

Executive Summary

The project should not go ahead because the BESS is too hazardous to be deployed near the populous areas planned and because Sunnica are unqualified to design such a hazardous project effectively having done no comparable projects before. They are inadequately financed to manage the risks in the correct way. This is compounded by currently inadequate regulation as evidenced by the HSE not considering BESS to be hazardous material needing regulation. The likely consequence of this is that, as in the Grenfell fire, regulation will follow a serious adverse event rather than prevent it. The issue is what level of event will cause a rethink – a serious event causing significant damage or a catastrophe causing significant loss of life as happened at Grenfell. To mitigate the risk in this period before adequate regulation is put in place, the main mitigations available are limiting the energy and toxic chemical release by limiting the size of BESS and being prudent about the experience and financial strength of the companies allowed to deploy these hazardous systems. An ancillary risk is that a serious adverse event within the Sunnica project causes other better conceived schemes by more experienced suppliers to be delayed whilst new regulations are put in place delaying necessary projects to counter climate change.

The proposed system contains a Battery Energy Storage System to enhance Sunnica's revenues. It is specifically designed to accept energy inputs from anywhere on the grid. As such it is not an associated development but a separate item that could be constructed elsewhere in a more appropriate location where it would present less hazard to neighbouring populations.

In the event of the authority wishing to go ahead with the project some improvements are suggested to the DCO. These tidy up ambiguities in Sunnica's specification relating to generation and storage capacity so that the costs and benefits can be assessed unambiguously, improve the decommissioning fund to shield the treasury from the financial risks in Sunnica's proposal and improve the tree planting proposal.

Consider this as a competitive government procurement; Sunnica would not be qualified

Imagine this project were a government procurement of the system that Sunnica have proposed. The government would have a number of criteria for selecting the supplier which would be likely to include:

1. The track record of the companies offering to do the project in particular in similar projects delivered. Similar would be judged by the scale of the projects and the inclusion of the essential features of the proposed project in previous projects.
2. Demonstration of credible plans for managing all aspects of the project in particular any hazards inherent in the design, construction or operation of the proposed system
3. The financial standing of the company and its ability to manage the risks inherent in such a project
4. The cost of the project both in development and construction and over its operational lifetime
5. The plans for restoration of the land at the end of the life of the proposed system and the funding of those costs

Having assessed these factors, the best value offeror would be selected.

In this case, Sunnica have no prior experience at all - their filings at Companies House indicate they have never traded. This means that they are wholly reliant on their investors and sub-contractors for financial, engineering and operational credibility. However, the normal

shielding of the investors from Sunnica through limited liability companies mean that their investors do not supply any financial credibility. Under any circumstances, including but not limited to unforeseen risks on the project requiring significant additional funds, the investors might withdraw support and leave the Secretary of State with the choice between funding the restoration of the land to prior condition or funding the completion of the project with a new partner. If we then look at the owners of Sunnica they are Tribus Energy (which again has negligible value) and PS Renewables which is a subsidiary of the Spanish company Padero Solaer. PS Renewables is also quite a small company that has delivered 255MW of solar farms in the UK over 20 projects, none of which include a BESS. Thus neither Sunnica nor the direct owners of Sunnica have any experience of BESS. Thus, we can only conclude that the delivery of project will rely on subcontractors. It is not unusual for major infrastructure projects to have large parts of them delivered by subcontractors. However, the prime contractor needs to have the system level knowledge and experience to specify the project fully and manage the contributions of the subcontractors; it is highly unusual and very risky for the Secretary of State to have a financially weak and inexperienced prime contractor – particularly for a project including a hazardous sub-system such as the BESS.

BESS is not an associated development

The applicant argues the BESS is an associated development because it can only store four hours of generation of the solar farm which it described verbally at the Issue Specific Hearing on November 1st as having a capacity of 2.4GWhr. When challenged to then have the DCO say the battery should only be allowed to store energy generated by the solar farm, it says no the National grid should be allowed to store any generated energy from anywhere on the grid in the battery. This is because such storage represents significant revenue streams for Sunnica. Indeed, if given the Carte Blanche they have requested, they might increase the battery storage capacity even more to enhance such revenue streams. They have also argued, incomprehensibly, that the hazards presented by the battery are not related to its capacity (in the Issue Specific Hearing on November 1st). The normal way to assess hazards for safety critical projects is to consider the severity of an adverse event and the probability of such events by a team independent from the design team. The design team then proposes mitigating measures which reduce the risk for severe hazards to low. It is well reported in the press and the literature that high-capacity lithium-ion batteries present a significant fire risk from thermal runaways, even with much lower capacity BESS. Such accidents have caused injury and loss of life to firefighters and significant damage to energy security for the time it takes to restore the plant to an operational condition.

Improvement of the DCO

If despite the serious shortcomings of the proposal illustrated above, the authorities wish to go ahead with the project then the DCO could be improved by:

1. The authority should require a definite outcome for the project rather than the vague >50MW generation and >50 MW storage. The applicant argues that this is adequate because it makes it a nationally significant infrastructure project. But this is not the point; the project is taking around 11 sq km of land; a 50MW solar generating array would normally require less than 1 sq km (for instance, the Stowbridge, Green End and Fen Land solar farm between Ely and Cambridge provides 69MW generation on 0.875 sq km of land). Sunnica seem to be trying to arrange the requirement so that if they are unable to raise enough investment, they can build a small but grossly inefficient solar farm on a vast area. A proportionate response would be to allow them a 50MW solar generating plant subject to a land limit of 1 sq km with no compulsory purchase rights. You could also consider including a 50MW, 200MWhr battery and this might constitute a

reasonable project for a start-up company like Sunnica to learn the practical problems of design, delivery and operation of such infrastructure.

2. Sunnica have proposed that they pay into a decommissioning fund from the revenues from the project. This pre-supposes that Sunnica succeed in completing the project. Given that Sunnica have no previous successful track record, the Authority is entitled to assume that there is a high risk of non-completion of the project. Under those circumstances, the costs of completion or restoration should not be borne by the public purse. To enforce this, Sunnica should be required to deposit a bond at the outset of the project which is sufficient to complete the project or restore the land to its pre-project condition. At all times, this bond must be sufficient to cover the costs of restoration of the land to pre-project conditions.

3. Sunnica have proposed obscuring the large structures constructed in their proposed project with trees. However, their proposal is inadequate because they propose planting saplings at the end of the process of construction which will then take tens of years to grow to a level where they influence sight lines of the constructed infrastructure. If trees are required to obscure the infrastructure, then obscuration of the equipment should be achieved within a reasonable period such as within one year of completion of construction

Battery Energy Storage Systems represent a major hazard

There have been many BESS fires in grid storage systems, a few are listed below:

1. April 2019, Surprise, Arizona, 2MW battery caught fire and exploded injuring a team of firefighters.
2. 20 fires reported at South Korean BESS facilities within a year of the Arizona incident.
3. July 2021, the fire of the Tesla 300MW, 450MWhr battery at Geelong, Australia burned from July 30 to August 2nd. It took 150 firefighters to fight the blaze in this relatively small capacity battery relative to Sunnica's proposal. Would there be an adequate firefighting response available in Suffolk/ Cambridgeshire for an incident at the Sunnica plant?
4. September 2021 and February 2022, Moss Landing Energy Storage Facility, California, 400MW, 1600MWhr, have seen cascades of failures in fire suppression systems with parts of the battery melting down. The plant has only recentl