distance between the individual BESS cabinets is stated to be 0.1m (100mm) which is significantly below the standard of 3ft / 914mm set out under NFPA 855, being the same standard referenced in the National Fire Chiefs Council (NFCC) Guidance for Grid Scale Battery Energy Storage Systems (BESS) – Fire and Rescue Services', updated December 2025 (UK) (referred to as the NFCC Guidance hereafter).
- 9.3.14. The Fingleton White report outlines that a number of standards, including those relating to separation between cabinets and cabinet group sizing / storage capacity along with hazardous mitigation analysis associated with decreased separation and increasing maximum storage capacity, are not relevant on the basis that the CATL

EnerOne BESS underwent and passed a large-scale fire test to UL9540A (carried out by third parties in September 2022). The Fingleton White report outlines that the test demonstrated that when the unit was forced into thermal runaway no external flaming occurred, no flying debris or explosion was triggered and during post-test observations no further re-ignitions were observed. The Fingleton White report further outlines that the test result means that the CATL EnerOne BESS does not need to adhere to grouping sizes and separation distances.

- 9.3.15. With regards fire detection, the Fingleton White report outlines that whilst a fire detection system is not required for the CATL EnerOne BESS, it being an outdoor installation, each cabinet is equipped with a fire detection system consisting of smoke and temperature detectors.
- 9.3.16. Similarly with regards fire suppression, the Fingleton White report outlines that whilst a fire suppression system is not required for an outdoor installation, each cabinet is equipped with a fire suppression system consisting of an aerosol fire extinguisher composed primarily of ultrafine particles of potassium salt and inert gas. The Fingleton White report also outlines that each cabinet is constructed of high strength steel with a 1-hour fire rating, providing additional protection to adjacent equipment and personnel. I would note that while the AWN report acknowledges the detailed report submitted by Fingleton White and does not cite any misgivings with regard the BESS technology, it does conclude that based on evidence from previous incidents the recommended method to control thermal runaway is through the use of water.
- 9.3.17. Section 4 of the Fingleton White report provides further detail on fire safety features of CATL EnerOne BESS. Of note, and as detailed already above, is that the report outlines that the large-scale fire test to UL9540A proved that the battery module does not release enough gas to require deflagration venting in the event of a thermal runaway, and that the test demonstrated that when the unit was forced into thermal runaway no external flaming occurred, no flying debris or explosion was triggered and during post-test observations no further re-ignitions were observed, and further referencing a thermal management system that provides, where necessary, active cooling and heating to the internal BESS components, and that an inbuilt dry agent fire suppressant would be deployed to prevent a fire from occurring. The Fingleton White report considers that a controlled 'burn down' is the best approach, outlining that the use of water in a fire event is not necessary, a stance maintained by the

applicant in the s. 132 response. I would note again and reiterate what I outlined in the previous section, that while the AWN report acknowledges the detailed report submitted by Fingleton White, it does conclude that based on evidence from previous incidents the recommended method to control thermal runaway is through the use of water.

- 9.3.18. Observations received to the submission of the applicant post remittal include that the developer's reliance on CATL EnerOne BESS, UL 9540A testing carried out on cell, module and rack level to eliminate all risk of fire, explosion, thermal runaway and toxic gas release are useful but do not guarantee that a hazardous incident could not occur. Specifically, the Lithium Iron Safety Letter (with respect to Lithium-Iron batteries) prepared by Dr Paul A. Christensen, submitted with an observation to the applicant's submission to the s. 131 notice following remittal, refers to the risk of explosion and need for water as part of a firefighting strategy. Water requirement, gas release and risk of explosion are discussed below, with my conclusions on the matter set out thereafter.

Dispersion Modelling

- 9.3.19. Many of the observations received refer to the health risk associated with gas emissions during a fire / thermal runaway event, and I further note that the Kildare CFO identified in its original submission to the PA that a dispersion model was not submitted. Fire dispersion modelling can be important tool used to predict how smoke, heat and gases might spread in the air after a fire incident starts; it is particularly relevant in more built-up, suburban areas, however, where a place is more densely populated and urbanised in nature.
- 9.3.20. Section 5.1 of the Fingleton White Report (submitted post remittal) provides details of gas composition analysis carried out when a CATL EnerOne BESS was forced into thermal runaway during a third party UL9540A large-scale. Table 19 of the Fingleton White Report lists the gases recorded, summing up that the data demonstrates that toxic gases sometimes associated with Lithium-ion batteries, such as Hydrogen Fluoride (HF), Hydrogen Chloride (HCL) and Hydrogen Cyanide (HCN), were not detected during the test.
- 9.3.21. I note that section 3.1 of the first AWN report identifies that carbon monoxide was recorded during the forced thermal runaway event, noting that this gas is both

flammable and toxic. In this regard, I note that the BESS compound would be sited in a backland location, over 200m from the nearest existing dwelling and c. 148m from the dwelling permitted in 2022 on land to the north east. Therefore, unlike an urban area, in my view, the potential risk associated with smoke, heat radiation, or airborne contaminants would be comparatively less. I also note that the first AWN report (see Appendix 1) considered that dispersion modelling is not required on the basis that Hydrogen Fluoride (HF) or Hydrogen Cyanide (HCN) are not expected to be generated.

- 9.3.22. I am therefore satisfied that this issue has been addressed and that dispersion modelling is not required.

Explosion Modelling

- 9.3.23. Section 3.1 of the first AWN report identifies various flammable gases recorded during the forced thermal runaway event and recommend that explosion modelling be undertaken. The Section 132 notice issued to the applicant required details on a water supply and over pressure / explosion modelling. Water supply is discussed in the next section.
- 9.3.24. Attachment A of the applicant's response to the s. 132 notice contained a Fire Explosion Technical Note prepared by Fingleton White. The technical note reiterated earlier findings in terms of explosion risk referring to the third party testing carried out in accordance with UL 9540A, again pointing out that the CATL battery racks are compliant with NFPA 855 and NFPA 68 without the need for deflagration venting.
- 9.3.25. Notwithstanding the above, the technical note acknowledges the potential for a catastrophic failure of a CATL BESS cabinet and refers to a Technical Note prepared by Atkins for the Health and Safety Executive for Northern Ireland (HSENI), titled *Technical Note: Hazard Assessment of Battery Energy Storage Systems*, which sought to assess the potential overpressure wave that may result from a BESS fire.
- 9.3.26. Using the findings of the HSENI technical note the applicant's own (Fingleton White) technical note concludes that based on the size of each proposed CATL EnerOne BESS cabinet and associated internal rack, a residual vapour space of 1.5 cubic metres is present within each cabinet which would potentially generate a blast radius of between 10 and 21 metres based on a 70-mbar overpressure wave. A

representative map is included showing a 21 metre blast radius in the context of the site.

- 9.3.27. Referring to the submitted Fingleton White technical note, the applicant's response cover letter concludes that the theoretical blast radius is at a considerable distance from the nearest receptors and therefore in the event of an overpressure incident, the theoretical blast radius will not adversely effect the receptors in the vicinity of the site.
- 9.3.28. The explosion risk modelling was reviewed by AWN as part of its brief from the Commission (see AWN report in Appendix 2), which found that the methodology used and blast radius identified to be acceptable and thus concluded that the Fingleton White technical note demonstrates there are no significant effects from an explosion risk perspective.
- 9.3.29. In summary, based on submitted documentation, I am satisfied that whilst there is residual risk of explosion, the risk is limited and in the event that one occurred, the effects would be limited considering the locational of the BESS compound in the context of sensitive receptors. I am therefore satisfied that this issue has been addressed.

Dedicated Water Supply for Firefighting Purposes

- 9.3.30. Referring to the response to the s. 132 notice, the applicant, in the first instance, maintains the position as set out in the Fingleton White Expert Technical Report, received by An Bord Pleanála on 29th May 2024 as part of the applicant's submission following remittal of the case from the High Court. The position is that water is not considered to be the agent of choice in the event of a fire related / thermal runaway incident, and furthermore that any agent, including water, deployed externally to the BESS unit would not be capable of penetrating its enclosure. On this basis, the applicant invites the Commission to consider the original design option. Whilst the applicant is not explicit as what version is being referred to, I can only assume that the 'original design option' referred to in this context relates to the amended layout as submitted to An Bord Pleanála on the 29th May 2024, which includes a change from Lithium-Ion batteries to Lithium Iron Phosphate (LFP) batteries, consolidation of battery modules and a greater setback of same from the northeast boundary, but does not include firefighting water supply or drainage infrastructure to retain spent firewater.

- 9.3.31. However, in an effort to address the concerns of An Bord Pleanála, the applicant has amended the layout to address Item 1 of the S. 132 notice, with reference made to an Engineering Report, Second Addendum to the Environmental Report and amended drawings (P804 Rev. P, P808 Rev. P, P81 Rev. P 7 and P818 Rev. P), all of which accompanied the response. This is referred to by the applicant as the 'Firefighting Option'. Having regard to the various observations on file, and having particular regard to the reports received from the expert fire consultant at AWN Consulting Ltd., it is my view that the final revised proposal, the 'firefighting' option, is the most suitable design proposal, reflecting the advice that an on-site provision of water is necessary.
- 9.3.32. An above-ground firewater storage tank will be provided on-site with a capacity to store 250 cubic metres (250,000 litres) of water, which the applicant stated is in excess of the recommended 228,000 litres (1,900 litres of water per minute for two hours) as recommended in the NFCC BESS Guidance. I note that the NFCC published updated BESS guidance in December 2025, which states that 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. Based on this guidance, the applicant's proposed tank of 250,000 litres represents an overprovision of 70,000 litres or c. 38%. On review of the s. 132 response, AWN consultants acknowledged the updated guidance but considered the over provision to be suitably conservative and appropriate.
- 9.3.33. In my view, a water supply above the NFCC recommendation is appropriate in this instance when considered against access to water supply. In its s. 132 response, the applicant outlines that water supply to fill the on-site tank would be sourced either from public mains on the Dunshane / Johnstown Road (L6044) or tankered onto the site, the latter, the applicant states, is also an option under the NFCC Guidance. The tank would be filled over a period of time under either scenario prior to commencement of the use of the BESS facility. With respect to mains supply, the applicant submitted a pre-connection enquiry to Uisce Eireann (copy enclosed), however a response from Uisce Eireann was not received at the time the applicant was submitting the S. 132 response. Following receipt of the s. 132 response, ACP invited Uisce Eireann to comment on the application / appeal. No response was

received. I would note that the first party appeal lodged by the applicant includes a copy of a pre-connection enquiry response from Uisce Eireann, dated 16th June 2021, which outlines that a water connection is possible. Whilst this letter from Uisce Eireann was based off the original proposal which did not include for on-site water storage, it does indicate the potential for a water connection.

- 9.3.34. I also note observations received argue that the water mains on the L6044 are not suitable for supplying water to the extent needed for the BESS water tank. In any event, the NFCC guidance does appear to accept an on-site provision of water supply, stating '*Where a flow of 25L/sec cannot be achieved, it would be prudent to provide an equivalent static supply of water on site...*'. As noted above, given the uncertainty around a suitable public mains supply, I consider it appropriate to make provision for on-site water storage over and above the NFCC guidance recommendation.
- 9.3.35. The applicant outlines that the water tank would be maintained at capacity and connected to an on-site hydrant. The drawings submitted with the s. 132 response indicate the location of the mains connection to the BESS compound and the location of the water storage tank, however there is no location shown for a fire hydrant despite a symbol for same shown in the drawing legend. This can be suitably conditioned on any grant of permission.
- 9.3.36. In summary, whilst I am satisfied that the applicant has demonstrated that the CATL EnerOne BESS is sufficiently armed with suitable fire related detection and suppression systems, I concur with the AWN report and indeed those observations made including within the Dr Paul A. Christensen reports, that water is a necessary agent in dealing with fire risk and thermal runaway events. If the Commission is minded to grant permission, I recommend that the project be carried out in accordance with the 'firefighting option' as its referred to by the applicant, comprising the revised layout submitted in response to the s. 132 notice, including the provision of on-site water as indicated in the response.
- 9.3.37. I am therefore satisfied that this issue has been addressed.

Emergency Access

- 9.3.38. A number of observations raise concern with regards emergency access with much emphasis placed on the Kildare County Council CFO report to the planning authority

and the Lithium Safety Report (with respect to Lithium-Ion batteries) prepared by Dr Paul A. Christensen, submitted with an observation to the applicant's first party appeal. The CFO report refers to the requirements need for hardstanding areas for fire tenders whilst the Christensen report calls for two access roads, stating that it is usual for thermal power stations to have two access roads.

9.3.39. The NFCC guidance requires suitable access and egress for local fire services and refers to a minimum road width of 3.7m and a provision for turning circles. The site plan as submitted in response to the s. 132 notice shows an access road of 4m wide and sufficient space for circulation and turning within the compound. The compound itself will comprise an asphalt surface as part of the drainage strategy, which also addressed the CFO's concern with regards hard standings.

9.3.40. I am therefore satisfied that this issue has been addressed.

Emergency Response Plan

9.3.41. The applicant has not submitted a specific Emergency Response Plan however in my view the Fingleton White Report, submitted with post remittal, provides sufficient information to form a view around the issue of emergency response.

Suitable access is available for emergency vehicles and equipment

Discussed above. I am satisfied that suitable access is available.

Suitable water resources are available on site

Discussed above. I am satisfied that suitable water resources are available.

Suitable fire water run-off measures are available

In the s. 132 response, the applicant outlines a drainage strategy to collect stormwater and firewater. The batteries would be located on an impermeable and bunded asphalt surface. The make-up of the surface is further explained under section 4.1 of the Engineering Report with details shown on drawings P817 Rev. P and P818 Rev. P. Stormwater would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank. The tank is sized to cater for the recommended water supply for firefighting (228,000 litres,

based on 1,900 litres per minute for two hours) plus 30% buffer to account for rainfall during a fire event, thus a total capacity of 300,000 litres. Firewater would be held in the tank until emptied by a licenced contractor.

The second Awn report received (Appendix 2) finds that it is not clear how the 300,000 litre underground tank volume has been calculated, and that the tank should be designed to cater for the firewater run-off plus the 1 in 100 year rainfall event onto the surface area which discharges to the fire-water run-off holding tank, plus a 30% climate change allowance. Awn recommend that a condition be included on any grant of permission which requires the tank to be designed to include for the 1 in 100 year rainfall event with a 30% climate change allowance. I consider this requirement to be reasonable however I consider it more appropriate that the capacity of the underground tank be capable of holding the full capacity of the above ground water storage tank plus the 1 in 100 year rain event, plus the climate change factor. This can be conditioned if the Commission is minded to grant permission.

Suitable protection / separation is in place for sensitive receptors

Given the rural location, I am satisfied that there is suitable separation between the BESS compound and sensitive receptors.

With regards emergency response, the Fingleton White Report, submitted post remittal, outlines that monitoring of the BESS facility is fully remote, with the Battery Management System allowing the operator to directly interact with the BESS control system to address a fault or if needs be remotely shut down an individual BESS unit or the entire site. The Fingleton White Report also outlines that remote access capabilities allow the site operator to access support quickly and seamlessly from the BESS suppliers technical support team, should they be required. The Fingleton White Report does not however define procedures and responsibilities during a thermal runaway event, which may require the presence of fire tenders.

As such, whilst the proposal, in my view, includes a sufficient range of controls for the containment, storage and control of spent firefighting water, which is important for environmental reasons, and provides sufficient infrastructure to facilitate firefighting, I consider it prudent that an Emergency Management Plan be prepared and submitted to the planning authority for approval, to ensure an effective and timely

response to a fire-related incident. I am satisfied that same can be addressed by condition where the Commission is minded to grant permission.

Disposal of Spent Batteries

- 9.3.42. The issue of battery disposal was raised by a number of parties, including An Taisce in its report to the planning authority, also in the third party appeal and by observers. In the applicant's s. 132 response, it is stated that a benefit of the CATL EnerOne BESS module is that LFP (Lithium-iron) battery chemistry involves its end-of-life disposal, noting that Lithium-iron phosphate is non-toxic and can be recycled or disposed of more easily by manufactures. If the Commission is minded to grant permission, I recommend that a condition is included which requires that prior to the commencement of construction a battery method statement must be prepared and submitted for the written agreement of the Planning Authority detailing how end-of-life batteries are intended to be managed and disposed of.
- 9.3.43. I also note that the applicant does not explicitly identify whether the batteries to be used in the facility would be either new 'first-life' or used 'second-life' units. While second-life batteries can often be a cheaper alternative, new batteries typically provide advanced performance, better longevity, and higher inherent safety qualities. If the Commission is minded to grant permission, I recommend that a condition is included requiring that first generation (new) batteries only must be used in the development. The inclusion of such a condition would prohibit the possibility of the Applicant / facility operator from using second-life batteries as part of the BESS facility.

Summary

- 9.3.44. On the basis of the foregoing, I am satisfied that the application as amended post remittal has addressed the concerns raised by the planning authority in its reason for refusal and in observations received with regards fire risk management. In this regard, I particularly note the change to alternative Lithium-iron batteries, battery management systems, on-site provision of firefighting water above the NFCC recommendation, proposed drainage strategy including containment measures, and explosion modelling, and consideration of these elements by the AWN fire consultant.

