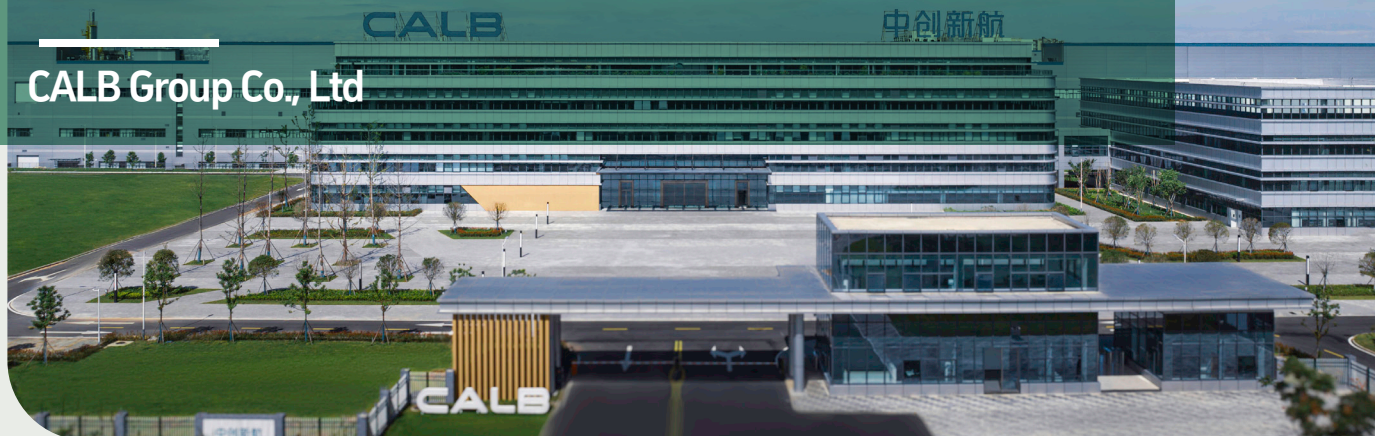


How to Address Climate Change as a Battery Maker? Practice from CALB answers.

CALB Group Co., Ltd



PROJECT OVERVIEW

CALB has embedded its commitment to a net-zero future deeply within its corporate strategy and product development. In early 2025, the company unveiled its "30-40" carbon neutrality roadmap, pledging to achieve carbon neutrality in its core operations by 2030 and across its full value chain by 2040. This ambitious target not only drives profound internal decarbonization efforts but also serves as a strategic guide for how its products and services will accelerate the broader transition to a low-carbon economy.

The company leverages the industrial Internet and next-generation information technologies to establish intelligent lithium battery manufacturing systems and energy management centers, significantly enhancing both production and energy efficiency. Concurrently, it actively adopts clean energy and energy-saving processes. Key measures include: deploying photovoltaic stations and industrial energy storage systems to enable on-site renewable consumption; adopting biomass fuel for steam generation to cut natural gas use and associated direct emissions; and utilizing intelligent gas-electric hybrid heating and waste heat recovery technologies to dynamically optimize energy supply. Beyond operational improvements, the company has also established a product carbon footprint management system that spans the entire lifecycle. Through these multi-layered efforts, CALB has achieved substantial progress in decarbonization, laying a robust foundation for its "30-40" carbon neutrality goals.

COMPANY/ORGANIZATION PROFILE

CALB 中创新航

CALB is a globally leading new energy technology company committed to serving as an energy value creator and building a comprehensive energy operation system. It provides complete product solutions and full life-cycle management for the entire spectrum of new energy applications, including automotive, marine, and energy storage. The Company operates ten production bases located in China (i.e. Changzhou, Xiamen, Wuhan, Chengdu, Hefei, Jiangmen, Meishan and Handan), Europe, and ASEAN, demonstrating strong capabilities in large-scale manufacturing and delivery.

