

volytica and Sinovoltaics launch BESSential Quality Control Service to Reveal and Correct Battery Pack Defects

Dresden / Austin, Texas (USA) – July 11, 2024 – Sinovoltaics, a global leader in quality assurance for the battery energy storage system (BESS) and solar photovoltaic (PV) industries, has launched its BESSential analysis service, offering 100% battery pack review. The groundbreaking service, which detects and corrects thermal, electrical, and capacity imbalance issues directly at the BESS factory, was launched in partnership with [volytica diagnostics](#), a pioneer in the development of cloud-based battery diagnostics software.

Battery systems are formed by stacking battery cells to create battery modules, which are then combined to form racks that are installed into containers. These containers go through extensive electrical and performance tests at the factory to ensure they meet industry standards. However, since these Factory Acceptance Tests (FATs) are performed at the container level, they can miss smaller defects and abnormal behaviors that may not become apparent for years. Even more worrying, some BESS integrators only perform sampling performance tests. Consequently, they often miss underlying issues in subsystems, racks, or battery packs that emerge after installation.

Sinovoltaics and volytica have identified and addressed the need for a more thorough analysis to remove and replace all defective battery packs and other components in battery assets. The BESSential service is based on Sinovoltaics' years of experience auditing battery factories and volytica's advanced algorithms and expertise in battery diagnostics.

The proprietary BESSential analysis goes much deeper than traditional Factory Acceptance Testing. The service collects and compiles the vast amount of data from the FAT and then evaluates each pack down to the cell level. BESSential identifies volatility in individual battery packs and cells, such as temperature shifts, voltage irregularities, capacity imbalance, and other factors predictive of battery defects. These metrics are then used to model the micro-environment of each battery pack. Any anomalies that are found are flagged in the system for further inspection. Any volatile components are also removed and tested further, with BESSential-vetted replacements substituted for defective components.

"At Sinovoltaics, we want to protect our clients' investments by ensuring the performance and safety of their BESS assets," said Arthur Claire, Director of Technology at Sinovoltaics. "Even a minor defect at the cell level can jeopardize an entire BESS investment. Our BESSential 100% pack analysis mitigates this risk, protecting the client's physical asset while also securing their return on investment."

Battery pack data analysis tests are usually performed during site commissioning, not at the factory. This traditional method leads to a suboptimal testing environment that prevents a comprehensive performance evaluation of the BESS. Also, if an issue is detected during commissioning, it can take months to replace defective modules, as the supplier needs to first review the defect and then replace the defective modules. According to a [recent study](#) by the Electric Power Research Institute, almost 50% of severe BESS failures occur in the first year after commissioning.

In contrast, BESSential provides a thorough analysis at the factory, before shipment, ensuring that only good components are shipped and avoiding project delays. volytica's data-driven approach offers a comprehensive and swift diagnostic process, identifying performance inconsistencies, thermal inhomogeneity, charge imbalances, and early signs of cell degradation.

“In order to mitigate investment risk, thorough testing of energy storage systems prior to commissioning is essential, says Claudius Jehle, Managing Director and CEO at volytica. “Current practices often miss critical defects by testing systems as a whole, rather than testing each element individually. At volytica, we're transforming this method by rigorously testing 100% of all components: automatically. This meticulous approach significantly reduces the risk of post-deployment setbacks, saving time, money and avoiding disputes with OEMs.”

After a BESSential analysis, a full report is provided on defects and remediations, giving BESS owners and investors data-backed confidence in their assets. This makes BESSential a valuable tool for asset operators and asset owners alike.

By identifying and replacing high-risk cells, modules, and battery racks before commissioning, BESSential reduces the likelihood of failures, ensuring predictable performance and reliable grid interaction. In addition to protecting battery asset owners' investments, BESSential helps reduce the risk of fires and electrical shorts, directly translating into lower maintenance costs, improved operational efficiency, and greater trust from investors.

With the new BESSential service, Sinovoltaics continues its tradition of innovation and the advancement of quality standards for both solar PV systems and BESS.

About Sinovoltaics

Since 2009, Sinovoltaics, a Dutch-German Battery Energy Storage (BESS) and solar photovoltaic (PV) technical compliance and quality assurance service firm, has been a pioneer in the BESS and solar photovoltaic industries. With our SELMA (Sinovoltaics EL Mass Analysis) software and industry-leading Zero Risk Solar® guarantee, our mission is to eliminate all photovoltaic and BESS product defects, enabling investors and the world to succeed with minimal investment risks.

Sinovoltaics' services include quality assurance inspections, factory audits, Environmental, Social, and Governance (ESG) reports, and traceability audits for utility solar developers and investors. The company maintains a global presence with offices in Switzerland, the United States, Hong Kong, mainland China, Vietnam, and Spain, as well as factory inspection and audit teams strategically located in Vietnam, Turkey, Thailand, China, Malaysia, Cambodia, South Korea, India, U.S., and other key manufacturing bases.

About volytica diagnostics

volytica diagnostics, based in Dresden, Germany, is a pioneer in battery diagnostics. As an independent software provider, we offer battery monitoring solutions that empower our customers to make informed decisions for the safe, sustainable, and efficient use of any battery, from e-mobility to renewable energy storage.

Using advanced analytics and algorithms from daily field data, our software provides insights into battery degradation, health status, anomalies, and safety risks. Additionally, it minimizes battery notifications and offers handling recommendations, improving ease of use for all clients. The volytica solution integrates seamlessly into any SCADA system, thanks to its interoperability, compatibility with third-party platforms, ease of installation, and scalable architecture. Our Vision: Every battery will be used to its true potential.