9.4. Visual Amenity

- 9.4.1. Observations received argue that the proposal, including elements added at the latter stages, will adversely impact the visual amenity of the rural area.
- 9.4.2. CDP Objective EC O65 supports Battery Energy Storage Systems subject to a number of considerations including those relating to landscape, residential and amenity.
- 9.4.3. The landscape and visual impact associated with the proposal was addressed under Chapter 9 of the Environmental Report (ER) submitted with the application as initially lodged with the planning authority. The visual impact assessment did not include photomontages rather described the anticipated visual impact on four chosen receptors in the vicinity of the site. The first party appeal to ABP did however include an update visual impact assessment comprising the evaluation of 17no. photomontages.
- 9.4.4. The landscape and visual impact chapter was subsequently updated (ER First Addendum) in the submission made to ABP following remittal to take account of the revised layout and provisions of the new county development plan. This updated chapter along with the photomontages submitted with the first party appeal were subsequently relied upon by the applicant for consideration of the revised layout submitted to ABP in response to the s. 132 notice.
- 9.4.5. The ER identifies that the site is located within the Eastern Transition Landscape Character Area, identified as Class 2, Medium Sensitivity, that the site is low lying and does not interact with any landscape sensitivities including protected or scenic views. The ER identifies that the landscape baseline of the area is informed by established hedgerows and woodlands and also by the presence of the Dunnstown 400kV substation and associated pylons. The ER concludes that the magnitude of impact of the proposal would be low considering the footprint of the BESS compound, the scale of existing 400kV substation and pylons in the area and also that existing hedgerows would mostly remain intact and that any removal to facilitate access to and through the site will be compensated (referring to landscape masterplan submitted as part of submission following remittal). By association with landscape sensitivity and magnitude of impact, the applicant concludes that the significance of effects on the landscape is slight.

- 9.4.6. The submitted visual impact assessment considers the construction and operational stages of the development in the context of 17 no. viewpoints. By reason of the backland nature of the BESS compound itself and nature of roadside and field boundary hedgerows, the ER concludes that the proposal will have a low impact on the visual amenity of the area. The ER identifies that the construction phase will have a moderate to significant impact on the visual amenities in the vicinity of the proposed new entrance however such impact would diminish at operational stage and into the future as the proposed tree planting at the entrance matures. The applicant also considers the visual impact on the permitted dwelling (P.A. Ref. 211506 – granted June 2022) on land to the east and notes that a condition on that permission requires boundary planting (including oak and alder) to be carried out in the first planting season following commencement of development.
- 9.4.7. CDP Objective LR O1 seeks to ensure the consideration of landscape sensitivity. With reference to CDP Map ref. V1-13.1 (Chapter 13), the site is located in the Eastern Transition landscape character area, which is identified in CDP Table 13.1 as being Class 2 - Medium Sensitivity, being areas with the capacity to accommodate a range of uses without significant adverse effects on the appearance or character of the landscape having regards to localised sensitivity factors. CDP Table 13.3 provides guidance on the likely compatibility between a range of land-use classes and the principal landscape areas of the county classified by sensitivity, ranging from Least compatible through Low, Medium, High and finally Most compatible. The table identifies ‘solar energy’ and ‘major powerlines’ as being of high compatibility in the Eastern Transition landscape character area while a ‘windfarm’ and ‘industrial projects’ are identified as being of medium compatibility. While it doesn’t reference battery storage facilities, I am satisfied that by reason of its physical characteristics and function, and proximity to the Dunnstown substation, the proposal would fall within the high compatibility classification.
- 9.4.8. I generally concur with the applicant with regards landscape and visual impact. The BESS compound would be contained within fields bounded by established hedgerows which are to be retained. The proposal also includes new planting in the vicinity of the new entrance and in the vicinity of the BESS compound including along the network of raised earthen berms on its northeastern side. In terms of structures, and with reference to the submitted s. 132 response and dwg. no. P808 Rev. P (site

cross sections), the BESS compound would include the BESS cabinets, each at 2.2m high, a single storey switch and control room building with a pitched roof height of c. 6m, transformer compound with height of c. 4m, a water storage tank with a height of c. 3m and a 2.6m high palisade fence. Having regard to the character of the surrounding landscape and proposal to retain and supplement field boundary hedgerows, and considering the relatively low height of proposed structures and footprint of same and location of the compound in the context of public roads and nearby dwellings, I consider that the proposal will not seriously detract from the landscape character or visual amenities of the area, consistent with CDP Objective LR O1.

- 9.4.9. In terms of the dwelling and stables permitted under 211506, the dwelling would be located c. 148m from the closest BESS cabinet and c. 135m from the switch and control room building. During a site visit in May 2026 I observed that construction of the dwelling had not yet commenced, however the stables appear to be constructed. On the basis of the structure heights outlined above, along with existing boundary vegetation, which is to be supplemented, and the proposed 3m high planted berm to run along the northeastern side of the BESS compound, in my view the permitted dwelling will be sufficiently screened from the BESS site, preserving the visual amenity afforded to the dwelling, once constructed.
- 9.4.10. I also note that detailed plans and elevations of the various structures associated with the BESS, including switch and control room building, do not appear to have been submitted with the various submissions post remittal. This can be suitably conditioned if the Commission is minded to grant permission.

9.5. Residential Amenity

- 9.5.1. Observations received argue that the proposal will negatively impact on the amenities of nearby residents in the form of visual impact, noise and construction phase disturbance including traffic. Visual impact is considered in section 9.4 above whilst traffic related impacts are considered in section 9.7 below.
- 9.5.2. The planning authority's third reason for refusal included reference to noise. Chapter 6 of the ER first addendum (submitted post remittal) and Chapter 6 of the ER second addendum (submitted in response to the s. 132 notice) consider noise impact

associated with the revised proposal, both in terms of construction and operational phases.

- 9.5.3. ER first addendum (submitted post remittal) refers to the baseline acoustic survey outlined in the original ER submitted with the application as lodged with the planning authority, indicating that the baseline survey continues to form the basis for the addendum noise impact assessment.
- 9.5.4. The ER identifies 17 no. noise sensitive receptors, comprising 11 no. existing dwellings located along Stephenstown Lawn Road to the northeast and the L6044 to the east / southeast, along with the new dwelling permitted on land to the northeast and 5 no. proxy locations to the north / northwest and west to represent dwellings located further afield in those directions on the R412 and R448.
- 9.5.5. With respect to the construction phase, Section 3 in the preliminary CEMP outlines a typical construction timeline for a 212MW battery storage facility, indicating that the site setup, laying of foundations etc. would take c. 8 weeks following which the installation of battery storage units would take a further 8 weeks. I note that the construction phase of the associated substation (subject to future SID application) is also included, assigned 16 weeks following completion of the BESS. The programme indicates that following completion of both the BESS and substation, the connections and commissioning phase would take c. 20 weeks.
- 9.5.6. The ER outlines that construction noise will primarily arise during Phases 2 and 3, which comprise the installation of site structures and buildings (phase 2, 8 weeks) and digging / covering of cable trenches (phase 3, 16 weeks), albeit I note that with reference to the submitted preliminary CEMP, phase 3 relates to the substation. The ER concludes that for all sensitive receptors, noise levels, for both the BESS project and cumulatively with the substation project will not exceed the 65dB threshold.
- 9.5.7. Having regard to the backland nature of the site and intervening hedgerows to be retained, I consider that construction related noise that has the potential to cause nuisance to local residents is that generated by the movement of HGVs at the proposed site entrance on the L6044. However, whilst construction phase noise emissions will cause a nuisance to local residents, having regard to the relatively short construction period anticipated and conditioning of normal working hours, such

impact will be short term, and thus, not likely to cause adverse loss of residential amenity in the medium to long term.

- 9.5.8. With respect to the operational stage, the ER (first addendum) identifies the 598 no. BESS modules and 16 no. MV-Twin Skid (each comprising 2 no. invertors and 1 no. transformer) as being the operational noise emission sources, along with the substation transformer (future SID application). The ER does state that plant specifics will be confirmed at tender stage and that data for typically available plant is used for the purpose of operational stage noise assessment. The ER also outlines that the battery storage modules have two modes, namely the 'force-cooling/heating' mode used for daytime modelling and the 'self-circulation' mode used for night time modelling.
- 9.5.9. The ER modelling shows that operation stage noise at the sensitive receptor locations will be less than 40dB in all instances, but does identify that the night time noise level at NSR17 (the permitted, but not yet constructed, dwelling on land to the northeast) would be 39dB, which represents a +10dB change in the background ambient noise as a result of the proposal, noting that as per the British Standard BS4142, an increase above 5dB is likely to indicate an adverse impact. The ER outlines however that the World Health Organisation (WHO) recommends that the population should not be exposed to night time noise levels greater than 40dB, as such, the noise level of 39dB at NSR17 is below this mark. The ER concludes that the proposal will not cause any significant noise nuisance during day or night.
- 9.5.10. Notwithstanding the above, the ER outlines mitigation measures in the form of a 3m high landscaped berm to be constructed along the northeastern side of the BESS compound, seeking to further reduce noise levels to dwellings on the upwind side of prevailing south-westerly / westerly winds.
- 9.5.11. On the basis of the information provided by the applicant, I am satisfied that the proposal is unlikely to cause adverse noise pollution on nearby residents. I would further note the floor plan for the permitted dwelling to the northeast, which comprises four bedrooms, three of which have windows facing to the north/ northeast away from the BESS site and the fourth facing southwest. I also note a condition on the permission which requires boundary planting (including oak and alder) around the

south and southwest boundaries, to be carried out in the first planting season following commencement of development.

- 9.5.12. I also note that whilst based on the original layout, a submission received by the planning authority from the HSE concludes that a) the project area is not a quiet area as per the EPA Guidance NG4; b) approves noise assessment methodology; and c) agrees that there will be no significant operational noise impacts.
- 9.5.13. However, I also note that the planning authority's third reason for refusal included reference to noise impacts, and by association the commentary in the planning authority's planner's report regarding noise measurement periods used in the applicant's original Environmental Report, thus relating to the use of Lithium-ion batteries. The planning authority did not make any further comment with regards noise in subsequent submissions to ABP, albeit noting that the planning authority did reiterate its decision to refuse permission.
- 9.5.14. Notwithstanding the above, noting that the BESS plant specifics would not be confirmed until tender stage, if the Commission is minded to grant permission, I recommend that day time and night time noise restrictions be imposed for the operational stage, with the night time level restricted to 40dB to reflect the noise assessment submitted and recommendations of the World Health Organisation (WHO), with the levels measured from the identified sensitive locations, and such data be provided to the planning authority prior to installation of any BESS unit.

9.6. Impact on the Equine Industry

- 9.6.1. The third-party appeal submitted, along with other observations received, argue that the BESS project will cause significant reputational damage and negative impacts on the wider equine industry locally and nationally.
- 9.6.2. In response to the appeal, the applicant outlines that there is no evidence submitted to show that the project would undermine the economic viability of stud farms or cause reputational damage.
- 9.6.3. CDP Objective RD O15 encourages the expansion of the bloodstock industry by appropriately protecting the environment and amenity value of rural areas from encroachment by urban sprawl and incompatible development, whilst CDP Objective RD O7 supports the development of renewable energy production in rural areas and

Objective EC O65 supports the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants, subject to landscape, residential, amenity, human health, and environmental considerations. I also note Objective EC O66 which seeks to facilitate the delivery of necessary integration of transmission network requirements to allow linkages of renewable energy proposals to the electricity transmission grid in a sustainable and timely manner.

- 9.6.4. In the first party appeal, the applicant identifies that there are 12 no. studs within 5 km of the site and that the nearest stud is the Mylerstown Stud located c. 2km to the north. Furthermore, the applicant notes that there are no studs within the 2km length of the L6044 roadway off which access is sought for the proposed BESS. On this basis, the applicant argues that the BESS facility nor access to same would cause any visual impact on existing studs. I also note observations received from Mr. Peter Dillon with regards his land adjoining the BESS site to the northeast. His observations raise concerns that the BESS would have serious impacts on his home and his equestrian business, referred to by Mr. Dillon as Harristown Commons Stud. I note that the observer applied for planning permission in October 2021 (five months after the BESS application was lodged) for the new house, stables and barn.
- 9.6.5. Battery energy storage systems are supported by policy at national and local level and recognised as having an important role to play in facilitating several CAP and Sectoral Emissions targets. Having regard to the site context in a low lying area, nature of the proposal, including height of structures and footprint of same, landscaping scheme including retention and nature of field boundary hedgerows, along with the relatively short construction period and remote management at operational stage, I consider it unlikely that the project would cause any adverse impacts on the operation of equine / stud businesses in the area, nor damage to the reputation of the industry.
- 9.6.6. Broadly associated with the previous point, observations received also raise concern around the issue of toxic gases and associated impact on the health of horses. Most notably are letters / reports submitted with observations including a letters from various persons in the horse racing and bloodstock industry and also a Veterinary Medicine Equine report prepared by Dr Celia Marr, the latter outlining the vulnerability

of horses to toxins and the associated risk where Hydrogen fluoride (HF) is released from a Lithium-ion battery.

9.6.7. I would note that many of the observations around this issue of toxic gases were submitted to the original proposal for the use of Lithium-ion batteries, whereas the revised proposal submitted post remittal is based on the use of Lithium-iron batteries. Section 5.1 of the Fingleton White Report (submitted post remittal) provides details of gas composition analysis carried out when a CATL EnerOne Lithium-iron BESS was forced into thermal runaway during a third party UL9540A large-scale. Table 19 of the Fingleton White Report lists the gases recorded, summing up that the data demonstrates that toxic gases sometimes associated with Lithium-ion batteries, such as Hydrogen Fluoride (HF), Hydrogen Chloride (HCL) and Hydrogen Cyanide (HCN), were not detected during the test. In my view, this directly addresses the concerns raised in the various observations on the issue of HF and horse health. As outlined in section 9.3 of my report, I note that section 3.1 of the first AWN report, with reference to the Fingleton White report, identifies that carbon monoxide (CO) was recorded during the forced thermal runaway event, noting that this gas is both flammable and toxic. Any CO released would be released to the open air, dispersing quickly compared to a release within a confined space. Considering the rural location, setback from boundaries, in my view, the potential risk to animal health associated with CO release would be negligible.

9.6.8. I am therefore satisfied that this issue has been addressed.

9.7. Traffic and Vehicular Access

9.7.1. Access to the site would be via a new entrance on the L6044. The existing entrance to the field would be closed off permanently. The new entrance will be used for construction and operational phases and will be constructed prior to the transport of construction material to the site. At operational stage, the site will be monitored remotely.

9.7.2. Observations received to the application as lodged with the planning authority, and observations received to the appeals lodged, raised road safety concerns with regards construction and decommissioning phase traffic. Included with an observation to the first party appeal is a Traffic Impact Assessment prepared by Aidan

Farrell, Engineer, who sets out a number of concerns with regards the assessment by the applicant of potential traffic impact at construction phase and also refers to inadequate access for emergency vehicles, substandard road width and lack of internal circulation space.

Construction Traffic and Access

- 9.7.3. I note that the planning authority's planner's report identifies that roads in the vicinity of the site are narrow and that the ability of two vehicles to pass is limited, which is likely to cause disruption during the construction and decommissioning stages. However, the planner's report finds that the proposal is acceptable from a roads perspective subject to conditions regarding construction management of the site and access.
- 9.7.4. I also note a report, dated 19th June 2021, received by the planning authority from the Roads, Transportation and Public Safety section of Kildare County Council. The roads section raised no objection to the proposal subject to conditions including the requirement for the applicant to submit a construction traffic management plan and pre-commencement condition survey of the L6044 local road in the vicinity of the site entrance.
- 9.7.5. Traffic and road related issues are considered in the Engineering Planning Report and Chapter 11 of the Environmental Report, as originally submitted with the application to the planning authority. I note that subsequent submissions made by the applicant to ABP, including the response to the s. 132 notice, rely on the original traffic assessments submitted to the planning authority, albeit the ER addendum reports do outline that the change in technology will result in the need to transport smaller cabinets to the site compared to the previously proposed containers, which, the applicant predicts, would likely result in a reduced impact on the surrounding road network.
- 9.7.6. The Engineering Planning Report concentrates on the sightline and stopping distance requirements with regards the proposed entrance. The report identified that (at that time) the speed limit on the L6044 was 80km per hour, which, according to the 2017-2023 CDP, would require a stopping sight distance of between 120 and 160 metres in each direction. The report refers to a traffic survey, the results of which show that

the actual operating speed of that section of road is closer to 70km per hour, which, in the opinion of the applicant, justifies sightlines of 120m in both directions.

- 9.7.7. With regards speed limits, I note that as of 7th February 2025, the speed limit on all rural local roads nationally changed from 80 km per hour to 60 km per hour. With regards policy, the 2023-2029 CDP (Chapter 15, section 15.7.5) outlines that sightline requirements are determined by the Council on a case-by-case basis, that factors including the type, speed limit and condition of the road are taken into consideration; and that where sightlines are inadequate and would give rise to a traffic hazard, development will not be permitted.
- 9.7.8. On the basis of the lesser speed limit, and notwithstanding the operating speed observed by the applicant, I consider that 120m sightlines are sufficient. Furthermore, during a site visit, I observed that due to the profile of the local road in the vicinity of the proposed entrance, required sightlines in both directions are achievable and without any works to neighbouring roadside boundaries.
- 9.7.9. ER Traffic chapter outlines that the haul route for the construction phase would travel to the site via the R412 onto Stephenstown Lawn / L6073, then right onto the L6044 and then right into the site.
- 9.7.10. Section 3 in the preliminary CEMP submitted with the application outlines a typical construction timeline for a 212MW battery storage facility, indicating that the site setup, laying of foundations etc. would take c. 8 weeks following which the installation of battery storage units would take a further 8 weeks.
- 9.7.11. I note that the construction phase of the associated substation (subject to future SID application) is also included, assigned 16 weeks following completion of the BESS. The programme indicates that following completion of both the BESS and substation, the connections and commissioning phase would take c. 20 weeks.
- 9.7.12. Overall, and notwithstanding that the substation is subject to a future SID application, the actual construction phase of the BESS, at 16 weeks, and another 16 weeks for a substation, is relatively short, noting that the initial 8 weeks of the BESS construction programme comprises conventional site works and foundations with the next 8 weeks comprising installation of BESS units.

