BOE

The Advanced Path to Carbon Neutrality

BOE DISPLAY' S LOW-CARBON STRATEGY REPORT

BOE TECHNOLOGY GROUP CO., LTD.

CONTENTS

Message from Management

The world is actively addressing the climate crisis, accelerating climate governance, and advancing sustainable development. China adheres to President Xi's concept of green productivity, positioning the cultivation of new quality productive forces as the key to high-quality economic development and achieving the carbon peaking and carbon neutrality goals, taking proactive actions to address climate change and contributing Chinese strength to global climate governance.

The display industry not only faces the urgent task of its own low-carbon transformation but also bears the important mission of fostering new quality productive forces and facilitating intelligent upgrades and sustainable development across various fields. This is an inescapable responsibility for the industry, as well as a strategic challenge and development opportunity bestowed by the times.

BOE elevated sustainable development to a core group strategy in 2025, launching China's display industry's first sustainable development brand "ONE" (Open Next Earth)— representing openness and inclusiveness, innovation leadership, and an enduring ecosystem—and the core philosophy of "safeguarding humanity's future through open innovation technology," join hands with partners worldwide to deeply implement ESG principles amid the tide of globalization, and move forward together toward a greener, more innovative, and harmonious future.

BOE, with an open and inclusive attitude, has jointly built an integrated industrial ecosystem with over 5,000 global partners. Upstream in the industrial chain, we promote green management and intelligent transformation across the entire lifecycle of suppliers through collaboration and empowerment. Downstream, we are committed to developing low-carbon and circular products that precisely meet customers' demands for green solutions. Meanwhile, BOE actively promotes sustainable awareness to the public. Since 2021, we have partnered with the China Foundation for Rural Development on the public welfare initiative "Lighting Up the Growth Path," and collaborated with the United Nations Development Programme (UNDP) on the "Water Meets Screen" water resource management project in 2023, conveying the warmth and responsibility of BOE to society.

BOE adheres to the principle of "respect for technology and commitment to innovation," redefining the value of technology through its "Screen of Things" strategy, driving breakthroughs in display technologies, and realizing the infinite possibilities of sustainable development. Relying on three core technological foundations— displays, IoT innovation, and sensor components—we actively engage in extensive collaborations with research institutes, universities, and ecosystem partners both domestically and internationally.

BOE is committed to building a harmonious community of shared future. Through green technology innovation and circular economic development, we are defining a new paradigm for symbiosis between industry and nature, promoting the sustainable coexistence of technology, ecology, and humanity. We pledge to achieve carbon neutrality in (our) operations by 2050, with 100% renewable energy utilization. To this end, we focus on four key areas—green management, green factories, green supply chain, and green products—implementing concrete carbon reduction initiatives. In 2024, our greenhouse gas emissions decreased by 633,800 tons year-on-year, and the proportion of renewable energy usage reached 29%.

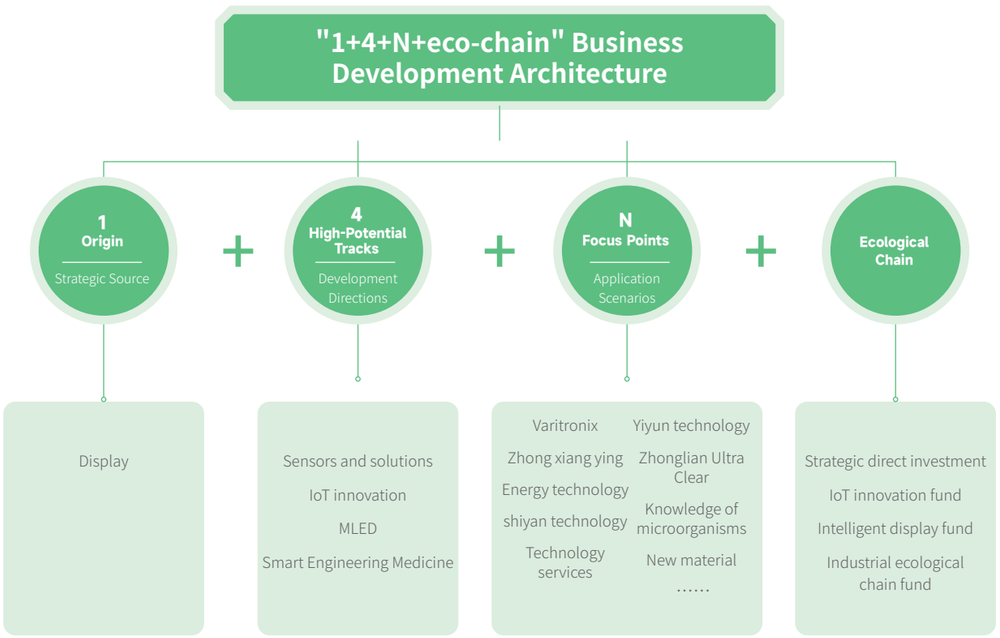
Thanks to the joint efforts of all colleagues, BOE has achieved remarkable results in climate action, gaining wide industry recognition and winning numerous awards. As of the first half of 2025，18 BOE factories have been recognized as national-level green factories, 9 factories have joined the Science Based Targets initiative (SBTi), 7 factories have obtained UL 2799 Platinum certification for zero waste to landfill (the highest level), and 2 zero carbon factories have been successfully established, with BOE's Mianyang Gen 6 AMOLED (Flexible) production line becoming the industry's first zero carbon factory. At the same time, BOE Display received multiple authoritative honors, including the China New Industry Chain Contribution Award (Green and Low-Carbon Category), Carbon Pathfinder Outstanding Enterprise, the Third International Green and Zero Carbon Festival 2024 Dual Carbon Model Enterprise Award, the 2024 Outstanding Green Technology Product Award, the 2024 Outstanding Green Innovation Product Award, the IDC Sustainable Development Pioneer Case, and an outstanding practice case for enterprise green and low-carbon development.

Now is the time to set sail and forge ahead with determination to write a new chapter. As new-quality productive forces thrive, BOE will bravely undertake its mission as an industry innovator, integrating cutting-edge technologies and the concept of sustainable development. Leveraging advanced technologies such as AI and low-carbon displays, the company will empower diverse application scenarios, driving functional integration, diversified form factors, and expanded use cases for displays. Looking ahead, the company will continue to take green development as the foundation of high-quality growth, adhering to a dual-driven model of "innovative technology and sustainable development," building a new ecosystem of industrial integration and coexistence, accelerating the cultivation and transformation of new-quality productive forces, and injecting strong momentum into the high-quality development of the economy and society.

BOE Technology Group Co., Ltd.
Chief Executive Officer Feng Qiang
October 2025

About Us

BOE Display [1] is the core of BOE [2] Technology Group 's "1+4+N+eco-chain" business structure, focusing on device and machine business, with 18 display production lines and 5 smart manufacturing plants. Our production bases are located in 12 provinces and cities, including Beijing, Chengdu, Sichuan and Hefei, Anhui. Our business covers innovative applications such as TVs, monitors, laptops, tablets, mobile phones and VR/AR, automotive, medical, splicing, wearable, EPD, commercial, industrial control, home and whiteboard products.



BOE has always adhered to its original mission of "changing life with heart." In 2025, it elevated sustainable development to a core strategy of the group and launched "ONE" (Open Next Earth), the first sustainable development brand in China's display industry. With the connotations of "Openness and Inclusiveness (Open), Innovative Leadership (Next), and Sustainable Ecology (Earth)", this brand originates from BOE's grand vision—to become a great enterprise most respected on Earth—and represents the culmination of the upgraded “Screen of Things” strategy. It marks BOE's transformation from an "innovative leader in science and technology" to a "builder of sustainable ecosystems," demonstrating its firm determination to lead the global display industry toward sustainable growth.

[1]Refers to "BOE Technology Group Co., Ltd. Semiconductor Display Business". The same below.
[2]Refers to "BOE Technology Group Co., Ltd.". The same below.

BOE Display, as the core of BOE's "1+4+N+eco-chain" business architecture, is committed to harmonious coexistence with the environment by fully fulfilling its environmental commitments through a green system, green products, and end-to-end green operations. We consistently pursue scientific and technological innovation to improve energy efficiency, reduce emissions, and conserve energy. Rigorous management across the entire product lifecycle ensures that processes including R&D, design, procurement, production, logistics, and recycling comply with the principles of sustainable development. We continuously advance R&D and innovation in green products and technologies, exploring the application of new technologies to address emerging environmental issues and challenges, thereby achieving a virtuous cycle of coexistence and shared growth between the enterprise and the environment, and building a thriving ecosystem for green development.

Report Summary

BOE Display adheres to the sustainable development brand concept of "ONE," and is committed to promoting the joint development of enterprises and society through high-quality, sustainable products and services. In the report, BOE Display will elaborate on the progress toward its carbon neutrality in our operations goals, specific measures and achievements in four key areas, as well as future plans for sustainable development.

Embed Low-Carbon Strategy and Governance

See pages 07–16

BOE Display, guided by its goal of achieving carbon neutrality in our operations, has established a comprehensive carbon neutrality management system and actively joined international initiatives. To date, **9** factories have joined the SBTi. The assessment results of CDP Climate Change and Water Security questionnaire assessments have been upgraded from Grade **C** to Grade **B**, and the supplier cooperation assessment has advanced to Grade **A**, fully playing the role of an industry benchmark.

In the future, BOE Display will be guided by its top-level strategic goals, continuously refine the "group - display - factory" management pathway, and strengthen the foundation of green management.

Establish Benchmark Low-Carbon Factories

See pages 17-34

BOE Display closely integrates green factory initiatives with carbon neutrality planning to establish facility-level carbon neutrality pathways. As of 2024, **18** of its factories have been designed as National-Level Green Factories, **7** have obtained UL 2799 Platinum Level certification, **4** have been recognized as National-Level Green Supply Chanin Management Enterprises, **3** as Industrial Product Green Design Demonstration Enterprises, and **1** as a National-Level "Zero-Waste Enterprise" typical case.

In the future, BOE Display will actively apply AI technology to further enhance governance quality and efficiency, promoting the integrated development of digitalization and greening within the industry.

Decarbonize the Value Chain

See pages 35-44

BOE Display places a high priority on the low-carbon development of its supply chain, having established a **"3+1"** supplier management system. This system focus on three objectives: "low-carbon, harmless, and low consumption," while strengthening management in five areas: "green certification, green design, green production, green logistics, and green recycling." Through project-based initiatives, BOE Display has collaborated with suppliers to implement **29** green sub-projects across **17** major categories.

In the future, BOE Display will continuously improve supplier management, strengthen phased green requirements, and jointly build a low-carbon ecosystem.

Advance Low-Carbon Products

See pages 45-56

BOE Display, based on the "manufacturing - consumption - recycling" circular model, implements carbon reduction measures across the entire process including design, materials, packaging, and end-of-life treatment, striving to create products with green, low-carbon, and circular attributes. While upgrading green products, the company continuously enhances product carbon footprint certification. As of 2024, **48** products have obtained third-party carbon footprint certifications.

In the future, BOE Display will comprehensively optimize green display products through eco-design, material innovation, and green labelling. Meanwhile, it will gradually explore new industrial directions and promote renewable energy applications across industries and multiple scenarios.

Foster a Low-Carbon Culture

See pages 57-69

BOE Display focuses on building a talent team with diverse skills and a forward-looking vision, fostering a corporate green culture to drive progress toward climate commitments and laying a solid cultural foundation for cultivating new quality productive forces. Meanwhile, through organizing and participating in activities in the field of sustainable development, it shares green development concepts and technological achievements with industry partners.

In the future, BOE Display will continue to explore new opportunities and pathways within the industrial cooperation ecosystem, jointly pursuing low-carbon transformation with partners across industries.

1.0

Embed Low-Carbon Strategy and Goverence

- Green Development Concept
- Low-Carbon Strategy Roadmap
- Green Management
- International Initiatives
- New Journey of Future Development

Green Development Concept

Accelerating Global Climate Governance

Against the backdrop of an intensifying global climate crisis that severely threatens human civilization and the ecosystem, countries around the world are actively advancing climate governance. The 29th Conference of the Parties (COP 29) to the *United Nations Framework Convention on Climate Change* in 2024 achieved significant outcomes in areas such as climate finance and international carbon market mechanisms, further strengthening the international community's resolve for climate action. At the same time, as a responsible major country, China has established a "1+N" policy framework centered on the dual carbon goals, deepening its climate commitments. General Secretary Xi Jinping emphasized that "green development is the defining colour of high-quality development, and new quality productive forces are inherently green productive forces," charting the course for scientific and technological innovation, strategic emerging industries, and future industries, highlighting the critical importance of fostering new quality productive forces in driving high-quality economic development and achieving carbon peaking and carbon neutrality.

"Technology+ Green" Empowers New Quality Productivity

As an industry pioneer, BOE Display actively responds to the national carbon peaking and carbon neutrality initiative, embracing the "technology + green" model as its core and integrating AI with the concept of sustainable development across the entire management and operational chain. Through technological innovation, BOE Display accelerates the development of new quality productive forces in the display industry, promotes the transformation of scientific and technological achievements, and empowers diverse application scenarios. Under the "Screen of Things" business philosophy, BOE Display has achieved remarkable results in green manufacturing, green product technologies, green supply chain, and informatization, leading the industry toward intelligent and low-carbon development. In the future, BOE Display will deepen innovation in management, technology, products, and collaboration, driving the industry's upgrade toward authenticity, high-end quality, intelligence, and sustainability.

Green Development Assists Cultivate New Quality Productive Forces

- Green Management System
- Digital Management Platform
- Response To International Initiatives

Green Management: Laying the Green Foundation for New-Quality Productivity

Green Factory: Building the Green Engine for New-Quality Productivity

- Green Factory Blueprint
- Energy Conversation Priority Principle
- Research and Development of Emission Reduction Technologies
- Use Of Clean Energy

- Green Products Planning
- Products Carbon Reduction Measures
- Green Product Certification

Green Products: Leading the Innovation Wave of New-Quality Productivity

Green Supply Chain: Weaving the Green Link for New-Quality Productivity

- Low-Carbon Management Of Suppliers
- Participation Of External Partners
- Low-Carbon Logistics Innovation

Low-Carbon Strategy Roadmap

The preventive, long-term, and innovative characteristics of BOE's display development philosophy are highly aligned with the principles of circular economy and sustainable development. In our business operations, we are fully committed to achieving carbon neutrality in our operations, optimizing governance structures, formulating and implementing sustainable development action plans, thereby realizing a harmonious integration of ecological, economic, and social benefits.

Key Milestones for Carbon Naturality Goals

BOE Display plans to achieve carbon neutrality in its own operations by **2050**, with a goal of **100%** renewable energy use.

Targets for Own Operational Emission Reduction and Renewable Energy

Short-term Target (2030)

- Carbon emissions down by 10% compare to a 2022 baseline
- Achieve a 30% share of renewable energy usage

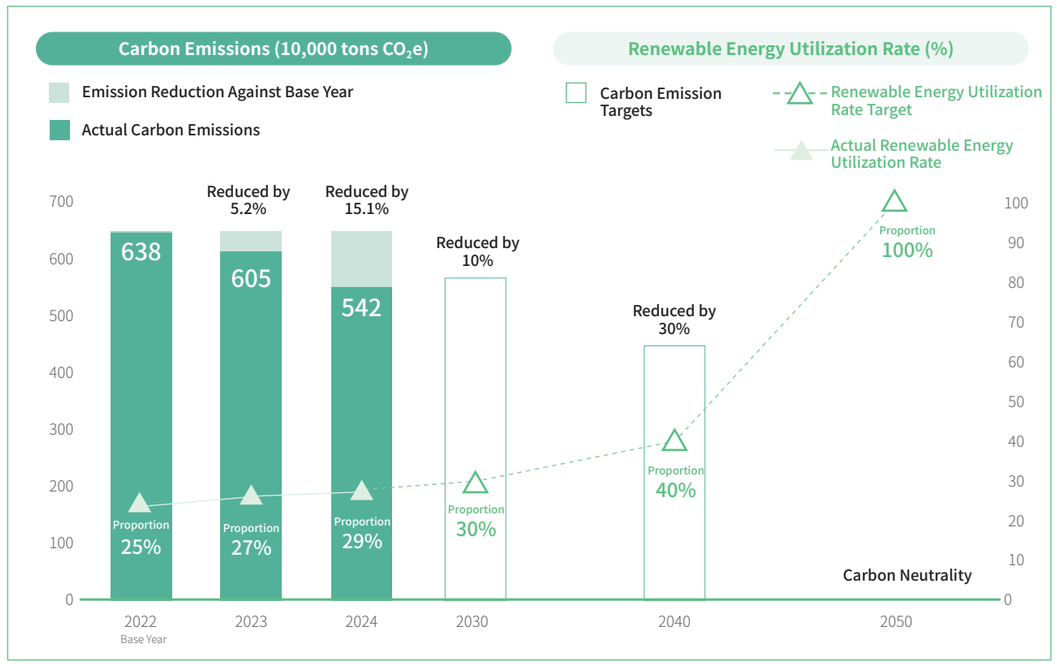
Medium-term Target (2040)

- Carbon emissions down by 30% compare to a 2022 baseline
- Achieve a 40% share of renewable energy usage

Long-term Target (2050)

- Achieve carbon neutrality in own operations.
- Achieve a 100% share of renewable energy usage

Roadmap for Carbon Neutrality Targets and Progress in 2024



Implementation Path for Low-Carbon Development

BOE Display is actively shaping a low-carbon development trajectory and steadily advancing along the "green path". We are committed to achieving carbon neutrality in our operations, precisely focusing on four key areas - green management, green factories, green supply chain and green products – to comprehensively drive the realization of our goals.

