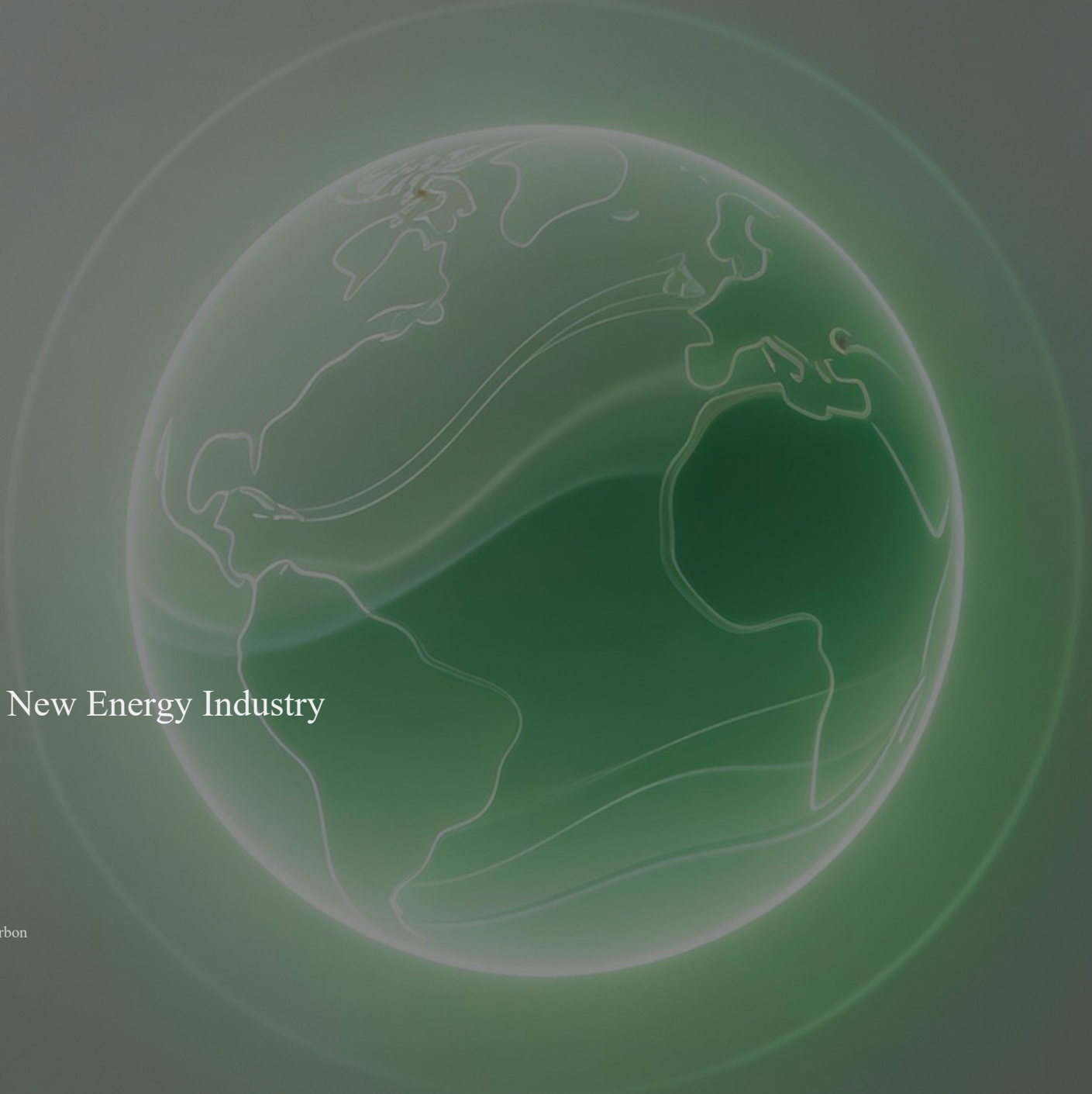


JONCHASE Group



Report on the Sustainable Development of the New Energy Industry

2026 Green Powering Innovation: Working Together to Build a Zero-Carbon Future

Content

01 / Overall Planning Report

Provide a comprehensive overview of the company's profile and core strategy, strengthen fundamental product capabilities, define phased development objectives, and establish actionable implementation measures to chart a clear course for sustainable growth.