- 9.7.13. The Aidan Farrell report argues that the calculation of construction related trips to and from the site is underestimated by the applicant and the implications of same on road safety. The observer estimates that for Phase 1 (site preparation, foundations and road) trips to and from the site would be in the region of c. 50 trips in daily and thus c. 50 trips out over an 8 week period compared to the applicant's estimation of c. 5 trips in and thus c. 5 trips out on daily basis. The observer's figures are based fundamentally on his estimations around the depth of excavation required for the compound and substation base, and by association the volume of material to be removed off site and volume of base material required to be imported.
- 9.7.14. Notwithstanding the alternative estimations put forward in the Aidan Farrell report, I consider that the implementation of a construction traffic management plan, to be agreed with the planning authority, would be sufficient to address the short term construction phase related impacts on the local road network, including issues around traffic user safety. I also note in the submitted preliminary CEMP that a liaison officer would be appointed to liaise with representatives of the Camphill Community, a group residential home located on the L6044 northeast of the site entrance.
- 9.7.15. I also consider that the haul route chosen is reasonable as it avoids heavily populated areas with minimal reliance on local roads. With regards the estimation of trips to the site, I would also note that the Aidan Farrel report was based on the original layout, thus the layout comprising 40ft BESS containers on a c. 1.3ha compound footprint. The revised layout submitted post remittal includes a reduced BESS compound footprint to a stated 0.88ha and replacement of 40ft containers with free standing BESS cabinets.
- 9.7.16. I would again note that the planning authority nor its roads section raised any objection in this regard subject to conditions, including the requirement for the developer to submit a construction traffic management plan and details of haul routes for agreement.
- 9.7.17. The Aidan Farrel report also refers to the impact of construction related dust on nearby residents. Nuisances during construction including dust and noise are addressed in the submitted preliminary CEMP. I consider that a final CEMP setting out best practice in emission control, submitted for agreement to the planning authority would address this concern. I also recommend that the condition be

adjusted to add specific reference to dust control on the local haul route, which, in my view, is a reasonable measure to protect the amenity of local residents and road users particularly pedestrians and cyclists.

- 9.7.18. The Aidan Farrel report also raises concern regarding the condition of the local roads, arguing that a further deterioration as a result of construction traffic would cause road safety issues. I consider that a condition requiring a pre-condition survey and post construction repair would sufficiently address this concern. In this regard, I note the condition recommended by the roads section in its report to the application as lodged. I recommend that this condition be attached to any grant of permission.
- 9.7.19. The observer's report also outlines that the proposed switchgear building, at a width of 4.8m, constitutes an abnormal load and thus requires a permit from relevant road authority with regards transport of same, and by association the impact of transporting the switchgear structure on the local road network in terms of removal of hedgerows and trees.
- 9.7.20. In the revised layout, buildings include a switch and control room, which, with reference to the submitted site cross sections, has the appearance of a conventional hipped roof building, and a transformer compound. This is a slight departure from the layout plan as originally submitted, which showed a switchgear building in the form of a steel container. No plans of these buildings have been submitted. This can be conditioned on any grant of permission. I also consider that details on abnormal loads can be suitably dealt with in a construction traffic management plan to be submitted to the planning authority for agreement.
- 9.7.21. I am satisfied that the proposed means of vehicular access to the site for the construction and operational phases is acceptable, and the predicted traffic volumes generated by the proposed development would not lead to any significant traffic safety issues or be prejudicial to public health.

Fire Tender and Emergency Vehicle Access

- 9.7.22. With regards emergency access, and as outlined in section 9.3 above, the NFCC guidance requires suitable access and egress for local fire services and refers to a minimum road width of 3.7m and a provision for turning circles. The site plan as submitted in response to the s. 132 notice shows an access road of 4m wide and sufficient space for circulation and turning within the compound. The compound itself

will comprise an asphalt surface as part of the drainage strategy, which also addressed the CFO's concern with regards hard standings. I am therefore satisfied that this issue has been addressed.

9.8. Cultural Heritage

- 9.8.1. Observations raise concerns that the proposal would negatively impact cultural heritage including archaeology and protected structures.
- 9.8.2. Chapter 10 of the ER as submitted with the application lodged to the planning authority considers the potential, likely and significant effects of the proposed development on archaeological and architectural heritage.
- 9.8.3. The ER identifies that there are no known recorded monuments within the development site and that the closest recorded monument is located some 475m to the west. Similarly, the ER identifies that there are no NIAH listed buildings within the site and that the nearest building on the NIAH register is Dunnstown Cottage (ref. 11902405) located c. 880m to the west.
- 9.8.4. The ER does not refer to protected structures. I have reviewed the Record of Protected Structures contained in Appendix 6 to the CDP and note three protected structures within relative proximity to the site, namely Dunshane House (RPS Ref. B24-15) located on the east side of the L6044 northeast of the proposed site entrance and c. 300m east of the BESS compound, Dunstown House (RPS Ref. B24-14) located on the west side of the L6044 south of the proposed site entrance and c. 600m south of the BESS compound, and Dunstown Cottage (RPS Ref. B24-21) also being on the NIAH register as outlined above.
- 9.8.5. Considering the separation distances between the site and the protected structures, the local topography of low lying flat land and intervening vegetation, I consider that the proposal would not cause any significant effects on the setting, visual or otherwise, of the protected structures.
- 9.8.6. I note that the Development Applications Unit of the Department of Tourism, Culture, Arts, Gaeltacht, Sports and Media recommended a condition with regards archaeological monitoring. I consider this to be reasonable.

- 9.8.7. On the basis of the above, subject to a condition on archaeological monitoring, I am satisfied that the proposal will not cause any significant effects on the archaeological or architectural heritage of the area.

9.9. Biodiversity

- 9.9.1. Observations raise concerns that the proposal would have adverse impacts on the natural environment including protected species, hedgerows and also with regards the proximity of the proposal to Harristown Common and impact on same.
- 9.9.2. An ecological impact assessment is provided in Chapter 6 of the original Environmental Report. The ER provides a review of the relevant policy and legislation, including the EU Habitats Directive, EU Birds Directive, and Wildlife Amendment Act 2020, and sets how the desk-based and walk over survey (8th April 2021) were undertaken to inform the assessment, describes the existing natural environment, including habitats, provides an assessment of potential impacts, and outlines proposed mitigation measures for the project.
- 9.9.3. Chapter 5 of the ER first addendum report (submitted May 2024 post remittal) provides an update to the biodiversity chapter, specifically seeking to address concerns around the potential impact of the proposal on designated bird species associated with the Poulaphouca Reservoir SPA. Chapter 5 of the addendum report refers to wintering bird surveys carried out over the winter of 2022 / 2023 and the winter of 2024.
- 9.9.4. Chapter 4 of the ER second addendum report (submitted in response to the s. 132 notice) provides a more complete review of the original biodiversity chapter, referring to the original walk over habitat survey carried out on 8th April 2021 and further habitat surveys carried out on 30th September 2022, 26th January 2024 and 9th April 2025, and concludes that the firefighting option will have no further impact with regards biodiversity and as such the mitigation measures outlined in the original ER remain valid.
- 9.9.5. I have read and reviewed the ER and addendums to same as part of my assessment of the appeal case and, in my opinion, the reports provide an accurate and thorough assessment of the ecological features present within the zone of influence for the proposed development.

- 9.9.6. The ER second addendum report is based on the firefighting option, which, in my view, is the preferred option having regard to the conclusions of AWN consultant reports (see Appendices 1 and 2 of this report). As such, I will base my assessment on the findings of the ER second addendum report, along with relevant baseline information and mitigation measures set out in the original ER.
- 9.9.7. The original ER identifies that the site comprises 3 no. habitat types, namely Improved Agricultural Grassland (GA1), Hedge / Treelines (WL1 / WL2) and Drainage Ditch (FW4), noting that the GA1 is of low local ecological value whilst GA1 and WL1/WL2 are of high ecological value. With reference to the ER Second Addendum Report, the habitat value was confirmed to be the same on foot of the most recent walk-over survey on 9th April 2025.
- 9.9.8. A relatively small section of hedgerow would be removed to facilitate access off the public road and also for the internal access track to cross through an internal field boundary. All remaining hedgerows would be retained. With reference to the original ER and second addendum to same, mitigation includes that all works and development would be set back a minimum of 6m from hedgerows, whilst / ecological enhancement comprises supplementing existing native hedgerows and planting of new native trees and hedgerows, resulting in a net gain in hedgerows following completion of development.

Birds

- 9.9.9. The bird survey carried out in April 2021 recorded robin, wren, blackbird, great tit, coal tit, swallow, pheasant and rook. All recorded species are green listed (not considered at risk of extinction) apart from the swallow which is listed as amber (medium conservation concern).
- 9.9.10. The 5 no. winter bird surveys detailed in the ER addendum report recorded a total of 37 no. bird species across the site and northern marchlands. These included 25 no. green-listed species, 7 no. amber-listed species (Goldcrest, Herring Gull, House Sparrow, Linnet, Skylark, Starling and Black-headed gull, noting that the Black-headed gull was previously red-listed), and 5 no. red-listed species (Kestrel, Lapwing, Meadow Pipit, Redwing, Yellowhammer and Kestrel, noting that the Kestrel was previously amber-listed. Reference is also made to the National Biodiversity Data Centre database, accessed by the applicant in June 2025, which indicates that for

the previous 10 years species recorded (other than those already recorded by the applicant) within 2km of the site include red-listed Barn Owl, Curlew, Snipe and Swift and Woodcock, noting that the Woodcock was previously amber-listed.

- 9.9.11. The ER considers that the proposal will not have a significant impact on birds given that all treelines and hedgerows which offer good foraging and nesting potential will be retained and protected. The ER also states that birds are mobile and therefore will move away from disturbances to other similar available habitat in the wider area, thus the site itself is not identified as a site of importance for birds. Other mitigation set out in the original ER include vegetation removal outside of nesting season and engagement of an ecological clerk of works during construction.
- 9.9.12. Having regard to the relatively small footprint of the proposal within a wider rural setting, nature of the farmed grassland, retention and protection of hedgerows and drainage ditches, relatively short construction phase, remotely monitored facility at operational stage, and mitigation measures proposed, I consider that there would be no significant effect on birds as a result of the proposed development. Wintering bird species associated with the Poulaphouca Reservoir SPA are discussed in greater detail in Section 9.14 and Appendix 4 of this report.

Badgers

- 9.9.13. I note that no badger activity was recorded on site during the various field surveys however mammal paths were identified within the hedgerows and treelines indicative of a wider commuting network and further noting that the grassland is a suitable foraging habitat for badgers. The ER considers that badgers are unlikely to be affected by the proposal on the basis that hedgerows and treelines are to be retained and protected however given the suitability of the grassland for foraging, mitigation during construction is proposed, including pre-construction survey, engagement of ecological clerk of works and measures around deep excavations, and operational phase ecological enhancement measures including the planting of additional hedgerows and trees and supplementing existing hedgerows. On the basis of the foregoing, I do not consider that there would be any significant effects on badgers as a result of the proposed development.

Bats

- 9.9.14. The original ER outlines that an initial assessment was carried out during the field survey (April 2021) for suitability of the habitats within the site to support bat roosting, foraging and commuting. The ER further outlines that bats are known to follow linear features as they commute through the landscape and there considers that bats are unlikely to be affected by the proposal on the basis that hedgerows and treelines are to be retained and protected and that the sections of hedgerow to be removed for access were not identified as having roosting bat potential.
- 9.9.15. By reason of the site location within the wider expanse of hedgerows and woodlands, and taking account of the ecological enhancement proposed, I consider that the extent of hedgerow and tree removal to be relatively small scale, and unlikely to result in any adverse effect on bats.
- 9.9.16. However, I do note that the proposal will include lighting. The appropriate design of luminaire and lighting fixtures should be done by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended areas only. I am satisfied that this can be addressed by condition.
- 9.9.17. In conclusion, I consider that the proposed development is acceptable in terms of ecology and biodiversity, subject to the implementation of the recommended mitigation measures outlined in the ER and addendums to same and pCEMP.

Harristown Commons South / Dunshane Common

- 9.9.18. A number of observations make reference to the wetland bordering the site to the north, referring to the land as being of national importance and a candidate National Heritage Area. For clarity, there is no formal / statutory natural heritage area designation on the Harristown / Dunshane Common wetland adjacent to the site. The identification of Harristown Common wetland as a candidate natural heritage area originates from Chapter 12 of the Kildare County Development Plan 2023-2029 (CDP), with a candidate status applying only to the section of the wetland, known as Harristown Common North, located north / northeast of Stephenstown Lawn / L6073, while the part of the wetland known as Harristown Commons South (Dunshane Common) wetland, located to the southwest of Stephenstown Lawn / L6073, thus adjoining the site, is not identified under the CDP as a candidate natural heritage area.

- 9.9.19. I would reiterate that a candidate natural heritage area is not a statutory designation nor is it akin to a proposed natural heritage area (also non-statutory) as referenced in the National Parks and Wildlife Service (NPWS) website.
- 9.9.20. CDP Table 12.6 identifies Harristown Commons North as Category B (Nationally Important), recognised as undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive) and / or undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000.
- 9.9.21. CDP Table 12.6 identifies Harristown Commons South (Dunshane Common) wetland as a Category C+ Wetland (County Value), recognised as, for example, as a site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.
- 9.9.22. These sites, in their capacity as a wetland, are not mapped in the CDP however Objective BI O49 refers to the County Kildare Wetlands Survey 2012-2014. This survey appears to be incorporated into a national wetland survey map², which identifies the extent of both Harristown Commons North and Harristown Commons South (Dunshane Common) wetlands, with the latter sharing its south / south-eastern boundary with the appeal site, or more accurately, the site of the proposed substation (subject to future SID application).
- 9.9.23. Objective BI O49 of the CDP seeks to *'protect wetland sites that have been rated A (International), B (National) C+ (County) and C (Local) importance as identified in the County Kildare Wetlands Survey 2012-2014, (See Tables 12.5 & 12.6). Any development within the zone of influence of these listed wetland sites should be subject to EclA and where appropriate, hydrological impact assessment'*.
- 9.9.24. Considerations around hydrology is discussed in the next section. These sites are not designated European sites therefore are not subject to AA screening. Having regard to the ecological assessment conducted by the applicant, contained in Chapter 6 of the original ER, with addendums to same, and mitigation measures proposed, I consider that the proposal will not cause any significant ecological effects to the

² <https://www.wetlandsurveys.ie/news/kildare-wetland-inventory-completed>

Harristown Commons South (Dunshane Common) wetland nor the Harristown Common North.

9.10. Drainage, Flood Risk and Water Quality

- 9.10.1. Observations received contend that the proposal will result in ground and surface water contamination, flood risk and interference with hydrological regime of the wider area including that of the Commons to the north.
- 9.10.2. A drainage strategy submitted with the firefighting option has been designed to collect stormwater and firewater. The batteries would be located on an impermeable and bunded asphalt surface. Stormwater would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank, to be sized to cater for 1 in 100 year rain event and climate change. Firewater would be held in the tank until emptied by a licenced contractor. Note that the AWW firewater consultant queried the capacity calculation and recommends the inclusion of a condition on any grant of permission to require that the tank is sufficiently designed to account for the heavy rain event plus climate change contingency. All other surfaces within the site would comprise permeable material, including the access.
- 9.10.3. With regards flood risk, section 5.2.2 of the ER second addendum outlines that the OPW national flood hazard mapping dataset shows no recorded historic flood events within a 2km radius of the site. The ER also outlines that OPW CFRAM mapping from indicates no potential risk of fluvial or pluvial flooding within the site, with the closest risk c. 2.7km south at the River Liffey.
- 9.10.4. The impact on water quality is discussed under section 9.15 - Water Framework Directive (WFD) with further reference to Appendix 5. In summary, the WFD Screening Report submitted by the applicant concludes that due to the implementation of a CEMP at construction stage and drainage strategy at operational stage, including infiltration basin and petrol interceptor, and containment of firewater, the proposed development will not result in the deterioration of any surface or ground waterbody. I concur with this conclusion subject to conditions with regards the design capacity of the underground firewater holding tank.

- 9.10.5. In the context of Harristown Common wetland, the appeal site is hydrologically connected to the wetlands via the network of drainage ditches which, according to the applicant's ER, drain in a northerly direction into the Harristown Commons. The pCEMP submitted with the application outlines that alteration of drainage ditches is not required for the proposal and that industry best practice will be implemented during construction to avoid any pollution of the drains. In terms of operational stage, the proposed drainage strategy, including bunded compound, infiltration basis, petrol interceptor and holding tank for firewater, are, in my view, sufficient to ensure that no operational stage contaminants reach the commons adjoining the site.
- 9.10.6. The planning authority's third reason for refusal refers to treatment of foul water from on-site staff toilets during the operation stage. In the first party appeal, the applicant clarifies that the operation stage toilet facility would be located in the substation building, which is to be subject of a SID application, thus those facilities can be considered by ABP under that process.
- 9.10.7. Based on the applicant's response, the operational stage of the BESS facility will not contain toilets, thus no requirement for on-site foul treatment, noting no foul mains serving the area. I am therefore satisfied that there would be ground or surface water concerns. I do note that during construction stage, temporary welfare facilities will be provided on site including a portable toilet with foul water to be stored and removed off site by a licenced contractor. I consider this to be reasonable for the construction phase.
- 9.10.8. On the basis of the foregoing, I am satisfied that the drainage strategy for the proposed development has been sufficiently designed to cater for the development and unlikely to cause any adverse impacts on surface or groundwater.

9.11. **Procedural Issues**

Acceptance of Amended Plans

- 9.11.1. An observation received contends that the purpose of remittal is to restart the procedure so that a legal error can be corrected (i.e. in this case the failure to engage with submissions related to water supplies for firefighting) and not to allow the developer to modify the project. In this regard the observer argues that An Bord Pleanála erred in directing public notice and further public observations on the

modified project. The same observer refers to a statement in the cover letter submitted by the applicant as part of the submission made to the s. 131 notice post remittal, where the applicant states that if a grant of permission was to issue for the proposal as originally lodged, it is likely that the applicant would seek consent for the amendments then proposed under Section 146A(1)(b)(iii).