Milestones on the "Green Path"

Since 2011
Multiple products have obtained product carbon footprint certifications

March 2022
The BOE Fuzhou Gen 8.5 TFT-LCD production line awarded the "Lighthouse Factory", the highest honor in global smart manufacturing

August 2022
Chongqing BOE Optoelectronics Technology Co., Ltd. became the first display panel manufacturer in mainland China to join SBTi

April 2023
The first laptop LCD product obtained CarbonTrust carbon footprint certification

June 2023
Released own operational carbon neutrality targets and *The Path to Carbon Neutrality: BOE Display's Low-Carbon Strategy Report*

September 2023
The first laptop liquid crystal display obtained SGS carbon neutrality certification

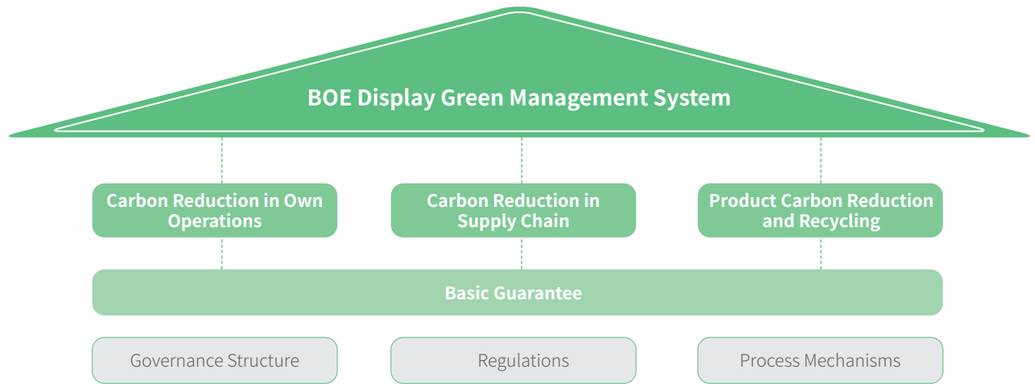
2024
The industry's first carbon-neutral factory

Green Management

BOE Display relies on the group's strength to build a carbon neutrality management framework and evaluation system, continuously deepening the construction of green management systems.

Green Management System

BOE Display, in alignment with its low-carbon strategy, carbon neutrality goals, and market requirements, has established a comprehensive green management system (here in after referred to as the "system"). Focusing on three key areas—carbon reduction in operations, supply chain decarbonization, and product carbon reduction and recycling—the system is underpinned by a foundation of "governance structure, policies, and process mechanisms." It includes multiple institutional frameworks such as the *Display Business Dual Carbon Management System, Greenhouse Gas Emission Accounting and Management System*, and *Product Carbon Footprint Accounting Management System*, driving green transformation across multiple dimensions and building core competitiveness in low-carbon development.



Green Management Framework

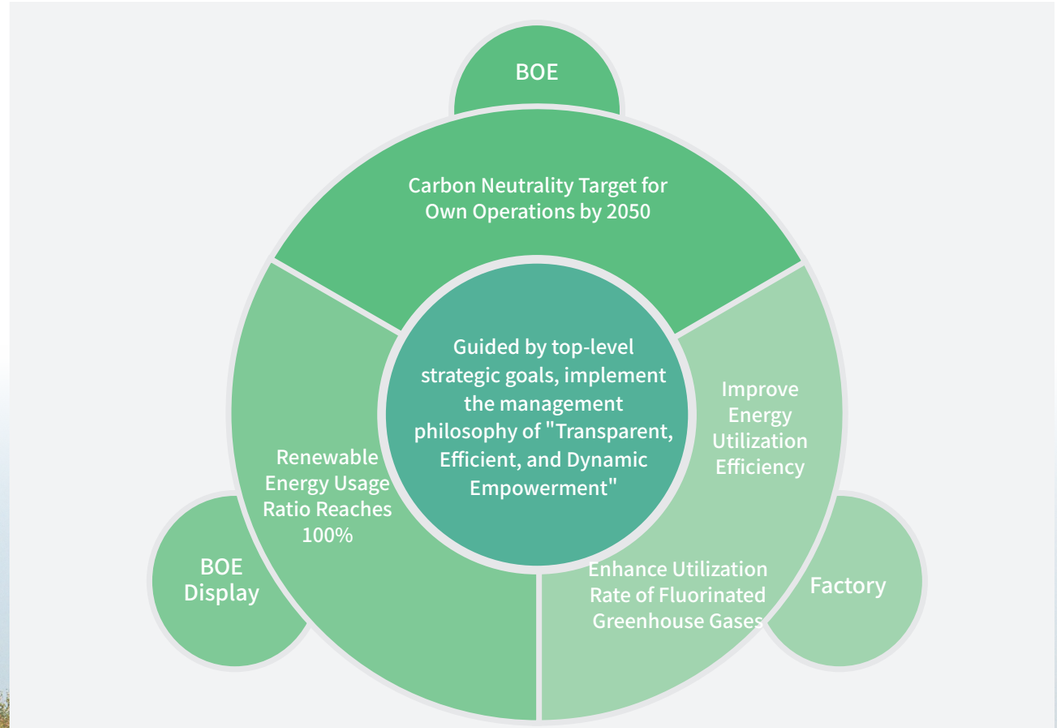
BOE adheres to the "ONE" (Open Next Earth) sustainable development brand and has established a comprehensive sustainable development management system. The company has built a three-tier sustainable development organizational structure consisting of those charged with governance, management, and execution levels. On this basis, BOE's display division has further enhanced specialized task forces with both decision-making and execution functions, including task forces for environmental insights, brand communication, and carbon neutrality. Among them, the carbon neutrality task force has established sub-teams for green factories, green supply chains, and green products. Each sub-team directly interfaces with the corresponding functional departments of respective factories, ensuring the efficient top-down implementation of climate strategies.

Management Evaluation System

To accelerate the comprehensive green transformation and ensure the smooth achievement of carbon neutrality in our operations, BOE Display has established a deep linkage mechanism between performance evaluation and carbon reduction targets. By stratifying and breaking down these targets, the company has built a low-carbon management performance assessment system covering all organizational levels. This mechanism not only underscores the company's determination in driving green transformation but also reflects its concrete measures for implementing low-carbon guidelines.

Meanwhile, BOE Display has deepened the design of low-carbon assessment indicators by breaking down the factory's phased and macro-level carbon reduction goals into multiple specific sub-targets, allocating them across various levels and departments. This ensures that each department clearly understands its own emission reduction responsibilities, thereby better motivating employees at all levels and fostering an organizational carbon management culture with full participation to jointly advance the green transformation process. At the same time, departments are required to regularly report carbon data to ensure dynamic traceability of carbon emissions. This helps identify problems and shortcomings in a timely manner and provides data support for subsequent improvements. Through data integration and analysis, the company can accurately evaluate the emission reduction performance of each department and iteratively optimize future carbon reduction strategies accordingly.

BOE Display has achieved dynamic and precise management of carbon emissions through a performance evaluation mechanism and low-carbon assessment design, laying a solid foundation for the company's green and sustainable development.



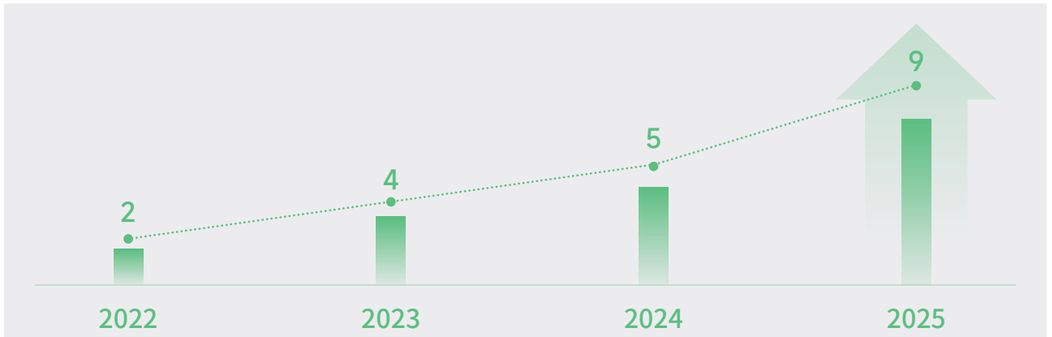
Performance indicators are refined to the factory and department levels

International Initiatives

As a leading enterprise in the global display industry, BOE Display actively joins international climate initiatives, practices the concept of sustainable development, and collaborates with the international community to explore solutions for climate change, contributing to the global green transition.

Science Based Targets initiative (SBTi)

To date, **9** BOE Display factories have successfully joined the SBTi[3]. All **9** factories have completed setting 1.5°C targets for their scope 1 and scope 2 emissions. Most factories have set the target of "reducing Scope 1 and Scope 2 emissions by 42% and Scope 3 emissions by 25% by 2030, with 2021 as the base year," among which Chongqing BOE Optoelectronics Technology Co., Ltd. was the **first** display manufacturing enterprise in mainland China to join this initiative.



The number of factories that have joined the SBTI

Carbon Disclosure Project (CDP)

BOE's CDP[4] Climate Change and Water Security ratings improved from C Level to B Level, elevating from the awareness level to the management level; the module of CDP Supply chain showed a stepwise improvement, achieving B- Level in 2021 and 2022, upgrading to A- Level in 2023, and further advancing to A Level in 2024. This indicates that the company has established emission reduction targets and implemented them effectively, while simultaneously strengthening supplier carbon management. It reflects BOE's transformation and progress from climate awareness to active management, establishing a closed-loop climate management system. This milestone also signifies the company's continued success in enhancing customer experience and satisfaction, deepening customer relationship management, and driving innovative development across the industrial chain.

[3]The Science Based Targets initiative (SBTi) is a global initiative jointly launched by the Carbon Disclosure Project (CDP), the United Nations Global Compact (UNGC), the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF). The initiative aims to help organizations identify the necessary emission reductions required for their business by setting science-based carbon emission targets, thereby aligning with the Paris Agreement's goal of limiting global temperature rise to1.5° C and achieving their own organization carbon management objectives.
[4]CDP is a non-profit international organization and one of the world's largest and most authoritative environmental data disclosure platforms, aiming to encourage and support companies, cities, and governments to disclose information and data on climate change, water resource management, and forest conservation, promoting the global transition to allow -carbon economy and sustainable development.

Industry Standard Development

BOE Display actively participates in industry standardization while advancing technological and product innovation, leading and contributing to the development of multiple pioneering technical standards, setting benchmarks for the standardized growth of the display industry.

Since leading the development of the first international standard IEC 61747-4 *Liquid crystal display devices - Part 4: Liquid crystal display modules and cells - Essential ratings and characteristics* in September 2012, BOE Display has participated in the formulation and revision of multiple standards, including GB/T 44443-2024 *Green product assessment – Computers*, T/SQIA 084-2024 *Technical requirements for carbon footprint assessment – Mini LED display devices*, T/SQIA 083-2024 *Technical requirements for carbon footprint assessment – Organic light-emitting diode (OLED) display devices*, T/AHES02-2024 *Evaluation criteria for zero carbon factories, and DB11/T 2176—2023 Specification for the allocation and management of energy measuring instruments – Electronic device manufacturing industry*, comprehensively supporting standardization efforts in areas such as product carbon footprint, clean production, and zero carbon factories.

Participate in the formulation of various standards

New Journey of Future Development

Against the backdrop of global digital transformation, green management has become a core driver for sustainable development in the display industry.

Deepening and Integrating Green Principles into Strategy

Most display enterprises have incorporated green management principles into the core of their long-term strategies, establishing management structures that span from top-level decision-making to frontline implementation, and setting up dedicated departments to coordinate energy conservation, emissions reduction, resource recycling, and ecological protection. Some leading companies have already established clear carbon neutrality goals and implementation roadmaps, systematically advancing their green and low-carbon transformation through the dual drivers of technological innovation and management optimization.

Advancing Green Standards and Certification Systems

International and domestic efforts are accelerating the development of green standards and certification systems for the display industry to regulate corporate green management. At the international level, ISO environmental management and energy management standards provide globally applicable frameworks and guidelines for green management. At the domestic level, industry associations and standardization bodies focus on areas such as product energy efficiency labelling and electronic waste recycling regulations, guiding enterprises to develop differentiated competitive advantages.

Challenges, Responses, and Future Collaboration

Although the industry has achieved phased results in promoting green concepts and building standards systems, challenges related to high energy consumption characteristics and the implementation of assessment mechanisms still need to be overcome. By deepening refined energy management and improving assessment indicators, the display industry is expected to enhance the effectiveness of green management and advance the deep alignment of sustainable development goals with global environmental governance. Going forward, the industry needs to further improve green management capabilities and strengthen a multi-stakeholder collaboration mechanism led by enterprises, guided by government, and supported by social organizations, to promote technology sharing and model innovation. BOE Display will keep pace with industry developments, solidify the "group - display - factory" management pathway, strengthen low-carbon management assessment mechanisms, consolidate the foundation of green management, innovate management models, and actively participate in industry ecosystem development to continuously drive the low-carbon transformation of the industry.

2.0

Establish Benchmark Low-Carbon Factories

- Green Factories
- Greenhouse Gases Emission
- Energy Conservation and Consumption Reduction
- Clean Energy Utilization
- Digital-intelligence Integration
- New Directions for Future Development

BOE Display, driven by technological innovation, deploys tailored energy-saving strategies for different types of devices and application scenarios, striving to build green factories and leading the industry toward a greener and more sustainable zero carbon future. In 2024, over 160 new energy-saving and emission-reduction projects were added, with the use of green power (including green certificates and hydropower) reaching 3.17 billion kWh, achieving a total emission reduction of approximately 1.8 million tons.

New energy-saving and emission-reduction project

over **160**

Green electricity (including green certificates and hydropower) usage

3.17 billion kWh

Carbon emissions reduced

approximately **1.8** million tons

18 Green Factories

A factory that has achieved electrification, non-hazardous raw materials, clean production, high resource efficiency, and low-carbon energy.

Application of Eco-Friendly Processes and Materials

- Introduces environmentally friendly production processes and materials to reduce pollutant emissions during manufacturing.Utilizes recyclable cardboard and paper-based materials to minimize environmental pollution.

Energy Management and Efficiency Improvement

- Establishes a comprehensive energy management system with robust and well-organized energy-saving and emission-reduction infrastructure.Enhances energy utilization efficiency and reduces energy consumption through equipment upgrades, process optimization, and other measures.

Multiple National-Level Green Factories

- As of 2024, 18 factories have been designated as National-Level Green Factories.

4 Near-Zero Carbon Factories

Building upon the Green Factory foundation, these factories achieve a renewable energy usage rate of over 70%. Through implemented energy-saving and emission-reduction measures, their greenhouse gas emissions are significantly reduced.

Renewable Energy Application

- Continuously increases the proportion of renewable energy application. Gradually deploys rapid-installation photovoltaic systems on factory rooftops to provide a portion of clean energy and reduce reliance on traditional fossil fuels. As of June 2025, the photovoltaic capacity has reached 254.88 MW, enabling clean power generation of 2.3 billion kWh.

Energy System Optimization and Integration

- Utilizes digital photovoltaic and solar intelligent monitoring management systems to achieve real-time monitoring, optimized dispatch, and collaborative management of various energy sources within the factory.

Resource Recycling

- Through the continuous refinement of the energy ecological protection model, remarkable new achievements have been formed in demonstrating resource recycling and sustainable development. As of 2024, 7 factories have obtained UL 2799 Platinum level certification; 4 were selected as National Green Supply Chain Management Enterprises; 3 were recognized as Industrial Product Green Design Demonstration Enterprises; 1 was selected as a typical case of National-Level "Zero-Waste Enterprise".

Green Factories

Clarify the Development Blueprint

BOE Display actively promotes innovative practices in green smart manufacturing and continuously applies new technologies to drive the upgrading and transformation of green factories through digital solutions. The company has established a three-tier development pathway of "green factories - near-zero carbon factories - zero carbon factories," continuously optimizing production processes to reduce carbon emissions.

2 Zero Carbon Factories

Within the accounting boundary for greenhouse gas emissions, the GHG emissions generated from production and services over a specified period (typically a calendar year), calculated in carbon dioxide equivalent (CO_2e), are balanced. Following maximum internal reduction efforts, the remaining emissions are neutralized by carbon removal projects outside the accounting boundary and/or by procuring an equivalent amount of carbon credits, thereby achieving net-zero impact and progressively approaching a state of net-zero emissions for the factory.

Building a Zero-Carbon Ecosystem

- Based on digitalization and smart technologies, with the path and goal being zero-carbon and green, the core transformation strategy involves optimizing the energy structure and implementing precise energy conservation and emission reduction measures. This drives the deep integration of factory development with zero-carbon objectives.

R&D and Application of Low-Carbon Production Processes

- Focuses on innovating low-carbon production processes and advances the R&D of flow chart data technology. Drives the upgrade of production techniques and reduces carbon emissions at the source through the R&D and application of key technologies such as low-speed detection, low-carbon gas substitution, and intelligent optimization.

Collaborative Emission Reduction Across the Entire Industry Chain

- Strengthens collaboration with upstream and downstream partners in the industrial chain. Establishes a synergistic emission reduction mechanism across the entire chain through resource sharing, logistics optimization, and joint technology R&D.The company will promote full lifecycle management—from raw material procurement and manufacturing to product use and recycling—to achieve an overall reduction in the carbon footprint of the industrial chain.

Digital and Intelligent Transformation

- Leverages digital and smart technologies such as big data, artificial intelligence, and the Internet of Things (IoT) to conduct in-depth mining and analysis of factory production, distribution, and environmental data. Enables refined management and dynamic optimal control of production processes, empowering the upgrade of the green, low-carbon system through technology.

