

USKMOUTH ENERGY STORAGE PARK

BATTERY REPLACEMENT SCHEME

MAY 2025

Revision A

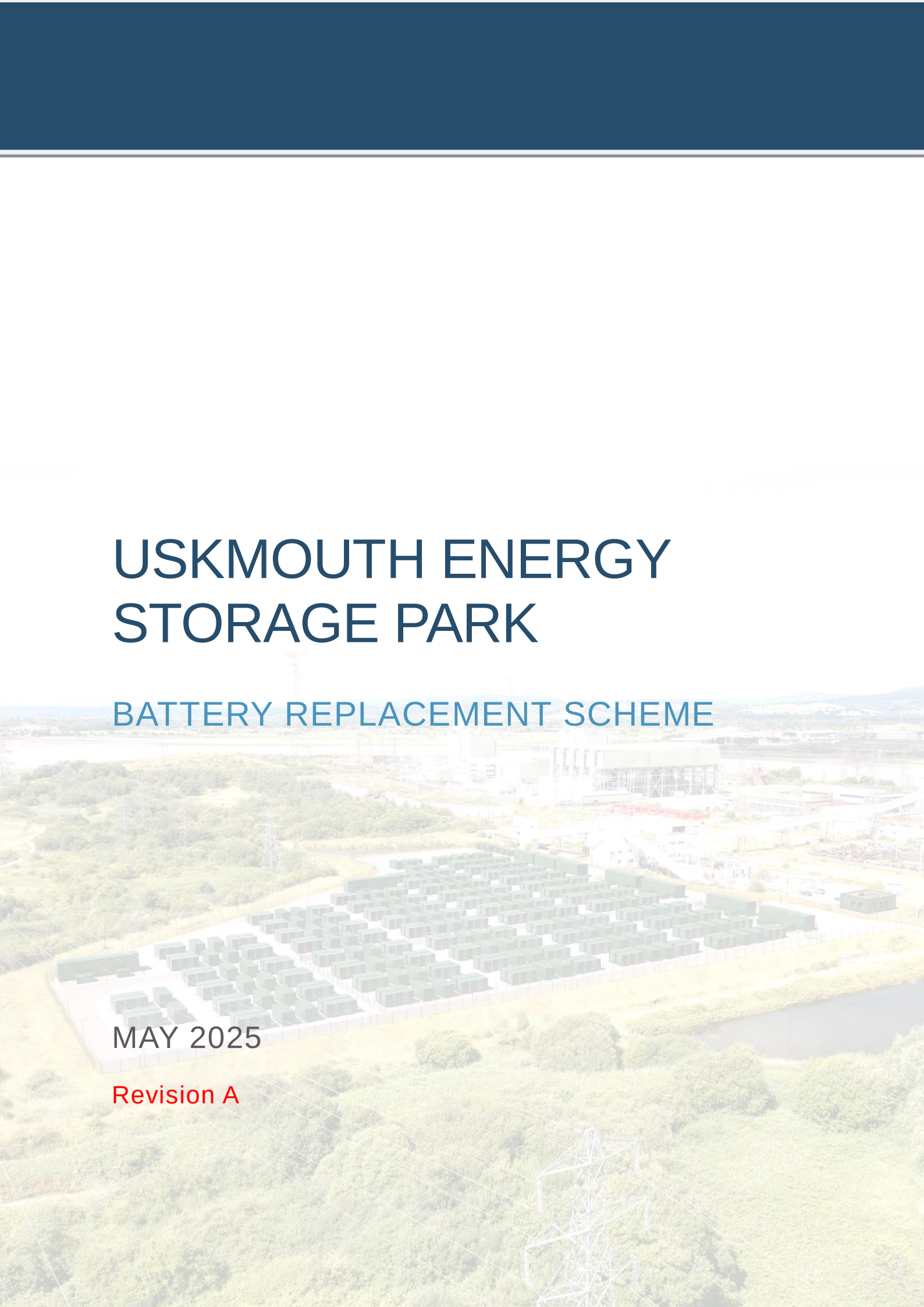


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1 INTRODUCTION

1. This Battery Replacement Scheme has been prepared by Uskmouth Energy Storage Limited ('UESL') to accompany the discharge of Requirement No. 8 of the approved planning permission granted permission on the 23rd of November 2023 in relation to the Battery Energy Storage System (BESS) application number 23/0835.
2. The information and scheme prescribed in this document have been prepared to provide an outline of the expected replacement of the battery units and associated infrastructure over the lifetime of the project.
3. This information is prepared on a best endeavours basis and may vary at the time of battery units being required to be replaced, and does not account for any situation regarding the replacement of any defective battery unit or module which may occur from time to time due to fault or failure or any requirements of replacement due to a change in regulation, law or statutory policy.