- 9.11.2. As outlined in Sections 1.0 and 4.0 above, An Bord Pleanála's original decision to grant planning permission (under ref. ABP-310841-21) was quashed by the High Court and the appeal case was remitted back to An Bord Pleanála for renewed consideration.
- 9.11.3. Following remittal, due to the passage of time the Board invited submissions or observations from all interest parties pursuant to s. 131 of the Act. As a side note - considering the findings in *Keshmore Homes Limited v An Bord Pleanála* [2023] IEHC 369 with regards the adoption, in that case, of a variation to a CDP, being considered a material matter, and similarly in this case, the adoption of a new County Development Plan in the period after the remittal date, it was, in my view, fair procedure to allow submissions from the interested parties, particularly the applicant, as the starting point to reconsideration of the remitted case.
- 9.11.4. The Applicant's response, dated 29th May 2024, included a revised layout and revised supporting reports / documentation, which took account of the location of a new house permitted to the east of the site (P.A. ref. 21/1506), a revised type of BESS on the basis of advancement in technology (constituting a change from Lithium-ion batteries to Lithium-iron batteries – noting greater storage capacity and efficiency of space), and the adoption of a new County Development Plan for County Kildare. The submitted documentation was circulated to interested parties and, in the interests of natural justice, readvertised by the applicant (newspaper notice and new site notice) pursuant to 142(4) of the Act.
- 9.11.5. The observer argues here that the Board should not have accepted revised plans at this point and as such erred in requiring new public notices with respect to same.
- 9.11.6. The s. 131 notice issued to all parties stated that the Board cannot consider comments outside the scope of matters in question. In my view, the submission of a revised proposal in the form that it took was a reasonable measure by the applicant as the submission, including supporting documents and reports, sought to respond to the

matters of the judicial review, particularly AA and fire risk, and in doing so sought to respond to the evolution of matters on a number of other fronts, namely the adoption of a new county development plan in 2022, a grant of permission for a new one-off dwelling on adjoining land to the northeast, and the advancement of BESS technology.

- 9.11.7. And in any event, the changes to the layout at that stage comprised a contraction of the BESS compound accounting for technological advances (c. 1.3ha to c. 0.88ha), albeit a marginal increase in MW capacity (212MW to 222MW), height of cabinets reduced by 40cm, and additional landscaping including a 3m high earthen berm with planting along the northeastern boundary, with the remainder of the submission comprising updated supporting reports, including AA screening. In its response to the post remittal s. 131 notice, the applicant considered that such changes were not materially at variance with the original layout. I would tend to agree.
- 9.11.8. Notwithstanding, the pertinent point, in my view, is not the acceptance of the revised proposal but rather the action by the Board at that point to seek the views of all interested parties (s.131 notice) and also, in the interests of natural justice, the general public by requiring the applicant to carry out new public notices under s. 142(4) (newspaper notice and site notice), the wording of which included a detailed description of the changes made and revised supporting documentation submitted.
- 9.11.9. A number of other observations received raised a concern that, by reason on the amendments made following remittal, the proposal is materially different to that initially lodged with the planning authority and that to ensure fairness and transparency a new application should be made to the planning authority.
- 9.11.10. Following a review of submissions received and following the engagement by An Bord Pleanála of an external fire consultant, a s.132 notice, dated 27th May 2025, was issued to the applicant relating to issues around firefighting water, explosion risk and AA. The further information received from the applicant on the 23rd June 2025 was deemed to be significant, and it was circulated to the various parties to the appeal for comment pursuant to s. 131 of the Act and readvertised as significant new information pursuant to s. 142(4) of the Act. That public notice, which comprised a new site notice and newspaper notice, ran for 4 weeks commencing on the 25th November 2025.

- 9.11.11. As per with the first readvertisement, the new public notices (newspaper notice and site notice), included a detailed description of the changes made. In my view, the processing of the appeal to date, which has included two separate rounds of public consultation pursuant to s. 131 and 142(4) of the Act, has ensured fairness and transparency.
- 9.11.12. With regards the applicant and observer's reference to Section 146A(1)(b)(iii) of the Act, this is an issue of separate procedure not relevant to the subject appeal.

Referrals / Notification

- 9.11.13. An observation received raised concerns that the modified proposal was not circulated to Kildare Fire Service.
- 9.11.14. The revised proposal, as submitted in response to the s.132 notice, was notified to Kildare County Council, by letter dated 13th August 2025, pursuant to s. 131 of the Act. A response was received on 2nd September 2025 reaffirming its decision to refuse permission. In such cases, the notification is to Kildare County Council rather than to individual sections of the council. It is the responsibility of the council to engage with each relevant internal section, including fire services, in the preparation of an informed response.

9.12. **Other Matters**

Climate Change

- 9.12.1. I have considered the application in the context of climate change. The Climate Action and Low Carbon Development Act, 2015, as amended, commits Ireland to the objective of becoming a carbon-neutral economy by 2050 and reducing Greenhouse Gas (GHG) emissions by 51% by the end of the current decade. Section 17 of the Climate Action and Low Carbon Development (Amendment) Act, 2021 amends the principal act such that Section 15(1) requires a relevant body shall, in so far as practicable, perform its functions in a manner consistent with relevant climate related plans and strategies including the most recent approved climate action plan (CAP), being CAP 24 and CAP 25.
- 9.12.2. The purpose of the CAP is to lay out a roadmap to deliver on Ireland's climate ambition of 51% reduction in GHG emissions from 2021-2030 and net-zero emissions by 2050.

- 9.12.3. The proposed development comprises battery energy storage to manage the delivery of energy generated by renewable energy, thus facilitating the capacity for Ireland to meet its target for renewable energy generation and to achieve a climate-neutral economy by no later than 2050, the underlying objective of CAP25.

Devaluation of Property

- 9.12.4. I note the concerns raised in observations with respect of the devaluation of neighbouring property. However, having regard to the assessment and conclusion set out above, I am satisfied that the proposed development would not seriously injure the amenities of the area to such an extent that would adversely affect the value of property in the vicinity.

9.13. **Environmental Impact Assessment**

- 9.13.1. The proposed development is not a class for the purposes of EIA as per the classes of development set out in Schedule 5 of the Planning and Development Regulations 2001, as amended (or Part V of the 1994 Roads Regulations). No mandatory requirement for EIA therefore arises and there is also no requirement for a screening determination. Refer to Form 1 in Appendix 3 of report.

Project Splitting

- 9.13.2. Observations argue that the application fails to comply with the EIA Directive and comprises project splitting since it is part of a wider energy project which is not considered in the application.
- 9.13.3. With regards the potential for project splitting in the context of EIA, the O’Grianna v An Bord Pleanála judgement found, in simple terms, that if an EIA is required for the main part of the development, in that case a wind farm, an EIA will also be required for the grid connection, and that the cumulative impact of the primary project, in that case a wind farm, and the grid connection needed to be considered in order to comply with the EIA Directive.
- 9.13.4. In the context of the O’Grianna judgement, it is worth examining the status of the proposed 220kV substation (albeit a SID planning application for same has yet to be made) within the wider national grid network. The documentation submitted with the

SID pre-application consultation request, to which ABP-310033-21 relates, outlines that the substation would become a node on the national grid for this region in the county allowing a connection point for future solar projects in the area, a point noted in the associated Inspector's Report. Referring again to the O'Grianna judgement, the Court concluded that in reality the wind farm and its connection to the national grid was one project, neither being independent of the other. In my view there is a clear differentiation made between the 'project', in that case being the wind farm and associated grid connection, and the 'national grid', and also in terms of the elements of a project not being independent of each other.

- 9.13.5. In the current case, whilst the proposed 220kV substation constitutes an upgrade to the national grid, the proposed BESS is reliant on the delivery of the substation for connection to the national grid, thus they are functionally related. That aside, and with reference to Appendix 3 of this report, I conclude that no automatic requirement for EIA arises with respect to the BESS facility and there is also no requirement for a screening determination. I also note that a 220kV substation is not a class of development for the purposes of EIA.
- 9.13.6. Notwithstanding the above, the applicant's Environmental Report, along with the first and second addendum to same, examine the proposed substation in the context of cumulative impact.
- 9.13.7. Furthermore, in the case of the solar farm permitted under ABP-314320-22, the Board deemed it not to be a prescribed class of development for the purposes of EIA, nor was it deemed to constitute sub-threshold development in the context of restructuring of rural landholdings for the purpose of EIA, with reference to Class 1 under Part 2 of Schedule 5 of the Planning and Development Regulations 2001, as amended.
- 9.13.8. On the basis of the above, I am satisfied that for the purposes of the EIA directive, project splitting does not occur.

9.14. **Appropriate Assessment Screening**

- 9.14.1. Refer to Appendix 4. In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in this AA screening, I conclude that the proposed development individually or in

combination with other plans or projects would not be likely to give rise to significant effects on any European Sites, including the:

- Pollardstown Fen SAC (Site Code: 000396)
- Poulaphouca Reservoir SPA (Site Code: 004063)

in view of the conservation objectives of these sites and is, therefore, excluded from further consideration. Appropriate Assessment is not required.

9.15. Water Framework Directive

9.15.1. The applicant submitted a Water Framework Directive (WFD) Screening Report as part of a response to a s. 132 notice, a report which was not submitted previously.

9.15.2. The WFD screening report concludes that due to the absence of a pathway between the site and surface waterbodies within the 2km study area, there would be no deterioration in surface water quality as a result of the proposed development, and on that basis, there are no surface waterbodies screened in for further consideration.

9.15.3. The WFD screening report also considers groundwater bodies within 2km of the site. The Curragh Gravels East groundwater body lies beneath the site whilst the Kilcullen groundwater body is located to the southeast however also extends under the Curragh Gravels East groundwater body. The Waste Facility (W0014-01) groundwater body is identified to the southwest. The WFD report identifies a direct hydrological connection between the site and the Curragh Gravels East groundwater body, an indirect hydrological connection with the Kilcullen groundwater body and due to the expected flow direction of underground water, no hydrological connection with Waste Facility (W0014-01) groundwater body.

9.15.4. The WFD Screening Report concludes that due to the implementation of a CEMP at construction stage and drainage strategy at operational stage, including containment of firewater, the proposed development will not result in the deterioration of any surface or ground waterbody. I conclude that on the basis of objective information, that the proposed development will not result in a risk of deterioration on any waterbody (rivers, lakes, groundwaters, transitional and coastal), either qualitatively or quantitatively, or on a temporary or permanent basis, or otherwise jeopardise any waterbody in reaching its WFD objectives. Therefore, it can be excluded from further assessment.

9.15.5. See Appendix 5 of this report for further information.

10.0 Recommendation

10.1. I recommend that planning permission be granted for the reasons and considerations set out below.

11.0 Reasons and Considerations

Having regard to the:

- provisions of the Kildare County Development Plan 2023-2029, including Policy EC P2 which promotes renewable energy generation and associated grid infrastructure at appropriate locations to meet national objectives toward a net zero economy and Objective EC O65 which supports the reinforcement and strengthening of the electricity transmission and distribution network, including the installation of Battery Energy Storage System plants.
- provisions of the Climate Action Plan 2025 and Climate Action Plan 2024,
- location, nature, size and scale of the proposed facility, as amended on appeal,
- nature of the receiving landscape and absence of any specific conservation amenity designation for the subject lands,
- location and proximity of the proposed development to the regional and national road network, including the R412, R448, M7 and M9,
- mitigation measures proposed for construction and operational phases,
- submissions on file including those from prescribed bodies, the appellant, and the Planning Authority,
- documentation submitted with the application, including the Environmental Report and associated addendums to same, Appropriate Assessment Screening Report and associated second addendum, Preliminary Construction Environmental Management Plan and Technical Notes on Fire Risk prepared by Fingleton White Environmental, and
- AWN Fire Consultant Reports,

- The report and recommendation of the planning inspector,

it is considered that, subject to compliance with the conditions set out below, the proposed development would:

- be in accordance with the provisions of the Kildare County Development Plan 2023-2029, and with national, regional and local planning policy,
- be in accordance with CAP25, and CAP24
- be acceptable in terms of traffic safety and convenience,
- be acceptable in terms of the protection of groundwater and surface water,
- not give rise to a risk of fire safety, serious pollution, or be prejudicial to public health, and
- not seriously injure the amenities of the area or property in the vicinity,

the proposed development would therefore be in accordance and with the proper planning and sustainable development of the area.

12.0 Conditions

1.	The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the further plans and particulars received by An Coimisiún Pleanála on 29th May 2024 and 23rd June 2025, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars. (a) The development shall be carried out in accordance with the ‘firefighting’ option, plans and particulars for which was received by An Coimisiún Pleanála on 23rd June 2025. Reason: In the interest of clarity.
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2.	The period during which the development hereby permitted may be carried out shall be 10 years from the date of this Order. Reason: Having regard to the nature of the development, the Commission considers it appropriate to specify a period of validity of this permission in excess of five years.
3.	a) The operation life of the BESS shall be for a period of 30 years from the date of the first commissioning the battery energy storage system. All structures, including the battery cabinets, control building, and all other permitted equipment and ancillary structures, shall then be removed and the site reinstated unless, prior to the end of that period, planning permission shall have been granted for their retention for a further period. b) Prior to the commencement of development, a detailed Site Restoration and Decommissioning Plan providing for the removal of the battery cabinets and all other ancillary structures, and a timescale for its implementation, shall be submitted to and agreed in writing with the planning authority. c) On decommissioning of the facility, the battery arrays and all ancillary structures shall be dismantled and removed permanently from the site. The site shall be restored in accordance with the agreed Site Restoration Plan, and all decommissioned structures shall be removed from the site within 6 months of decommissioning. Reason: To enable the planning authority to review the operation of the battery energy storage system over the stated time period, having regard to the circumstances then prevailing, and in the interest of landscape restoration.
4.	a) The mitigation measures contained in the Environmental Report and associated addendum reports shall be fully implemented b) A Final Construction and Environmental Management Plan (CEMP) shall be submitted to and agreed in writing with the planning authority prior to the commencement of development. The CEMP shall include but not be limited to construction phase controls for dust (including on the haul route

	sections of Stephenstown Lawn / L6073 and L6044), noise and vibration, waste management, protection of soils, groundwaters, and surface waters, site housekeeping, emergency response planning, site environmental policy, and project roles and responsibilities. c) An Ecological Clerk of Works (ECoW) with suitable experience shall be appointed to ensure all mitigation measures outlined in the Environmental Report and associated addendum reports and the Construction Environmental Management Plan are carried out. d) The ECoW shall submit a report to the planning authority demonstrating compliance with mitigation measures and ecological considerations both during and post the construction phase. Reason: In the interest of environmental protection, residential amenities, public health and safety and environmental protection
5.	Prior to commencement of development, the following shall be submitted for the written agreement of the Planning Authority: a) Plans and elevations of the single storey switch and control room building, transformer compound. b) Details of the materials, colours and textures of all the external finishes of the proposed development. c) The inverter/transformer stations, battery storage, control units and all fencing shall be dark green in colour, or a similar muted colour. d) A method statement detailing how end-of-life batteries shall be managed and disposed of. Only first generation (new) batteries shall be used in the development. End-of-life battery management shall thereafter be undertaken in accordance with the details agreed. e) Amended site layout plan showing the location of fire hydrant/s. Reason: In the interest of visual amenities of the area and of environmental management.
6.	Prior to commencement of development, the developer shall submit a final Fire Risk Management Plan (FRMP) and Emergency Response Plan

	prepared by a suitably qualified individual for the review of the planning authority. No works shall commence on site until the developer has received the written agreement of the planning authority regarding these plans. (a) The measures contained in the Fire Risk Management Plan shall be fully implemented. (b) The measures contained in the agreed Emergency Response Plan shall be fully implemented.
7.	a) During the operational phase of the proposed development, noise levels, as measured at the nearest noise sensitive location shall not exceed: i. An Leq,1h value of 55 dB(A) during the period 0800 to 2200 hours from Monday to Saturday inclusive. ii. An Leq, 15 min value of 40 dB(A) at any other time. The noise at such time shall not contain a tonal component. At no time shall the noise generated on site result in an increase in noise level of more than 10 dB(A) above background levels at the boundary of the site. b) All sound measurement shall be carried out in accordance with ISO Recommendation 1996:2007: Acoustics - Description and Measurement of Environmental Noise. Reason: In the interests of environmental protection and management and to protect amenities in the vicinity.
8.	Prior to commencement of development, the following shall be submitted for the written agreement of the Planning Authority: a) A Construction Traffic Management Plan, which shall include measures to minimise disruption to the public road network and prevent damage and make provision for repair of same. Where necessary, the plan shall facilitate vehicle passing movements on the local road network and include details of the proposed methods for notification of general road users, and local residents, during the construction phase. b) A detailed programme of deliveries shall be provided, including dates and times, number of loads, weights (including any abnormal loads),

	road closure and diversion routes, support vehicles etc. The programme of deliveries shall be developed following consultation with all relevant services and utility providers and prior to deliveries taking place. c) A copy of the agreed Construction Traffic Management Plan, programme for deliveries and agreed haul routes shall be submitted for the records of the Planning Authority prior to commencement of development. The development shall thereafter be undertaken in accordance with the agreed details. d) In the event of any damage to the L-6044 local road at the location of the vehicular entrance caused by the development, this shall be repaired by, and at the costs of such repairs shall be the developer. Prior to the commencement of development, the developer shall submit a full photographic and condition survey of the L-6044 local road to distances of 50 metres either side of the permitted construction site entrance. This photographic and condition survey shall be subject to the written agreement of the planning authority. Reason: To prevent damage to the public road in the interests of traffic safety and public safety.
9.	a) Comprehensive details of the proposed external lighting system to serve the development shall be submitted to, and agreed in writing with, the planning authority, prior to commencement of development. b) The agreed lighting system shall include a recommended strategy for reducing the impact of lighting on bats and be fully implemented and operational before the proposed development is occupied. c) CCTV cameras shall be fixed and angled to face into the site and shall not be directed towards adjoining property or the road. d) Each fencing panel shall be erected such that for a minimum of 300 millimetres of its length, its bottom edge is no less than 150 millimetres from ground level.

	e) All service cables associated with the proposed development, such as electrical and telecommunication cables, shall be located underground. Reason: In the interest of visual and residential amenity, to allow wildlife to continue to have access to and through the site and to minimise impacts on drainage patterns.
10.	a) The site shall be landscaped in accordance with a comprehensive scheme of landscaping prepared by a suitably qualified person, details of which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development and which is consistent with the details in the Landscape Masterplan prepared by Hayes Ryan Landscape Architecture submitted to An Coimisiún Pleanála on 29th May 2024. b) All planting shall be adequately protected from damage until established. Any plants which die, are removed or become seriously damaged or diseased, within a period of five years from the completion of the development shall be replaced within the next planting season with others of similar size and species, unless otherwise agreed in writing with the planning authority. Reason: In the interest of residential and visual amenity.
11.	(a) The developer shall engage a suitably qualified (licensed eligible) archaeologist to monitor (licensed under the National Monuments Acts) all site clearance works, topsoil stripping, groundworks, dredging and/or the implementation of agreed preservation in-situ measures associated with the development following consultation with the National Monument Service (NMS). (b) Prior to the commencement of such works the archaeologist shall consult with and forward to the Local Authority archaeologist or the NMS as appropriate a method statement for written agreement. The use of appropriate tools and/or machinery to ensure the preservation and recording of any surviving archaeological remains shall be necessary. Should archaeological remains be identified during the course of

	archaeological monitoring, all works shall cease in the area of archaeological interest pending a decision of the planning authority, in consultation with the National Monuments Service, regarding appropriate mitigation. (c) The developer shall facilitate the archaeologist in recording any remains identified. Any further archaeological mitigation requirements specified by the planning authority, following consultation with the National Monuments Service, shall be complied with by the developer. Following the completion of all archaeological work on site and any necessary post-excavation specialist analysis, the planning authority and the National Monuments Service shall be furnished with a final archaeological report describing the results of the monitoring and any subsequent required archaeological investigative work/excavation required. All resulting and associated archaeological costs shall be borne by the developer. Reason: To ensure the continued preservation either in situ or by record of places, caves, sites, features or other objects of archaeological interest
11.	Prior to the commencement of development, the developer or any agent acting on its behalf, shall prepare a Resource Waste Management Plan (RWMP) as set out in the EPA's Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (2021) including demonstration of proposals to adhere to best practice and protocols. The RWMP shall include specific proposals as to how the RWMP will be measured and monitored for effectiveness; these details shall be placed on the file and retained as part of the public record. The RWMP must be submitted to the planning authority for written agreement prior to the commencement of development. All records (including for waste and all resources) pursuant to the agreed RWMP shall be made available for inspection at the site office at all times. Reason: In the interest of proper planning and sustainable development.

