

In response to [REP2-084] Q1.0.18 HSE

The applicant does not consider this site to come under COMAH regulations. Given the applicant doesn't currently know what battery composition will be used in the BESS how does the applicant have a calculation to back this up?

Using a general Li Battery make up a 300 MW (4-hour duration) BESS would have a total energy capacity of 1,200 MWh. Such a system would likely contain approximately 360 tonnes of electrolyte. This quantity significantly exceeds the UK's Control of Major Accident Hazards (COMAH) lower-tier and upper-tier thresholds for most relevant hazard classifications. The site would almost certainly be classified as an Upper Tier COMAH establishment, requiring the applicant to implement stringent safety measures and submit a safety report to the Health and Safety Executive (UKHSE).

Calculation and Threshold Context Energy Capacity:  $300 \text{ MW} \times 4 \text{ hours} = 1,200 \text{ MWh} = 1,200,000 \text{ kWh}$

Estimated Electrolyte Mass:  $\sim 0.3 \text{ kg per kWh} \times 1,200,000 \text{ kWh} = 360,000 \text{ kg} = 360 \text{ tonne}$

The classification as an Upper Tier site is based on Schedule 1 of the COMAH Regulations 2015, specifically using the aggregated total mass of dangerous substances that fall into generic hazard categories, such as: "Flammable liquids" (the solvents used in the electrolyte mixture). Substances generating toxic gases (like hydrogen fluoride if the electrolyte reacts during a fire). The quantity of 360 tonnes is well above the thresholds for these categories (which are often in the range of 10 to 50 tonnes for Lower Tier and 50 to 200 tonnes for Upper Tier).