02 /Distributed Residential Solar and Storage Systems Section

By focusing on the positioning and current development status of the residential photovoltaic-storage sector, we have established specific business objectives and implemented detailed implementation measures to promote the widespread adoption and application of distributed energy systems.

03 / Industrial and Commercial Energy Storage & Large-Scale Energy Storage

Analyze the overall landscape of the industrial and commercial sectors as well as large-scale energy storage, identify their economic and environmental sustainability benefits, establish phased development objectives, and implement scientifically sound and effective green development measures.

04 / Portable Energy Storage Power Supply

Provide a detailed analysis of the business strategy for portable energy storage power solutions, highlighting their sustainable advantages such as portability and high efficiency, while outlining short-term and long-term market expansion plans along with technological upgrade roadmaps.

05 / Supporting Implementation Policies

Green R&D and Manufacturing

Invest in environmental protection technology R&D, optimize low-carbon production processes, and reduce energy consumption at the source.

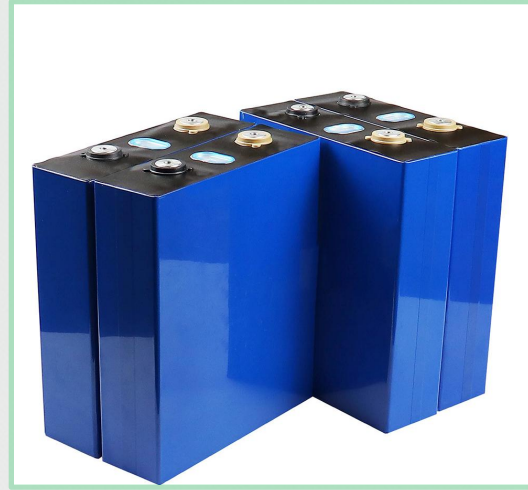
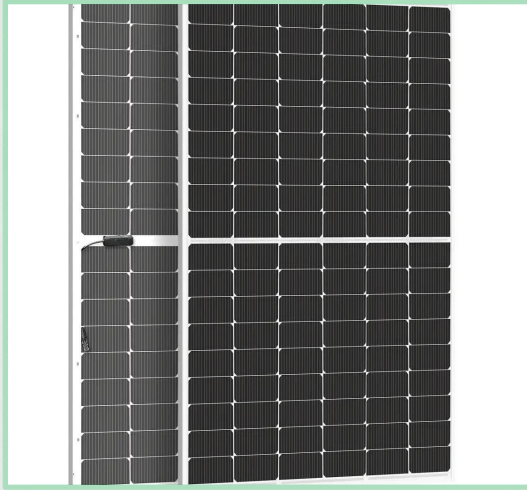
Promotion and Services for Low-Carbon Development

Promote green consumption by providing low-carbon services and technical support throughout the entire lifecycle.

Resource Recycling

Establish a comprehensive battery recycling system to achieve cascaded material utilization and harmless treatment.

01 Master Plan Report: Company Profile and Full Industry Chain Structure



JONCHASE focuses on building a comprehensive industrial chain encompassing N-type TOPCON high-efficiency photovoltaic modules, lithium iron phosphate energy storage batteries, and diverse energy storage systems, creating a closed-loop ecosystem integrating power generation, storage, and utilization. The company is committed to delivering safe, efficient, and sustainable one-stop green energy solutions for global users.