Supported by research entities such as national-level enterprise technology centers and postdoctoral research hubs, CALB has established four innovation technology platforms: Advanced Materials, Advanced Batteries, Advanced Power Sources and Advanced Manufacturing. The company has been continuously technological making breakthroughs in materials, structural design, manufacturing, and eco-friendly innovation. CALB has led or participated in multiple national and provincial key research programs. Furthermore, CALB holds thousands of patents covering all critical nodes of the battery industry chain, and has received the National Science and Technology Progress Award for key energy storage

technological innovation. Several of its products have redefined quality and performance benchmarks for the whole industry.

In recent years, CALB has sustained rapid growth globally in the markets of EV batteries and BESS batteries. Beyond these domains, the company's products also extend to emerging fields such as electric vessels, eVTOL and humanoid robotics, underscoring its commitment to enabling zero-carbon applications across all scenarios.

PROJECT OUTCOME

CALB remains steadfast in its commitment to green and low-carbon development, accelerating its transition through a series of targeted decarbonization measures. These include elevating the use of clean energy, transitioning to sustainable fuels, advancing digital and intelligent transformation, deploying energy-efficient facilities, and implementing a product carbon footprint management system.

These practices have generated consistent and measurable outcomes. In 2024, the company achieved a 19.47% year-on-year reduction in CO₂ emissions per unit product, maintaining a consistent and substantial decrease since its inaugural reporting period.

CALB will keep up with these efforts, with a clear focus on driving deeper emission reductions. Achieving meaningful operational decarbonization and fostering collaborative value-chain decarbonization remain central to the company's strategic mission.

PROJECT HIGHLIGHTS

Through the effective implementation of decarbonization initiatives, the company has been rewarded:

1. Jiangsu provincial-level pilot enterprise for carbon peaking and carbon neutrality (in the very first batch)
3. National Model Factory for Smart Manufacturing
4. National Green Factory
5. Jiangsu Provincial Smart Factory

PROJECT IMPLEMENTATION

CALB is actively building a green manufacturing system characterized by high efficiency, low carbon emission, eco-friendliness, and smart technologies. Guided by the principles of low-carbon energy and clean production, the company continues to drive down energy and resource consumption per unit product while reducing pollutant emissions. By constantly refining manufacturing processes and promoting resource recycling, CALB is accelerating its green and low-carbon transformation.

1. Photovoltaic Power Generation and Industrial Energy Storage

CALB makes full use of unobstructed areas such as factory rooftops and parking lot shelters across its production bases to install solar panels for photovoltaic (PV) power generation. As of the first half of 2025, the company's cumulative installed PV capacity reached 55 MW. In 2024, it generated nearly 50 million kWh of solar power, reducing carbon emissions by over 25,000 tons. In the same period, CALB deployed 85 MW of industrial energy storage systems, which serve three core functions: zero curtailment of solar power, load shifting (valley filling and peak shaving), and waste energy recovery. These systems convert approximately 87 million kWh of electricity annually. The company continues to expand its solar panel installations, with a total planned capacity exceeding 130 MW.

2. Thermal Use of Biomass Fuels

The company has implemented non-power application of biomass fuel. Biomass pellets—produced from local agricultural and forestry waste such as peanut shells, reed, wood chips, and timber residues—are used as fuel to generate steam for production processes. This approach not only taps into the energy potential of local waste but also reduces reliance on fossil fuels. It is estimated that this initiative avoids approximately 70,000 tons of direct CO₂ emissions each year. At multiple production bases, CALB uses biomass pellets—made from locally sourced peanut shells, reeds, wood chips and forestry wastes—as fuel to generate steam for manufacturing. This approach leverages the energy potential of regional agricultural and forestry byproducts while cutting dependence on fossil fuels. The practice reduces direct CO₂ emissions by an estimated 70,000 tons per year.

