海尔智家
Haier smart home

# CARBON NEUTRALITY ACTION REPORT

HAIER SMART HOME CO., LTD.

Haier FISHER & PAYKEL Casarte AQUA GE APPLIANCES CANDY Leader

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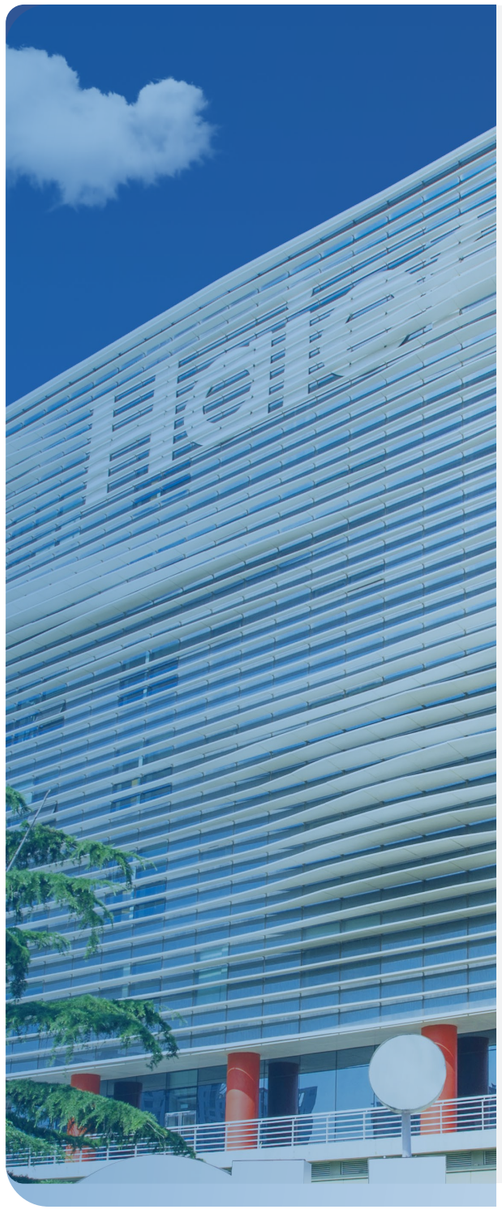
# Message from Leadership

## Toward Carbon Neutrality: Haier Smart Home's Green Mission and Intelligent Future



**Climate change is reshaping humanity's future, and the global energy transition sits at the heart of that transformation.** The International Energy Agency (IEA) estimates that appliances now account for more than 20% of global electricity consumption. This is not merely a statistic; it is a signal that energy use in homes and commercial spaces has become a strategic frontier in the race to decarbonization.

In response to this reality, Haier Smart Home has chosen to step forward proactively, transforming challenge into mission. We regard sustainability not as an optional add-on but as a core engine for industry renewal and long-term competitiveness. Our ambition is to drive a green transformation that extends from individual products to whole smart-home ecosystems—embedding sustainability at every stage, from the first design sketch to manufacturing, from daily use and intelligent interaction to end-of-life recycling and regeneration. Our aim is nothing less than a truly end-to-end low-carbon value system.

Sustainability is integral to the Haier ecosystem brand strategy and is deeply rooted in our corporate DNA. We believe green innovation is simultaneously an environmental duty and a competitive imperative: it enables us to deliver differentiated value on a global scale. True low-carbon transformation, in our view, begins with product innovation, is realized through ecosystem collaboration, and culminates in meeting users' aspirations for a better life.

### Reshaping the Industry's Green DNA Through the "6-Green" Strategy

Our **"6-Green"** lifecycle strategy is a systemic response to this challenge. It replaces isolated, point-in-time energy savings with an integrated value loop across **design - procurement - manufacturing - operation - recycling - disposal.** From green design and sustainable materials to lighthouse factories and zero-carbon parks in production, and finally to the world's first interconnected recycling-remanufacturing facility in our industry, we are closing material loops and minimizing resource loss by returning recycled inputs to sectors such as steel, automotive, and consumer goods.

### AI + Sustainability: Empowering Global Users' Low-Carbon Living Through Intelligent Technology

Across our operations and product portfolio, AI, big data and IoT enable finer energy management, adaptive controls, and service models that reduce consumption while improving health, comfort and convenience. Digitization of inventory, procurement and manufacturing has raised efficiency and lowered costs—and it has accelerated our decarbonization pathway.

