EN010168 Lime Down Solar – Open Floor Hearing Representation 24 April 2026
Interested Party Reference number: [redacted] Matthew Hood CEng

I am a chartered engineer with over 40 years' experience of safety critical systems in defence and rail. My concern is the lack of thorough safety investigation of the BESS and who will be held to account in the event of an incident.

All Lithium batteries can suffer 'Thermal Runaway'. This creates toxic explosive gasses. The fire modelling conducted by the applicant has **assumed** that a BESS fire will be restricted to a single container with flames only 4m high (Appendix 15-2) APP-239. The spread of fire between BESS containers is well documented and has occurred on multiple occasions. It happens because thermal runaway fires cannot be extinguished, only cooled until they run out of fuel. There have been over 120 serious fires involving BESS since 2021. Please will the Examiners refer to the Electric Power Research Institute (EPRI) database of BESS incidents (reference 1) to challenge the applicant's assumption of limiting fire to a single container. With over 5015kwh of batteries in each container (equivalent to 100 Tesla Model 3's) and over 270 containers there will be over 1.3 million lithium cells, thermal runaway is therefore not unlikely during the 60-year life of the scheme.

The BESS is only 85 metres from the **main** railway line to South Wales. Four trains an hour pass the site. Time for a cloud of explosive fumes to drift across the railway line and for a passing train, potentially carrying 800 people, to ignite it. The subsequent explosion could derail the train and cause a further hazard of an oncoming train colliding with the wreckage. This is a credible hazard to consider in a safety case. I am concerned that IGP have provided you with insufficient and misleading information on this topic for you to examine.

There is also a possibility of many residents being left with life changing inhalation injuries from smoke caused by a thermal runaway. Nickel, a key part of the battery cells, is widespread in the smoke and later the dust left behind, is a known carcinogen that leads to death. I personally struggle to see how I could construct a safety case for the proposed scheme with a clear conscience.

Scientific guidance is that for incidents likely to result in multiple deaths a probability per year of 1 in a million would require **intense** scrutiny. Even a probability of 1 in 3 million is likely to be unacceptable (Figure 1), if the risk was for 6 or more deaths (References 2 to 9). This needs to be true across all sixty years of this scheme. Please will the Examiners check whether *His Majesties Rail Inspectorate* (Now part of the Office of Rail and Road) should also approve a safety case for this scheme. Similarly, the fire brigade need to be fully satisfied that they can deal with a multi-container BESS fire adjacent to the railway line. At present, you don't have enough accurate information to make a valid recommendation to put forward to the Secretary of State for a decision. I would also

encourage the Inspectorate to examine carefully who will be liable should these disastrous events occur, a major national disaster in anyone's book.