Building a Green Factory

Green Factory

Chongqing BOE Display Technology Co., Ltd. embraces the concept of low-carbon development, optimizes production and manufacturing through comprehensive innovative practices, and was awarded the title of "National Green Factory" in 2024.

- **Infrastructure Development:** Factory buildings strictly follow national and industry standards for energy conservation and environmental protection, adopting energy-efficient design and eco-friendly materials. Projects are implemented with environmental protection as the priority and efficient resource utilization as the core, establishing an environmentally friendly, efficient, and low-consumption green construction model.
- Solar photovoltaic system installed capacity of **18.64** megawatts
- **Environmental Emission Control:** Strengthen pollutant management at the source, enhance resource recycling during production, and apply advanced exhaust and wastewater treatment technologies to ensure compliance with emission standards. Meanwhile, promote resource recovery and refined management of waste, continuously advancing toward the goal of a "zero-waste factory."

- **Management System Construction:** Establish and improve environmental, energy, and hazardous substance management systems. Through strict regulations and certifications, ensure the scientific and effective implementation of low-carbon management.
- Obtained ISO 14001, ISO 50001, and QC0 80000 system certifications
- The comprehensive utilization rate of solid waste reaches **100%**
- Chongqing's air pollution prevention and control performance rating reaches **A** Level
- **Green Product Development:** The company has established a production technology goal of "integration, intelligence, and green design," focusing its product research and development on the application of new environmentally friendly and high-performance materials, maintenance-free processes, and reduction of gas emissions, deeply integrating ecological concepts and fully meeting the requirements for green-design product assessment.
- **Energy and Resource Management:** Established an energy management center and formulated regulations such as the *Energy Management Benchmark, Energy Conservation Work Management Measures*, and *Resource and Energy Management Control Procedures*. Energy quota assessments are implemented for all energy-consuming units to achieve precise monitoring and optimized regulation of energy use, effectively reducing energy consumption per unit of product.
- Annual electricity savings reached **12.48** million kWh
- Water resources recycled: **9.93** million tons
- The overall weight of the OLED NB14.2 product is reduced by approximately **29%**, and the overall thickness is reduced by approximately **13%**

Near-Zero Carbon Factory

In 2024, Erdos Yuansheng Optoelectronics Co., Ltd. Continues to promote energy structure transformation, resource recycling, and the construction of company-level near-zero carbon factories through renewable energy utilization, water resource management, waste treatment, and energy conservation and emission reduction efforts.

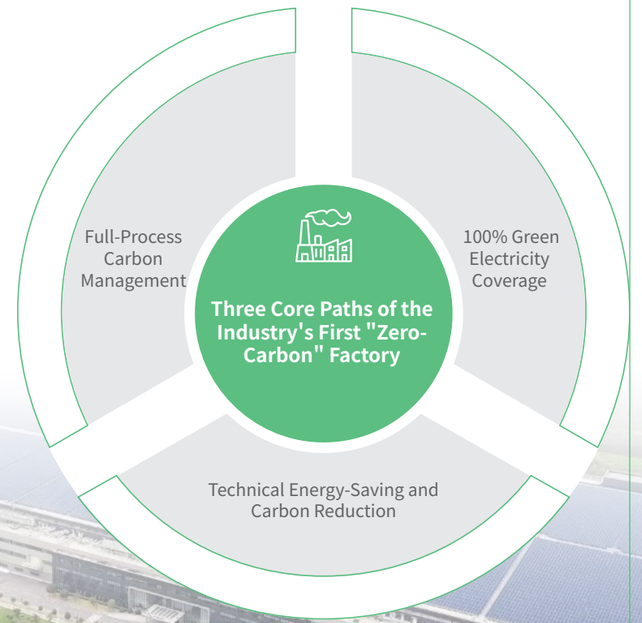
- **In terms of renewable energy,** BOE has established a distributed rooftop photovoltaic project, ensuring stable and continuous supply of green electricity to meet production needs. The proportion of renewable green electricity reaches as high as **72%**, actively powering a low-carbon future.
- **In water resource management,** BOE has tapped into system potential, implementing water-saving projects such as sludge filtrate reuse and plate-and-frame filter press rinse water recycling, reducing the use of Yellow River water. With a production water recycling rate of approximately **99%**, it has achieved intelligent water optimization "multiple uses for one water", setting an industry benchmark for water conservation.
- **In waste management,** BOE promotes resource recovery of solid waste, precisely handling hazardous waste and general industrial solid waste to ensure proper disposal and reuse, establishing a virtuous cycle of "waste - resources - products." With a resource utilization rate of **99%**, it brings new life to waste materials.
- **In energy conservation and emissions reduction,** BOE has meticulously implemented **12** key projects, cumulatively saving **36,541** cubic meters of natural gas and **3,527,339** kWh of electricity, turning every small effort into powerful momentum for green development.

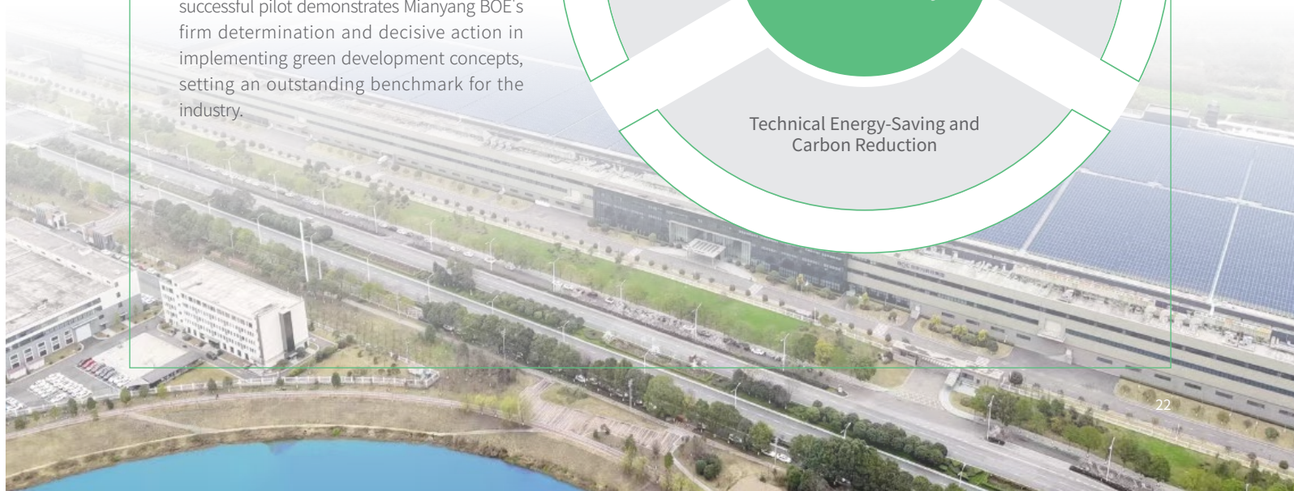
Zero Carbon Factories

BOE (Mianyang) Optoelectronics Technology Co., Ltd. relies on the ISO 50001 energy management system and applies an energy management system for precise control over each energy consumption stage through a hardware-software collaborative platform for visualized energy monitoring. The company aims to establish agree management system to build carbon neutrality in (our) operations and deliver comprehensive, end-to-end zero carbon solutions, including low-carbon processes and energy conservation, clean energy adoption, and emission reduction measures such as carbon credit offsetting.

- **In terms of low-carbon processes and energy conservation with emissions reduction,** the factory enhanced R&D on low-carbon technologies such as improving the utilization rate of fluorinated gases to reduce greenhouse gas usage and emissions. Meanwhile, it further explored carbon reduction potential and conducted energy-saving retrofits on equipment, achieving **3,255** tons of direct emission reductions and **3,677** tons of indirect emission reductions in 2023.
- **In terms of clean energy application,** BOE has increased its renewable energy usage through measures such as self-built distributed photovoltaic systems, hydropower trading, and the adoption of wind and photovoltaic clean energy, successfully achieving **100%** renewable energy use in 2023. The rooftop photovoltaic system generates an average of **24 million** kWh annually, reducing emissions by **12,800** tons per year.
- **Regarding residual carbon emissions,** BOE has assessed carbon leakagerisks and utilized high-quality carbon credit projects to offset the remaining emissions, achieving carbon neutrality in our operations.

BOE (Mianyang) Optoelectronics Technology Co., Ltd. has successfully achieved carbon neutrality in operations for 2023, and obtained the carbon neutrality statement for the 2023 calendar year, verified by SGS in June 2024, becoming the first display manufacturing facility in China to achieve carbon neutrality in its operations for a single calendar year. The successful pilot demonstrates Mianyang BOE's firm determination and decisive action in implementing green development concepts, setting an outstanding benchmark for the industry.





Greenhouse Gases Emission

Self-emission Status

Understanding current energy consumption and carbon emissions is the scientific foundation for BOE Display to formulate its carbon neutrality strategy. In 2023, BOE Display officially announced its carbon neutrality goal, demonstrating our commitment to sustainable global development and our firm confidence in technological innovation and green transformation. Currently, BOE Display is steadily advancing toward its carbon reduction targets through systematic initiatives.

BOE Display Carbon Emissions in 2024

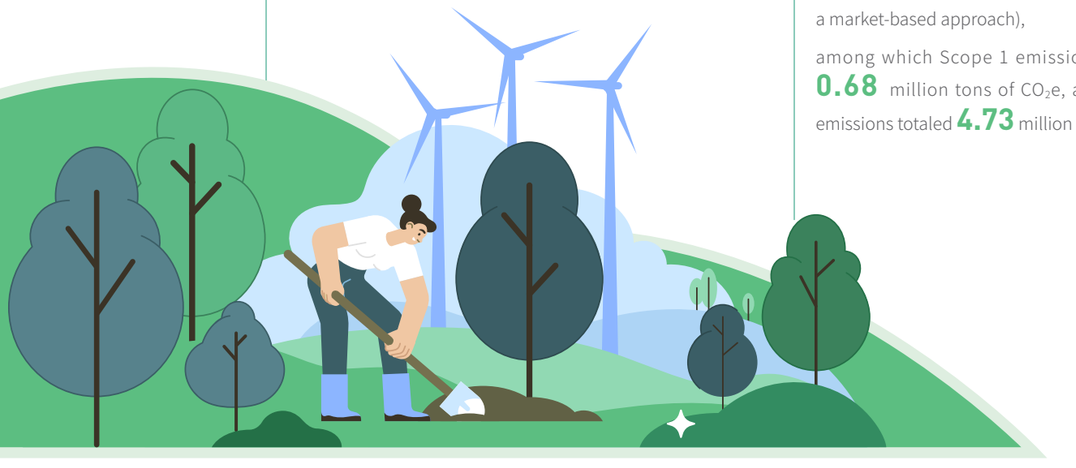
Verification Standard

- In line with ISO 14064-1:2018, as well as The Greenhouse Gas Protocol: *A Corporate Accounting and Reporting Standard* jointly released by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), the carbon emission data has been verified.

Overall Situation

In 2024, the total greenhouse gas emissions amounted to **5.42** million tons of CO_2e (on a market-based approach),

among which Scope 1 emissions reached **0.68** million tons of CO_2e, and Scope 2 emissions totaled **4.73** million tons of CO_2e.



Energy Conservation and Consumption Reduction

BOE Display continues to advance energy-saving technology upgrades by implementing equipment modernization, low-carbon process optimization, and resource recycling, thereby reducing energy consumption, promoting resource circulation, and achieving energy efficiency and carbon reduction in manufacturing operations.

Equipment Upgrade and Transformation

To build a green factory characterized by "clean production, waste resource utilization, and low-carbon energy", BOE Display has upgraded and retrofitted outdated equipment in its factories to reduce energy waste and improve equipment energy efficiency.

case Upgrase and Retrofit of Process Vacuum Unit

The process vacuum system (PV system) using fixed-frequency vacuum units has issues such as high energy consumption, significant vibration, and high failure rates, which negatively impact production stability and operational efficiency. With optimized design advancements in screw vacuum technology, the variable frequency range has been extended from an initial 60% to an initial 10%, significantly improving the energy efficiency of screw vacuum units. BOE Display has replaced the fixed-frequency vacuum units and implemented centralized control for the unit clusters. By optimizing the control system and upgrading equipment, the overall energy consumption of the PV system has been substantially reduced. After the retrofit, energy consumption per unit has decreased by approximately 30%, with annual energy savings of about **1.3** million kilowatt - hours per factory.

case EC Fan Wall

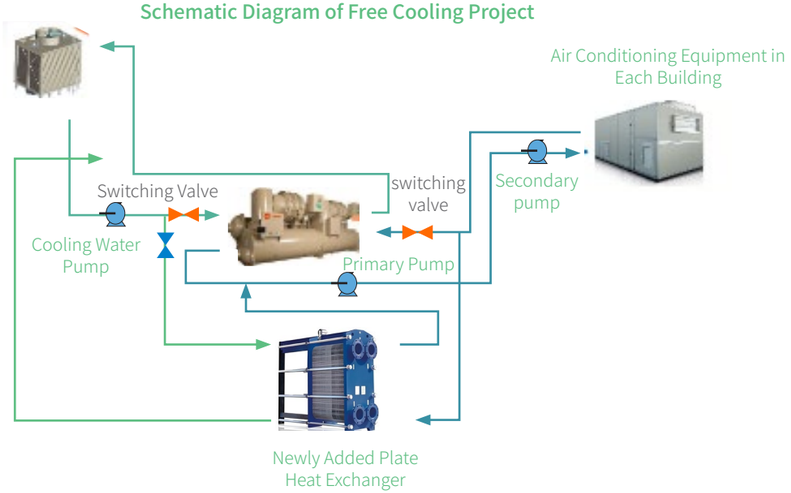
As a key component in the operation of heating and cooling systems, cooling towers play an important role in dissipating heat and lowering the temperature of cooling water. Traditional cooling towers use AC motors with belt-driven transmission to power the cooling fans (referred to as the "AC mode"), which suffer from drawbacks such as complex structure, low transmission efficiency, bulky equipment, high failure rates, and difficult maintenance, severely affecting operational stability. BOE Display has upgraded its cooling towers using EC (electronically commuted, DC permanent magnet) fan wall technology (referred to as the "EC mode"). Compared to the traditional AC mode, EC fans offer advantages including higher efficiency, energy savings, maintenance-free operation, and lower noise levels, significantly reducing operational complexity and energy costs. After the upgrade, the cooling tower’s energy efficiency has improved considerably, achieving an energy saving rate of 41%, with approximately **3.25** million kilowatt-hours of electricity saved annually per factory, delivering significant energy conservation and environmental benefits.

case

Energy Efficiency Improvement Project for Heating and Cooling Sources

The comprehensive energy consumption of cold and heat source systems accounts for more than 25% of the total electricity usage in factories. To improve energy efficiency, BOE Display has implemented multi-dimensional coupled optimization across its factories and established an intelligent heat recovery network: 1) Introduce free cooling technology, using cooling towers for direct heat exchange instead of medium-temperature chillers during winter or transitional seasons, combined with modular operation of variable frequency chillers. 2) Build a compressed air system waste heat recovery system to utilize high-temperature residual heat for factory area heating. 3) Use heat exchange between return water from process cooling water and raw water in the original water tank to reduce the overall power consumption of the cold and heat source system. Through the integrated application of the above technologies, the annual electricity savings across all factories reached **146,000** MWh (equivalent to reducing **78,000** tons of CO_2 emissions).

Schematic Diagram of Free Cooling Project



Low-carbon Process Optimization

BOE Display optimizes process parameters and fully exploits equipment potential by applying digital analysis technologies in the process of production process management, continuously reducing energy and resource consumption.

Optimization Directions

• **Excess Quality in Supply**	Precisely adjust parameters based on equipment energy consumption SPEC to accurately control supply, avoiding energy waste caused by excessive quality.
• **Equipment Level Operation**	Adjust equipment operation status, fully tap equipment energy-saving potential, and improve operation efficiency.
• **Digital Machine Analysis**	Use digital means to deeply analyze equipment operation status and realize refined management and optimization.
• **Resource Recycling**	Focus on water recovery work, establish efficient recovery processes and utilization systems, and improve resource utilization rate.
• **Process Optimization**	Set up special projects for in-depth research to promote energy-saving upgrading of processes.