12.	(a) Drainage arrangements, including the attenuation and disposal of surface water, shall comply with the requirements of the planning authority for such works and services. (b) The underground firewater holding tank shall be designed ensure it caters for the full capacity of the 250 cubic metre water tank, along with firewater run-off from the fire event (minimum 1900l/min x 2 hours) plus the rainwater run-off from the surface area diverted to the holding tank, based on the 1 in 100 year rainfall event with a 30% climate change allowance following Irish EPA Guidance Note to Industry on Fire Water Retention Facilities. No works shall commence on site until the developer has received the written agreement of the planning authority regarding these plans. Reason: In the interest of public health and to ensure a proper standard of development.
13.	Site development and building works shall be carried out only between the hours of 0800 to 1900 Mondays to Fridays inclusive, between 0800 to 1400 hours on Saturdays and not at all on Sundays and public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority. Reason: In order to safeguard the amenities of property in the vicinity.
14.	The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000, as amended. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine the proper application of the terms

	of the Scheme. Reason: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.
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I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Jim Egan
Planning Inspector

28th August 2026

Appendix 1 – AWN Technical Note



Trinity
Consultants

 **awnconsulting**

REVIEW OF PROPOSED BATTERY ENERGY STORAGE PROJECT AT DUNNSTOWN

CLIENT

An Bord Pleanála

DOCUMENT
REFERENCE

257501.0160R01

DATE

13/05/2025

DOCUMENT CONTROL SHEET

Document Control Sheet		
Our Reference	257501.0160R01	
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Details	Approved by	Written by
Signature		
Name	Matthew Michie	Dr Fergal Callaghan
Title	Senior Risk Consultant and Director	Director
Date	13/05/2025	13/05/2025

Disclaimer

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



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1. INTRODUCTION

Dr Fergal Callaghan of AWN Consulting Ltd was commissioned by An Bord Pleanála to complete a report with regards to the Dunnstown BESS, the brief issued to AWN was as follows:

1. To assess the suitability of the fire safety systems proposed by the applicant for the development (both as initially proposed and as subsequently modified) and specifically the absence of water as an extinguishment.
2. To review the Chief Fire Office's Report (KCC) and (with the exception of the final bullet point) to provide specific comment on the main conclusions reached in this report.
3. To review the following reports and to comment on the assumptions and methodology used and conclusions reached in each:
 - (a) Lithium Safety Report - Dr Paul A. Christensen
 - (b) Fire Safety report - EGAN
 - (c) Technical report for CATL EnerOne BESS units - Fingleton White
 - (d) Lithium Safety Letter - Dr Paul A. Christensen(where reports a and b relate to the project as originally proposed and assessed by the Planning Authority, and reports c and d relate to the revised proposal for a lithium-iron battery storage project subsequently submitted to ABP).
4. If appropriate, advise the reporting inspector on conditions to be included to address any likely main effects or matters requiring additional information which may form part of a request for Further Information.
5. Prepare a written report providing a synopsis of matters considered and main conclusions.

2. BATTERY ENERGY STORAGE SYSTEMS

In Ireland, renewable and sustainable energy sources have steadily increased their share of overall electricity generation over the past decade, driven by concerns about climate change, energy security, and fluctuating fossil fuel prices. Wind energy, which is Ireland's dominant renewable source, has played a key role in this transition. However, the intermittency of renewables remains a challenge, which can be mitigated—but not entirely resolved—by the deployment of battery energy storage systems (BESS).

BESS are able to store electrical energy from renewable and non-renewable sources and can release the energy when necessary, such as during peak demands, power outages or grid balancing. BESS are an array of individual battery modules aggregated, typically containerised to form a storage unit. BESS units discharge electricity as DC (Direct Current) – this is converted to AC (alternating current) by a device known as an inverter prior to being fed to the grid which operates on AC.

The lithium-ion (Li-ion) battery cell has become the most widely used BESS battery system, due to their compact size, high power density, and efficient energy storage capabilities. The current proposed Dunnstown BESS uses Lithium Iron Phosphate (LFP), a type of Li-ion battery, which is type of unit less prone to thermal runaway events.

Large scale Li-ion BESS developments are not currently regarded to be subject to the provisions of the COMAH Regulations (2015) by the Health and Safety Authority (HSA).

2.1 Battery Chemistry

Batteries are able store chemical energy and convert it to electrical energy through chemical reactions between the positive electrode, referred to as the anode, and the negative electrode, referred to as the cathode – negatively charged ions flow towards the anode, which has a positive charge and positively charged ions flow towards the cathode, which has a negative charge. The anode and cathode are separated by an electrolyte.

A LiB(Lithium ion Battery) cell is comprised of these two electrodes, the anode and cathode, either side of a porous polymer separator soaked in electrolyte.

Typical separators are polyethylene, polypropylene or a combination of both. The separators typically employed in LiBs are in the region of 20-30 μm thick, which is much less than the thickness of a standard sheet of A4 paper: i.e. very thin, and this should be considered concerning battery abuse and the consequent internal short-circuiting of anode and cathode. It will be noted that such a thin plastic sheet could be prone to damage during transport or installation and hence great care must be taken to ensure the likelihood of such damage occurring is minimized.

The electrolyte is a mixture of organic compounds with an added salt, lithium hexafluorophosphate or LiPF_6 for example, that dissociates in the organic mixture to produce free lithium and hexafluorophosphate ions (Li^+ and PF_6^-). The separator is a critical component as it prevents the electrodes from touching each other, which would cause an internal short circuit and significant Joule heating (which could lead to a thermal runaway event), but allows the free movement of the ions.

On charging, the lithium-ions move out of the cathode, through the electrolyte and into the anode, which is typically made up of very small particles of graphite. By definition, oxidative processes take place at the anode and reductive processes at the cathode. The anode is the graphite electrode during discharge and

the mixed metal oxide is the cathode: on charging, these terms should switch. However, by convention, the terms retained are those specified for discharge.

2.2 BESS Designs

A BESS arrangement consists of an aggregate of individual battery cells, sized to fit the energy supply needs of the development. The quantity of individual cells determines the BESS's power, typically in Megawatts (MW). The duration at which the BESS unit can deliver its power is measured in Megawatt Hours (MWh); for example, a BESS with a power rating of 50 MW and a useable capacity of 200 MWh will have an energy storage duration of approximately 4 hours.

2.3 BESS Safety Systems

Safety features of BESS units vary between supplier; however, enclosures typically have internal layers of protection to isolate faulty battery cells / stacks, to minimise fire propagation. Furthermore, enclosure casings should be designed to contain and prevent spread to adjacent enclosures (UL9540A - UL 9540A, Test Method for Evaluating -Thermal Runaway Fire Propagation in Battery Energy Storage Systems, was developed to validate the safety of BESS installations as an alternative to meeting specific code criteria).

BESS containers / enclosures should have the following safety features, as required:

1. Battery Management Systems (BMS), the BMS monitors the cells' voltage and temperature and measures current and pack voltage as well as detects any voltage imbalance, cell temperature differences, and sense line diagnostics.
2. A fire detection system, including CO gas detection and smoke detection system, and alarm system.
3. Facility for faulty BESS enclosures to be isolated by the BMS
4. Thermal Management System to minimise temperature fluctuations
5. Humidity and water ingress protection
6. Vents (can be passive or active) to avoid the build-up of gas in a cell thermal event
7. Deflagration panels to mitigate against the effects of an explosion event
8. The enclosures should be Highly Accelerated Life Tested (HALT)
9. Enclosure casing designed to prevent high voltage exposure
10. Modules made from a flame-retardant polymer material and the bottom tray made of steel to minimize the risk of spread of fire within the module or enclosure.
11. Adherence to UL9540 with evidence of a UL9540A burn test. This test demonstrates that, in the event of thermal runaway in a module, propagation should not occur between adjacent containers.

2.4 Design Standards

The BESS industry is still in the relatively early stages of development and policies and standards are being developed for large scale BESS developments. The National Standards Authority of Ireland (NSAI) has created an Electrotechnical Committee (ETC) for Electrical Energy Storage Systems (NSAI ETC TC 20). This committee is responsible for coordinating Irish input to the standardization work of the International Electrotechnical Committee (IEC) in energy storage. However, to the best of the authors knowledge, the IEC has not published standard guidance for Battery Energy Storage System design at the time of writing.

The NFPA 855 standard and UL 9540 standard are particularly significant standards for BESS developments, with the UL 9540A test protocol playing a crucial role in ensuring safety.

NFPA 855 applies not only to BESS but also to other electrochemical energy storage systems, fuel cell storage, and flywheel energy storage. It provides guidelines on emergency response, hazard mitigation, interconnections, commissioning, operations and maintenance, and decommissioning. Additionally, it references and requires compliance with various other energy storage system (ESS) standards. The primary focus of NFPA 855 is mitigating fire and explosion risks associated with BESS.

Underwriters Laboratories (UL) standards and certifications are another essential component of BESS safety. UL-listed products undergo rigorous testing and monitoring under nationally recognized safety standards, providing a higher level of confidence compared to non-listed alternatives. UL 9540 is a key safety standard for energy storage systems and their integration with utility grids or standalone applications. It addresses critical aspects such as functional safety, grid connectivity, fire detection and suppression, and environmental performance. NFPA 855 frequently references UL 9540. While UL 9540A is not a standard itself, it serves as a test method for evaluating thermal runaway risks in energy storage systems. This test assesses thermal runaway propagation at the cell, module, unit, and installation levels, providing key data on gas composition, heat and gas release rates, deflagration hazards, reignition risks, and fire protection effectiveness. Although some energy storage technologies are not susceptible to thermal runaway, UL 9540A can be used to conduct extreme testing to assess system performance in fire scenarios. This offers additional assurance regarding fire and explosion risks in new BESS technologies.

3. HAZARDS OF BESS

Battery cells can fail in several ways, including but not limited to, improper installation, abusive operation, physical damage, and cell design or manufacturing defects. These failures can lead to thermal runaway which can result in explosion, fires and dispersion of toxic gases. Thermal runaway is especially hazardous in large scale BESS, as thermal runaway is heat driven; therefore, there is potential for thermal runaway to cascade to surrounding cells within a BESS unit.

3.1 Thermal Runaway

Thermal runaway is a process whereby an uncontrolled chain of exothermic reactions produce heat and cause an increase in battery temperature. As battery temperature increases, these reactions trigger additional degradative processes which leads to an even greater amount of heat, resulting in an uncontrollable rise in temperature. Depending on the internal chemistry of the battery, flammable, explosive and toxic gases can be produced.

It is noted that a thermal runaway event is different to a fire. In a fire, heat oxygen and fuel are needed to sustain a fire. Removing one element can extinguish the fire. In a thermal runaway event, oxygen is not required to sustain the reaction. This has important consequences for fighting a thermal runaway fire, which is further explained in the following paragraphs.

From Section 3.2 of the DNV GL TECHNICAL SUPPORT FOR APS RELATED TO MCMICKEN THERMAL RUNAWAY AND EXPLOSION McMicken Battery Energy Storage System Event Technical Analysis and Recommendations Arizona Public Service Document No.: 10209302-HOU-R-01 Issue: A, Status: Final Date: July 18, 2020 report:

The fire triangle is used for training purposes to help firefighters, first responders, and safety officials generally understand the essential ingredients of any fire. The combination of fuel, heat, and oxygen are needed to sustain a conventional fire. If any one of them is removed, the triangle is disassembled, and the fire may be extinguished. Consider the example of a typical campfire. Application of heat through fire or friction will ignite the fuel (the wood).

When the wood is stacked and arranged such that air can flow under and through the firewood stack, it provides oxygen to help the wood fuel burn. The campfire is extinguished by removing any one of the corners of the triangle, i.e., suffocating the fire with a blanket to remove oxygen, dousing it with a bucket of water to cool it, or dispersing the embers to remove the wood fuel.

However, thermal runaway in a Li-ion battery differs from the conventional fire triangle. As a Li-ion battery is consumed in thermal runaway, it is fueled by an internal chemical reaction that releases heat and can continue without oxygen or a visible flame. Accordingly, management of thermal runaway differs from that of a conventional fire, specifically because starving a thermal runaway event of oxygen may have little effect, at least until the exothermic reaction is complete. Instead, heat must be removed (by cooling with water), or the fuel must be dispersed in order to stop a thermal runaway event.

Therefore, using a suppressant gas (which is designed to extinguish a conventional fire) does not work for a thermal runaway. Instead, water is required to cool batteries to remove the heat formed by a thermal runaway and hence bring the runaway under control and stop it propagating.

While thermal runaway and fire are two different processes in a Li-ion battery failure, one can lead to the other. For example, an external fire can send a battery into thermal runaway, or thermal runaway can create a secondary fire as it begins to burn plastic and remaining battery materials.

DNV GL stated in their report that they have performed hundreds of Li-ion battery cell thermal runaway tests and have concluded that the basic thermal runaway process of a single Li-ion battery cell (in air), and the secondary fire behavior, can be summarized into three phases:

First, voltage or temperature instability occurs. During DNV GL's test, the internal temperature of the cell rose as direct battery cell heating was applied. The cell began emitting gases, sourced mostly from the thermal decomposition of the electrolyte solvents in the battery, before going into thermal runaway.

Second, the voltage drops to zero as the internal cell materials fail, and the anode and cathode experience a direct internal short. This is the start of thermal runaway, as all of the electrical energy stored in the battery flows through the short. Temperatures can briefly spike as high as 300 – 600°C.

The duration of the temperature peak can be seconds to several minutes depending on the size of the battery. In open air, this thermal runaway event may be accompanied by flame, although, in a tightly packed assembly of cells, flame may not occur. Some firefighters may call this a "deep seated fire" but it is important to remember that substantial heat can be generated without any flame whatsoever.

Third, as the internal materials of the cell are consumed, the thermal runaway event can transition (if oxygen is present) to the consumption of the remaining battery materials—i.e., the electrolyte and polymers and plastics surrounding the battery cells. This would be a secondary fire as a consequence of the heat generated from the exothermic reactions in thermal runaway. The gaseous emissions of this "burn" are consistent with a plastic fire—i.e., H₂, CO, HCl, HCN, and HF are emitted along with other hydrocarbons. This plume is flammable and toxic, and if sufficiently concentrated, a flammable atmosphere may be created. It is important to note that the combination of these flammable gases can create a combined flammability and auto-ignition limit that is actually lower than the limits of the individual gases.

The autoignition temperature of a substance is the lowest temperature at which it spontaneously ignites in normal atmosphere without an external source of ignition, such as a flame or spark.

*In a module, rack, and system, battery cells can fail at different rates under different modes of off-gassing with or without flaming. Because thermal runaway can occur without flame, gases may not be consumed by an ignition source immediately after they are emitted from a consumed cell. **The presence of a fire suppression agent will also inhibit ignition of these off-gases. In fact, the potential of a non-flame thermal runaway event creates a scenario where high heat and combustible gases can coexist without igniting.** This is an important aspect of thermal runaway that is relevant to the cause of the explosion at the McMicken facility.*

P. A. Christensen, W. Mrozk and M. S. Wise, School of Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK state, in their report A Study on the Safety of Second-life Batteries in Battery Energy Storage Systems, published by the Newcastle University Office of Products and Standards, in January 2023 stated:

In broad terms, thermal runaway can be described as uncontrolled positive feedback.

However, the precise definition of thermal runaway remains a matter for discussion: thus, some authors define it as the point at which a fixed rate of temperature increase is surpassed, e.g. 1°C min⁻¹ or 10°C s⁻¹, whereas a more accurate (but less easy to measure) definition is that of a self-sustaining heating process, i.e. once the temperature of a cell passes a point of no return, the exothermic reactions continue to generate heat and the cell will progress inevitably to an exponential increase in temperature.

The events leading up to and including thermal runaway are also still a matter for research. Taking abuse by heating as a starting point: the first stage is generally accepted to be the breakdown of the Solid Electrolyte Interface or SEI, a protective layer that forms on the graphite anode particles during the first charge. This layer prevents further contact between the anode and solvent, but allows free passage of lithium ions.