Full-scenario coverage: From residential to large-scale energy storage

The system establishes four core application scenarios: residential photovoltaic energy storage, peak shaving and valley filling for industrial and commercial use, large-scale power station energy storage, and outdoor portable emergency energy storage, achieving comprehensive penetration and deep integration across all energy application domains.

Advanced Technology: Dual Assurance of Efficiency and Safety

The photovoltaic conversion efficiency reaches 23.51%, with lithium iron phosphate batteries demonstrating $\geq 6,000$ cycles at 80% DOD; certified by global authorities including CE, UL, and TUV, establishing stringent quality and safety standards.

Green Development: A low-carbon, closed-loop approach throughout the entire lifecycle

Adhere to a three-dimensional development approach encompassing clean energy production, low-carbon operations throughout the entire process, and circular recycling of decommissioned products, driving the energy industry toward high-quality evolution in an eco-friendly and sustainable direction.

01 Master Plan Report: Core Strategic Positioning for Sustainable Development



Product Low Carbonization

By replacing conventional products with N-type TOPCON high-efficiency photovoltaic modules combined with long-life lithium iron phosphate batteries, resource consumption and solid waste generation are significantly reduced, thereby laying a solid low-carbon foundation from the outset.

Greening of production processes

Promote the use of green electricity within factories, implement comprehensive water conservation and energy efficiency measures throughout the production process, and establish a closed-loop recycling system for hazardous waste. Develop zero-carbon smart manufacturing workshops to ensure environmentally friendly practices in all production stages through sustainable production methods.

Implementing carbon neutrality

Support households and industrial/commercial users in achieving energy structure transformation by fully replacing traditional thermal power with clean energy, thereby realizing a complete transition from energy consumption to carbon neutrality in end-use scenarios.

Industrial Circularization

Establish a closed-loop industrial chain covering the entire lifecycle of photovoltaic module retirement recycling and lithium battery reuse for energy storage, efficiently promote resource regeneration, and build a sustainable industrial ecosystem.

01 Master Plan Report: Core Product Matrix

Photovoltaic Sector: High-Efficiency Modules as the Leading Choice

N-Type TOPCON (main Product)

Covering 182/210 major configurations with power ratings ranging from 400 W to 725 W, it achieves a maximum conversion efficiency of 23.51% in mass production, setting the industry benchmark for high efficiency.

P-Type PERC (the Cost-Effective Choice)

A mature technical solution offering highly competitive cost advantages, suitable for various medium-to-large ground-mounted power stations and distributed energy projects.

core advantage : It delivers excellent low-light power generation performance, maximizing the system's electricity output.



01 Home-based Photovoltaic and Energy Storage System

Providing wall-mounted/vertical lithium iron phosphate batteries with a cycle life of $\geq 6,000$ cycles and a design life of over 15 years; compatible with various systems.
6.6–12.5 kW all-in-one unit with high integration and easy installation.



02 Industrial and Commercial Energy Storage Cabinet

Covering capacity ranges from 64 kWh to 3.85 MWh, it supports both air-cooled and liquid-cooled configurations, meeting the needs of industrial and commercial users for peak shaving, valley filling, demand management, and backup power supply.



03 Large-Scale and Portable Energy Storage Systems

The containerized energy storage system provides megawatt-scale solutions; its portable outdoor power supply delivers a capacity of 300–3600 W with a cycle life of $\geq 4,000$ cycles, meeting mobile emergency power requirements.

01 Master Plan Report: Sustainable Development Goals by Phase

Short-Term (2025–2027)

 **Product Structure Optimization:** N-type TOPCON cells account for $\geq 85\%$ of shipments, while energy storage long-cycle cells achieve 100% utilization rate, solidifying the product's technological competitiveness.

 **Green Production and Markets:** Thirty percent of the plant's electricity demand is met by self-installed photovoltaic systems; domestically, residential solar-storage installations have reached at least 20,000 households annually, with over 150 commercial and industrial energy storage projects implemented.

