Acoustic & Noise

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Battery Storage Energy Systems

Client: Green Switch Capital Ltd.

Location: Stonehaven

Project Overview

Commissioned, by Green Switch Capital Ltd., part of the Qair group, to undertake a Noise Impact Assessment (NIA) for a 49.9MW Battery Energy Storage System (BESS) development, where noise was identified as a potential constraint. Two different site designs were proposed, requiring assessment to determine the optimal layout.

Key Challenges

- **Low Background Noise Levels** – The rural setting meant minimal ambient noise, increasing potential impact on sensitive receptors.
- **Proximity to Residential Properties** – Nearby receptors were close enough that even minor noise increases could be significant.
- **Limited Acoustic Data** – Manufacturer data was incomplete or higher than typical values for this type of development.
- **Ineffective Initial Mitigation** – An earth bund was included in early designs but could not be optimally positioned for sufficient attenuation.

Our Solutions

- Engaged with the local authority to define acceptable noise limits and assess compliance with internal receptor levels.
- Adjusted and corrected acoustic data to refine noise impact predictions.
- Evaluated mitigation strategies, highlighting that perimeter acoustic barriers were largely ineffective due to site conditions.
- Provided ongoing advice to the client, ensuring informed decisions on plant layout and equipment selection.

The Successful Outcome

The final site layout and equipment selection achieved noise levels at or below background sound at the nearest receptors, ensuring compliance with local authority requirements.

