



GridSolve™ Noise Guard

At Wärtsilä, we believe noise mitigation is a fundamental design principle of energy storage systems. That's why we embed noise control into every stage of product development; from early design to site-specific modelling, our approach combines advanced engineering, predictive analytics, and transparent communication.

Why noise matters

Battery energy storage systems (BESS) are essential for modern grids but are often located near residential areas, introducing noise challenges. As a result, acoustic compliance has become a critical permitting factor with strict thresholds requiring early planning. Addressing noise upfront builds community trust, speeds up permitting, and ensures long-term project acceptance.

Noise concerns are often a top community concern when permitting... what if it didn't have to be that way?

Introducing GridSolve™ Noise Guard

A proprietary two-prong approach for noise control focused on both project delivery and product design—giving developers clear, reliable pathways to compliance in any market.

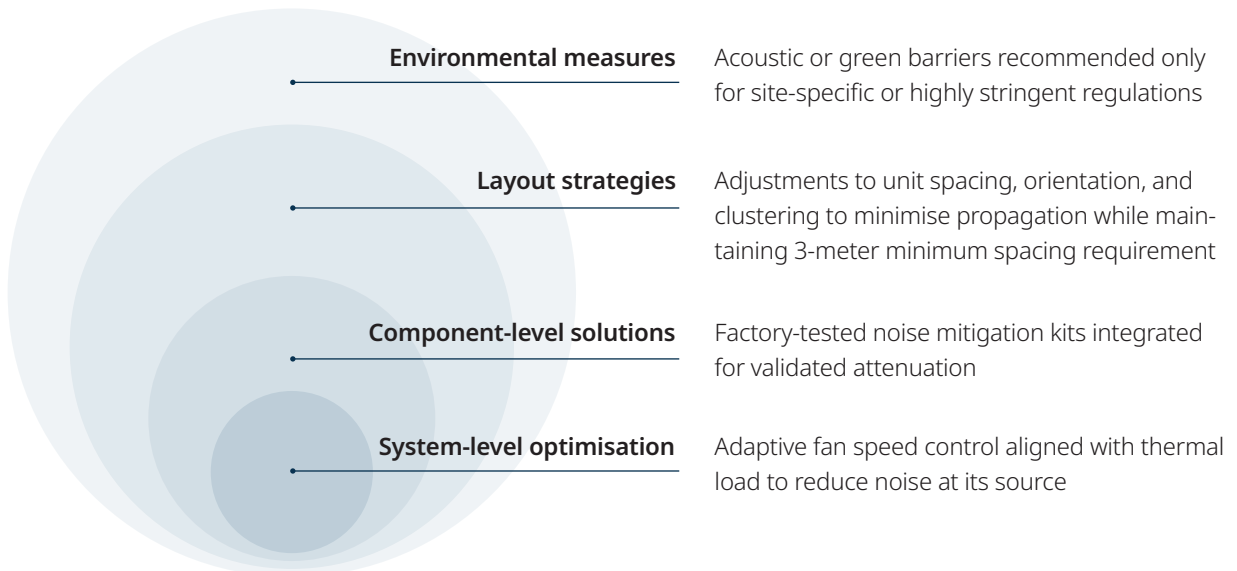
Project delivery solutions

Every site is unique, so our approach ensures compliance from the start. We model to local standards, refine layouts and operating profiles, and account for third-party equipment. Using CadnaA acoustic modelling, we validate results and collaborate closely with your team for fast, informed decisions.



Your path to predictable results

- 1 Measurement & data collection** – We conduct ISO-compliant noise measurements for all GridSolve™ solutions which are verified by third-party acoustic consultants. Results are documented in detailed datasheets and reports, including nominal and worst-case thermal conditions for accurate modelling inputs.
- 2 Predictive noise modelling** – We work with acoustic consultants to create site-specific noise profiles; factoring in topography, equipment operation modes, day/night requirements, ambient conditions, and other constraints.
- 3 Tiered mitigation plan** – When additional measures are required, we apply a layered approach:



Product design solutions

We manage noise at the source, designing our products to reduce noise before it becomes a site issue. The GridSolve™ BESS portfolio is designed to be inherently low in noise through integrated acoustic considerations rather than reactive add-ons.

Noise Guard supports faster, easier installation



Our acoustic advantage

- ✓ **Noise optimised chiller**
Low-noise operation through efficient component design and load-based airflow control
- ✓ **Low-vibration mechanical architecture**
Minimises tonal and low-frequency noise for quieter performance
- ✓ **Quantum3 integrated AC configuration**
String inverters reduce discrete noise sources, lowering site level acoustic emissions
- ✓ **Dynamic operational control**
Variable fan speed management balances thermal efficiency with noise reduction
- ✓ **Factory-tested noise mitigation kits**
Ready-to-deploy accessories for additional attenuation when required

Confidence in compliance

- ISO 3744:2010 and ISO 9614-1 for noise testing
- ISO-compliant tonal profile stacking integrated with regional noise criteria
- Compliance verified by third-party acoustic consultants
- Site modeling supported via ISO 9613 or CONCAWE methodology

How we stack up against the competition

GridSolve™ Quantum3 incorporates advanced noise mitigation technologies, achieving a sound power level of just 77–84 dBA, compared to competitor systems that often exceed 90 dBA.



Wärtsilä's noise mitigation approach prioritises community harmony by ensuring compliance, streamlining permitting, and fostering trust.

Our systems are designed to be a long-term, welcomed part of the local environment, working in partnership with the communities they serve.



Ready to tackle your next noise challenge? Let's talk.
wartsila.com/energy/energy-storage