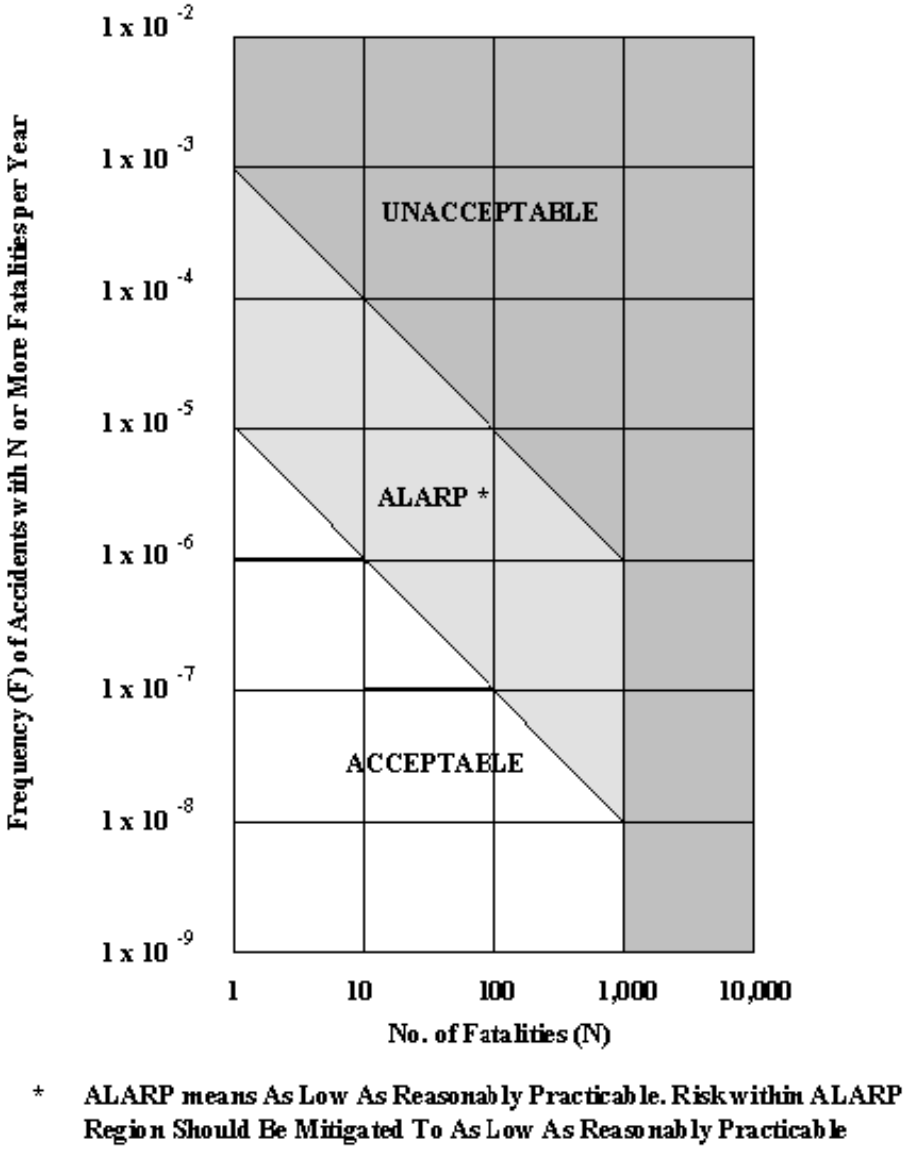

Figure 1 Zones of acceptable risk

References as actioned by the Chair at the Open Floor Hearing on 21st April:
Reference 1: https://storagewiki.epri.com/index.php/BESS_Failure_Incident_Database

Health and safety guidance on acceptable risk is industry specific and often contained in documents that are sold as standards or part of books or scientific papers that require subscription based access. A few examples of accessible guidance follow :

Reference 2: This is a link to an article about the principles of risk decision making https://www.tandfonline.com/doi/full/10.1080/10937404.2022.2107591#d1e288

Reference 3: Health and Safety Executive (HSE) guidance on risk and “As Low As Reasonably Practical (ALARP)” which is the test for acceptable risk:
https://www.hse.gov.uk/foi/internalops/hid_circs/permissioning/spc_perm_37/

Reference 4: HSE Information about the extent and severity of the consequences of major accidents. This is about Societal Risk – which is what the locals will suffer as a result of this proposed scheme.
https://www.hse.gov.uk/foi/internalops/hid_circs/permissioning/spc_perm_35.htm

Reference 5: HSE guidance on Control of Major Accident Hazards.
https://www.hse.gov.uk/comah/

Reference 6: An example of a research paper on the topic of acceptable risk.
https://www.researchgate.net/post/What_does_acceptable_risk_level_mean_and_where_does_it_come_from#:~:text=This%20region%20is%20known%20as%20ALARP%20region.&text=Acceptable%20risk%20levels%20are%20means,approximately%20one%20per%20one%20million.&text=The%20EN50126%20standard%20could%20be,en50126.blogspot.be/.

Reference 7: Another example of a topic discussion on this subject
https://www.sciencedirect.com/topics/engineering/broadly-acceptable-risk

Reference 8: An interactive text book that provides accessible guidance on the topic of safety standards.
https://interactivetextbooks.tudelft.nl/risk-reliability/risk-evaluation/safety-standards.html

Reference 9: Office of Rail Regulation Mainline Safety certificate and safety authorisation assessment criteria, MTU criterion D:Risks arising from the activities of other parties external to the railway system, page 21.
https://www.orr.gov.uk/sites/default/files/om/cert_auth_criteria_mainline.pdf

Other standards that should be called up:

ISO3100:2018 Risk management - Guidelines
ISO12100:2010 Risk Assessment and Risk Reduction
ISO45001: Certification – Health and Safety
IEC 60812: Failure Modes Effects and Criticality Analysis