On the product front we focus on five priorities—material upgrading, modular commonality, packaging optimization, energy-efficiency improvement and refrigerant recovery—to build globally competitive green solutions. Our smart appliances and energy-management systems integrate AI and data to optimize energy use from homes to buildings; Our smart building solutions have helped commercial buildings worldwide achieve quantum leaps in energy efficiency, with this business segment exceeding RMB 10 billion in 2024, continuing to lead the magnetic levitation market with decisive technological advantages.

### Co-creating a Zero-Carbon Future Through an Open Ecosystem

Carbon neutrality is not a solo act; it is a global, collaborative symphony. We actively partner with suppliers, recyclers, research institutions and international organizations to cultivate an open green ecosystem—leading the development of carbon-footprint standards, scaling high-value uses for recycled plastics, advancing climate initiatives, and creating multi-stakeholder platforms that unite government, industry and academia. Through these efforts, we seek to contribute a clear, practical pathway to global green transition informed by Chinese experience and global insight.

While the journey is long, consistent action ensures eventual success. Haier Smart Home solemnly commits to achieving operational carbon neutrality no later than 2050. We recognize this is a marathon of technological breakthroughs, managerial innovation and ecosystem collaboration. Yet we are convinced that every product upgraded, every factory efficiency gain, and every jointly developed standard reduces the planet's load and strengthens momentum for the future.

**We are ready to work shoulder to shoulder with partners worldwide—using technology as our pen and ecosystems as our canvas—to co-create a smarter, greener and more sustainable tomorrow. Every kilowatt-hour has the power to change the world; every home deserves a future that endures.**