Showcase of Some Excellent Process Optimization Projects

Serial Number	Name	Description	Decline Ratio
1	Oxide 7-Mask Process	• Compared with the 8Mask process commonly used in the industry, it can reduce the consumption of water, electricity, fuel oil, etc. required for Array substrate manufacturing.	Energy Consumption Decrease by More Than 10%
2	Sputter Ulvac Equipment L Chamber Optimization Project	• The L chamber of the Sputter main equipment is a high-vacuum atmosphere control chamber, which can improve equipment production efficiency and reduce the usage of N_2 at the same time.	N_2 Usage Decrease by 15.5%
3	A-Si Thickness Reduction Project	• A large amount of electricity is consumed during Array a-Si Dep (deposition). By reducing the thickness of a-Si, the actual Glass Dep time is reduced.	Average Actual Electricity Consumption of Glass Decrease by 7.2%
4	Seal Oven Heat Recovery Independent Transformation Project	• The Seal Oven is equipment used for Seal glue curing after Cell formation. It can directly introduce exhaust air into the air inlet and mix it with fresh air to improve the temperature of fresh air and reduce heating electricity consumption.	Electricity Consumption Decrease by 22.8%

Resource Recycling and Utilization

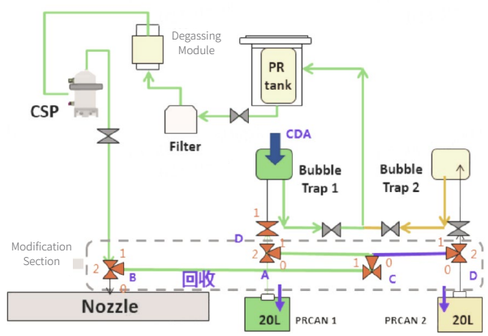
BOE Display is committed to building a circular system for resources, products, and waste by improving resource recycling through the "reduce, recycle, reuse" model. This covers categories such as stripping liquids, diluents, etching solutions, and waste target materials, continuously advancing the development of a circular economy to reduce reliance on resources. Currently, **9** of its factories have been awarded municipal-level or higher "Zero Waste Factory" titles, **1** factory has been selected as a national-level exemplary case of a zero-waste enterprise, and **7** factories have achieved UL 2799 Platinum certification for zero waste to landfill.

case Reduction of liquid chemicals in alignment layer coating process

BOE Display has, for the first time, implemented a condensation recovery retrofit on the rework solution used to strip PI liquid under coating defect conditions, successfully reducing rework solution emissions by **64%**. The company has also introduced waste liquid recovery and purification for PI liquid used in alignment films, enabling reuse and reducing PI liquid discharge by approximately **80%**. By precisely adjusting parameters related to NMP, BOE has effectively reduced NMP consumption, thereby lowering waste liquid emissions.

case Color Filter PR Gel Recycling and Reuse

In the color filter manufacturing process, BOE Display is systematically advancing the construction of a PR resist pipeline recycling system. By conducting in-depth modifications to the pipelines and software of PR resist coating equipment, residual PR resist within the equipment pipelines can be efficiently recovered and reused during transitions between different types of PR resist, effectively reducing PR resist discharge. After implementation, each discharge event will be reduced by approximately **1 liter**, representing a **13%** reduction in emissions. This initiative will significantly enhance environmental protection and resource conservation, strongly promoting the advancement of green manufacturing.



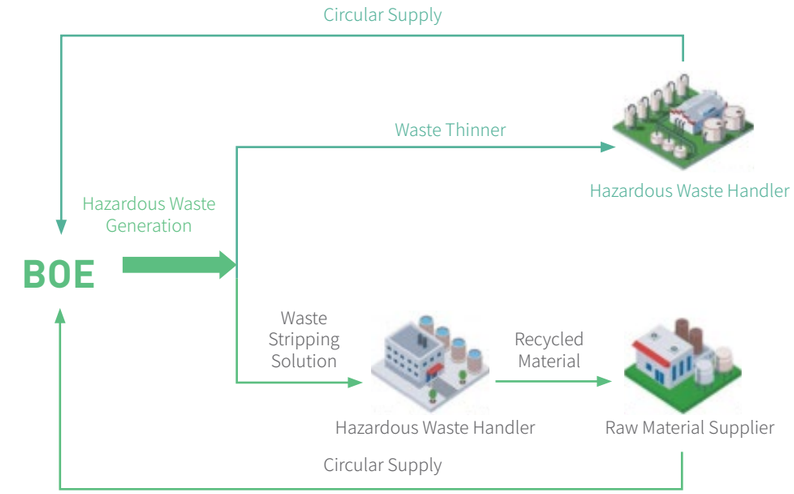
In waste management, BOE Display has established a systematic end-of-pipe waste management system. By implementing zero landfill certification for waste and leveraging a full life cycle management mechanism, the company has improved waste classification, collection, and recycling processes, strengthened standardized management of hazardous waste, continuously enhanced waste reduction and resource recovery efficiency, and optimized chemical waste liquid recycling technologies.

To effectively recover and utilize valuable resources from waste, BOE Display implements a refined three-tier classification system based on the hazardous characteristics, properties, composition, and impurity levels of waste. This enables stepwise screening of the smallest recyclable units and separation of non-recyclable fractions, thereby increasing waste conversion rates. Meanwhile, the company works closely with suppliers to optimize waste treatment methods, identify waste reduction opportunities, and conduct feasibility studies, supporting green, low-carbon, and circular development.

case Collaborate with Suppliers to Establish a Recycling System

To build a circular supply system, BOE Display proactively selects and dynamically manages suitable suppliers through systematic standards across the entire process of waste recycling, raw material production, and circular supply, thereby controlling the green circular efficiency of the supply chain at the source.

- **Factory construction phase:** Conduct preliminary research and planning on supplier and waste handler resources, while establishing cooperative relationships
- **Factory operation phase:** Promote point-to-point targeted utilization of waste, transforming waste handlers into raw material suppliers through process validation



BOE Display Circular Supply System

case BOE Display Wate Zero Landfill Certification Project

BOE Display has promoted zero landfill certification for waste in its existing factories, upgrading the traditional waste management model to a green and circular resource management system. Beijing BOE Display Technology Co., Ltd. became the **first factory** within the company to obtain the UL 2799 Platinum-level Zero Landfill Certification for waste, conducting compliance checks and audits for all waste streams until their scientific disposal. The factory has implemented measures such as refined waste classification, prioritizing recycling or waste-to-energy technologies, reducing and reusing packaging materials, and continuously improving the management system. These efforts have enabled the recycling and reuse of waste resources such as waste stripping solutions, waste diluents, waste acids, waste drums, and waste glass, achieving a **100%** waste conversion rate. As of 2024, a total of **7** BOE Display factories have obtained the highest-level Platinum certification under UL 2799 for zero landfill waste.

Clean Energy Utilization

BOE Display is progressively advancing toward its 2050 goal of **100%** renewable energy. Following the priority principle for green electricity procurement, the company first meets its own energy needs through self-generated and self-consumed power, then enters into green power purchase agreements. When these options are constrained by policy or other environmental factors, the company ultimately considers purchasing green electricity certificates.

Photovoltaic Construction

The power supply structure in China is shifting from being fossil energy-dominated to being reliably supported by new energy. With the continuous deepening of the carbon peaking and carbon neutrality goals, new energy sources such as photovoltaics will gradually shift from being the main source of electricity generation growth to the main source of installed capacity.

BOE Display has promoted the "distributed photovoltaic on the roof of the main building" initiative, which has significantly reduced carbon emissions while lowering the indoor temperature of the factory and reducing air conditioning energy consumption. As of June 2025, the installed photovoltaic capacity has reached 254.88 MW.

Photovoltaic installed capacity has reached

254.88MW

Distributed Photovoltaic Project on the Roof of the Main Building

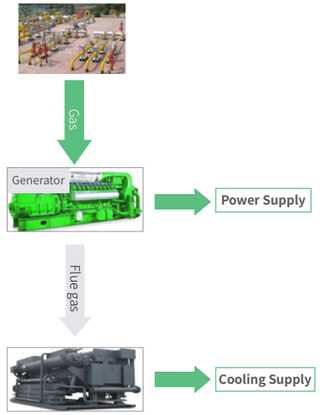
Natural Gas Utilization

With the optimization of the global energy structure, natural gas has become a "green engine" for energy transition due to its clean and efficient characteristics. During the "14th Five-Year Plan" period, China's natural gas industry is accelerating development and is expected to join the ranks of major gas-producing countries with an annual output of 250 billion cubic meters by 2025, playing an increasingly critical role in ensuring energy security and advancing the carbon peaking and carbon neutrality goals. BOE Display, in response to national low-carbon policies, has launched a natural gas distributed energy project to promote the low-carbon transformation of the energy structure.

case BOE Chongqing Optoelectronics Technology Co., Ltd. Natural Gas Distributed Energy Project

Chongqing BOE Optoelectronics Technology Co., Ltd. is utilizing existing vacant land to construct a natural gas distributed energy power plant. Using natural gas as fuel, the plant achieves cascaded energy utilization through combined cooling, heating, and power (CCHP), providing energy close to the load center. The project's gas-fired power generation capacity is approximately 22.5 MW, making it one of the largest natural gas distributed energy projects in Chongqing. It is expected to generate about 115 million kWh of electricity annually, supply around 95 million kWh of cooling per year, and reduce carbon emissions by approximately **21,000** tons annually.

Natural Gas Distributed Energy Station Unit



Digital-intelligence Integration

BOE Display, leveraging its intelligent energy management characteristics and relying on digital technologies such as data interconnection and model training, optimizes production processes and enhances production efficiency through machine learning and deep learning algorithms, establishing a digital management platform that integrates data interconnection and intelligent technology.

Cloud-Based Management Platform

BOE Display Management Platform

Intelligent Energy Management System

- Energy Consumption Monitoring
- Energy Consumption Analysis
- Equipment Early Warning
- Energy Efficiency Improvement

Product Carbon Management System

- Integrate the most authoritative internal and external carbon footprint databases from both domestic and international sources
- Achieve data interoperability with Supplier Carbon Management Platform
- Comprehensively cover carbon footprint management throughout the entire product lifecycle

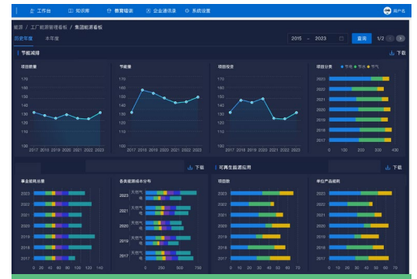
Carbon Management System

- Carbon Emission Monitoring
- Carbon emission analysis
- Performance Management and Information Management

Intelligent Energy Management System

To support the achievement of the national carbon peaking and carbon neutrality goals, BOE Display has continuously strengthened its R&D capabilities and sustained innovation in energy Internet of Things technologies. The independently developed BOE intelligent energy management system serves as an enabling platform for zero carbon integrated energy solutions. Through continuous iteration and integration of multiple innovative technologies, it drives factories steadily forward on the path of green and low-carbon development.

The BOE intelligent energy management system collects multi-dimensional data to enable real-time monitoring of all types of energy consumption—including water, electricity, and gas—across manufacturing plants. By leveraging AI algorithms, the system performs in-depth mining and intelligent analysis of energy consumption data, effectively promoting low-carbon, intelligent plant operations. Utilizing information technology, the system presents primary and secondary energy usage in a panoramic, digital format, offering refined management functions such as energy monitoring, consumption analysis, energy ranking, comparative analysis, energy reporting, and energy performance management. This provides accurate and reliable data support for energy consumption forecasting and control, establishing a solid data foundation for energy efficiency improvements and consumption reduction.

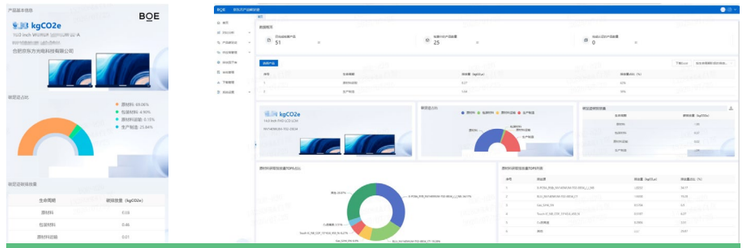


Intelligent Energy Management System

Product Carbon Management Platform

The product carbon footprint management platform built by BOE Display is an intelligent management system integrating product lifecycle modelling, accurate carbon footprint calculation, and in-depth analysis. The platform strictly follows international standards such as ISO 14067:2018 (Greenhouse gases—Carbon footprint of products—Requirements and guidelines for quantification) and PAS 2050:2008 (Specification for the assessment of the life cycle greenhouse gas emissions of goods and services). It incorporates industry-standardized carbon footprint accounting models and dynamically integrates mainstream domestic and international carbon emission factor databases, ensuring the accuracy and timeliness of calculation results through a real-time data calibration mechanism.

Leveraging digital interoperability, the platform establishes direct data connectivity with suppliers' carbon management systems, ensuring traceability of component carbon footprints. This functionality enhances product carbon footprint transparency to the "component level," laying a solid data foundation for the subsequent design and development of green products.



Product Carbon Footprint Platform Interface

Carbon Management System

To enhance low-carbon management efficiency, BOE Display has built an enterprise carbon management system. This platform integrates carbon emissions monitoring, carbon emissions analysis, carbon performance management, and carbon information management. Through massive data analysis, it dynamically presents visualized charts of energy management status, carbon emissions trends, carbon reduction project progress, and carbon performance evaluation. It promotes green management to advance toward informatization and process standardization, providing management with accurate and efficient decision-making data support, and helping the enterprise build an end-to-end, intelligent carbon management system.

Carbon Management System

Intelligent Manufacturing Platform

BOE Display is actively introducing and integrating multiple innovative intelligent systems and platforms, committed to pursuing scientific and technological innovation and to take the lead in the advanced manufacturing with intelligence as the core. By deeply integrating advanced information technologies with manufacturing processes, the company not only achieves intelligent and automated transformation in production but also provides strong support for building green factories. The application of intelligent systems and platforms can effectively control and reduce energy consumption and carbon emissions during production, helping BOE Display achieve its carbon reduction goals on the manufacturing side.

Risk Prediction Side

Proactive Quality Management:
Leverage historical data for trend analysis and forecasting, proactively implement preventive measures, optimize production line configurations, and reduce large-scale resource waste caused by batch quality issues, thereby achieving proactive avoidance of resource waste.

Production Source Side

Reduce resource waste:
Accurately identify product defects, proactively intercept potential quality issues, and prevent non-conforming products from entering subsequent processes, thereby avoiding waste of resources such as raw materials and energy.

ADC Intelligent Detection Management Platform

Process Iteration Side

Optimize the production process:
Feed defect information back to the upstream production stage, promptly adjust process parameters, replace manual operations, precisely control process defects, reduce defect rates at the production process level, and minimize secondary resource waste caused by repeated process adjustments.

Performance Gap Side

Improve production efficiency:
Seamlessly integrates with automated production equipment to automatically trigger equipment adjustments or shutdowns, reducing defective product output and improving production efficiency.

Big Data Defect Analysis System

Data-driven decision making

- Integrates defect data across all production stages, enabling data sharing so that different departments can collaborate efficiently on a unified data platform. This improves work efficiency and collaboration capabilities, while reducing resource waste and redundant work caused by information asymmetry.

Precisely identify the issue

- Construct a multi-dimensional defect analysis model to thoroughly analyze defect data, accurately identify key factors causing defective products, optimize the production process accordingly, improve product quality, and reduce energy and resource consumption caused by defective products.

Early Warning and Prevention

- By leveraging predictive analytics capabilities, potential defects can be forecasted and early warnings issued, enabling timely actions to prevent the production of large quantities of defective products and reducing energy consumption and environmental pollution caused by the handling of such defects.

New Directions for Future Development

Green manufacturing is an important pathway to achieving the carbon peaking and carbon neutrality goals

Under the era-defining proposition of the carbon peaking and carbon neutrality goals, green manufacturing has become the key to resolving the contradiction between economic development and ecological protection. Centered on efficient resource utilization, low-carbon energy transition, and pollution source control, it deeply integrates clean production processes, digital energy-saving technologies, and circular economy models into the entire manufacturing process—from raw material procurement to product delivery—minimizing carbon emissions and environmental impact to the greatest extent possible.

Synergistic advancement of digitalization and greening

The deep application of new-generation information technologies—such as artificial intelligence, big data, the Internet of Things (IoT), and 5G—is driving energy-saving and emission-reduction transformations in the display industry. For example, AI technology has enabled equipment failure prediction and precise diagnostics, effectively reducing energy waste caused by downtime. The integrated application of IoT and 5G helps distributed photovoltaic power stations build an "intelligent power generation network" through IoT sensors, increasing the proportion of clean energy and establishing a new paradigm of "zero-carbon manufacturing".

Industry Challenges and Responses

Although the industry has achieved phased results in building green factories (such as digital transformation practices, intelligent technology applications, and renewable energy deployment), it still faces challenges including energy consumption pressure, electronic waste management, resource shortages, and supply chain management. To address these issues, BOE Display will achieve breakthroughs through technological innovation, improved management systems, and industrial chain collaboration, working with stakeholders across the industry to advance green factory development and support the joint realization of global sustainable development and environmental protection goals.

In the future, BOE Display will accelerate its low-carbon transition through the application of energy storage technologies and renewable energy, innovate manufacturing processes, and promote green factory upgrades through smart manufacturing. Meanwhile, leveraging AI to optimize production scheduling and intelligent operations and maintenance, it will establish a green development paradigm driven by "technology and green" as dual engines, leading the display industry toward high-quality sustainable development.

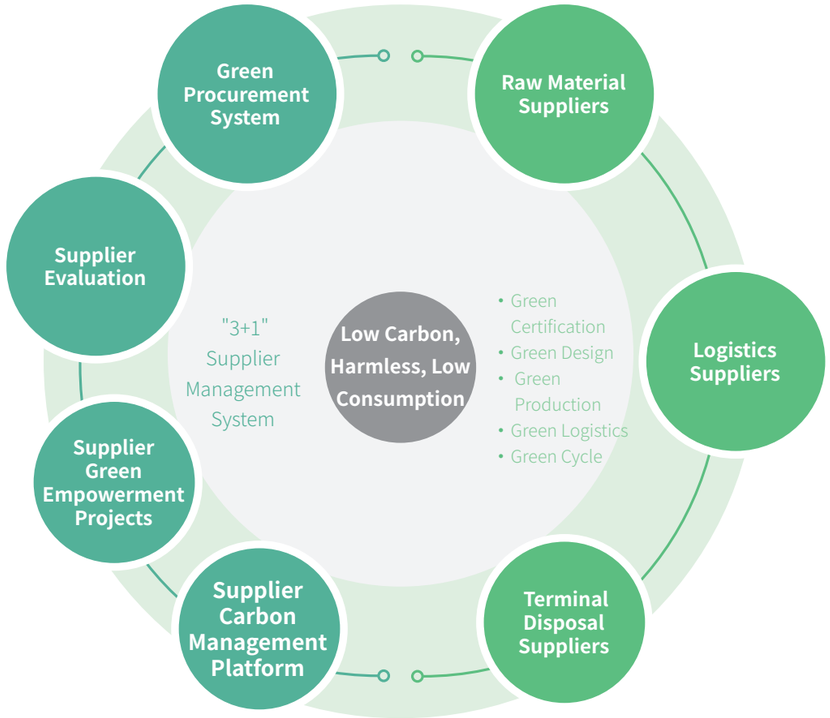
3.0

Decarbonize the Value Chain

- Supplier Management
- Supply Chain Emissions Reduction
- New Perspectives for Future Development

According to a report by the United Nations Global Compact, supply chains account for as much as 60% [5]of global greenhouse gas emissions, making supply chain emission reduction crucial for enterprises to achieve green and low-carbon development. BOE Display is committed to advancing the green transformation of its supply chain by incorporating the development of a green supply chain into its low-carbon development strategy and innovatively establishing a "3 + 1" supplier management system. This system integrates digital technologies into supplier management through three core mechanisms—green procurement, supplier evaluation, and green empowerment—supported by a digital platform. As a leading "chain" enterprise, BOE Display continuously deepens its management of suppliers across five areas—"green certification, green design, green production, green logistics, and green recycling"—from the perspectives of low carbon, harmlessness, and low consumption, consistently driving suppliers to implement the principles of low-carbon and sustainable development.