 **Environmental Recycling Pilot Program:** Establish a pilot recycling line for waste batteries to achieve a resource utilization rate of $\geq 75\%$, and develop an initial model for closed-loop recycling.

Mid-Term (2028–2030)

 **Technological Iteration and Upgrade:** By leveraging cutting-edge technologies such as Iterative BC and HJT, photovoltaic module conversion efficiency has surpassed 25%, consistently leading industry innovation.

 **Deepening of Green Manufacturing:** The production base achieves 50% self-sufficiency in green electricity and a solid waste resource utilization rate of $\geq 90\%$; a regional integrated photovoltaic-lithium battery circular industry park has been established.

 **Implementation of ecological benefits:** Through comprehensive product and service offerings, we help end-users reduce carbon dioxide emissions by over 200,000 tons annually.

Long-Term (2031–2035)

 **Construction of a Zero-Carbon Industrial Chain:** Drive the entire industrial chain to achieve near-zero carbon emissions through comprehensive green management spanning from raw materials and manufacturing to logistics and transportation.

 **Full-range Carbon Label Certification:** Obtain carbon footprint certification and carbon labeling for all product categories to enhance their competitiveness within the green trade framework.

 **Deeply engage in system development:** As a key participant, we are integrating into the development of the national new-type power system, providing essential support for energy transition and sustainable development.

01 Master Plan Report: Implementation Measures and Risk Management Strategies

01 / Key Implementation Measures

**Continued investment in research and development of technology**

Each year, 3% to 5% of revenue is allocated specifically for R&D, focusing on breakthroughs in low-carbon technologies and continuously optimizing production processes to reduce per-unit carbon emissions throughout the product's entire lifecycle.

**Full-chain Green Supply Chain Management**

Establish a rigorous ESG assessment and accreditation system to identify low-carbon, environmentally friendly suppliers, promote coordinated emission reduction across the supply chain, and build a sustainable green supply chain framework.

**End-user carbon reduction empowerment**

Free Energy Survey, Customized

The peak-shaving and valley-filling solution helps customers reduce costs and lower carbon emissions.

**ESG transparency disclosure**

Each year, the group releases information regarding its sustainability efforts.

The special annual report is subject to supervision and evaluation by all sectors of society.



Leveraging our specialized new energy laboratory, we continuously achieve breakthroughs in material science and process optimization, transforming research findings into tangible low-carbon productivity and laying a solid technological foundation for sustainable development.

02 / Risk Assessment and Mitigation

**Risk of fluctuations in raw material prices**

By signing long-term contracts to lock in costs for low-carbon raw materials and enhancing the research, development, and large-scale application of recycled materials, the company effectively mitigates the impact of price fluctuations.

**Risk associated with changes in international policies and regulations**

In line with China's dual-carbon policy framework, we have established an overseas regulatory research team to proactively comply with requirements such as the EU carbon tariff, ensuring compliant operations and avoiding trade barriers.

**Compliance risks associated with the recycling and disposal of waste materials**

Proactively establish compliance certification frameworks, forge strategic partnerships with local specialized hazardous waste treatment enterprises, and develop a fully closed-loop, standardized recycling and treatment system.

02 Distributed Residential Photovoltaic-Storage Sector: Positioning and Current Status



The deep integration of photovoltaics with energy storage, bringing clean energy to every household and establishing green, intelligent, self-sufficient home energy systems, represents a key approach to achieving low-carbon transformation in residential energy.

Core Positioning: The Primary Vehicle for Electrifying Civilian Energy Systems

We will build a comprehensive energy solution integrating **self-generation and self-use, surplus power feeding into the grid, and backup during power outages**, so as to bridge the "last mile" of green energy consumption for residents.

Long lifespan with low wear and tear

The all-black N-TOPCON modules offer a 25-year power warranty, with a lithium battery design life of up to 15 years. Their integrated all-in-one design reduces the use of discrete consumables, significantly minimizing resource waste and operational maintenance costs.