1.1 DOCUMENT STRUCTURE

4. The Battery Replacement scheme includes the following sections;
 - Introduction and document structure;
 - Estimated Replacement Lifecycles;
 - Replacement Procedure;
 - Estimated Traffic Generation;
 - Pollution / Waster Generation Impacts;

1.2 OUTLINE REPLACEMENT PROCEDURE

5. For any proposed replacement, the following outline procedure steps shall be performed;

Table 1 – Outline Replacement Procedure

Step	Task	Requirement	Reason
1	Condition Assessment	Complete a thorough assessment and inspection shall be undertaken in accordance with the manufacturers and industry good practice recommendation.	To evaluate and validate the equipment's condition and performance with a focus on safety.
2	Optioneering Assessment	Following the outcome of the Condition assessment, a Optioneering excursion shall be conducted to identify. a) If the equipment lifespan can be prolonged with refurbishment or partial replacement. b) Asses the project future needs and consider factors such as operational changes, technology advancement and latest regulatory compliance.	To ascertain if a more sustainable approach can be achieved prior to a full replacement being undertaken.
3	HAZID	Following the outcome of the optioneering assessment, a detailed Hazard Identification Study shall be conducted	To detect, describe and catalogue all potential risks which could be present through the process of refurbishment or placement, examine safeguards and mitigation to reduce all potential risks

			identified and implement though design control measure for managing all potential risks identified.
4	Replacement Execution Plan	Produce a specific Replacement Execution Plan to define the works, objectives and deliverable required to successful complete the proposed refurbishment or replacement.	To ensure the correct levels of resource, quality, risk management, communication and establish the works schedule and programme.
5	HAZOP	Complete a Hazard and Operability Study of the proposed Execution plan and identify any potential issues or processes which can be improved prior works being undertaken.	To ensure the safety of employee's, contractor, the public and the environment.
6	Monitor	Regular inspection during the re-refurbishment / replacement works to be undertaken ensuring the implemented control measures are being executed effectively.	To ensure the safety of employee's, contractor, the public and the environment.
7	Verification	Through recommissioning of the equipment ensuring the implemented control measures are functioning effectively.	To ensure the safety of employee's, contractor, the public and the environment.

1.3 ESTIMATED REPLACEMENT LIFECYCLES

6. Subject to actual operational use, the expected replacement lifecycles for the battery units and associated equipment are as follows;

Table 2 – Key Equipment Expected Lifecycle

Equipment Name / Description	Estimated Replacement Lifecycle
Battery Storage Units	10 - 15 years
Power Conversion Systems	20 - 25 years
High Voltage Substations	30 – 40 years
Transformers	30 – 40 years

1.4 ADDITIONAL CONSIDERATIONS TO TRAFFIC GENERATION

7. In addition to the Outline Replacement Procedure detailed in section 1.2 above, careful consideration shall be given to reduce the impact of traffic generation to the local area during any refurbishment / replacement, including;
- Use of alternative mode of transports such as rail.
 - Staging works in batches where mass replacement are required to be undertaken.
 - Seeking alternative solutions to whole replacements with weighted consideration to refurbishment.
8. In any case, traffic shall be managed in accordance with the approval planning permission documents specially the Transport Assessment by RPS 18th August 2022, ensuring no more than

18 HGV movement per day Monday to Friday and 9 on Saturday (or 100 per week which ever is greater) shall enter and leave the site during any replacement works period and ensuring that there shall be no HGV vehicle movements on Sundays or Bank / Public Holidays.

9. Prior to the commencement of any replacement works, the Transport Assessment produced by RPS 18th August 2022 has be confirmed as still valid and appropriate for the activities to be undertaken, and shall be amended accordingly if any there are any material changes to the local road networks at the time.

1.5 ADDITIONAL CONSIDERATION TO POLLUTION / WASTE GENERATION

10. In addition to the Outline Replacement Procedure described in Section 1.2 above, careful consideration shall also be given to minimizing pollution and reducing waste generation. Wherever practical, efforts should be made to recycle replacement equipment, aiming for as close to 100% recycling as possible.
 11. In all cased replacement of any battery units or battery modules shall be done so in accordance with the procedures and protocols set forth in the Battery Safety Management Plan.
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