BOE Display Supplier Management System



Supplier Management

BOE Display continues to improve its supplier management system, such as the *BOE Supplier Standard of Conduct* and the *Supplier CSR Management Measures*, establishing a clearly defined management structure, and building a supplier management system supported by a digital platform, centered on three core mechanisms: a green procurement system, supplier evaluation, and supplier green enablement programs.

[5] UN Global Compact — *Supply Chain Sustainability - A Practical Guide for Continuous Improvement*

Green Procurement System

BOE Display continues to advance green procurement practices and deepen the low-carbon transformation throughout the entire procurement process. The company has optimized and upgraded its green procurement system covering pre-, in-, and post-procurement stages, tapping into carbon reduction potential through refined management and innovative measures, driving continuous reduction in carbon emission intensity across procurement activities, and injecting new momentum into the green transformation of the supply chain.

Before Procurement

- Optimize supplier qualification criteria
- Implement green management control measures, such as signing the Global Procurement (GP) guarantee letter and the confirmation letter of the *BOE Supplier Corporate Social Responsibility Management Regulations*
- Participate in managing supplier design/production processes

During Procurement

- Deepen the green transformation of warehousing and logistics
- Implement a fully "paperless" procurement process

After Procurement

- Establish a procurement carbon footprint tracking system and regularly conduct carbon emissions data analysis
- Strengthen low-carbon management and guidance for existing suppliers
- Continuously improve the recycling and utilization of waste to maximize resource value

Supplier Evaluation

To promote green and low-carbon transformation in the supply chain, BOE Display has taken supplier performance evaluation as a key driver, continuously deepening the development of its evaluation system. By integrating CSR evaluation indicators, uniformly applying the internal EHS code of conduct, optimizing the evaluation framework, and expanding the scope of management, the company has enhanced its supplier low-carbon management mechanism, establishing a systematic and standardized supplier carbon management evaluation system. This has effectively improved suppliers' carbon management capabilities, laying a solid foundation for the green transformation of the supply chain.

Starting from 2025, BOE Display will conduct carbon peaking and carbon neutralit performance evaluations for all suppliers, including ISO14064 verification and feedback, as well as the promotion and implementation of joint carbon reduction projects. Currently, 744 suppliers have completed ISO14001 certification, 130 suppliers have completed ISO50001 certification, and 122 suppliers have completed ISO14064-1 certification.

Deepening and Enhancement	• Strengthening EHS management • Optimizing evaluation system • Expanding management scope
Infrastructure Construction	• Formulating Low-Carbon management evaluation standards and incorporating carbon emission management into supplier assessment • Establishing a supplier carbon data collection mechanism and regularly tracking carbon emission status • Conducting supplier Low-Carbon development training to enhance management awareness and capabilities

1 Strengthening EHS Management

- Improve the implementation rate of suppliers' EHS codes of conduct to ensure management standards are implemented.
- Randomly inspect and verify the implementation results of suppliers' EHS management.
- Strengthen the statistics and target setting of suppliers' carbon data, and promote the regular submission of carbon inventory reports.
- Urge suppliers to set carbon reduction targets based on the base year.

2 Optimizing and Upgrading the Evaluation System

- Add new evaluation dimensions related to carbon reduction to comprehensively assess suppliers' carbon reduction efforts.
- Focus on evaluating the implementation progress and effects of special carbon reduction projects.
- Pay attention to the proportion of clean energy use and promote energy structure optimization.
- Encourage obtaining ISO 14064/14067 certifications to enhance the professionalism of carbon management.
- Conduct activity data audits for key suppliers, gain an in-depth understanding of their low-carbon management levels, and establish low-carbon assessment and evaluation rules in combination with material category baseline sorting.

3 Expanding the Scope of Management

- Gradually expand the management hierarchy, extending from core suppliers to key and general suppliers.
- Achieve full-category data collection and establish a complete data foundation.
- Strengthen the overall green transformation of the supply chain and improve the carbon reduction effect of the entire chain.

Supplier Green Empowerment

To support suppliers in their low-carbon transition, BOE Display has established a green enabling system for suppliers from two dimensions: "capability development and technical support," enhancing suppliers' sustainable development capabilities. By conducting ISO 14064 system training and organizing the Green Partnership Conference, BOE comprehensively strengthens suppliers' carbon management capabilities and drives tangible progress in the green transformation of the supply chain.

Supplier Capability Empowerment

- Continuously enhance suppliers' carbon management capabilities by conducting ISO 14064 system training and carbon inventory tool usage training to improve the quality and efficiency of suppliers' carbon inventories. Relevant training has now covered 428 suppliers.
- The company organized 375 display suppliers to participate in the BOE Global Supply Chain Partner Conference (BOE SPC), engaging in in-depth discussions on topics including changes in environmental regulatory controls, responsible minerals and other CSR (Corporate Social Responsibility) issues, vocational skills empowerment, and high-quality development of environments for green product in the electrical and sustainable industries. The conference interpreted the company's requirements for management and sustainable development expectations for suppliers, effectively enhancing environmental control capabilities across the supply chain.

Technical Transformation Support

- In-depth engagement with suppliers who have needs for photovoltaic installation or energy-saving transformation
- Systematically collect BOE Display's excellent carbon reduction and energy-saving cases
- Invite BOE Energy Technology Company to provide professional solutions
- Conduct needs communication with suppliers regarding energy-saving transformation
- Enhance suppliers' green electricity application capabilities and energy-saving and carbon reduction management levels through diverse formats such as special training, technical exchanges, and case sharing

Supplier Carbon Management Platform

To systematically enhance suppliers' carbon management capabilities and implement the concept of green and low-carbon development, BOE Display is actively building a supplier carbon management system. By adding carbon emission ports, the system enables the collection of suppliers' carbon data entry data, thereby improving the accuracy and reliability of carbon emissions analysis across the industrial chain. With functions such as automated data collection, multi-dimensional analysis and assessment, target setting, and process control, it comprehensively enhances the scientific rigor and effectiveness of supply chain management.

Digital-intelligence Integration

BOE Display adheres to the concept of win-win cooperation, sets the goals of "low carbon, harmlessness, and low consumption", and focuses on three main types of suppliers: raw material suppliers, logistics suppliers, and end-of-life disposal suppliers. It continuously optimizes its management in five aspects: "green certification, green design, green production, green logistics, and green recycling". While promoting the green development of suppliers, it works together to build a green, low-carbon, and circular industrial ecosystem. The company promotes the implementation of green supply chain actions through a project-based approach and has cooperated with suppliers to implement **17** major categories and **29** green sub-projects, achieving an annual carbon reduction of **26,519** tons in 2024.

Green Certification

- Green and Low-Carbon
- Energy Management System
- Circularity
- Harmless Certification, etc.

Green Design

- Standardization
- Recyclability
- Durability
- Harmlessness
- Low Consumption

Green Production

- Green Electricity and Low Energy Consumption
- Zero Waste Landfill
- Recycling and Reuse
- Hazardous Substance Control

Green Logistics

- New Energy Vehicle Utilization
- Full-Load Rate Improvement

Green Recycling

- Regenerative Treatment
- Harmless Disposal

BOE Display Supplier Management System

Raw Material Suppliers

Green Certification

Continuously promote suppliers' environmental management system, energy management system construction, and greenhouse gas inventory work, thereby improving suppliers' own green management level.

- In 2024, 428 suppliers were invited to conduct carbon inventory, covering approximately **85%** of the entire supply chain's carbon emissions.

Green Design

Advocate and encourage suppliers to adopt green design concepts in the selection of key materials, and use low-carbon and renewable green materials while meeting product requirements.

- Jointly develop low-carbon materials with suppliers through project cooperation.

Green Production

Support suppliers in using renewable energy and encourage them to continuously optimize and upgrade their production processes.

- Collaborate with suppliers to research and develop top-level designs and implementation plans for green electricity pilot sites, and jointly build a replicable and promotable green electricity application model.

Logistics Suppliers

Green Logistics

Encourage suppliers to strengthen low-carbon transportation capacity building, deeply optimize integrated transportation resources, and explore low-carbon transportation solutions.

- Use new energy transport vehicles.
- Develop end-to-end green logistics solutions.
- Optimize transportation methods while improving loading rates.

End-of-Life Disposal Suppliers

Green Recycling

Explore and implement replicable and promotable resource recycling strategies with suppliers.

- Achieve pilot verification and mass production in the recycling and utilization of Mask, chemicals, packaging materials, etc., to reduce carbon emissions while lowering costs.

case Collaborative Development of Green Low-Carbon Materials

Green Design Innovation

- **Promote Recycled Material Utilization:** The PIR ratio of recycled materials after glass processing reaches over 20%, the PCR ratio of recycled materials after metal recovery reaches over 13%, and the PCR ratio of recycled materials after plastic consumption reaches over 60%, achieving an annual carbon reduction of **21,639** tons.
- **Enhance Recyclable Packaging Utilization:** Generally adopt GPO Tray, mold wood, and pulp molding, and optimize the design of packaging weight and load capacity, etc., to reduce packaging weight, improve packaging material utilization and loading rate, and reduce the carbon footprint of finished products.
- **Develop Harmless Materials:** Completed the trial of 1 type of material, and 2 types of materials are in the trial stage.

Lightweight GPO Tray

Lightweight, stable, resistant to deformation, excellent toughness, and recyclable. It can reduce weight by 70% for the same dimensions, achieving an annual carbon reduction of 603 tons.

Mold Wood

Made from bamboo and wood processing residues, plant fibers, and other raw materials through molding technology, it is lightweight, durable, moisture-resistant, shock-absorbent, and easy to clean. It is recyclable and reduces carbon emissions by 227 tons annually.

Recycled Protective Film

Dissolve, crystallize, purify, and coat the waste material after die-cutting to achieve 100% recycling of PET, enabling an annual reduction of 192 tons of carbon emissions.

Glass PIR

In the glass production and processing process, cutting generates edge trimmings and waste materials, which are crushed and returned to the furnace for melting. The recycling ratio can reach over 20%, achieving an annual carbon emission reduction of 20,000 tons.

Plastic PCR

During the production of plastic raw materials, waste materials such as recycled plastic water bottles, decorative panels, and automotive lamp housings collected from consumer markets are added, with an incorporation ratio reaching 60%–90%, achieving an annual carbon emission reduction of 737 tons.

Metal PCR

During the metal raw material production process, scrap steel returned from the consumer market is added, with an addition ratio of 13%-95%, achieving an annual carbon reduction of 902 tons.

case Promotion of Green Logistics

- **Optimize Transportation Methods:** Promote fuel-efficient shipping, achieving an annual carbon reduction of **461** tons.
- **Launch Green Logistics Projects:** In air transportation, work with partners to launch the GO GREEN sustainable logistics project to reduce air transportation carbon emissions. At the same time, promote green packaging projects, explore new energy vehicle pilot projects, and seek clean and efficient route transportation solutions.

New Perspectives for Future Development

Digital transformation is accelerating

With the rapid development of information technology, the digital transformation of the display industry's supply chain is accelerating. The application of IoT technology in supply chain management is continuously deepening, enabling real-time data collection and analysis of energy consumption, materials, and environmental parameters through the deployment of sensors on key equipment[6] . Currently, the construction of carbon footprint tracking systems is being comprehensively expanded. Leading enterprises have begun establishing carbon emission management platforms covering the entire process from raw material procurement and manufacturing to warehousing and logistics. Through the application of technologies such as blockchain, the traceability and credibility of product carbon footprint data are continuously improving, laying the foundation for future product-level carbon footprint accounting and management.

The standardization system is becoming increasingly comprehensive

The industry's green standard system is being accelerated. With the release of standards such as the *Guidelines for Green Supply Chain Management* and the *Evaluation Indicators for Maturity of Green Supply Chain Management*, requirements for energy conservation, emission reduction, clean production, and green supply chain management in the industry have become clearer. According to the *2023 work report of the National Technical Committee on Standardization* of Flat Panel Display Devices, more than 20 green-related standards are expected to be released and implemented within the next three years.

The unification of carbon accounting methodologies is accelerating. According to the *2023 Key Points of Standardization Work* issued by the Standardization Administration of China, guidelines for industry-specific carbon emission accounting and reporting are under development. This will provide a unified methodological framework for carbon accounting across all segments of the supply chain, enhancing data comparability and credibility.

The supplier evaluation system is becoming more standardized and systematic. Currently, major panel manufacturers are establishing multi-dimensional supplier evaluation systems that include environmental performance, energy management, innovation capability, and other factors. These evaluation results will be directly linked to procurement decisions and price negotiations, creating a management mechanism that combines incentives with constraints.

Deepening of the collaborative emission reduction mechanism

Industrial chain collaboration for emission reduction has become a widely accepted industry consensus. Leading enterprises are taking the initiative to establish green development alliances to promote the sharing of technologies, standards, and best practices.

Technological innovation cooperation is becoming increasingly close. Upstream and downstream enterprises are jointly overcoming technical bottlenecks in energy conservation and emissions reduction by establishing joint laboratories and conducting collaborative research. For instance, cooperative R&D in areas such as new environmentally friendly materials and clean production processes is accelerating.

An industrial ecosystem for resource recycling is taking shape. According to the *14th Five-Year Development Plan for the Electronic Information Manufacturing Industry* issued by the Ministry of Industry and Information Technology, the recycling systems for waste panels, end-of-life equipment, and other materials are continuously improving, and the proportion of recycled resources used is steadily increasing. It is expected that by 2026, the industry's overall resource recycling rate will rise to more than 75%, forming a relatively comprehensive circular economy industrial chain.

BOE Display has keenly grasped the development trends of the industry's supply chain, formulated a comprehensive green supply chain development strategy, advanced the construction of a low-carbon digital platform, and enhanced supplier performance management.The platform integrates core functions such as supplier carbon footprint management and environmental risk assessment to achieve digitalized supply chain management. On this basis, BOE Display has strengthened its management foundation by establishing a comprehensive supplier qualification and low-carbon evaluation mechanism, progressively enhancing stage-specific green requirements. The company also provides relevant training for suppliers, offering regular training and guidance to help them improve their low-carbon management capabilities. Furthermore, it will continue to advance technological innovation and collaborative emission reduction, working with suppliers on low-carbon R&D and promoting clean production processes, while supporting the development of detailed carbon reduction roadmaps for suppliers, establishing a project database for emission reduction initiatives, and promoting the widespread application of energy-saving technologies across the supply chain through a technology sharing platform.

In the future, as the green transformation of the display industry deepens, BOE Display will take digital transformation as a key driver, standardization as a foundation, and collaborative emission reduction as a goal, to promote low-carbon development across the value chain.

[6]China Academy of Information and Communications Technology, *ICT Industry Low-Carbon Development Report*

4.0

Advance Low-Carbon Products

- Product Planning
- Low-Carbon Products
- New Vision for Future Development

New Perspectives for Future Development

Product Planning

BOE Display systematically advances the green upgrade of products throughout their entire lifecycle, continuously enhancing product environmental friendliness through forward-looking product planning, innovative low-carbon design, and full-value-chain carbon reduction initiatives, leading the display industry toward a green transformation.

As global demand for low-carbon products increases, BOE Display combines industry development trends and customer needs to create a green product plan, endowing products with environmentally friendly characteristics throughout their lifecycle, driving industry green transformation, and enhancing the sustainability of products.

Short-Term Plans

Low-Carbon Materials

- Conduct research on low-carbon and renewable materials, gradually incorporating PCR and PIR recycled materials into core products.
- Implement thinning and lightweight design for MDL structural materials, with annual iterations.
- Collaborate with the suppliers to ensure sustainable certification of raw materials and promote the construction of green supply chain.

Low-Carbon Design

- Integrate energy-saving technologies into existing products, optimize product design, and reduce power consumption.
- Promote energy-efficient products and increase market awareness of green products.
- Use recyclable and biodegradable packaging materials to reduce the environmental impact of packaging.
- Optimize packaging design to reduce material usage, lower transportation costs, and reduce carbon emissions.

Short-Term Goals

- Achieve 50% application ratio of renewable materials in products.
- Achieve a over 99% recyclability rate for products.

Medium-Term Plans

Product Lifecycle Value Management

- Establish a product lifecycle value management system to track the environmental impact from design to usage, ensuring the implementation of green design.
- Conduct green design assessments, encouraging the consideration of recyclability and environmental friendliness during the product design phase.

Green Product Expansion

- Develop more low-carbon and environmentally friendly products based on market demand to meet customer needs for sustainable products.
- Promote the development and updating of industry standards, continuously expanding the scope of green product certifications.

