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23rd July 2025

Dear Ms Young

25/01050/FUL: Solar Farm and Associated Development

Please accept our apologies for the delay in getting this response to you. It is after the proposed deadline for comment but we hope that, as in the past, Winchester City Council will accept comments and take them into account until Decision Day. We have had this assurance before.

Ever since the introduction to Parliament of the Private Member's Bill, "Lithium-Ion Battery Storage (Fire Safety and Environmental Permits)", by Dame Maria Miller MP on 7 September 2022, it has been clear that this is another case of technology running ahead of government's ability to properly regulate it. Consideration of this application should take full cognizance of this fact.

The Bishop's Waltham Society wishes to lodge a formal objection to Planning Application **25/01050/FUL**, relating to the proposed Battery Energy Storage System (BESS) development, on the basis that it poses a potential public health and environmental hazard to nearby communities—particularly Bishop's Waltham and Swanmore, which lie directly downwind of the site under prevailing south-westerly winds, and to important biodiversity around the site.

The recent BESS fire in February 2025 at Thurrock and the April 2025 incident at a battery recycling site in Kilwinning, demonstrate the unpredictable and hazardous nature of lithium-ion battery fires. These events produced explosions, toxic smoke plumes, and airborne debris and chemical particles, some of which were deposited **across residential areas**. Below are photographs of the Kilwinning fire that occurred earlier this year.

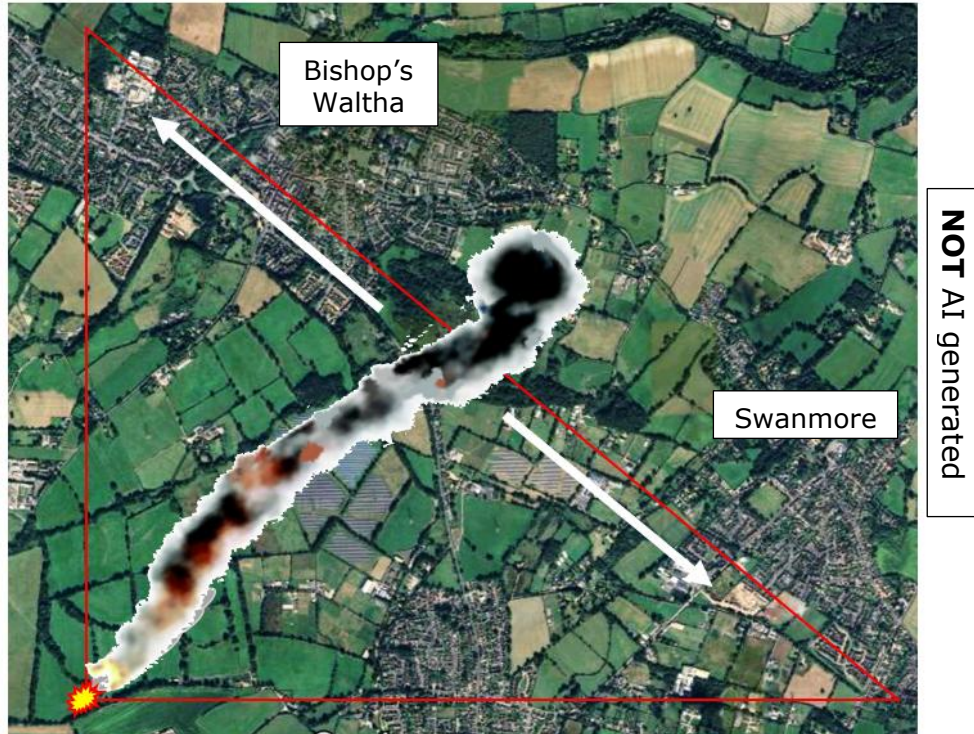


These four photographs of the fire shows the long plume of toxic material rising and then starting to fall as it cools - spreading toxic gases and particulates that poison the air and then the ground below.



Earlier in the year, on February 19, a fire broke out at an **under-construction BESS project** in Thurrock, Essex. The fire, which lasted three days and took over 200 firefighters to put out, highlighted the potential risks associated with large-scale battery storage facilities.