The breakdown of the SEI is stated as commencing around 90°C or as low as c.a. 60°C. The onset is dependent on the degree of lithiation of the anode: this process is exothermic and has been associated with the onset of self-heating. The breakdown of the SEI results in the production of small chain alkanes, CO₂ and oxygen. In general, it is accepted that the SEI can self-heal up to ca., 80 – 120° forming a "secondary SEI" that is less compact than the initially-formed layer and hence may allow exothermic reactions with the organic solvent of the electrolyte, again generating small chain alkanes and heat, and CO. In addition, hydrogen gas is produced from the reduction of the binders employed in the anode (e.g. polyvinylidene fluoride or polyvinylidene difluoride, PVDF).

Between ca. 120°C and 240°C internal short circuit and the accompanying catastrophic release of heat can take place depending upon the composition of the separator. Typical separators are made of polyethylene, polypropylene or a mixture of polymers, the latter may be coated with a ceramic layer. Thus, the melting point of polyethylene is 130°C, polypropylene 170°C and ceramic-coated polymer/mixed polymer separators c.a. 200°C.

The collapse of the separator was previously believed to be the trigger for thermal runaway: however, at temperatures above 150°C exothermic collapse of the cathode structure takes place to generate oxygen and, in some cases, highly oxidising oxides: the onset temperature of this process depends upon composition, e.g. from 150°C for NMC cathodes to c.a. 310°C for LFP cathodes. The oxygen produced can cross over to the anode where it is consumed in a highly exothermic reaction, sufficiently exothermic to initiate thermal runaway at temperatures significantly less than that needed for separator collapse. LiBs having LFP cathodes are generally considered to be more stable due to the higher onset temperature for the collapse of the cathode structure : however, this may simply delay ignition and hence facilitate explosion. With respect to this, it is worth noting that the explosions of the LiBESS in Brisbane and Beijing both employed LFP cells.

As the temperature of a cell rises, the solvents comprising the electrolyte will vapourise, e.g. the boiling point of dimethyl carbonate (DMC) is 91°C and that of ethylene carbonate (EC) is 248°C, and eventually vent as a result of burst or rupture events.

The exothermic reactions following abuse generate a mixture of gases that includes, on venting: flammable gases such as hydrogen, sulphur and nitrogen dioxides, toxic gases such as Hydrogen Fluoride, Hydrogen chloride, Hydrogen Cyanide, Carbon Monoxide, and carbon dioxide , droplets of organic solvent and a range of small chain alkanes and alkenes, in other words, a vapour cloud.

It appears that, in general terms, the composition of this vapour cloud does not vary with chemistry, form factor or manufacturer. The vapour has been routinely confused with smoke, but is actually the pre-ignition phase: there is insufficient oxygen inside cells undergoing exothermic reactions to sustain ignition, but the vapour may ignite immediately on venting, in which flare-like flames can be produced. If the vapour does not ignite immediately, due to, for example, insufficient oxygen, then a vapour cloud explosion could result.

Once a cell has passed the point of no return, it is critical to prevent this cascading to adjacent cells which can be challenging.

The first confirmed vapour cloud explosion caused by LiBs in thermal runaway occurred on 19 April 2019 and involved the 2MWh LiBESS in Surprise, Arizona. It is suspected that thermal runaway was triggered

in two cells in a module in one of the racks by an electrical arc, and propagated to all the remaining modules in the rack. The modules went into thermal runaway without ignition and produced copious amounts of white vapour. One of the reports on the incident, quoting a fire officer who was first on the scene, draws attention to the production of a heavier-than-air white cloud.

The proposed Dunnstown LFP BESS units do not contain fluoride as noted in the Fingleton White Report submitted with the revised proposal (Strategic Power Projects, Technical Report – Proposed CATL EnerOne BESS Units, Dunnstown, Co. Kildare) but the report notes that off gasses from a thermal runaway simulation in a laboratory contained some 11% carbon monoxide (which is flammable and toxic) and 35% hydrogen (an extremely flammable gas – a concentration above 4% in air is flammable and it is flammable all the way up to 75% hydrogen in air) and 10% methane (methane in air is flammable above 5%). A delayed ignition of a flammable cloud containing these gasses will lead to an explosion.

While the likelihood of a thermal runaway is low with LFP units, LFP thermal runaway events have occurred (see for example the Accident analysis of Beijing Jimei Dahongmen 25 MWh DC solar storage-charging integrated station project Institute of energy storage and novel electric technology, China Electric Power Technology Co., Ltd., April 2021)

<https://ctif.org/sites/default/files/2021-05/Accidental%20analysis%20%281%29.pdf>)

Another example is the Nathan Campus, Griffiths University explosion (Environmental impacts, pollution sources and pathways of spent lithium-ion batteries, Wojciech Mroziak, Mohammad Ali Rajaeifar, Oliver Heidrich and Paul Christensen, Energy Environ. Sci., 2021, 14, 6099).

<https://pubs.rsc.org/en/content/articlehtml/2021/ee/d1ee00691f>)

It is also of assistance to examine another fire and explosion event, which occurred when the Merseyside Fire and Rescue Service (MFRS) attended a fire incident at an Orsted Battery Energy Storage System (BESS) site, on Carnegie Road, Liverpool, 15th September 2020.

The Merseyside Investigation report into the above event concluded:

The initial fire investigation found that an automatic fire alarm system was present and actuated due to the ignition of flammable gases inside the BESS unit.

The conclusion of the Fire Investigation (FI) confirms that an automatic fire suppression system was fitted and did actuate however, actuation was most likely due to the deflagration, which either activated the alarm or, the pressure activated the break glass media trigger by the alarm panel.

The fire caused a significant blast event, with debris being propelled between 6 and 23m from the point of origin. This explosion occurred prior to the arrival of responding fire crews.

The explosion potential is a significant risk to emergency responders that has caused significant injury to firefighters at fire incidents on international BESS sites.

The presence of residential premises adjacent to the Carnegie Road BESS site raises concerns regarding the 'off-site potential' from fire incident risks at BESS sites to the local community.

The nature of Li-Ion cells makes them susceptible to a phenomenon called "thermal runaway". NFPA 855 3.3.20 Thermal Runaway states: The condition when an electro- chemical cell increases its temperature through self-heating in an uncontrollable fashion and progresses when the cell's heat generation is at a

higher rate than it can dissipate, potentially leading to off-gassing, fire, or explosion.

Once water was applied, the resulting run-off contained Hydrofluoric Acid (HF) (confirmed by Bureau Veritas) as a product of reaction between the cells and water contact. "Firefighting run-off was low due to the container involved being sited on a gravel base. Run-off was periodically checked for contamination, which was low. Appropriate environmental protection measures were put in place at the earliest opportunity". The run-off was mainly contained to the site.

Bureau Veritas (BV) scientific advisers identified the potential for the smoke plume to contain HF and Hydrochloric Acids (HCl) as a product of burning lithium cells, however, the dilution rate within the plume deemed the concentration as negligible.

Fire fighters set up a main water jet to deluge the fire event and subsequently set up a second water jet to cool an adjacent building. The fire fighting effort required a High Volume water pump as local hydrants were insufficient. Defensive fire fighting continued for 59 hours – this time is consistent with anecdotal evidence that fire fighting for battery fires tends to require 2 to 3 days of water application to ensure the thermal runaway event does not lead to heating and subsequent fire restarting after initially being extinguished.

The fire was brought under control in approximately 5 hours; however, the energy dissipated by the fire and continual recycling of heat from the Li-Ion store was to prove an issue during the latter stages of the incident as it continued to burn. This incident type required a continual and prolonged cycle of cooling and temperature monitoring.

It was concluded in the report that the selection of water was appropriate to the requirements of the incident. It was noted that the fire required the use of 2 main jets and 3 ground monitors, fed by a large volume (600mm diameter main).

It was also concluded that the unintended consequence of the firefighting action was the release of HF. This occurs due to hydrogen fluoride elements within the unit being produced during the combustion process. The tactic of applying water is correct and necessary to resolve the incident type. A containment strategy was not necessary for this particular incident due to the drain and soak away.

The report also noted:

Industry guidance on extinguishing fires involving Li-Ion cells states that the combustion process liberates oxygen and as such, a fire involving a BESS unit should be identified as a "Class D" metal fire and extinguished using a proprietary powder or granular agent.

A typical granular agent would be silicon oxide, which acts as a thermal blanket when exposed to fire, melting and forming a crust over involved objects. An alternative to the above, is an aerosol agent classed as a non-halon under legislation and which is fixable to the internal aspect of the unit. NOVEC 1230, the extinguishing agent fixed to the Orsted unit, is the latter type of agent, an aerosol of fluorinated ketones. The installation is pressurised with nitrogen, and is released on detection of fire conditions within the unit. NOVEC 1230 is stored as a liquid but discharges as an aerosol, evaporating 50 times quicker than water, absorbing heat and smothering any fire progression.

However as was noted with the Arizona fire, the fire suppressant does not extinguish a thermal runaway and may in fact exacerbate the explosion risk by allowing unburned flammable gas to accumulate.

The Liverpool incident investigation recommended that:

Environmental Impact and Safety

Separators or a catchment system under the site to contain water run-off and or other contaminants. Fire and Rescue Services should be made aware of the potential contaminants that may be given off at an incident and remain present in the aftermath.

It also notes:

Several early research papers from multiple organizations, including NFPA's Fire Protection Research Foundation, and third-party engineering groups have shown that fires involving lithium-ion cells must be cooled to terminate the thermal runaway process. Water is the agent of choice, yet system cabinet design could pose a significant barrier to the efficient application of water while simultaneously allowing the free movement of fire and combustion gases.

3.2 Summary of Consequences of Thermal Runaway

The materials used to build battery cells are contained in a casing that prevents exposure to air. As noted above, following thermal runaway, batteries can produce flammable and/or explosive atmospheres. The released gases depend on the chemical composition of the battery; however, common released gases include, hydrogen, carbon dioxide, and carbon monoxide with traces of light hydrocarbons. Depending on the type of enclosure, or absence of enclosure, consequences could be jet fire, flash fire and vapour cloud explosion (VCE). Flash fires are typical of released gases in open and uncongested spaces. Under certain conditions that can create sufficient turbulence (e.g. in congested spaces such as a BESS container), the combustion of pre-mixed flammable clouds can occur so rapidly that a vapour cloud explosion (VCE) occurs producing a blast wave.

4. AN BORD PLEANALA BRIEF AND RESPONSE

4.1 Fire safety systems and the absence of water as an extinguishant.

An Bord Pleanala Request – to assess suitability of the fire safety systems proposed by the applicant for the development (both as initially proposed and as subsequently modified) and specifically the absence of water as an extinguishant.

No water supply is proposed as part of the planning application – whereas the experience of actual BESS fire events described in the previous section of this report indicates that water is the most appropriate established and accepted method for managing a thermal run-away BESS fire.

The UK National Fire chiefs Council (NFCC) Grid Scale Battery Energy Storage System planning – Guidance for FRS (Fire and Rescue Services) states that a provision should be made for water for BESS units to provide 1,900 litres per minute of water for 2 hours, as a minimum.

The Merseyside Investigation report into the BESS fire on Merseyside concluded:

Fire fighters set up a main water jet to deluge the fire event and subsequently set up a second water jet to cool an adjacent building. The fire fighting effort required a High Volume water pump as local hydrants were insufficient. Defensive fire fighting continued for 59 hours – this time is consistent with anecdotal evidence that fire fighting for battery fires tends to require 2 to 3 days of water application to ensure the thermal runaway event does not lead to heating and subsequent fire restarting after initially being extinguished.

The fire was brought under control by in approximately 5 hours; however, the energy dissipated by the fire and continual recycling of heat from the Li-Ion store was to prove an issue during the latter stages of the incident as it continued to burn. This incident type required a continual and prolonged cycle of cooling and temperature monitoring.

It was concluded in the report that the selection of water was appropriate to the requirements of the incident. It was noted that the fire required the use of 2 main jets and 3 ground monitors, fed by a large volume (600mm diameter main).

It is reasonable to conclude that water is therefore required to deal with a thermal runaway BESS fire.

4.2 Review of Chief Fire Officer's Report

An Bord Pleanala request: To review the Chief Fire Officer's Report (KCC) and (with the exception of the final bullet point) to provide specific comment on the main conclusions reached in the report.

I would consider that failure mode analysis and hazard analysis has now been carried out and presented in the Fingleton White report. Explosion modelling has not been carried out – I would agree this should be carried out, however dispersion modelling is not required as HF or HCN is not expected to be generated. I would agree with the Fire Chief that fire fighting water is required, as per my note in 4.1 above.

4.3 Review of documents

An Bord Pleanála Request: To review the following reports and to comment on the assumptions and methodology used and conclusions reached in each:

- (a) Lithium Safety Report - Dr Paul A. Christensen
Dr. Christensen's report is based on published studies and I would not disagree with any of its main points, however I would note it relates to fluoride-based battery chemistry, whereas the revised proposal is for LFP batteries.
- (b) Fire Safety report – EGAN
This report is relatively generic and contains incorrect statements in my opinion, such as the one about not putting water on a lithium fire, which reflects a lack of understanding of a Lithium ion BESS fire.
- (c) Technical report for CATL EnerOne BESS units - Fingleton White
This is a detailed report - it makes statements such as "the most appropriate fire fighting strategy would be controlled burn down". I would respectfully point out that the Local Fire Service will decide the most appropriate fire fighting strategy and that evidence from incidents such as the Merseyside incident and in UK guidance, recommends the use of water for controlling a thermal runaway.
- (d) Lithium Safety Letter - Dr Paul A. Christensen – again I would not disagree with the statements in this letter which are evidence based.

4.4 Conditions to be included

BESS are still relatively new technology and emergency responders are learning from actual incidents which have occurred. There are some detailed incident reports available which means there is an understanding of accident modes in BESS and what responses have worked.

Taking the experience of emergency responders to date as referenced above, I would recommend that should An Bord Pleanála be minded to grant permission, that a condition be included that fire-fighting water (to the standard required by the UK guidance referenced above) be provided and that fire water retention to retain water be included in the proposed development. As noted above, the UK National Fire chiefs Council (NFCC) Grid Scale Battery Energy Storage System planning – Guidance for FRS (Fire and Rescue Services) states that a provision should be made for water for BESS units to provide 1,900 litres per minute of water for 2 hours, as a minimum. I would note that this would be relevant for both the original or the proposed battery types.

I would also note that explosion modelling should be undertaken in order to determine explosion impacts, as requested by the Chief Fire Officer.

5. CONCLUSION

In conclusion we have reviewed the documentation provided by ABP and made recommendations under 4.3 above.

Appendix 2 – AWN Technical Note on Response to S. 132 Notice



Trinity
Consultants



awnconsulting

REVIEW OF ADDITIONAL INFORMATION SUBMITTED IN RESPONSE TO SECTION 132 NOTICE WITH REGARD TO PROPOSED BATTERY ENERGY STORAGE PROJECT AT DUNNSTOWN

CLIENT

An Comisiun
Pleanála

DOCUMENT
REFERENCE

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DATE

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Details	Approved by	Written by
Signature		
Name	Matthew Michie	Dr Fergal Callaghan
Title	Senior Risk Consultant and Director	Director
Date	11/08/2026	11/08/2026

Disclaimer

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



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1. INTRODUCTION

Dr Fergal Callaghan of AWN Consulting Ltd was commissioned by An Comisiun Pleanála (ACP) to review the information submitted by the applicant in response to the Section 132 notice issued by ACP, dated 26th May 2025, with regard to the Dunnstown BESS, the brief issued to AWN was as follows:

1. Review the fire safety systems proposed by the applicant for the development, having regard to the applicant's response to the s. 132 notice.
2. Review the assumptions and methodology used and conclusions reached in the Fire Explosion Technical Note prepared for the applicant by Fingleton White, submitted in response to the s. 132 notice.
3. In the event that the information provided is deemed satisfactory from a fire safety perspective, advise on conditions to be included if considered necessary.
4. Prepare a Technical Note on the above to assist the Commission.

This report constitutes the "Technical Note" which addresses the above points.

2. BACKGROUND

AWN Consulting Ltd submitted a report to An Bord Pleanála, now An Coimisiún Pleanála (ACP), in February 2025 titled “Review of Proposed Battery Storage Project at Dunnstown” – this report describes the possible fire risks associated with BESS – we do not propose to repeat this information but respectfully refer the reader to this report should they require information on these risks.

3. REVIEW OF SECTION 132 RESPONSE DOCUMENTS

A review of submitted documents was conducted as follows:

Doc 1792-RG-0003 (Fingleton White) – Impact Distance Over Pressure

The report refers to and makes use of the HSE NI Technical Note Hazard Assessment of Battery Energy Storage Systems – this is considered an acceptable reference document to use as it was independently prepared by Atkins Consulting Engineers for the HSE NI and bases its findings on case studies and the analysis of actual accident events at BESS installations.

The assessment presented in the report submitted as part of the Section 132 response extrapolates the predicted explosion contour to 21m around the site boundary, using the 70mbar explosion overpressure value. This is considered suitably conservative as 70 mbar is considered a suitable external contour and is the overpressure contour predicted to lead to the partial demolition of houses – it is noted that no houses exist within the contour.

We are therefore satisfied that the report as submitted assesses the explosion related impacts from the proposed development and demonstrates there are no significant effects.

Engineering Planning Report FI Reference W21030 (Malone O Regan)

This report refers to the provision of fire fighting water and firewater retention facilities at the proposed development.

The report uses the 1900 litre/minute flow rate for a 2 hour period, for the calculation of the volume of fire fighting water. The UK National Fire chiefs Council (NFCC) Grid Scale Battery Energy Storage System planning – Guidance for FRS (Fire and Rescue Services), 2023, states that a provision should be made for water for BESS units to provide 1,900 litres per minute of water for 2 hours, as a minimum – therefore the proposed provision of fire fighting water meets the minimum standard required (indeed the report notes that up to 250m³ of fire fighting water will be stored and available onsite). This guidance was subsequently updated in 2025 and the requirement for fire hydrants was clarified to achieve a flow rate of no less than 25L/sec (or 1,500 L/min) and noted that if 25L/sec cannot be achieved, an equivalent static supply of approximately 180,000L is required to provide that flow rate for 120 minutes. As noted above

the previous guidance recommended 1,900 litres per minute for at least 2 hours. We are of the opinion that the volume of fire fighting water proposed by the applicant is suitably conservative and is appropriate.