Establishment of Recycling and Remanufacturing System

- Establish a comprehensive product recycling system, providing incentives to encourage consumers to participate in the recycling of old products.
- Launch remanufacturing projects, using recycled materials in the production of new products to promote resource recycling.

Long-Term Plans

Promote the Development of Green Products in the Industry

- Strive to become a leading enterprise in green products in the industry, promoting the industry's overall shift towards sustainable development.
- Actively align with international green standards to enhance the company's global competitiveness.

Intelligent Green Production

- Achieve intelligent green production to improve resource efficiency and the environmental friendliness of the production process.
- Continue to develop green technology innovations, explore new materials, processes, and technologies, and promote product innovation.

Global Green Cooperation

- Collaborate with enterprises and research institutions worldwide to jointly advance the research, development, and application of green products.
- Actively participate in international environmental organizations, sharing experiences and technologies to promote global green and low-carbon development.

Low-Carbon Products

BOE Display integrates the green and low-carbon concept throughout the entire product lifecycle. The company continues to focus on three core areas: low-carbon design, low-carbon material selection, and green certification of low-carbon products. Through technological innovation and product optimization, BOE Display aims to reduce the carbon footprint of its products.

BOE Display's core philosophy is centered around "reduction, lightweight, and low power consumption," while also incorporating the "3R1D" (Reduce, Reuse, Recycle, Degrade) design principles in product material selection and design.

"3R1D"

Reduce

- Reduce energy consumption and carbon emissions throughout the product's entire lifecycle. Minimization and thinning in the product design phase continuously reduce environmental impact.

Reuse

- Promote the reuse of products and materials to extend product lifespan and reduce resource waste. This includes improving product durability and reparability, as well as using reusable materials and components during the production process.

Recycle

- Increase the use of PCR materials during the product design phase, prioritize the selection of recyclable materials, and promote waste sorting and resource recycling during production and usage stages to improve overall recycling efficiency.

Degrade

- Explore the use of degradable materials in product design, which ensures the product breaks down safely after use, reducing long-term environmental impact.

Promote Low-Carbon Design

Simplification

Achieve simplification through "3R1D" design strategies, improving environmental performance while maintaining functionality.

- Develop a display module and independent functional module solution to enhance production efficiency and resource utilization, enabling a more flexible production model.

Lightweight Design

With advanced OLED technology and innovative process design, a dual breakthrough in product weight and thickness has been achieved. This is particularly evident in the application of large-size display products, showcasing significant environmental value.

- New Display Technology: The scaled application of flexible OLED technology significantly enhances lightweight and portability.

Low Functionality

Through hardware innovation and software algorithm optimization, a multi-level energy-saving technology system has been established. From panel technology to intelligent control algorithms, comprehensive energy efficiency improvements have been achieved.

- Hardware Technology Innovation
- Structure & Drive Design and Algorithms
- Power Efficiency Improvement
- BOE ADS Pro Technology Empowerment
- Pixel Design and Drive Optimization

Packaging Design

BOE Display continuously optimizes packaging design through three major initiatives to reduce product packaging carbon emissions and promote the implementation of low-carbon goals.

- Optimize Packaging Structure: Develop multi-piece packaging processes, significantly improving usage efficiency compared to single-piece packaging, and reduce material usage through structural optimization.
- Lightweight Packaging Materials and Use of Recycled Materials:Introduce materials such as GPO and EPO to reduce packaging weight, and incorporate recycled materials such as buffer paper and molded pulp to reduce plastic usage in packaging.
- Recycled Materials Addition: Add recycled materials to pallets.

Energy-Saving Achievements

- Tandem Technology: Device power consumption reduced by **20%**, and overall power consumption reduced by **15%** when paired with LTPO technology.
- LPC Brightness Control Algorithm: EL power consumption saved by **15%**.
- CAEPC Adaptive Control: Expected energy savings of **15%**.
- EIC Integration Technology: Overall power consumption reduced by **35%**.
- Basic Software Algorithm Optimization: Power consumption reduced by **20%**.
- Innovative Integrated Gate Driver Circuit: System power consumption reduced by **10%**.
- Power Efficiency Achieved Above **90%**.
- Through BOE ADS Pro technology, combined with Oxide technology, low-frequency technology, and high-efficiency BLU technology, a low-power solution for laptop products is achieved.
- Achieved an extreme low-power solution of 300nit at 1W and a 1-120Hz ultra-low-frequency technology solution, reducing the use of high-carbon impact materials.

case Optimized Product Design

Innovation in Reduction

- IC reduced by 50%
- PCB area reduced by 33%

Dual gate designed products

Lightweight Design

- Glass Thickness reduced from 0.7mm → 0.5mm

Most MNT products

Ultra-low power consumption

- Power Consumption Reduced at least 40%

Oxide products

Low-Carbon Material Application to Create Green Low-Carbon 24-inch Display Products

- By replacing with higher PCR materials and using low-carbon modules, the overall product carbon emissions were reduced by 11.56% (B2B segment).

BOE Launches First Green Low-Carbon Commercial Display Products

- After implementing raw material replacement and low-power design, the product's carbon emissions were reduced by 21.23%.

86-inch Green Low-Carbon Whiteboard Product

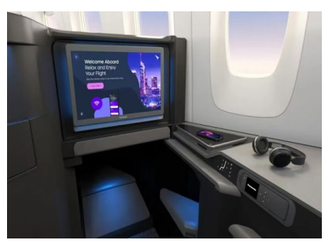
- By using low-carbon recycled materials, lightweight design, and low-power design, the product's weight was reduced by 5.64%, power consumption was decreased by 27.22%, and carbon emissions were reduced by 21.14% compared to the original model.

OLED Laptop (14.2 inches)

- Through CG/SCF/Panel thinning, the overall weight was reduced by 29% compared to the previous generation, and the thickness was reduced by 13%.

Aviation Entertainment Screen (13.3 inches)

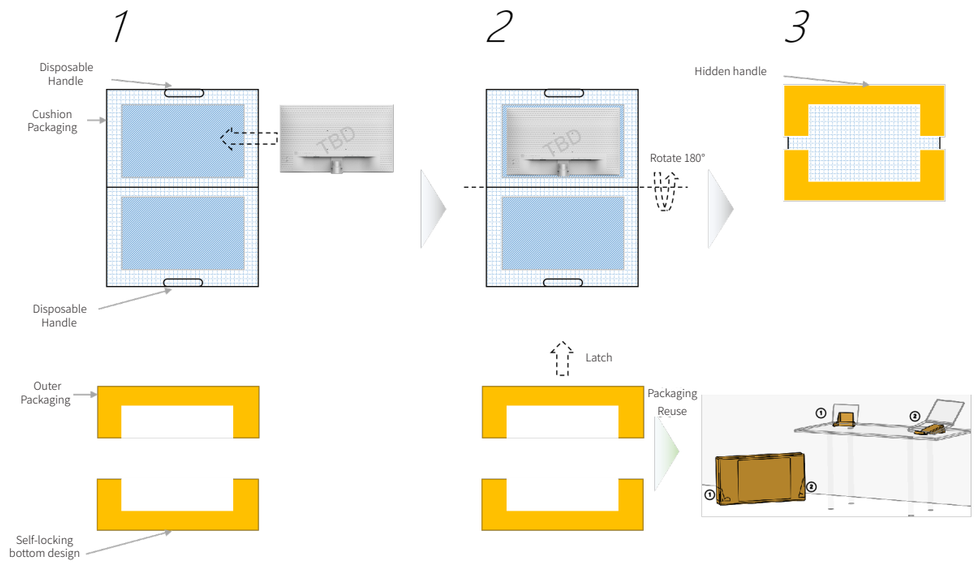
- The weight of a single module was reduced by 34%, and the overall weight of the aircraft was reduced by 19.8 kg per unit.



case Actively Promoting Packaging Innovation

BOE Display has developed the second-generation green display packaging solution, using recyclable or 100% naturally degradable materials for the outer packaging, cushioning, and packaging bags.

By combining the design of outer packaging with cushioning materials, the amount of material used is reduced, achieving weight reduction. By integrating the design of outer packaging and cushioning materials, material usage is reduced and weight is minimized. The self-sealing bottom outer packaging, combined with integrated cushioning materials, improves factory packaging efficiency. The company has also introduced a packaging reuse design, such as making paper shelves and desktop projection devices, giving the packaging a second life and supporting the achievement of the carbon peaking and carbon neutrality goals from multiple dimensions.



Application of Low-Carbon Materials

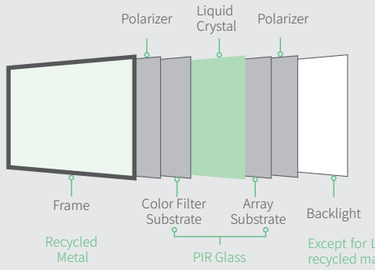
BOE Display integrates green principles into product development, focusing on promoting environmentally friendly materials to reduce environmental impact. By using a high proportion of recycled materials, promoting biodegradable packaging, and collaborating with upstream partners to develop new low-carbon, environmentally friendly material technologies, BOE Display builds a green supply chain system from raw materials to end products.

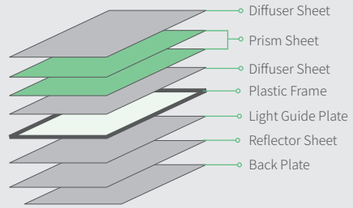
Low-Carbon Products Materials

Under the premise of ensuring product performance, BOE Display continuously promotes the use of low-carbon materials in products while also investing in the development of low-carbon materials.

- **Recyclable Materials:** BOE Display promotes the reuse of waste materials in upstream supply chains for core components such as glass, plastic, and metal, establishing a material solution where recycled content accounts for more than 50%. Specifically, cover glass (CG) incorporates over 20% PIR-certified recycled material, and certain backlight modules have achieved full-scale production with recycled materials integrated across all core components.
- **Optical Grade Recycled Plastics:** In optical films such as light guides, diffusion, prisms, and reflectors, BOE Display has implemented PCR technology, solving issues related to color degradation and scratch resistance, and expanding the application range of recycled materials.
- **Low-Temperature, Low-Volatility, Fluorine-Free Materials:** BOE Display actively verifies materials such as low-temperature, low-volatility, and fluorine-free solutions. It has completed the development of 0VOC diffusion, LTS PCBA, and LED materials, and is conducting research on low-temperature baking resin materials, PFAS-free resins, LCDs, and optical films.

Green LCD Products





Except for LEDs, 100% of backlight materials can achieve recycled material solutions

Types of Applied Recycled Materials:

Full-series optical films (diffuser sheet, prism sheet, reflector sheet) - PET material (PCR)

Light guide plate - PMMA&MS material (PIR)

Plastic Frame - PC material (PCR)

Back plate - Recycled metal (steel, aluminum, stainless steel)

Packaging Materials

BOE Display focuses on optimizing packaging materials by using waste items and recycled resources, reducing dependence on new raw materials, and minimizing the environmental burden in the packaging process.

- **Application of Eco-friendly Plastic Trays:**

  The tray recycling rate for LCD products is 30%, reducing the use of virgin materials and promoting plastic recycling.
- **Promotion of Biodegradable and Recycled Materials:**

  All outer packaging cartons are made from renewable or 100% biodegradable green materials.
- **Reuse and Innovative Design of Packaging Materials:**

  Develop reusable packaging designs, such as DIY paper shelves and DIY paper desktop projection devices. These designs enhance the practicality and fun of packaging while effectively extending the lifespan of packaging materials.

  Developed the second-generation green display packaging solution, achieving green packaging through strategies such as the use of green materials, efficiency improvement, and packaging material reuse.

  In 2024, a total of 959,000 packaging boxes, 11.52 million trays, and 112,000 wooden pallets were recycled, collectively reducing carbon dioxide emissions by 22,000 tons.

Accelerating Green Certification

BOE Display is committed to minimizing carbon emissions throughout the entire product lifecycle. Through systematic calculation and assessment of product carbon footprints, the company adopts carbon-reduction measures such as identifying energy-saving and low-carbon material applications. BOE actively seeks industry authority certifications. By 2024, **48** products' carbon footprints will have been certified by third parties.

case 14-inch NB Display Carbon Neutral Certification

By promoting carbon reduction with suppliers, reducing carbon emissions in manufacturing, and offsetting remaining carbon emissions through carbon credits, BOE Display has piloted the creation of "zero-carbon products," achieving a net-zero carbon footprint for the 14-inch NB display panel.

Obtained the first Carbon Neutrality Certification for 14-inch NB display issued by SGS

Reducing carbon emissions from supply chain raw materials + reducing carbon emissions from on-site production + offsetting the remaining emissions

Low-Carbon Design

- Under the premise of ensuring performance, integrate low-carbon energy efficiency into product design, using “3R1D” principles for low-carbon design. Light-weight design and optimization to reduce carbon emissions.

Low-Carbon Materials

Increase the proportion of recycled materials in raw materials

- 20% recycled material in glass substrate
- 20% recycled material in backsheet
- 40% recycled material in adhesive frame

Packaging materials used

- 100% recyclable materials

Low-Carbon Production

Energy conservation and consumption reduction, carbon reduction at the source

- Energy efficiency improvements, using 100% clean energy in manufacturing.
- 100% collection and treatment of fluorine-containing exhaust gas, with a treatment efficiency of over 95%.

Low-Carbon Logistics

Select low-carbon emission transportation methods

- Select low-carbon transport solutions, such as eco-friendly logistics for delivery.

Low-carbon end-of-pipe treatment

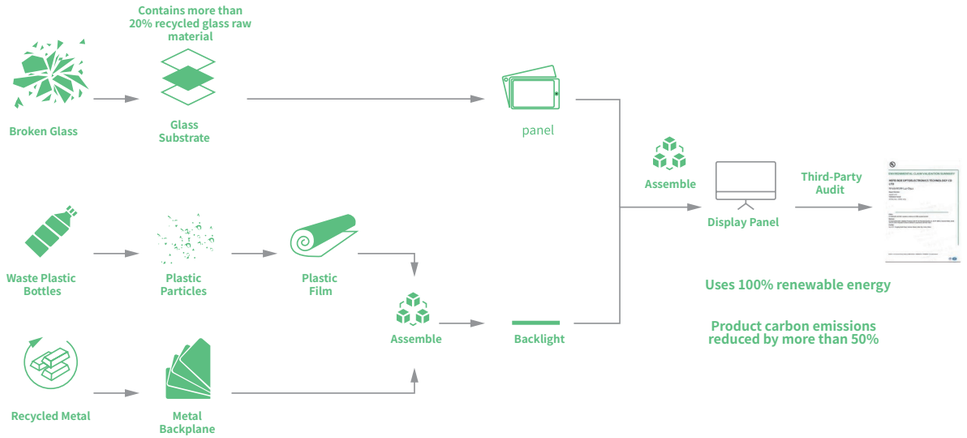
End-use utilization, promoting circulation

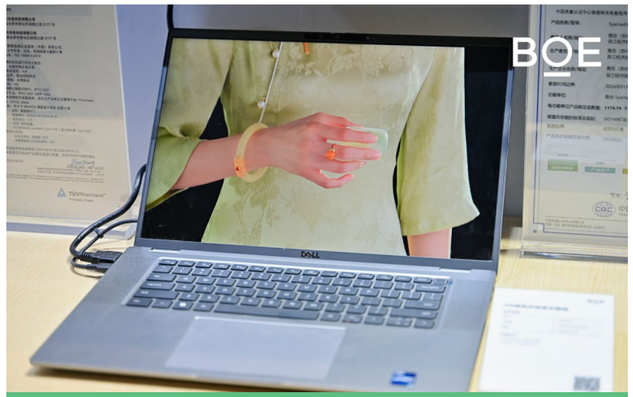
- Circulation rate at the factory level reaches 97%
- Waste conversion and utilization rate reaches 100%

case

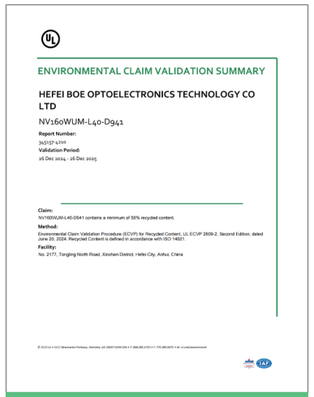
16-inch NB Product Receives UL 2809 Recycled Content Certification

BOE's 16-inch laptop features a low-carbon module utilizing 58% recycled materials and 100% renewable energy during production, achieving over 50% reduction in carbon emissions, and it has obtained a product carbon footprint certificate issued by the third-party authoritative certification body TÜV Rheinland.





16-inch NB Product Diagram



ENVIRONMENTAL CLAIM VALIDATION SUMMARY

HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO LTD

NV160WUM-L40-D941

Report Number:
342537.1.1.1

Validation Period:
16 Dec 2024 - 16 Dec 2025

Claim:
NV160WUM-L40-D941 contains a minimum of 58% recycled content.

Method:
Environmental Claim Validation Procedure (ECVP) for Recycled Content, UL ECVP 2809-2, Second Edition, dated June 20, 2024. Recycled Content is defined in accordance with ISO 14021.

Facility:
No. 2177, Tangling North Road, Xinchen District, Hefei City, Anhui, China

16-inch NB UL Certification Document

New Vision for Future Development

As an essential part of the industry, the display industry is accelerating its transition toward green and low-carbon development under the global drive for carbon neutrality. Strong policy support has established a robust institutional framework for the industry's sustainable development. *The Carbon Border Adjustment Mechanism* (CBAM) and *the Ecodesign for Sustainable Products Regulation* (ESPR), core policy instruments of the European Green Deal, are driving low-carbon transformation of products from trade and design perspectives respectively, exerting profound impacts on global supply chains and export-oriented enterprises. The *Green Development Action Plan for the Display Industry* released by China's Ministry of Industry and Information Technology sets specific targets: by 2025, green display products should account for 50% of the market, manufacturing energy consumption should decrease by 30%, and water recycling utilization rate should reach 95%.