Low carbon emissions, high benefits.

For a single household with a 10 kW system, the average annual amount of self-generated electricity is...

12,000 kWh; this substitution of thermal power generates an annual carbon reduction of approximately **9.6 tons**, achieving household energy self-sufficiency while creating significant ecological and environmental value.

02 Distributed Residential Photovoltaic and Storage Sector: Objectives and Measures

The Network Has Been Comprehensively Deployed Across All Locations.

We have comprehensively established a network of solar-storage service outlets, implementing **22,000 residential projects annually** and helping residents reduce carbon emissions by 150,000 tons each year. Concurrently, we launched a new generation of lightweight, easy-to-install residential energy storage products to lower deployment barriers.



Product Lightweighting

Optimize the structural design; make it larger.

The reduction in area allows for the use of aluminum materials instead of plastics.

Consumables help reduce production costs and transportation difficulties.



Establish Deep Cooperation

Further promote implementation and establish a localized service system.



Trade in Your Old Device for a New One.

Phasing out outdated photovoltaic systems and lead-based components

Acid batteries can be exchanged for lithium batteries at a discount.

Energy Storage Services – Unified Return

Process and handle transactions to ensure security.

03 Industrial and Commercial Energy Storage & Large-Scale Energy Storage: Overview and Value

01 / Comprehensive Product Coverage and Compatibility Across All Scenarios

The product portfolio covers air-cooled and liquid-cooled energy storage cabinets and container-based systems with capacities ranging from 64 kWh to 5 MWh, meticulously designed for five key applications:factories, shopping malls, hotels, hospitals, and charging stations. These solutions integrate multiple functions including peak shaving, valley filling, demand management, emergency backup power, and photovoltaic energy storage, enabling efficient energy utilization.



Industrial Cost Reduction

By leveraging peak-valley arbitrage, electricity costs can be reduced by 30%–50%; combined with rooftop photovoltaic systems, this maximizes green power self-sufficiency and enhances energy independence.

Key Measures to Ensure Supply

Provide uninterrupted emergency power supply for hospitals and supermarkets, replacing diesel generators to reduce carbon emissions and operational costs while ensuring business continuity.

Power Grid Empowerment

Participate in power grid frequency regulation and renewable energy integration, effectively address the challenges of solar and wind power curtailment, enhance grid stability, and support the development of a new-type power system.

Integrated Rooftop Photovoltaic and Energy Storage Demonstration Project on Factory Premises

By utilizing idle rooftop resources to build photovoltaic power stations and integrating them with energy storage systems, the system enables self-generation for internal consumption and surplus electricity feeding into the grid, significantly increasing enterprises' reliance on clean energy and fostering a green, low-carbon production model.



Integrated Energy Storage, Power Generation, and Charging Station

It smooths grid load fluctuations, reduces the impact of charging facilities on the power grid, and leverages peak-valley electricity price differences to lower operating costs while enhancing the reliability and cost-effectiveness of charging services.

03 Industrial and Commercial Energy Storage & Large-Scale Energy Storage: Objectives and Measures



Short-Term Goal

The focus is on developing energy storage projects in industrial parks and large commercial complexes, with 120 industrial and commercial energy storage projects planned for implementation annually to swiftly seize market opportunities.

Medium to Long-Term Goals

We are actively developing energy storage systems for new energy charging stations and integrated wind-solar-storage power plants, while playing a key role in supporting the construction of large-scale new energy infrastructure projects.



Scalability of liquid-cooled products

Liquid-cooled energy storage reduces energy consumption by over 15% compared to air-cooled systems, and we will gradually enhance the performance of liquid-cooled solutions.

The proportion of cold energy storage capacity in total energy storage capacity:

Leverage technological advantages to reduce costs and improve efficiency.



Customized Low-Carbon Solutions

Exempting energy-intensive factories from certain regulations...