With regard to fire water run-off from a fire event, the report proposes that a diversion valve be put in place and that the valve will be triggered in the event of a fire to divert firewater run-off to a holding tank, from where it can be subsequently removed from the site by tanker.

The firewater run-off holding tank has, according to the report, been designed to retain 130% of the firewater volume, which is 300 m³, as noted in Section 4.1.3. It is not clear how this volume has been calculated - this tank should be designed to cater for the firewater run-off plus the rain falling onto the surface area which discharges to the fire-water run-off holding tank, from the 1 in 100 year rainfall event (plus a 30% climate change allowance) - the Irish EPA have provided the standard reference guidance in Ireland for the calculation of firewater retention, in their document titled "Guidance Note to Industry on Fire Water Retention Facilities, 2019". It is not clear how the 300 m³ value has been calculated and whether or not it includes for the surface area which will be draining to the firewater retention tank. The tank capacity needs to be sufficient to cater for the fact that a fire could occur while it is raining, and the firewater retention tank would overflow in that event if sufficient allowance has not been made for that rainfall.

It is proposed that the following condition be included in the planning permission, should planning permission be granted, which would state "underground firewater holding tank to be designed ensure it caters for firewater run-off from the fire event (minimum 1900l/min x 2 hours) plus the rainwater run-off from the surface area diverted to the holding tank, based on the 1 in 100 year rainfall event with a 30% climate change allowance" following Irish EPA "Guidance Note to Industry on Fire Water Retention Facilities".

Water Framework Directive Screening Report – Malone O Regan

Protection of Groundwater (Section 4.2.2) – it is noted that groundwater will be protected in the event of a fire event by virtue of the diversion valve and retention tank – we would agree with this statement provided the retention tank capacity is redesigned to retain rainfall which may occur during a fire event.

Environmental Report – Second Addendum Report – Malone O Regan

We have reviewed this Report and note that it aligns with the proposed fire fighting and firewater approach.

4. CONCLUSION

It is proposed that the following condition be included in the planning permission, should planning permission be granted, which would state:

“underground firewater holding tank to be designed ensure it caters for firewater run-off from the fire event (minimum 1900l/min x 2 hours) plus the rainwater run-off from the surface area diverted to the holding tank, based on the 1 in 100 year rainfall event with a 30% climate change allowance following Irish EPA Guidance Note to Industry on Fire Water Retention Facilities”.

Appendix 3 – EIA Form 1

EIA Pre-Screening

Case Reference	ABP-319518-24
Proposed Development Summary	Battery Energy Storage Facility
Development Address	Dunnstown Co. Kildare
	In all cases check box /or leave blank
1. Does the proposed development come within the definition of a ‘project’ for the purposes of EIA? (For the purposes of the Directive, “Project” means: - The execution of construction works or of other installations or schemes, - Other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources)	☒ Yes, it is a ‘Project’. Proceed to Q2.
	☐ No, No further action required.
2. Is the proposed development of a CLASS specified in Part 1, Schedule 5 of the Planning and Development Regulations 2001 (as amended)?	
☐ Yes, it is a Class specified in Part 1. EIA is mandatory. No Screening required. EIAR to be requested. Discuss with ADP.	
☒ No, it is not a Class specified in Part 1. Proceed to Q3	
3. Is the proposed development of a CLASS specified in Part 2, Schedule 5, Planning and Development Regulations 2001 (as amended) OR a prescribed type of proposed road development under Article 8 of Roads Regulations 1994, AND does it meet/exceed the thresholds?	
☒ No, the development is not of a Class Specified in Part 2, Schedule 5 or a prescribed type of proposed road development under	There is no specific class or threshold for BESS in Schedule 5 of the Planning and Development Regulations 2001, as amended.

Article 8 of the Roads Regulations, 1994. No Screening required.	Having regard to the nature and location of the development, I have also considered the following classes under Part 2: <u>Class 1(a) - restructuring of rural landholdings</u> <i>Projects for the restructuring of rural landholdings, undertaken as part of a wider proposed development, and not as an agricultural activity that must comply with the European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011, where the length of field boundary to be removed is above 4 kilometres, or where re-contouring is above 5 hectares, or where the area of lands to be restructured by removal of field boundaries is above 50 hectares</i> A relatively minor section of hedgerow would be required to be removed to facilitate the entrance on the public road and also to facilitate access through two existing field boundaries within the site. Having regard to the purpose and nature of the proposal, such non-agricultural development would, in my view, not constitute rural restructuring under Class 1 of Part 2 of Schedule 5. <u>Class 10 Infrastructure Projects</u> <i>(b)(iv) Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.</i> The site, with an area of c. 4.089ha, of which c. 0.88ha covers the BESS compound, is located in an area best described as rural, with the closest urban settlement being the village of Two Mile House c. 1.6km to the northwest and the southern environs of Naas town c. 4.3km to the north. The site itself and immediate environs comprises farm land, with wetland to the north / northwest, and the existing Dunnstown substation facility further west. The local road network, particularly along the Dunshane Road to the east of the site, is heavily developed with rural housing. Notwithstanding the above, the European Commission's Guidance document '<i>Interpretation of definitions of project categories of annex I and II of the EIA Directive</i>', which is not binding, rather offers assistance in interpretation, notes:
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	<i>“In relation to project location, an urban development project should be seen as a project that is urban in nature regardless of its location.”</i> In the Ryan v ABP & Analog judgment [2025] IEHC 111 some clarity on the matter of urban development is provided concluding that – <i>“it appears the word “urban” relates, at least primarily to the nature of the project rather than to its location”</i>. In Reid v. An Bord Pleanála (No.5) [2022] IEHC 687, Humphreys J., found that based on the definition of ‘urban’ in the Oxford English dictionary, a non-residential industrial park is not an urban development unless it is located in an independently urban area. Holland J noted in the Ryan case that ‘On a broad view, “urban” would, in its ordinary meaning, mean development of a nature typically pertaining to a collective human residential settlement – be it village, town or city’. In Reid v. An Bord Pleanála, Humphreys J. referred to the types of projects identified in the European Commission’s Guidance document that might be considered to be within Class 10(b), namely bus garages, train depots, housing developments, hospitals, universities, sports stadiums, cinemas, theatres, concert halls, other cultural centres, sewerage and water supply networks, telecommunications / wireless communication deployment, urban transport schemes and two buildings incorporating a hotel, commercial and conference premises, an underground skating rink and underground sports hall, all inherently urban in nature, identifying that these projects all pertain to a city or town or their residents, in the way that an industrial estate does not. In my view, the same approach applies to a BESS facility, a project type, in terms of use or function, that does not pertain to a city or town or their residents, regardless of location, thus a development that is not urban in nature. The fact that it is not urban in nature is reinforced by its rural location, thus, in my view, does not constitute urban development within the meaning of Class 10(b)(iv). <i>(dd) All private roads which would exceed 2000 metres in length.</i> The proposal includes the construction of a new entrance on the Dunshane Road / L6044 and a new access track of hardcore construction extending west / northwest to the BESS compound and continuing to provide indicative access to a proposed substation within
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the same landholding (noting that the substation is subject to a future SID application). The track would be c. 410m in length to a point where it serves the BESS compound and would, in effect, continue to a full length of c. 690m for providing access to a proposed substation.

Referring to the drawings submitted as part of the s. 132 response, I note that the site plan (dwg. no. P804, Rev. P) labels the roadway as a 'Proposed Access Road, 4m wide'. I also note that the legend included on the drainage plan (dwg. no. P817 Rev. P) indicates that the roadway to serve the BESS compound would comprise a hardcore surface. A further examination of dwg. no. P804, Rev. P shows that the access road where it extends beyond the BESS compound towards the proposed substation site is colour shaded differently with an annotation stating that the access road extension to the substation is to be confirmed, suggesting that the access road beyond that point would form part of the SID application.

At section 2.2 of the Second Addendum to the Environmental Report, submitted as part of the s. 132 response, the applicant provides an EIA screening exercise. With regards Class 10(dd), the applicant refers to the road as an internal access track and concludes that Class 10(dd) is not applicable on the grounds that the internal access track is not accessible to the public, substantially similar to a farm access track and only used to access the proposed development intermittently; and at c. 690m in length (entire track length to proposed substation at western end of the site), the access track is significantly less than the 2km threshold.

In his judgement in *Cummins & Ors v An Coimisiún Pleanála* [2025] IEHC 521, Humphreys J. found that '*A track of crushed rock on a geotextile membrane, overlain with quarry dust, is well removed from the concept of a modern paved or otherwise surfaced and finished way that can withstand regular ongoing traffic. Whether one calls it crudely finished, primitive, or rudimentary doesn't particularly matter – there is a clear distinction between access tracks and roads, with the directive only applying to the latter.*'

In my view, this judgement is relevant to the subject case.

Whilst I note that the submitted drawings refer to a 'Proposed Access Road' it is also the case that the drawings identify the access road to be constructed of 'hardcore road surface', whilst the applicant in its Second

	Addendum to the Environmental Report describes the road as an internal access track. I note that ‘hardcore’ is defined in the Oxford English dictionary as ‘<i>Pieces of broken stone, brick, etc. used to make the base under a floor, path, or road</i>’. I further note that the drainage plan (dwg. no. P817 Rev. P) indicates that there would be no drainage infrastructure serving the access track, rather composed of permeable surface. I would also refer back to the judgement in Ryan v ABP & Analog judgment [2025] IEHC 111 where Holland J emphasised that classifications of a project for the purpose of EIA screening must be based on the <u>project's inherent characteristics</u>, and at the same time rejected a broad, purposive interpretation of a project, in that case a move that might bring industrial projects under the category of "urban development" as described by Annex II. In my view, a similar practical approach in respect of the inherent characteristics of a project can be applied in this case, and in this regard, I concur with the applicant’s EIA screening. The proposed roadway is required only to provide access to the proposed BESS, thus with no public access, and possibly a future substation which is associated infrastructure. Referring to section 11.2.2 of the original Environmental Report submitted with the application to Kildare County Council, operational stage traffic is expected to comprise 3 to 4 visits annually, in my view potentially generating less traffic than a farm track. On the basis of the above, it is my view that the proposed access track would not constitute a private road in the context of Class 10(dd) of Part 2 of Schedule 5.
☐ Yes, the proposed development is of a Class and meets/exceeds the threshold. EIA is Mandatory. No Screening Required	
☐ Yes, the proposed development is of a Class but is sub-threshold. Preliminary examination required. (Form 2)	

OR If Schedule 7A information submitted proceed to Q4. (Form 3 Required)	
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Inspector: _____ **Date:** _____

Appendix 4 - AA Screening

Screening for Appropriate Assessment Test for likely significant effects	
Step 1: Description of the project and local site characteristics Case File: ABP-319518-24	
Brief description of project	Battery Energy Storage Facility See Section 2.0 of Inspector's Report
Brief description of development site characteristics and potential impact mechanisms	The applicant seeks permission for a Battery Energy Storage System (BESS), and all associated site works on a greenfield site in a rural area of County Kildare. Whilst the overall site has a stated area of c. 4ha, the BESS compound itself would be contained on an area of c. 0.88ha (reduced from c. 1.3ha following remittal and to account for advanced technology). Access to the site would be via a new entrance on the L6044 with a hard-core access track. <u>Firefighting Water</u> (in response to s. 132 notice) The proposal includes for on-site storage of firefighting water to be either sourced from a public main on the adjoining L6044 or tankered in. <u>Drainage Proposal</u> (amended in response to s. 132 notice) A submitted drainage strategy has been designed to collect stormwater and firewater. The batteries would be located on an impermeable and bunded asphalt surface. Stormwater would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank, sized to cater for the recommended water supply for firefighting plus 30% buffer to account for rainfall during a fire event. Firewater would be held in the tank until emptied by a licenced contractor. Note that AWN firewater consultant queried the capacity calculation and recommends the inclusion of a condition on any grant of permission to require that the tank is sufficiently designed to account for the heavy rain event plus climate change contingency. Mains sewer is not available at this location.

	<u>Other Locational Context</u> The site is not located within or immediately adjacent to any designated site. The closest surface water body is the Flemington South Stream (part of LIFFEY_050), which flows south on the eastern side of the L6045, c. 840m to the east of the site. The stream drains into the River Liffey c. 2.9km to the south, which, in turn, flows into Dublin Bay (and associated European Sites) c. 40km (as the crow flies) to the northeast. The submitted AA Screening Report identifies that the field drains around the site drain to the north / northeast, thus considers that there is no direct hydrological connection between the appeal site and Flemington South Stream or River Liffey, the applicant does however acknowledge that the wider drainage network in the area ultimately discharges to the Liffey. The Curragh Gravels East groundwater body lies beneath the site whilst the Kilcullen groundwater body is located to the southeast however also extends under the Curragh Gravels East groundwater body. The Waste Facility (W0014-01) groundwater body is identified to the southwest. The site is located within the Liffey and Dublin Bay catchment and Liffey_SC_030 sub catchment. GSI mapping shows that the site is underlain by a poor bedrock aquifer and regionally important gravel aquifer. The part of the site on which the BESS facility is located is underlain by ground water with high vulnerability, whilst the eastern end of the site through which the access track would be constructed, is underlain by ground water with medium vulnerability.
Screening report	Yes, an AA screening report, prepared by Malone O'Regan Environmental, was submitted with the original application lodged with the planning authority. Following remittal from the High Court the applicant made a submission to ABP in response to a s.131 notice. The submission cover letter refers to an ER addendum report, an AA addendum screening report, technical note from Fingleton White and revised drawings. However, the AA addendum screening report is not on the file. In response to the subsequent s. 132 notice, an AA second addendum screening report was submitted to ABP, which takes account of the firefighting option and amended drainage strategy submitted.

	Of particular note is that appended to the AA second addendum screening report is a copy of a Wintering Bird Survey Results Technical Note, dated May 2024. The AA second addendum screening report is a full screening report of the proposal as amended post remittal including consideration of the firefighting option, which, from my perspective, is the preferred option having regard to the conclusions / recommendations of the AWN consultants reports (contained in Appendices 1 and 2 of my report). As such, I am satisfied that the AA second addendum screening report, on its own, is sufficient for the purposes of my assessment with regards AA screening. The Wintering Bird Survey Technical Note considers 5 no. wintering bird surveys conducted by the applicant over the winters of 2022, 2023 and 2024. The AA second addendum screening report also refers to a further site visit in April 2025, conducted to confirm habitat conditions on the site as a measure to demonstrate that the previous survey results remain valid. The Wintering Bird Survey Technical Note concluded the following: • Using the methodologies of 'Vantage Point Viewshed' survey for the marshland to the north and a 'Transect' survey for the appeal site, a total of 38 bird species were identified utilising habitats on site, the majority of which were common countryside bird species. • Four species recorded were waterbirds (black-headed gull, herring gull, lapwing and little egret). The survey notes that these species were observed flying over the site rather than recorded within the site. By association, the surveys did not record graylag goose or lesser black-backed gull within the site not within the northern marshland. • The surveys did not identify any roosting sites or potential roosting sites on the appeal site nor within the northern marshland. • It is considered that the site and northern marshland are not sites of importance for any wintering bird species. The second addendum to the AA screening report concludes the following:
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	• No designated habitats were identified on site or within the immediate vicinity. • 5 no. SACs and 2 no. SPAs within 15km. • The site comprises predominately agricultural grassland for grazing livestock, bordered and bisected by hedgerows / tree lines with associated drainage ditches. • There is no hydrological connection between the site and any EPA watercourse or European Site. • Construction works will be carried out in accordance with best practice guidelines. • The 'firefighting' option (as submitted in response to the s. 132 notice) will ensure that suitable containment measures are in place for spent firewater. • On the basis of distance to the nearest European site, it can be concluded that no impacts associated with dust will occur. • All identified European sites are located outside of the appropriate zone of influence associated with noise disturbance on waterfowl. • Winter bird surveys carried out in 2022, 2023 and 2024 remain valid. • No impacts associated with noise or disturbance will occur as a result of the proposed firefighting option. In effect, the second addendum to the AA screening report concludes that the findings of the original AA screening report and first addendum to same remain valid, that no significant effects on the European Sites are likely, and that the addition of the firefighting option and associated drainage strategy will not result in any new impacts or any greater significant effects on European Sites. I note that the planning authority screened out the application for the purposes of AA (this relating to the application as lodged).
Natura Impact Statement	No
Relevant submissions	Observations received include concern with regards impact of the development on bird species of community interest (SCIs) associated with the Poulaphouca Reservoir SPA and hydrological connection with the Pollardstown Fen via the Curragh aquifer.
Step 2: Identification of relevant European sites using the Source-pathway-receptor model	

European Site (code)	Qualifying interests Link to conservation objectives (NPWS, 14th July 2026)	Distance from proposed development (km)	Ecological connections	Consider further in screening Y/N
Pollardstown Fen SAC (Site Code: 000396)	Fens and springs 3 no. species of Whorl snail Conservation Objectives NPWS, 2022	c. 9.9km to the west	Possible hydrological pathway via the Curragh Aquifer.	Y
Mouds Bog SAC (Site Code: 002331)	Active and degraded raised bogs, and peat substrate depressions Conservation Objectives NPWS, 2015	c. 9.3km to the northwest	No, due to distance and absence of a hydrological pathway.	N
Red Bog, Kildare SAC (Site Code: 000397)	Transition mires and quaking bogs Conservation Objectives NPWS, 2019	c. 10.1km to the northeast	No, due to distance and absence of a hydrological pathway.	N
Wicklow Mountains SAC (Site Code: 002122)	Oligotrophic Waters, lakes, ponds, heaths, grasslands, siliceous scree, blanket bogs, rocky slopes, oak woods Otter Conservation Objectives NPWS, 2017	c. 12.5km to the east	No, due to distance and absence of a hydrological pathway.	N
Ballynafagh Lake SAC (Site Code: 001387)	Fens Whorl Snail and Marsh Fritillary Conservation Objectives	c. 14.4km to the northwest	No, due to distance and absence of a hydrological pathway.	N

	NPWS, 2021			
Poulaphouca Reservoir SPA (Site Code: 004063)	2 no. species of wintering water birds (Greylag Goose and Lesser Black-backed Gull). Conservation Objectives NPWS, 2024	c. 7.6km to the southeast	Possible use of grassland habitat for foraging by the Greylag Goose and Lesser Black-backed Gull.	Y
Wicklow Mountains SPA (Site Code: 004040)	Merlin and Peregrine Conservation Objectives NPWS, 2024	c. 14.4km to the east	No, due to distance and the lack of any relevant ex-situ factors of significance to these species.	N

Step 3. Describe the likely effects of the project (if any, alone or in combination) on European Sites

AA Screening matrix

Site name Qualifying interests	Possibility of significant effects (alone) in view of the conservation objectives of the site*	
	Impacts	Effects
Pollardstown Fen SAC (Site Code: 000396) Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] Petrifying springs with tufa formation (Cratoneurion) [7220] Alkaline fens [7230] Vertigo geyeri (Geyer's Whorl Snail) [1013]	Direct: No direct impacts and no risk of habitat loss, fragmentation or any other direct impact. Indirect: Negative impacts (temporary) on groundwater quality due to construction related emissions including increased sedimentation and construction related pollution] Low risk of surface water runoff from construction reaching sensitive receptors via Curragh Aquifer which includes the Curragh Gravels East	Undermine conservation objectives related to water quality.