Material innovation provides core support for green product development

The large-scale application of bio-based materials, low-toxicity materials, and recycled materials has become an industry trend. International standardization organizations and industry bodies continue to improve environmental rating systems for materials, regulations on hazardous substances control, and recycling guidelines, while updating energy efficiency standards and recyclability assessment mechanisms to provide technical benchmarks for green product development.

The improvement of the green labeling system has promoted environmental management across the entire product life cycle

According to data from the Global Ecolabelling Network (GEN, 2024), continuously rising standards for energy efficiency labels, environmental labels, and sustainability certifications are driving improvements in environmental management across product lifecycles. The China Electronics Standardization Institute's *White Paper on Green Development in the Display Industry*, released in 2024, points out that green labels have become a key factor in enhancing product market competitiveness.

As a industry leading manufacturer of display devices, BOE Display actively embraces the green development trend, facilitating the application of renewable energy across its diverse scenarios. BOE Display is expanding the application boundaries of perovskite photovoltaic technology by integrating it into various devices such as metal curtain walls, power station controllers, and consumer electronics. This supports the development of the upstream building materials and power storage markets while creating demand for environmental protection and green consumption, empowering low-carbon upgrades across multiple sectors through innovative technologies.

The trend toward green products in the display industry presents new opportunities and challenges for enterprises. BOE Display focuses on green product innovation, promoting the application of renewable energy across industries and multiple scenarios in display products and related processes, integrating green attributes into the entire product lifecycle. The company will continuously increase the proportion of green materials used, advance more sustainable and environmentally friendly product designs, and steadily promote initiatives such as green product labeling, contributing to global low-carbon development through more pioneering practices.

5.0

Foster a Low-Carbon Culture

- Building a Low-Carbon Workplace
- Developing Green Capabilities
- Leading Green Initiatives
- New Directions for Future Development

Building a Low-carbon Office

BOE integrates internal standards with industry norms, establishing a long-term low-carbon office mechanism by upgrading green administrative service scenarios and certification systems. Through multi-dimensional standard certification covering facility configuration, energy-saving measures, outcome evaluation, and management innovation, BOE creates a low-carbon working and living environment for employees. Currently, the coverage rate of green administrative service scenarios has reached **34%,** demonstrating significant results.

Establish a Green Points System

BOE Display, centered on the concept of sustainable development, focuses on green campuses, offices, transportation, and living scenarios, and has innovatively launched the "Green Action" administrative service points management system. Employees can manually log their activities to accumulate green points, and the system uses a reward/deduction mechanism to incentivize individual behaviors and overall performance, along with rankings based on points and carbon reduction.

In 2024, employees cumulatively reduced approximately 2,883tons of carbon emissions through green check-ins and themed activities, equivalent to planting 130,000 trees[7]. Around 1.32 million check-ins were recorded, with an employee participation rate of 64%, an increase of 28% compared to 2023.

Cumulative emission reduction: approximately
2,883 tons

Equivalent to planting trees
130,000

Number of participants in point check-ins
1.32 million person-times

Employee participation rate
64%

Increase compared to 2023
28%

Green Points Platform

Create Green Scenarios

BOE Display has piloted an innovative management model in its dormitories by linking living area accommodations with a points-based system, comprehensively promoting energy-saving and consumption-reduction initiatives. By establishing an energy management and control mechanism, the company has achieved precise energy consumption measurement, integrated bed resource allocation, and tiered energy management. Furthermore, through key initiatives such as promoting green campus awareness, organizing green-themed activities, and recognizing outstanding green dormitories, BOE empowers production and operations with a green culture, driving value co-creation.

Green Dormitory

- **Energy-Saving Management and Carbon Reduction Practice:** As of December 2024, a total of **70** energy-saving measures have been implemented, covering dormitories and public areas. It has accumulated a total electricity saving of **1,313** kWh and reduced carbon emissions by **0.7** tons.

Green Canteen

- **Low-carbon Operation:** By optimizing the layout and space of the canteen, visualized and paperless operations are realized. Green points QR codes are set up at dining tables for secondary scanning, and energy-efficient equipment is updated and replaced to achieve energy conservation and carbon reduction.
- **Sustainable Certification:** From material procurement, processing to waste disposal, the entire process follows low-carbon principles. Carried out the green administrative management innovation system project and business certification, with more than 20 organizations obtaining the "Green Environmental Protection Restaurant" certification from the China Catering Industry Association.

7: The selection of this calculation formula and emission reduction coefficient is based on Appendix 27 Appendix 2 Environmental Key Performance Indicators Reporting Guidelines issued by Hong Kong Exchanges and Clearing Limited (HKEX) (File name: HKEX Appendix 27 Appendix 2 Environmental Key Performance Indicators Reporting Guidelines.pdf). The calculation logic of "Carbon Dioxide (CO_2) Emission Reduction (R) = Number of Trees (T) × CO_2 Emission Reduction Coefficient per Tree (RF)" and the emission reduction coefficient (23 kg/tree) corresponding to "banyan trees (at least 5 meters away from buildings)" are both derived from the relevant provisions of this guideline.

Green Café

- **Green Plant Science Popularization:** According to the data of carbon dioxide absorbed by plants, the layout is scientifically arranged to ensure fresh air. At the same time, green labels are set up to cultivate green awareness.
- **Coffee Recycling Mechanism:** A classified recycling mechanism is established, and coffee grounds are used for plant fertilization, coffee-flavored latte, and sustainable products (such as coffee grounds cups, pens, etc.).

Green Office Environment

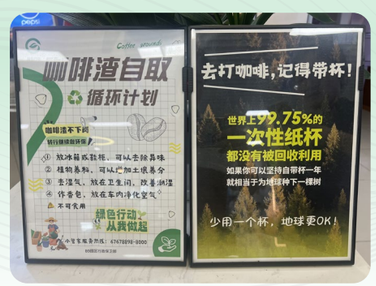
- **Paperless Office:** Relying on display technology and digital means, through electronic badges, door signs and digital signs for one-click batch information update, paperless office is realized.
- **Zoned Lighting:** According to the functional division of the office area and the law of personnel flow, the space is divided into multiple zoning areas, and precise lighting control is realized through an intelligent control system.

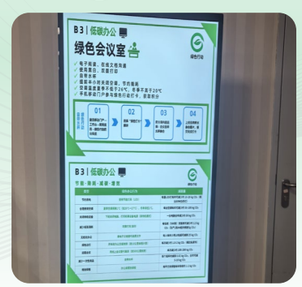
Green Travel

- **Low-carbon Travel Management:** A green travel management system is established through the i-travel business trip platform to realize the full-process digital management of business trips.
- **New Energy Promotion:** The proportion of new energy vehicles in official vehicles has been increased to over 90%. Charging piles are fully covered in the park, and green parking spaces are set up to practice green commuting.

Green Conference

- **Digital Attendance Management:** Through online appointment and electronic check-in, the conference resource management efficiency is improved.
- **Paperless Conference:** Deploy electronic table signs, conference all-in-one machines, whiteboards and other equipment to promote paperless conference construction.
- **Energy Consumption Monitoring:** Upgrade the energy monitoring system to monitor conference room energy consumption in real time. Combined with daily operation and maintenance, a green conference room system is built.





BOE Display is committed to building a talent team equipped with diverse skills and forward-looking vision through diversified communication and training activities, cultivating employees to become leading talents in the field of sustainable development.

Externally, the company actively organizes and participates in major events related to sustainable development, sharing cutting-edge low-carbon concepts and technological achievements with industry partners, and working together with industrial chain partners to build a sustainable development ecosystem.

Developing Green Capabilities

As business expansion and climate actions deepen, the company faces growing demand for diverse and multidisciplinary talent. In 2024, the company vigorously advanced talent capability development by conducting diversified and multi-level training programs, accumulating over **43,300** hours of training in total. These initiatives aim to enhance employee skills and drive behavioral change, foster a long-term culture, and support the fulfillment of climate commitments.

Sustainable Talent Cultivation System

System Features

- **Diversified:** Concept advocacy, low-carbon capability building, and legal and regulatory trends.
- **Multi-form:** Combination of theory and practice, online and offline integration, and internal and external integration.
- **Multi-level:** Special training for different positions and job levels.

Cultivation Objectives

- Compound talents with diverse skills.
- Industry leaders with sustainable thinking.

Value Output

- Shape green culture.
- Fulfill climate commitments.

Diversified, Multi-form, and Multi-level Employee Training

Future-oriented Diversified Content

Formulate diversified training content, broaden employees' horizons, and improve the necessary skills to cope with complex business environments.

Key Training Content

- **Concept Advocacy:** Conveying carbon neutrality, World Environment Day, and other concepts.
- **Low-carbon Capability Building:** Product carbon footprint accounting and certification training, greenhouse gas training, SBTi training, energy conservation and emission reduction training.
- **Legal and Regulatory Trends:** Interpretation and training of environmental laws and regulations, energy-related laws and regulations.

Demand-oriented Diversified Forms

In the process of selecting training formats, fully consider training needs and the feasibility of activity implementation to ensure participants gain knowledge.

Key Training Forms:

- Combination of theoretical learning and hands-on practice to promote understanding and knowledge precipitation.
- Integration of online and offline to ensure the smooth progress of training.
- Combination of internal employee training and external environmental activities to internalize sustainable concepts both inside and outside the company.

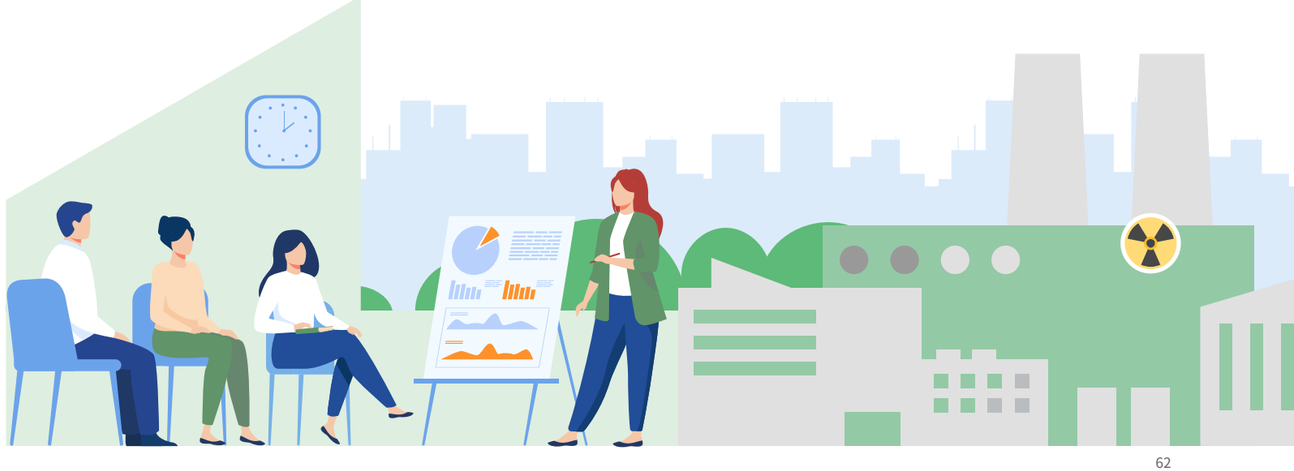
Precision-focused Multi-level Training

The company provides customized learning opportunities for employees in different positions, focusing on the key skills required for their positions to help employees better develop their potential.

Key Training Levels:

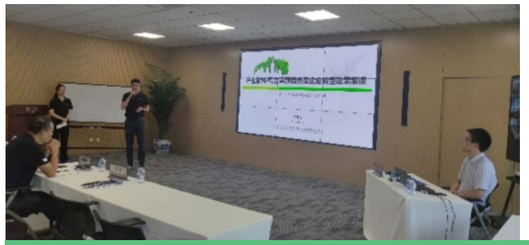
- **Job-specific Training:** Internal auditor training for environmental, occupational health, and energy management systems, and personnel training for key environmental positions.
- **Management-specific Training:** EHS-related systems, policies - supervisors, department managers, and general managers.

BOE Display focuses on building low-carbon capabilities, conducting thematic training centered on low-carbon concepts and policies, dual carbon related standards, and dual carbon pathways and methodologies. In 2024, the training covered green management teams and technical safety leaders within the display business, accumulating over **770** participants in low-carbon capability training. This enhanced employees' understanding of low-carbon work and provided talent support for achieving carbon neutrality in our operations.



Low-carbon Capability Building

Training Category	Training Topic	Training Objects	Number of Trainees
Low-carbon Concepts and Policies	Industrial Carbon Neutrality and Renewal Trends and Enterprise Transformation Policy Interpretation	Carbon Neutrality Leadership Team, Working Group, General Managers of Each Factory and Heads of Technical Departments	300+
Carbon Peaking and Carbon Neutrality Relevant Standards	ISO 14064&GHG Protocol	Heads of Technical and Safety Departments and Engineers in Factories	120+
	ISO 14067&PAS 2060	Heads of Technical and Safety Departments and Relevant Personnel in Factories	50+
	Product Carbon Footprint Special Training	Relevant Personnel in Technical and Safety Departments of Factories	50+
"Dual Carbon" Paths and Methods	"Dual Carbon" Basic Concepts and Carbon Neutrality Path Training	Carbon Neutrality Working Groups, Heads and Section Chiefs of Technical Departments, and Engineers in Factories	150+
	Carbon Emission Calculation Training	Relevant Personnel in Technical and Safety Departments of Factories	50+
	Scientific Carbon Target (SBTi) Setting Training	Heads of Technical and Safety Departments and Relevant Personnel in Factories	50+



Emerging Trends in Industrial Carbon Neutrality Transformation and Interpretation of Corporate Transition Policies

Dual Carbon Basic Concepts and Carbon Neutrality Path Training

BOE Display continues to strengthen its green communication initiatives, actively building a comprehensive green communication matrix to consolidate internal consensus and set external benchmarks, driving the integration of dual carbon goals into the entire corporate development chain. Internally, we have established an official WeChat account dedicated to green development, publishing weekly updates on the latest dual carbon trends. Through engaging and accessible content combined with interactive formats, each article achieves an average readership of over 400 employees, effectively enhancing awareness of sustainable development. Additionally, we regularly release the monthly *Dual Carbon Newsletter*, which focuses on analyses of green trading markets, interpretations of key international and domestic policies, assessments of low-carbon industry trends, and updates on corporate social responsibility. This publication provides in-depth insights into industry hot topics and has become a key platform for internal green knowledge sharing. Externally, we disseminate dual carbon-related news through the "BOE Display" official WeChat account and BOE's official Weibo channel, telling compelling stories about green development in diverse formats to strengthen our corporate green brand image. Furthermore, leveraging the Environmental and Dual Carbon Information Insight Platform, we simultaneously distribute updates on our dual carbon actions, creating synergies with integrated industry trends, policies, regulations, and high-quality resources to promote collaborative low-carbon transformation across the industry and demonstrate the responsibility and leadership of a technology enterprise.

Weekly publish the latest dual-carbon developments through the internal Green Development official account

Regularly publish the monthly *Dual Carbon Information Bulletin*

Release dual carbon news through the BOE Display official account and BOE's Weibo

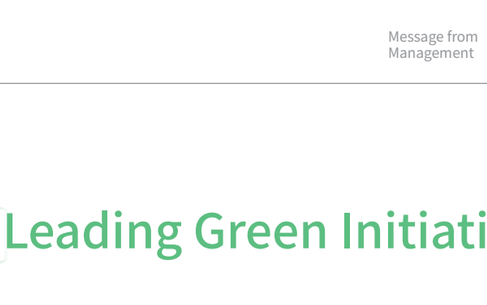
Push corporate dual carbon initiative updates via the environmental dual carbon information insights platform

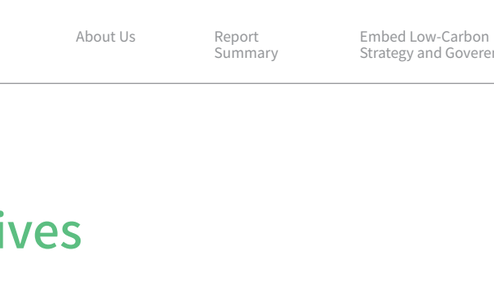
Leading Green Initiatives

BOE Display deeply understands that the low-carbon transformation of the industry requires the collective efforts of all partners. Based on its own development achievements, the company actively participates in and hosts global exchange events, sharing cutting-edge sustainable development concepts and the latest technological advancements with industry partners, promoting mutual growth and integration, and jointly advancing towards a new era of green and low-carbon development.

case International Conference on Display Technology 2024(ICDT 2024)

From March 31 to April 3, 2024, the International Display Technology Conference (ICDT 2024), hosted by the Society for Information Display (SID), was held, bringing together experts, scholars, and industry representatives from around the world to explore innovative achievements in electronic information technology and the latest industrial trends. BOE Display showcased cutting-edge innovative applications across various fields, including low-carbon displays, as well as its latest products empowered by AI and low-carbon technologies, promoting an "innovative and green development" model to support the cultivation and transformation of new-quality productivity within the industry.





Diverse Innovative Products

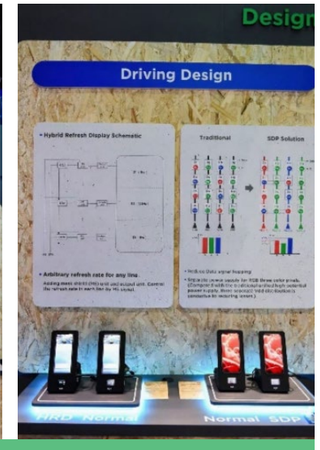
As a leading display company, BOE Display consistently integrates green principles into product design R&D, manufacturing, packaging, and transportation, creating green, low-carbon, and eco-friendly display products and advocating a more sustainable lifestyle to end consumers.