Conduct energy audits at no cost.

Optimize the "energy storage + photovoltaic" combination solution to match its optimal capacity, maximizing energy-saving benefits.



Project Carbon Accounting Service

Designed for large-scale energy storage projects.

Includes a professional carbon emission reduction report.

Help customers complete data

Monitoring and Filing: Efficient

Apply for various energy-saving subsidies.

Through technological innovation and model optimization, we achieve a win-win outcome for both economic and environmental benefits, establishing a sustainable closed-loop energy storage ecosystem.

04 Portable Energy Storage Power Supply: Business Description and Advantages

A Comprehensive, Decentralized Solution for Supplementing Clean Energy Across All Scenarios

The product range covers the full spectrum of lithium iron phosphate portable energy storage systems, with capacities from 300 W to 3600 W. Widely used in diverse applications including outdoor camping, field operations, off-grid power supply in remote mountainous areas, and household emergency scenarios, these systems serve as complementary solutions for decentralized micro clean energy sources, effectively filling gaps in traditional power grids while ensuring flexible and secure electricity supply.



Long cycle life, low-carbon and environmentally friendly

Utilizing lithium iron phosphate batteries enables a long cycle charge-discharge life of $\geq 4,000$ cycles. This effectively replaces disposable dry cells and small gasoline generators, significantly reducing battery waste pollution and fuel exhaust emissions at the source while balancing durability with environmental protection.



Photovoltaic Direct Charging – Providing Outdoor Power Generation Without Any Fuel Consumption.

Comprehensively supports direct charging technology for solar photovoltaic panels, eliminating reliance on traditional power grids and fossil fuels. Achieves fully zero-fuel, zero-emission green power supply in outdoor environments, providing sustainable energy assurance for field operations and expeditions.

04 Portable Energy Storage Power Source: Sustainable Development Plan



Product Section · Green Efficiency

Increase the utilization ratio of recycled plastics and recycled metals in portable power device housings to reduce resource consumption at the production source. Simultaneously, optimize the battery cell BMS management algorithms to enhance charge-discharge conversion efficiency, lower overall energy consumption, and develop core product capabilities with low-carbon and environmental sustainability.



Market Side · Benefiting People's Livelihoods

Promote portable energy storage products in remote rural areas worldwide that lack grid power supply, effectively addressing the fundamental electricity shortage in regions without or with limited power access. By replacing traditional kerosene lamps and small fuel-powered generators with clean energy sources, this initiative not only enhances living standards but also significantly reduces emissions and pollution from fossil fuels.



Recycling End · Closed-Loop Cycle

Establish a comprehensive trade-in channel for portable power sources to reduce users' replacement costs. Conduct professional inspection and disassembly of retired battery cells, implement unified cascaded recycling, and deploy them in applications such as low-speed energy storage and street lighting energy storage systems, thereby maximizing the value throughout the battery's entire lifecycle and fostering a green, circular industrial ecosystem.

From green production to widespread adoption and closed-loop recycling, we apply a full life-cycle management approach to make portable energy storage a key driver of sustainable development.

05 Four Key Supporting Policies Have Been Implemented: Green R&D Support Policies

To ensure the robust implementation of sustainable development strategies, we have established a comprehensive green R&D support system that encompasses financial guarantees, incentive mechanisms, and industry-academia collaboration, thereby injecting strong momentum into technological innovation.



Special Fund Guarantee

The group annually allocates **4%** of its previous year's revenue to establish a dedicated fund for specific purposes, prioritizing investments in N-type TOPCON iteration, R&D of BC/HJT new technologies, development of long-life energy storage cells, and breakthroughs in lightweight, low-carbon materials to strengthen its technological foundation.



Incentives for Innovative Achievements

A performance-based incentive mechanism has been established: if new products achieve a carbon reduction improvement of **5%** or more, the R&D team will receive a dividend bonus equivalent to **3%** of the project's profits, thereby fostering innovation enthusiasm and motivation across the organization.