Vertigo angustior (Narrow-mouthed Whorl Snail) [1014] Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016]	groundwater body which underlies the appeal site.	
	Likelihood of significant effects from proposed development (alone) No (see further commentary below)	
	If No, is there likelihood of significant effects occurring in combination with other plans or projects? No In combination impacts have been considered with other permitted or known developments in the area including those set out in the Planning History section of the Inspector's Report. Particular regard has been had to the permitted Solar Farm (ABP-314320-22) c. 5km to the northeast (not constructed – subject to current JR) with which the proposed BESS is associated and also grants of permission by for a solar farm (ABP-318785-24) and a 220kv substation (ABP-319252-24), both within c. 2km of the proposed BESS site. The Commission will note a Stage 2 appropriate assessment or NIS was not required for either of the two solar farms or the substation SID application.	
Observations raised concerns that the site is hydrologically connected to the Pollardstown Fen SAC via the Curragh Aquifer. The springs feeding Pollardstown Fen provide a continuous supply of calcium-rich water from the Curragh aquifer and from limestone bedrock to the north. Therefore, ecosystem that supports the fens and Whorl Snail species are dependent on water quality. Notwithstanding the distance of c. 9.9km between the site and the Fen, intervening land uses including the M9 / M7 and the urban footprint of Newbridge, and the fact that the site and the Fen are located in different WFD catchments, there is a hydrological groundwater pathway via the Curragh Aquifer, noting that the aquifer comprises three groundwater bodies, namely the Curragh Gravels West, Curragh Gravels East and GWDTE Pollardstown Fen, and noting that the appeal site is underlaid by the Curragh Gravels East ground waterbody. The applicant submitted a preliminary CEMP with the application as originally lodged with the planning authority, and which outlines that construction will follow best practice standards for the protection of surface and ground waters, noting particularly that hedgerows and associated ditches are to remain intact (apart from new access points between fields). Similar CEMP references are made within the Water Framework Directive screening report submitted by the applicant as part of the s. 132 notice response. Section 3 in the preliminary CEMP outlines a typical construction timeline for a 212MW battery storage facility, indicating that the site setup, laying of foundations etc. would take c. 8 weeks following which the installation of battery storage units would take a further 8 weeks.		

I note that the construction phase of the associated substation (subject to future SID application) is also included, assigned 16 weeks following completion of the BESS. The programme indicates that following completion of both the BESS and substation, the connections and commissioning phase would take c. 20 weeks.

Overall, and notwithstanding that the substation is subject to a future SID application, the actual construction phase of the BESS, at 16 weeks, and another 16 weeks for a substation, is relatively short, noting that the initial 8 weeks of the BESS construction programme comprises conventional site works and foundations with the next 8 weeks comprising installation of BESS units.

Having regard to the distance between the site and the Fen and intervening features, the construction period anticipated and the submitted preliminary CEMP, I consider it unlikely that construction phase emissions would be result in adverse impact on water quality of the Fen.

As such, I conclude that significant impacts on the qualifying interests are not considered likely and that significant effects on the conservation objectives of the SAC are not likely.

With respect to the operational stage, I note that drainage plans submitted as part of the s. 132 response show that the batteries would be located on an impermeable and bunded asphalt surface. Stormwater from this area would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank. Note that the fire consultant commissioned by ACP has recommended a condition which requires the tank to be sufficiently designed to accommodate the 1 in 100 year rainfall event with a 30% climate change allowance. I am satisfied that while it may incidentally provide mitigation against impacts on a European Site, the proposed drainage system, including provision of an underground holding tank for spent firewater, is an intrinsic element of the project and aligns with the recommendations set out in the current go-to BESS guidance of the UK NFFC.

Site name Qualifying interests	Possibility of significant effects (alone) in view of the conservation objectives of the site*	
	Impacts	Effects
Poulaphouca Reservoir SPA (Site Code: 004063) Greylag Goose (Anser anser) [A043] Lesser Black-backed Gull (Larus fuscus) [A183]	Direct: No direct impacts and no risk of habitat loss, fragmentation or any other direct impact. Indirect: Loss of grassland habitat.	Negative effect on ex-situ foraging habitat.
	Likelihood of significant effects from proposed development (alone): No (see further commentary below)	

	If No, is there likelihood of significant effects occurring in combination with other plans or projects? No (as per commentary provided above with respect to the Pollardstown Fen SAC).
Concerns were raised in the observations that some of the birds recorded foraging in the area surrounding the appeal site may be SCI species for the Poulaphouca Reservoir SPA. Poulaphouca Reservoir SPA The site synopsis for Poulaphouca Reservoir SPA outlines that the principal interest of the site is the Greylag Goose population, which is of national importance, and that the site is also notable as a winter roost for gulls, especially Lesser Black-backed Gull. The Conservation Objectives for the Poulaphouca Reservoir SPA discusses – • “Barriers to connectivity and site use” • “Forage spatial distribution, extent and abundance” and • “Roost spatial distribution and extent” The respective conservation objectives document includes the following relevant information: <u>Greylag Goose</u> • <i>Referring to the findings of Boland and Crowe, 2008, it outlines that this species is primarily a grazer and that key foraging habitats include marshes, grasslands (particularly wet grasslands) and other wetland habitats, cereal stubble, estuaries, and lakes; that key forage resources are herbaceous plant materials accessible at ground level in terrestrial areas or from the surface of water bodies.</i> • <i>When roosting overnight, this species typically utilises lakes, estuaries and other open waterbodies; while daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members.</i> • <i>The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution.</i> <u>Lesser Black-backed Gull</u> • <i>This species is omnivorous with an opportunistic, scavenging foraging strategy, with kleptoparasitism also noted. In winter, this species forages within marine, freshwater and terrestrial (open habitat) environments, and food sources include fish, invertebrates, rodents, birds, and fishing discards, as well as other food scraps/waste. This species can switch foraging habitat depending on prey availability. Foraging methods include dipping-to surface, surface-plunging, shallow-plunging, and surface pecking in aquatic environments, and scavenging, walking and pecking when on land.</i> • <i>Roosting is a critical ecological requirement for the wintering population. The species is found in a wide variety of marine, freshwater and terrestrial (including inland) habitats during winter. Daytime roosting is also a common behaviour, where birds minimise activity levels to conserve energy, while benefitting from the vigilance of other flock members.</i>	

- *The impact of any significant disturbance (direct or indirect) to the wintering population will ultimately affect the achievement of targets for population trend and/or spatial distribution*

The possible use of habitat by mobile species has been examined by the applicant in the submitted AA screening report and associated addendum reports and wintering bird surveys comprising the methodologies of a 'Vantage Point Viewshed' survey for the marshland to the north and a 'Transect' survey for the appeal site.

I consider that the applicant has presented a robust approach to the issue of wintering water birds with sound methodologies based on Irish and UK best practice. The vantage point survey considers the marshlands north of the site while the transect survey examines all external and internal field boundaries across the site. The four initial surveys were carried out over the winter of 2022 / 2023, a fifth survey was carried out in January 2024, whilst the second addendum to the Environmental Report submitted with the s.132 response refers to a fifth site visit / walk-over survey in April 2025 to confirm that the baseline conditions on the site and surrounding area had not changed and by association that the results of previous surveys remain valid.

A total of 38 bird species were identified utilising habitats on site, the majority of which were common countryside bird species. Four species recorded were waterbirds (black-headed gull, herring gull, lapwing and little egret). The survey notes that these species were observed flying over the site rather than recorded within the site. By association, the surveys did not record graylag goose or lesser black-backed gull within the site nor within the northern marshland. The surveys did not identify any roosting sites or potential roosting sites on the appeal site nor within the northern marshland.

The applicant's Wintering Waterbird Survey Technical Note refers to the NBDC database which indicates that neither the Greylag Goose nor the Lesser Black-backed Gull was recorded within 2km of the site in the preceding 10 years.

The applicant concluded that the site is not a site of importance for any wintering bird species, based on a number of reasons including that there are numerous grass land fields within the vicinity of the SPA and in the intervening area between the SPA and the site.

My commentary above with regards the construction phase in the context of the Pollardstown Fen SAC is also relevant to the Poulaphouca Reservoir SPA, which, in summary, outlines that the actual construction phase of the BESS is relatively short at 16 weeks. I also note that the operational phase will see low traffic movements, stated to be 3 to 4 trips per year.

As noted above, the applicant considers and land in the vicinity of the SPA and the area between the SPA and the site offers plenty of foraging habitat suitable for the Greylag Goose or Lesser Black-backed Gull, and as such concludes that the site nor marshland to the north constitute sites of importance for any wintering bird species.

Observers argue that the Greylag Goose and the Lesser Black-backed Gull frequent the area. While the presence of the QI on the subject site has not been specifically identified, I acknowledge that there is potential for its use of these lands. Such use would not appear to be frequent or significant in nature given the results of the wintering bird surveys undertaken. The third-party submissions confirm that these and other lands in the surrounding area offer potential foraging habitat for this QI. The habitat map included in the applicant's Second Addendum to the Environmental Report shows that the appeal site is classified as 'GA1' improved agricultural grassland, which, according to The Heritage Council publication entitled '*A Guide to Habitats in Ireland*', is a category used for intensively managed or highly modified agricultural grassland that has been reseeded and/or regularly fertilised and is now heavily grazed and/or used for silage making.

Any occasional ex-situ use of the subject site by the Greylag Goose or the Lesser Black-backed Gull would be part of a pattern of use of lands in the wider area rather than reliance on these lands. I conclude therefore that while there may be occasional use of the lands by the qualifying interests of the SPA, the available information does not indicate that the site comprises an important ex-situ foraging or roosting site for the species. Having regard to the extent of lands available within the area surrounding the SPA, there is, and will likely continue to be, a sufficiently large habitat to maintain its populations on a long-term basis notwithstanding the development of these lands and specifically noting the relatively small footprint of the BESS compound and relatively short construction period.

I do not consider the proposed development would create a significant barrier likely to limit either bird species from accessing the SPA or other ecologically important sites.

I conclude that significant impacts on the range, distribution or population of the qualifying interests are not considered likely and that significant effects on the conservation objectives of the SPA are not likely.

Step 4 Conclude if the proposed development could result in likely significant effects on a European site

Article 6 of the Habitats Directive considers whether or not a proposed plan or project would adversely affect the integrity of a European Site.

I conclude that the proposed development (alone) would not result in likely significant effects on the Pollardstown Fen SAC (Site Code: 000396), Poulaphouca Reservoir SPA (Site Code: 004063) or any other European site. The proposed development would have no likely significant effect in combination with other plans and projects on any European sites. No further assessment is required for the project.

I conclude that the proposed development (alone or in combination with other plans and projects) would not result in likely significant effects on European sites. No further assessment is required for the project.

No mitigation measures are required to come to these conclusions.

Screening Determination

In accordance with Section 177U of the Planning and Development Act 2000 (as amended) and on the basis of the information considered in this AA screening, I conclude that the proposed development individually or in combination with other plans or projects would not be likely to give rise to significant effects on the Pollardstown Fen SAC (Site Code: 000396) or Poulaphouca Reservoir SPA (Site Code: 004063) in view of the conservation objectives of these site and are therefore excluded from further consideration. Appropriate Assessment is not required.

This determination is based on:

- Location of the site in the context of the Poulaphouca Reservoir SPA and Pollardstown Fen SAC

- Findings of the Wintering Water Bird Survey and associated technical note and addendum to same, as submitted by the applicant
- Nature of development including the BESS compound footprint, length of construction phase and nature of operational phase.

Appendix 5 – WFD Stage 1: Screening WATER FRAMEWORK DIRECTIVE IMPACT ASSESSMENT STAGE 1: SCREENING			
Step 1: Nature of the Project, the Site and Locality			
ACP ref. no.	ABP-319518-24	Townland, address	Dunnstown, Co. Kildare
Description of project		Battery Energy Storage Facility	
Brief site description, relevant to WFD Screening,		• Greenfield site within a rural area. • No indication of a watercourse within the boundary of the site. • The site is not located within or immediately adjacent to any designated site. • The closest surface water body is the Flemington South Stream (part of LIFFEY_050), which flows south on the eastern side of the L6045, c. 840m to the east of the site. The stream drains into the River Liffey c. 2.9km to the south, which, in turn, flows into Dublin Bay (and associated European Sites) c. 40km (as the crow flies) to the northeast. • The submitted AA Screening Report identifies that the field drains around the site drain to the north / northeast, thus considers that there is no direct hydrological connection between the appeal site and Flemington South Stream or River Liffey, the applicant does however acknowledge that the wider drainage network in the area ultimately discharges to the Liffey. • The Curragh Gravels East groundwater body lies beneath the site whilst the Kilcullen groundwater body is located to the southeast however also extends under the Curragh Gravels East groundwater body. The Waste Facility (W0014-01) groundwater body is identified to the southwest. • The site is located within the Liffey and Dublin Bay catchment and Liffey_SC_030 sub catchment. • GSI mapping shows that the site is underlaid by a poor bedrock aquifer and regionally important gravel aquifer. The part of the site on which the BESS facility is located is	

	underlain by ground water with high vulnerability, whilst the eastern end of the site through which the access track would be constructed, is underlain by ground water with medium vulnerability. The applicant submitted a Water Framework Directive Screening Report as part of a response to a s. 132 notice.
Proposed surface water details	A drainage strategy was submitted with the s. 132 response. The batteries would be located on an impermeable and bunded asphalt surface. Stormwater would be directed to an on-site infiltration basin via a petrol interceptor. During a fire event, an automatic shut-off valve would be closed and all firewater and stormwater would be diverted away from the infiltration basin and directed instead to a sealed underground firewater retention holding tank, sized to cater for the recommended water supply for firefighting plus 30% buffer to account for rainfall during a fire event. Firewater would be held in the tank until emptied by a licenced contractor. Note that AWN firewater consultant queried the capacity calculation and recommends the inclusion of a condition on any grant of permission to require that the tank is sufficiently designed to account for the heavy rain event plus climate change contingency. Mains sewer is not available at this location.
Proposed water supply source & available capacity	An above-ground firewater storage tank will be provided on-site with a capacity to store 250 cubic metres (250,000 litres) of water. Water supply to fill the on-site tank would be sourced either from public mains on the Dunshane / Johnstown Road (L6044) or tankered onto the site.
Proposed wastewater treatment system & available capacity, other issues	No foul mains serve the site. Temporary welfare facilities are proposed during the construction phase. The submitted preliminary CEMP outlines that portable toilets will be provided for construction workers with associated waste to be disposed off-site by a suitably licenced contractor. During the operation phase, the substation building will contain a sink and toilet. Given that the site will be remotely monitored, the welfare facilities will be infrequently used, therefore it

	is proposed to divert foul water to a holding tank, to be frequently removed by a suitably licenced contractor.
Others?	N/A

Step 2: Identification of relevant water bodies and Step 3: S-P-R connection							
Identified water body	Water body name(s) (code)	WFD Status	Risk of not achieving WFD Objective e.g. at risk, review, not at risk	Identified pressures on that water body (data to 2021)	Pathway linkage to water feature (e.g. surface run-off, drainage, groundwater)	Mitigation Measures proposed	Is mitigation sufficient? Will there be any residual impacts?
River Liffey	LIFFEY_060	The River Waterbody WFD Status 2019-2024 awarded the river a status of 'Moderate'	At Risk	Agriculture	Surface water run-off and drainage.	CEMP Embedded mitigation in the form of a drainage strategy including on-site infiltration basin, petrol interceptor and containment of firewater.	Embedded mitigation is sufficient. No residual impacts.
Curragh Gravels East groundwater body	IE_EA_G_017	The Ground Waterbody WFD Status 2019-2024 awarded Curragh Gravels East	Not at Risk	n/a	Surface water run-off, drainage and groundwater	CEMP Embedded mitigation in the form of a drainage	Embedded mitigation is sufficient. No residual impacts.

		groundwater body a status of 'Good'				strategy including on-site infiltration basin, petrol interceptor and containment of firewater	
Kilcullen groundwater body	IE_EA_G_003	The Ground Waterbody WFD Status 2019-2024 awarded Kilcullen groundwater body a status of 'Good'	At Risk	Agriculture Forestry Unknown	Surface water run-off, drainage and groundwater	CEMP Embedded mitigation in the form of a drainage strategy including on-site infiltration basin, petrol interceptor and containment of firewater.	Embedded mitigation is sufficient. No residual impacts.