Given the proposed site's elevation and exposure, and the south-westerly prevailing wind pattern, any similar fire event could result in toxic particles and chemical-laden smoke drifting over Bishop's Waltham (and/or Swanmore). See projection below. It would affect not only homes but also vulnerable receptors such as local schools (Infant and Junior), care homes, local doctor's surgery, as well as the Moors SSI and the source of the Hamble River. As airborne contaminants cool, they can settle on soil, gardens, play areas, and water sources – posing longer-term risks to health and ecology. God help Waltham Chase should it have turned due westerly on the day!



Lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke, and it is increasingly being realised that the emission of toxic gases and particulates can be a larger threat than the heat given off by the fire. Large amounts of hydrogen fluoride are produced as well as phosphoryl fluoride. Other chemicals found include carbon monoxide, polycyclic aromatic hydrocarbons, volatile organic compounds, and even hydrogen cyanide has been

identified. These all range from low to high and very high toxicity. All are harmful to human health – some seriously so.

The heat and flames (recorded at heights up to 50-75ft.) push the smoke plume well above the fire and therefore enable the toxic gases to cover significant distances. The BESS fire in July 2021 in Australia, at the Victorian Big Battery site near Geelong, prompted the authorities to issue a toxic air warning for homes and businesses within a 3-mile radius, with residents advised to stay inside, shut windows and doors, block fireplace flues and turn off air conditioning systems that draw air from outside.

Over the last few years more detail has emerged about the known risks of spontaneous fires and thermal runaway fire propagation in BESS equipment because of the lithium-ion batteries and their propensity to fail or be damaged. Such damage can occur during transport or assembly on site - and then remain unnoticed.

For some time lithium-ion batteries are known to have the propensity for thermal runaway but the potential for vapour cloud explosions, caused by the use of fire suppression systems, is a more recent understanding (this is, we believe, what happened at the Liverpool Carnegie Road BESS fire, that lasted three days). So a fire suppression system is no guarantee and indeed appears to be the potential cause of a different type of incident!

We are particularly perturbed by comments made by Paul Christensen, Director of Lithiumionsafety Ltd. He and his team were the first to link vapour cloud explosions to lithium-ion battery energy storage. In his commentary on this application, attached to Shedfield Parish Council's objection, he states that: "It is not clear from the documentation if the applicant is aware of the vapour cloud explosion hazard. Hence there is no mention of methods to avoid or mitigate vapour cloud explosion."

The risk of thermal runaway fires and vapour cloud explosions must be acknowledged as ever present. The risk may be low, even **very, very low**, however the impact would be high and could be **very, very high**. Nodding this through on climate change emotions is a no-go on safety grounds alone. The precautionary principle MUST be considered, realistically.

RISK		Low	High	Impact of event
Likelihood of event	High			
	Low		X	

POTENTIAL ENVIRONMENTAL POLLUTION

We also object to Planning Application 25/01050/FUL because if the BESS scheme goes ahead it would create potential for catastrophic pollution of the Hamble. Three years ago, for a fellow civic society (the Faversham Society), Professor Sir David Melville estimated that it would take approximately 1.25 million gallons to extinguish a fire in a single 5 MWh container¹. We simply do not believe that the proposed arrangements in this application reflect the reality of such fires and their consequences. For example, the attenuation tank, proposed to capture spent fire-fighting water "includes access for the fire service to pump out and reuse firefighting water in

¹ <https://favershamsociety.org/cleve-hill-response-from-the-faversham-society-that-requirement-9-should-not-be-discharged/>

the event of an emergency”. Is this a serious suggestion the Fire Service would really put heavily polluted/toxic water back through its pumps and hoses? This, frankly, is ‘cloud cuckoo land’ and illustrates a lack of understanding of the reality of such a situation. May we recommend asking the Fire Service how real this suggestion is!

The “access track” that runs past and through the BESS containers, and beside the attenuation tank, appears to provide the perfect path for the fire-water to flow straight downhill to the river.

If this were to be a possibility, we suggest that the Environment Agency be asked for an opinion on the impact to the riverine habitat of such contaminated flows could have. The Hamble is home to sea trout, who spawn in the shallow water gravel in the upper reaches of the river (exactly this stretch) where their hatchlings spend up to three years in their ‘alevin’ and ‘parr’ stages. What impact would toxic pollution have on these new generations and the future health of the Hamble’s sea trout population?