Low-Power Display Product Zone

case International Display Week (SID Display Week 2024)

In May 2024, BOE Display attended the Society for Information Display's Display Week (SID 2024), where it showcased multiple world-first technological innovations and cutting-edge products in the field of low-carbon solutions. The company introduced for the first time its "AI-powered Intelligent Display for All Scenarios" technology direction and related solutions, redefining the new trend of global display industry development.

At the core area of the exhibition zone, BOE Display has newly established a green and low-carbon section, comprehensively showcasing its industry-leading position in green intelligent manufacturing, green product technologies, and green supply chains. The exhibition features multiple advanced low-power technologies and green, low-carbon products such as laptops, monitors, and smartphones, achieving full-process integration of sustainable development—from design and modules to panels and final devices.



Low-Carbon Zone

case

2024 World Display Industry Innovation and Development Conference

On December 19, 2024, the World Display Industry Innovation and Development Conference was held in Chengdu. During the conference, BOE showcased a range of advanced display technologies, latest achievements in the low-carbon field, and diversified innovative applications. Through technology zones centered around its three core technology brands—technology zone, green zone, and scenario zone—BOE comprehensively presented the practical outcomes of "Screen of Things" in empowering a better life, fully demonstrating its profound expertise and leading advantages in the field of innovative display technologies, delivering to global users more realistic, premium, intelligent, and green visual experiences.

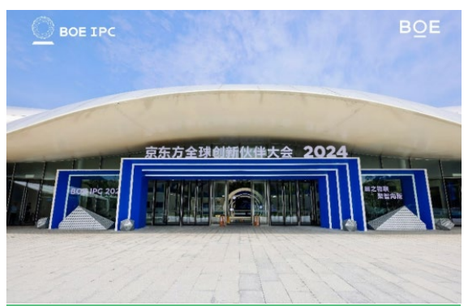
Product Carbon Management Certification Results

Green Highlighted Booth

case

Global Innovation Partner Conference · 2024

On September 4, 2024, BOE's Global Innovation Partner Conference 2024 (BOE IPC · 2024) was successfully held. The theme of this conference was "Screen of Things, Intelligence Drives Innovation" aiming to promote high-quality sustainable development of enterprises through innovative technology and green development.

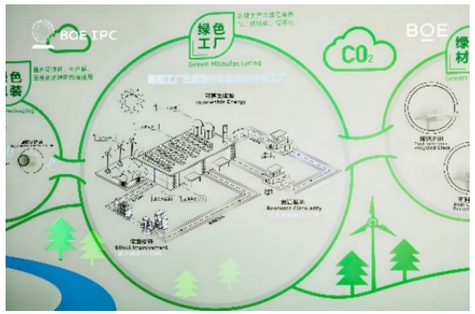


BOE IPC · 2024 Venue

BOE IPC · 2024 Exhibition Hall

For the first time, this exhibition has added a green and low-carbon zone in the core area, vividly showcasing BOE Display's achievements in green management, green design, green materials, green factories, green supply chain, and digital platforms through a green honor wall and interactive green wall. By sharing experiences, it aims to promote collaboration among upstream and downstream ecosystem partners to co-create a green ecosystem for the display industry.

Green Honor



Green Interactive Wall

In the future, BOE Display will continue to adhere to innovative development, actively explore and apply low-carbon technologies, collaborate with upstream and downstream partners to promote green and low-carbon transformation across the entire industrial chain, jointly build a low-carbon ecosystem, and contribute to achieving a better green future.

New Directions for Future Development

With the acceleration of global digital transformation, the display industry has ushered in unprecedented development opportunities, accompanied by continuous technological innovations. Driven by multiple factors such as policy support, market demand, and technological innovation, China’ s display industry has also demonstrated a growth trend, becoming a significant force in promoting high-quality economic development. At the same time, the rapid advancement of emerging technologies such as 5G, cloud computing, big data, and artificial intelligence has created even broader development prospects for the display industry.

Increased demand for composite talents

As global emphasis on green development continues to deepen, enterprises' demand for multidisciplinary talent equipped with knowledge and skills in dual carbon, carbon footprint management, and ESG will steadily increase. Cultivating ESG multidisciplinary talent will become one of the key strategies for corporate sustainable development. To this end, companies should strategically deploy talent management across recruitment, utilization, development, and retention, strengthen the introduction of such multidisciplinary talent, fully leverage their advantages in production and operations, provide ESG-related training for employees across functions to promote capacity building, and leverage related performance evaluation and incentive mechanisms. This comprehensive approach will foster multidisciplinary talent teams capable of adapting to emerging trends and support long-term corporate growth.

The materiality of cross-sector industrial communication and collaboration is becoming increasingly prominent

With the continuous advancement of industrial technology, industry characteristics are increasingly exhibiting trends toward intelligence, phantomization, and sharing. In fields such as product development and standard setting, integration and convergence will become the primary modes of innovation. To effectively respond to these trends, cross-sector collaboration and communication are becoming increasingly important, leveraging the advantages of emerging technologies such as 5G, cloud computing, big data, and the Internet of Things to promote functional crossover and integration, expand application areas, and achieve a comprehensive industrial upgrade from products to systems. On this foundation, enterprises should further strengthen cooperation among government and enterprises, among enterprises themselves, and between enterprises and academic institutions, fully utilizing the unique strengths of each party. By relying on green innovation-themed conferences, forums, and other events, they can facilitate the exchange and collaboration of cutting-edge achievements across industries, fostering an innovative and sustainable development-oriented cultural climate.

BOE Display has already established a solid foundation in cultivating compound talents and promoting industrial exchange and cooperation. Going forward, we will continue to explore innovative approaches and methods for sustainably developing talent, aiming to cultivate and deliver high-quality professionals to the industry. Externally, we will also actively promote cross-sectoral exchange and collaboration, facilitate the sharing and integration of innovative outcomes, and work with all stakeholders to advance the high-quality development of the industry.

Green Initiative Achievements and Honors

Green Management

BOE Display has shaped green management leadership by joining international initiatives and innovating green action models.

Green Management Governance Achievements

- Relying on databases such as Ecoinvent, it has established the industry's **first** display component product carbon footprint management platform.
- In 2024, employees reduced carbon emissions by approximately **2,883** tons through green check-ins and themed activities, equivalent to planting **130,000** trees; the number of check-ins reached **1.32 million** person-times, with an employee participation rate of **64%**, an increase of 28% compared to 2023.

Green Management Honors

- **9** factories joined the Science Based Targets Initiative (SBTi), and Chongqing BOE Optoelectronics Technology Co., Ltd. became the first display manufacturing enterprise in mainland China to join SBTi.
- **24** factories obtained ISO 14001 Environmental Management System Certification.
- **22** factories obtained ISO 50001 Energy Management System Certification.
- **22** factories obtained ISO 14064-1 Greenhouse Gas Emission Certification.
- Fuzhou BOE Optoelectronics Technology Co., Ltd. was included in the COP28 *2023 Corporate Climate Action Case Collection*.
- Beijing BOE Display Technology Co., Ltd. won the 2024 "Dual Carbon Model Enterprise Award".

2024 Dual Carbon Model Enterprise Award

- Beijing BOE Display Technology Co., Ltd. won the 2024 China Industrial Low-Carbon "Pioneer" Enterprise Award.
- BOE Display won the 2024 IDC Sustainable Development Pioneer Enterprise Explorer List Enterprise Award.
- BOE Display won the 2024 NetEase Selection "Outstanding Enterprise Award".
- BOE's case study *"Flat Panel Display Industry: Exploring a Multi-dimensional and Full-chain Green Low-Carbon Transformation Path"* was selected into the China Entrepreneur Association's "2024 Excellent Corporate Green Low-Carbon Development Practice Cases".

Green Factory

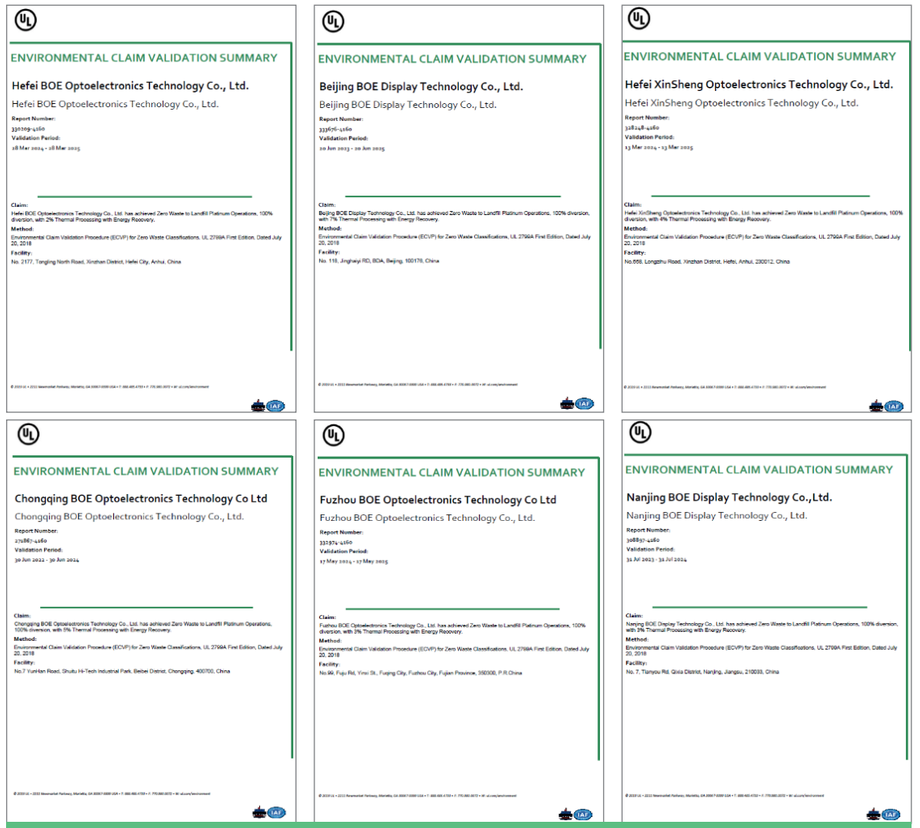
BOE Display integrates the concept of green development into every aspect of factory management, achieving remarkable results in energy conservation and emission reduction. Multiple factories under its umbrella have obtained authoritative certifications.

Green Factory Governance Achievements

- In 2024, a total of **160** new energy-saving and emission-reduction projects were implemented. The usage of green electricity (including green certificates) reached **3.17 billion** kWh, achieving a total carbon emission reduction of approximately **1.8 million** tons
- In 2024, our carbon emissions decreased by **63,380** tons year-on-year, and the proportion of renewable energy usage reached **29%**.

Green Factory Honors

- The BOE Mianyang Gen 6 AMOLED (Flexible) production line obtained the **first** carbon-neutral certified factory in the display device industry.
- **18** factories awarded the National-level Green Factory title.
- **9** factories awarded the municipal-level or above "Zero-Waste Factory" title.
- **1** factory selected as a national-level zero-carbon enterprise model case.
- **7** factories obtained UL 2799 Zero Waste Management Gold Certification.
- **2** factories obtained UL 3600 Circularity Fact Sheet certification. Chongqing BOE has obtained the UL 3600 Circularity Metrics Verification Certificate and the UL 2799 Zero Waste to Landfill Gold-Level Verification Certificate. It is the first enterprise in Chinese mainland to achieve and secure the UL 3600 Circularity Metrics certification.
- **1** factory selected as a national-level industrial wastewater recycling typical case and awarded the national-level water-saving enterprise certification.
- **2** factories obtained the Three-Star Green Building Certification.
- The Fuzhou 8.5th Generation TFT-LCD production line won the "Lighthouse Factory" award, the highest honor in global intelligent manufacturing.
- Yunnan Invensight Optoelectronics Technology Co., Ltd. was awarded the "Five-Star Zero-carbon Factory" certificate under Category I and the PAS 2060:2014 carbon neutrality certificate.



UL 2799 Platinum Certification for Zero Waste to Landfill

UL 3600 Recurring Fact Certification

Certificate for the Full-Year Carbon Neutrality in Operations BOE Yunnan Invensight Optoelectronics Technology Co., Ltd.

Carbon Neutrality Certificate of Yunnan Invensight Optoelectronics Technology Co., Ltd. and Certification Certificate for Zero Carbon Factory (Type I)

Green Supply Chain

BOE Display extends its positive influence to the supply chain and shares advanced concepts and achievements with suppliers to co-build an efficient and sustainable ecosystem.

Green Supply Chain Governance Achievements

- Based on solid carbon accounting fundamentals, **428** suppliers were organized to participate in ISO 14064 series training.
- To share new concepts of green development, the company invited **375** display suppliers to attend the BOE Global Supply Chain Partner Conference (BOE SPC).
- The post-industrial recycled content (PIR) in the glass industry exceeds **20%**, the post-consumer recycled content (PCR) in metals exceeds **13%**, and the post-consumer recycled content (PCR) in plastics exceeds 60%, resulting in an annual emission reduction of **21,639** tons..
- In collaboration with logistics suppliers, biofuel shipping was promoted, achieving an annual carbon reduction of **461** tons.
- Realized **100%** recycling of Tray packaging materials for mainstream products.

Green Supply Chain Honors

- **4** factories were selected as National-level Green Supply Chain Management Enterprises.
- **2** factories won the 2023 China New Display Industry Contribution Award - Green Low-Carbon Award.

Green Products

BOE Display implements full-life-cycle management for green products and has achieved remarkable results in energy consumption reduction, recycling, and green certification.

Green Product Governance Achievements

- Product Energy Efficiency Improvement: Tandem stacking technology reduces component power consumption by **20%**; combined with LTPO technology, it reduces complete machine power consumption by **15%**; LPC high-brightness manufacturing process saves EL power by **15%**, and power efficiency reaches over **90%**.
- Product Material Reduction: IC usage is reduced by **50%**, PCB by **33%**. For example, the 86-inch green low-carbon whiteboard product, by using low-carbon recycled materials, lightweight design, and low-power design, achieves a weight reduction of **5.64%**, a power consumption reduction of **27.22%**, and a product carbon emission reduction of **21.14%**.

Green Product Honors

- **3** enterprises recognized as Industrial Green Product Design Demonstration Enterprises.
- 2024 Outstanding Green Technology Product Award.
- 2024 Outstanding Green Innovation Product Award.
- Green Certification: As of 2024, a total of **48** products have passed third-party certification.
- VUSION series electronic labels receives the first carbon footprint assessment report in the global retail field.
- The 14-inch NB display product became the first to obtain PAS2060:2014 Statement of Verification for Carbon Neutrality

2024 Outstanding Green Technology Product Award

2024 Outstanding Green Innovation Product Award

PAS2060:2014 Statement of Verification for Carbon Neutrality

Appendix I: List of Abbreviations

Abbreviation	Full English Name
About Us	
EPD	Electronic Paper Display
MLED	Mini Light-Emitting Diode
Upgrading Green Factories and Setting Benchmarks for Low-Carbon Production	
CDA	compressed air
SPEC	Specifications
COP	Coefficient of Performance
Oxide 7Mask	Oxide Semiconductor 7-Mask Process
Sputter Ulvac	Sputtering by ULVAC
A-Si	amorphous silicon
Glass Dep	Glass Deposition
Seal Oven	Encapsulation Sealing Oven
Cell	LCD Cell Assembly
Rework	Process Rework
PI	Polyimide
NMP	N-Methyl-2-pyrrolidone
PR	Photoresist
EHS	Environment、Health、Safety

Abbreviation	Full English Name
Upgrading Green Products and Stimulating Carbon Reduction Vitality	
PCR	Post-Consumer Recycled material
PIR	Post-Industrial Recycled material
IC	Integrated Circuit
PCB	Printed Circuit Board
OLED	Organic Light - Emitting Diode
LCD	Liquid Crystal Display
CG/SCF/Panel	Cover Glass / Sensor Cover Film / Display Panel
Tandem	Tandem OLED
LPC	Luminance Profile Control
CAEPC	Contents Adaptive EL Power Control
EIC	Electronic Integrated Circuit
ADS pro	ADS professional
BLU	Backlight Unit
GPO	Glass-Filled Polyolefin
EPO	Expanded Polyolefin
PCBA	Printed Circuit Board Assembly
LED	Light Emitting Diode
PFAS	Per- and Polyfluoroalkyl Substances

Appendix 2: About the report

Report Introduction

This report is the second low-carbon development report released by BOE Display. It announces the progress of BOE Display's 2050 carbon neutrality target for its own operations and elaborates on BOE Display's low-carbon development initiatives, achievements, and future plans.

Key Concepts

The concept of "Carbon neutrality" in this report is consistent with the PAS2060 *Carbon Neutrality Declaration Specification*, specifically referring to: within a certain period, all relevant greenhouse gas emissions of an organization do not lead to a net increase in the global atmospheric greenhouse gas content.

References

- [1] World Meteorological Organization *State of the Global Climate 2023*
- [2] World Economic Forum *Global Risks Report 2024*
- [3] Global Compact *Supply Chain Sustainability - A Practical Guide for Continuous Improvement*
- [4] China Academy of Information and Communications Technology *ICT Industry Green and Low-Carbon Development Report*
- [5] *Road to Carbon Neutrality: BOE Display Low-Carbon Development Report*
- [6] *BOE 2023 Sustainability Report*

Disclaimer

This report contains forward-looking statements, such as BOE Display's carbon neutrality targets and action plans. These forward-looking statements are uncertain, and many factors may cause the actual results to differ from those stated in the report. In the future, if there is any information adjustment, the latest published version shall prevail.

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