Norwell Solar Farm Steering Group

Application by Elements Green Trent Limited for an Order Granting Development Consent for the Great North Road Solar and Biodiversity Park – project ref. EN010162

Unique Number – [redacted] (Our ref: NSG/11)

Deadline 6: BESS Firewater

1 Introduction

The purpose of this report is to revisit the amended plans designed to cope with any firewater used during any thermal runaway at the BESS batteries. This is because there are still some unanswered questions surrounding the Fire Safety Management Plan (FSMP).

2 Burn time and Water Volume

2.1 The following sentence is included in ES TA A9.3 Outline Drainage Strategy (paragraph A9.3.3.2) REP3-052.

> *"Based on recommendations in NFPA 855 Standard for the Installation of Stationary Energy Storage Systems and NFCC – Grid Scale Battery Energy Storage System planning – Guidance for FRS, a burn time of 2 hours and a requirement of 1,900 l/min of fire suppression water has been used to calculate the volume of fire suppressant water required to be stored on-site in the event of a container fire.*
>
> *This equates to 228 m^3 of storage"*

2.2 In terms of the volume of water required in storage, this is in line with the NFCC Guidance. It requires that 2 hours of water be available on site. The difficulty some may have with the wording of this paragraph is that it could be misinterpreted that the NFCC expect the burn time will only last 2 hours. Previous experience as reported (in REP3-114) by the Group demonstrates that that would be widely inaccurate. And yet the document still goes on to say...

> *"The SuDS structures serving each catchment of the BESS compound will be sized to accommodate ... 228 m^3, and this will be sufficient for storing the full fire suppressant volume."*

2.3 This has been questioned before but is mentioned again as there is

now published the final statement of common ground (SoCG) with the Environment Agency (EA) REP5-033. On page 38, the EA historically voice the concern that " *there were insufficient measures to avoid chemical pollution from Battery Fire.*" The EA's position now is that they seem to accept that 228m³ will be enough to accommodate all the firewater. It is unclear on what evidence they base this assessment.

2.4 The Applicant's initial view that the water "*applied externally for cooling is unlikely to become contaminated, as it remains physically separated from internal electrolytes and other possible contaminants within the enclosure*"(page 39) has developed. It seems certain that any sprinkler system will produce contaminated water. Initially the Applicant hoped at Deadline 1 that firewater could be discharged to the unnamed field drain. However, the EA and Applicant now agree that water will be removed by tankers.

2.5 The EA, in accepting that tankers will intervene to prevent the SuDS being overwhelmed as firefighters were still deploying suppressant water more than 2 hours after attendance, may wish to explain how, in their experience, tanker drivers will be allowed on-site whilst the fire is still in progress. No doubt the firefighters will be deployed with breathing apparatus. It is unlikely tanker drivers will be so trained. It is still unfortunate that to date there is absence of any comment from Nottinghamshire Fire and Rescue Service (NFRS). Within the Group, there is training and experience of attendance at major incidents, including alongside NFRS assets. In the past, NFRS have been very reluctant to allow civilian personnel on-site whilst the fire is still in progress and toxic fumes are present.

3 Contaminated Water.

3.1 This is where some confusion creeps in. The SoCG signed by the EA states on page 41 *"that in the event of a fire suppression event, the captured water will be tested".*

3.2 In the ES TA A9.3 Outline Drainage Strategy REP3-052 on page 12, it states...

"An automatic penstock will be placed on the outlet of the SuDS structure and would be shut off in the event of a fire suppression event. It would remain closed until testing of the captured water has taken place."

3.3 In Deadline 3, the Group queried how possible it would be to achieve testing and tankering within 2 hours of NFRS attendance. In response, the Applicant stated the following on page 71 of EN010162/APP/8.29 Responses to Deadline 3 Submission Report REP4-059:-

"Chemical testing is not proposed for contained suppressant, as agreed with the Environment Agency."

3.4 This appears to be in conflict with the later SoCG.

3.5 This document also assists with another query. It was unclear to the Group how pumping potentially contaminated firewater to the holding basin would be achieved, especially whilst the fire is still in progress. Page 78 assists as the Applicant volunteers its own staff to do this. Again, it would be useful to have seen documentation directly from NFRS such as a risk assessment confirming they are happy with this as a plan.

4 Off-site Transport

4.1 In an earlier submission, the Group questioned the legality of road transporting untested potentially hazardous contaminated firewater to a licensed facility.

4.2 The relevant legislation appears to be the Hazardous Waste (England and Wales) Regulations 2005 and The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

4.3 The Group now accept the possibility that Regulation 62(2) of the 2005 Regulations may permit the carriage of contaminated firewater by road without a consignment note. This would depend on whether the EA would class water from a thermal runaway as an *"emergency or grave danger".* With what the EA have accepted within the SoCG, it does appear that they do not recognise any potential for grave danger to the environment which would be a precondition. It may be that this needs to be addressed in the full FSMP. This issue is relevant to the doubt over testing as if a consignment note is required, then the pollutants will need to be identified within the note.

5 Conclusions

5.1 During the examination, this Group have sought to address just two aspects of this proposal – Greenhouse Gas harm and how safe the BESS will be.

5.2 With one BESS already permitted, the Group would argue that on safety and climate change grounds, this project design should be altered to remove this second BESS. In REP1-099, it was demonstrated that this project caused the least harm to climate change if the second BESS was removed. It also demonstrated that it is not required to meet national or regional targets.

5.3 Perhaps the most striking implication discovered by the Group during its scrutiny was that this project designed as it is,would be a significant contributor to greenhouse gases in our atmosphere. The Group are now seeing other campaign groups around the country coming alive to this fact and it is anticipated this will not be the last time an ExA is confronted with this argument.

Norwell Solar Farm Steering Group
April 2026.