Deep collaboration in industry-academia research and development

Conduct cutting-edge research on advanced topics such as battery recycling and photovoltaic silicon material regeneration. All related collaborative funds shall be fully incorporated into the green R&D budget to facilitate the efficient transformation and practical application of industry-academia research outcomes.

05 Four Key Supporting Policies Have Been Implemented: Green Manufacturing Control Policies for the Production Sector



By installing distributed photovoltaic power stations on industrial plant rooftops, idle space is effectively utilized to prioritize meeting production electricity demands, steadily increasing the proportion of self-generated green energy within the facility and reducing carbon emissions at the source.



Plant Area Green Energy Policy: Priority is given to installing self-built photovoltaic systems.

All production workshops shall prioritize installing self-built distributed photovoltaic systems, scientifically plan the installed capacity, develop annual improvement plans, and progressively increase the proportion of self-generated green electricity in the plant's total production power consumption.



Consumable Management: Increasing the procurement ratio of recycled materials

For aluminum materials used in photovoltaic modules and energy storage enclosures, priority shall be given to procuring recycled raw materials. A supply chain traceability system shall be established to ensure a steady increase in the annual procurement proportion of recycled materials to **5%**.



Waste management: High-standard resource recovery and recycling

Strictly control production wastewater with a recycling rate of $\geq$ **85%**; classify solid waste for separate storage and dispose of it through qualified enterprises; establish a regular monthly environmental inspection system to eliminate environmental risks.

05 Four Key Supporting Policies Have Been Implemented: Low-Carbon Promotion Incentive Policies on the Market Side.



Deliver low-carbon energy products to every household, and build a green, livable modern ecosystem.



Home-based Photovoltaic and Energy Storage Systems: Rural Revitalization and Inclusive Benefits

We closely align with local household photovoltaic subsidy policies, offering targeted product discounts in rural areas to lower the barriers for farmers to adopt clean energy.



Industrial and Commercial Energy Storage: Energy-saving Upgrades Linked to Discounts

For energy-saving renovation projects at high-energy-consuming manufacturing facilities, customers can directly benefit from tiered procurement discounts on the Group's energy storage products by presenting a third-party energy efficiency certification report, thereby incentivizing corporate green transformation.



Overseas Markets: Responses to Carbon Tariffs and Special Incentives

For key carbon tariff regions such as the EU, Japan, and South Korea, priority will be given to supplying low-carbon N-type photovoltaic products and liquid-cooled energy storage systems. Export teams that fulfill green orders will receive special bonuses.

05 Four Key Supporting Policies: Product Life Cycle Recycling and Reuse Policy



The Practice of a Closed-Loop System for Resource Recycling

By establishing a comprehensive recycling network and a scientific tiered utilization system, combined with market-based incentive mechanisms, we can maximize the residual value of waste products, reduce resource waste and environmental pollution, and truly fulfill our green commitment to sustainable development.

01 Global Recycling System Framework

Establish specialized recycling and transfer stations for waste photovoltaic modules and energy storage batteries, and build an efficient, wide-ranging end-of-life recycling network to ensure comprehensive collection of all waste resources.

02 Scientific and Hierarchical Utilization of Regenerated Materials

For retired lithium-ion batteries meeting health standards, they are disassembled and repurposed for applications such as street lighting and portable energy storage systems; waste silicon wafers and aluminum frames are subjected to specialized recycling processes for smelting, achieving material-level circularity and enhancing resource utilization efficiency.

03 Market-oriented Customer Incentive Mechanisms

By providing economic incentives, end-users are encouraged to actively participate in resource recycling, fostering a virtuous cycle involving the entire society.



Thank You for Listening.

THANK YOU

JONCHASE Group will continue to uphold the principle of sustainable development, driven by technology and guided by green principles, working hand in hand with all stakeholders to create a clean and low-carbon future