A recent scientific publication by Held et al. (2022) in the journal *Renewable and Sustainable Energy Reviews* found that “the heavy metals nickel, cobalt and manganese were detected in very high acid-soluble concentrations [in the run-off water from a lithium-ion fire]. These levels exceed the limit for drinking water in Switzerland (where they are defined) by factors of 700 to 1,800. The limits for introducing fluids into the sewage system for industrial effluent in Switzerland are exceeded by factors of 20-70.” The idea that such high levels of these pollutants could flow into the Hamble simply doesn’t bear thinking about. The water would also be contaminated with highly corrosive hydrofluoric acid. The effect of all this entering the Hamble would not just affect the upper reaches but would pollute the whole river downstream as far as the Solent.

AND ALSO... DELAYING CONSIDERATION IS VITAL

As mentioned at the start of this letter, it is very obvious that the British government is running hard to catch-up with BESS technology. This means that Winchester City Council is in the invidious position of being asked to consider this planning application *prematurely*, in advance of critical national regulatory and safety standards currently under development.

1. Environmental Permitting Not Yet in Place

The UK Government had committed to launching a formal consultation by June 2025 to bring BESS infrastructure within the scope of the Environmental Permitting Regulations (EPR). Clearly it has missed its own deadline but, once in effect, this will require developers to:

- Obtain permits covering emissions and pollution control
- Implement firewater containment systems
- Demonstrate protection of groundwater, soil, and local ecosystems

These safeguards are not currently enforceable. So approving this scheme now risks circumventing regulatory measures explicitly designed to mitigate the kind of hazards this site may pose, particularly in a position close to substantial residential areas downwind of the site.

2. Inadequate Fire Safety Oversight

While the fire risks of lithium-ion BESS are now well-documented – including high-temperature thermal runaway, vapour cloud explosions and the release of toxic gases – statutory fire safety mechanisms have not yet been implemented:

- A BESS Fire Safety Bill, which would make fire services and environmental agencies *mandatory consultees*, is still progressing through Parliament, **with enactment expected in late 2025.**

- The National Fire Chiefs Council (NFCC) is preparing technical guidance for fire detection, suppression, and containment. **This is expected by the end of 2025.**

To approve this development before such statutory guidance and fire safety protections are in place would be to expose residents, schools, and the local environment to avoidable risk – particularly given the site's proximity to Bishop's Waltham/Swanmore, downwind of the prevailing south-westerly air currents.

We believe there is a very reasonable case for deferral. Ideally, this application should not proceed until:

- The EPR consultation has concluded
- The Fire Safety Bill becomes law
- NFCC fire safety standards are published and capable of being enforced through planning conditions

There is a clear and reasoned basis for deferring consideration until at least **early 2026**, when the national regulatory context MIGHT have caught up with the scale and nature of this proposal.

None of this affects our current objections, but it would create a better environment for proper consideration of this application which, in turn, might answer our opposition.

The Bishop's Waltham Society believes that there are multiple reasons why this planning application should be refused.

We absolutely acknowledge that renewable energy is vital for both country and planet and that Winchester City Council is a leading local authority on climate action, with near-complete decarbonisation of its own operations and ambitious district-wide goals. Its efforts in building retrofitting, transport transition, green procurement, and community engagement have earned national praise. In June 2025, Climate Emergency UK named Winchester as the top-performing district council in England, particularly excelling in Buildings and Heating, and Planning and Land Use.

But such heady praise should never go to the head. There is a housing shortage – but that doesn't mean that houses should be built anywhere without due regard for location and consequence. The same applies to locating renewable energy resources – especially when they include such potentially damaging storage systems (BESSes) so close to rural communities and vital ecosystems such as the river Hamble. The precautionary principle, particularly in this regulation vacuum, must be the wisest choice.

Yours sincerely



Tony Kippenberger
President

CC: Councillor Jonathon Williams; Councillor Ritchie Latham; Councillor Steve Miller; Councillor Kevin Jones; Councillor Tracy Conduct; Emma McKenzie, Executive Officer, Bishop's Waltham Parish Council; Trustees of the Bishop's Waltham Society. For information: Councillor Suzanne White; Councillor Malcolm Wallace; Councillor Danny Lee; Jo Fox, Shedfield Parish Clerk.