3. Smart Manufacturing for Enhanced Efficiency

Leveraging industrial Internet and next-generation information technologies such as 5G, AI, big data, and cloud computing, CALB has deeply integrated digital design, digital operations, smart production, and green manufacturing systems. This enables online and systematic management across the entire product lifecycle—from design and business operations to manufacturing—significantly improving production

and energy efficiency. For example, the comprehensive energy consumption per unit product at its Jiangsu base has reached the international advanced level (Tier 1) for clean production in the battery industry.

4. Energy-Saving and Consumption Reduction Measures

CALB has implemented an intelligent natural gas-electricity hybrid heating control system. This system dynamically adjusts the ratio of heat sources based on real-time thermal demand in production, substantially reducing natural gas consumption. Furthermore, through flexible process scheduling and coordinated control of general equipment, it helps balance heat supply and demand, optimizes process conditions, and shortens the duration of high energy-consumption procedures—thereby lowering overall energy use. At the Jiangsu base, this system reduces annual energy consumption by approximately 4,000 tons of standard coal equivalent and cuts CO₂ emissions by about 1,500 tons each year.

The company has also equipped cooling towers for general equipment with high-efficiency heat recovery and steam mixing devices. These upgrades improve primary energy utilization, reduce primary energy consumption, and allow waste low-grade heat to be reused in production. At the same time, they reduce consumption of high-grade steam, enabling multi-stage and cascaded use of energy and significantly enhancing overall energy efficiency. In 2024, this system recovered approximately 19,000 GJ of thermal energy and reduced CO₂ emissions by about 900 tons.

5. Full Life-Cycle Product Carbon Footprint Management

CALB has established a product carbon footprint management system that covers the entire product lifecycle. Based on international standards and best practices, the system scientifically quantifies greenhouse gas emissions at each stage—from raw material acquisition, manufacturing, and distribution to product use and end-of-life treatment—enabling precise identification of high-impact phases for prioritized optimization. By transparently disclosing product carbon footprint information, the company continues to advance low-carbon innovation in both production processes and product design. Additionally, CALB has participated in developing Jiangsu Province's Product Carbon Footprint Public Service Platform and successfully implemented one of the province's first pilot projects for product carbon footprint labeling and certification.

PROJECT IMPACT & SUSTAINABILITY

CALB's decarbonization initiatives have garnered significant attention from government entities, customers, and supply chain partners, generating considerable influence. Notably, the company was selected as one of Jiangsu Province's first batch of pilot enterprises for carbon peak and carbon neutrality initiatives, and it is the only lithium-ion battery manufacturer included. Customers widely acknowledge CALB's emission reduction achievements and the low-carbon attributes of its products. They recognize that long-term collaboration with CALB will support their own value-chain decarbonization goals. Meanwhile, suppliers are keen to learn from the company's practical experience and have actively responded to its call for coordinated emission reduction throughout the supply chain.

The company's decarbonization practices are highly replicable and offer valuable insights not only to manufacturing companies but also to firms across other sectors. In response to requests from numerous supplier partners, CALB regularly organizes exchange sessions and workshops to share best practices and align decarbonization roadmaps.

Committed to a sustainable development path, CALB will keep on advancing energy conservation and emissions reduction within its own operations, while also influencing and driving deep decarbonization across its value chain. Through its low-environmental-impact batteries designed with full life-cycle considerations, the company contributes to a broader societal transition toward green energy. CALB believes that addressing climate change requires accountability, collaboration, and persistent effort, where corporate responsibility is ultimately demonstrated.

Expert Comments

As a global leader in new energy technology, the company has fully integrated its zero-carbon vision into corporate strategy and product innovation. The company has set clear objectives, adopted well-defined strategies, and achieved tangible results in addressing climate change, embodying corporate social responsibility for green development through concrete actions and establishing itself as an industry benchmark. Beyond implementing deep carbon reduction practices within its own operations, the company extensively empowers low-carbon transition and emission reduction across its upstream and downstream industrial chains through its products and services. Notably, the company has achieved remarkable outcomes in technological innovation, positioning science and technology as the driving force for realizing its zero-carbon vision and contributing positively to the creation of comprehensive zero-carbon applications and services for all scenarios.