

BATTERY ENERGY STORAGE SYSTEMS (BESS) NOISE ASSESSMENT

*THE IMPORTANCE OF SOURCE
NOISE DATA*



WHAT ARE BESS?

Battery Energy Storage Systems (BESS) are a critical part of modern energy infrastructure, storing power when it's abundant and releasing it when it's needed most.

They support renewable energy, improve grid stability, and enable a more energy-efficient future.

As BESS deployment accelerates, these systems are increasingly being installed close to urban and mixed-use areas, bringing environmental noise considerations to the forefront.

WHY BESS NOISE MATTERS

BESS facilities often operate 24/7 and can be located in urban and mixed-use areas.

Operational noise can arise from cooling and ventilation systems, inverters and power conversion equipment, and transformers and auxiliary plant.

These sources **must be carefully managed**, specially in urban settings, as small inaccuracies in noise prediction can be the difference between compliance and exceedance.



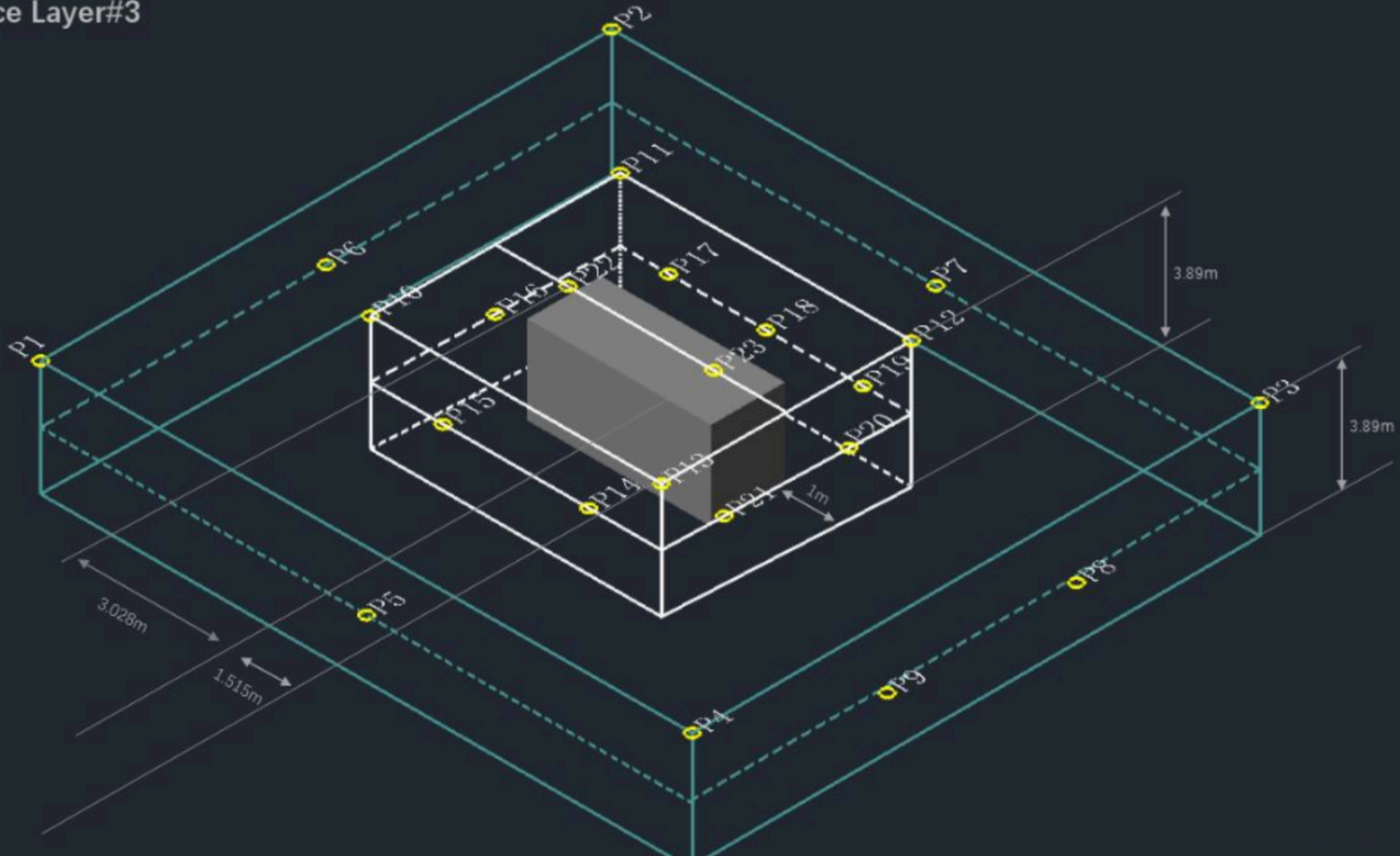
THE IMPORTANCE OF SOURCE NOISE DATA

Accurate environmental noise assessment starts with **credible source noise data**. BESS units are being produced, tested, and installed continuously, making it essential to verify that noise data used in assessments is:

- Relevant
- Complete
- Standard-compliant

Robust noise predictions rely on testing undertaken in accordance with ISO 3744:2010 or AS 5331:2019.





OUR APPROACH

Unfortunately, not all supplier noise data is based on standard-compliant testing. That is why our approach focuses on:

- Verifying source noise data against recognised standards
- Reviewing sound power levels and test conditions
- Accounting for directivity and air inlet/outlet locations
- Applying this data within 3D noise models to reflect real site conditions

This is critical where container placement and short assessment distances can influence compliance.

MITIGATION MEASURES AND OUTCOMES

Where required, mitigation measures may include:

- Acoustic enclosures or treatments to BESS units
- Noise barriers or screening walls
- Selection of low-noise plant and equipment
- Optimisation of site layout and equipment orientation
- Operational controls or curfews

Together, these measures support regulatory compliance, protect surrounding communities, and enable the long-term, efficient operation of BESS facilities.