# About Haier Smart Home

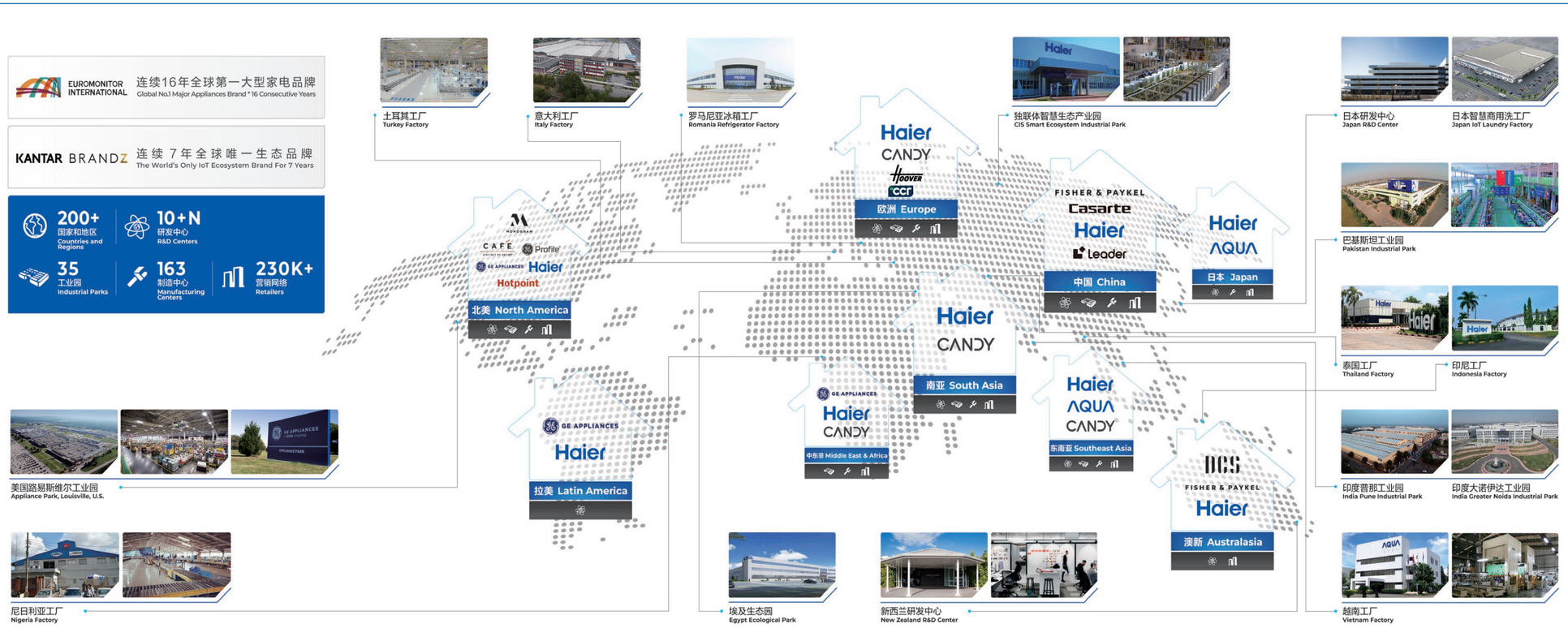
## Company Overview

Founded in 1984, Haier Smart Home originated in Qingdao and has grown to become a global leader in smart home ecosystems. Its business footprint now extends to over 200 countries and regions, dedicated to delivering comprehensive, intelligent solutions for better living to hundreds of millions of families worldwide.

In 1993, Haier Smart Home listed on the Shanghai Stock Exchange (600690.SH) and has progressively established an "A+D+H" global capital market presence (690D.DE/06690.HK). This capital platform spanning Shanghai, Frankfurt, and Hong Kong effectively supports globally coordinated operations across R&D, manufacturing, and marketing systems.

Centered on core categories including refrigerators, washing machines, air conditioners, and kitchen appliances, Haier Smart Home has built integrated service capabilities covering smart appliances and intelligent scenarios. The company operates seven global brands: Haier, Casarte, GE Appliances, Fisher & Paykel, and others. Through the strategic acquisitions of CCR (Commercial Refrigeration) and Kwikot (South African water heaters) completed in 2024, the company continues to strengthen its industrial presence in global commercial refrigeration and water heater sectors.

As of 2024, Haier brand major appliances have ranked first globally in retail volume for 16 consecutive years, with core categories such as refrigerators and washing machines continuing to lead the industry. This market performance not only validates exceptional product capabilities but also reflects the enduring trust global consumers place in the Haier Smart Home brand.




### Haier

- 连续16年稳居全球第一大型家电品牌
- 产品覆盖全品类与全价格区间
- 全球市场核心品牌

- Global No.1 Major Appliances Brand for 16 Consecutive Years
- Full product offerings and full price range coverage
- Global core brand

### FISHER & PAYKEL

- 新西兰超高端家电品牌
- 世界上最以人为本的家电品牌
- 聚焦社交厨房理念

- Luxury premium home appliances brand in New Zealand
- World's most human centered appliances brand
- Brand built on the social kitchen concept

### Casarte

- 国际高端家电品牌
- 高端白色家电的市场领军者
- 融合欧美现代经典设计风格

- International premium home appliances brand
- Market leader in premium white goods sector
- Contemporary and classic design with European and American style

### GE APPLIANCES

- 美国第一家电公司
- 服务超过一半的美国家庭
- 美国增速最快的家电公司和最受尊敬的公司之一

- No.1 home appliances company in the U.S.
- Serve over half of American household
- Fastest growing home appliances company and one of the most respected company in America

### AQUA

- 致力于以独特技术提升用户舒适体验
- 在日本与东南亚市场广泛认知
- 日本智能社区洗行业引领者

- Committed to improving user comfort experience with unique technology
- Widely recognized in Japan and Southeast Asia
- Leading in the smart community laundromat industry in Japan

### Leader

- 新世代首选家电品牌
- 年轻人的生活养成伙伴
- 以时尚设计、新潮科技，构建乐趣生活的无限可能

- New generation preferred home appliances brand
- Life companion of youngsters
- Through innovative technology and fashionable design to build a fun life of endless possibilities

### CANDY

- 打造智慧家庭解决方案的用户首选品牌
- 首个推出可通过 Wi-Fi 互联全系列家电的品牌
- 欧洲互联家电第一份额

- To be the first consumer choice in smart home solutions
- The first brand lauched a complete range of domestic appliances connected via Wi-Fi
- No.1 in market share of connected appliances in Europe

# Green Development Strategy

At Haier Smart Home, sustainability is not optional—it is imperative for our future. The company has established it as a core strategy driving long-term value, guided by the principle of "creating infinite possibilities through a boundless ecosystem" continuously advancing digital transformation and technological innovation while exploring pathways to high-quality sustainable development.

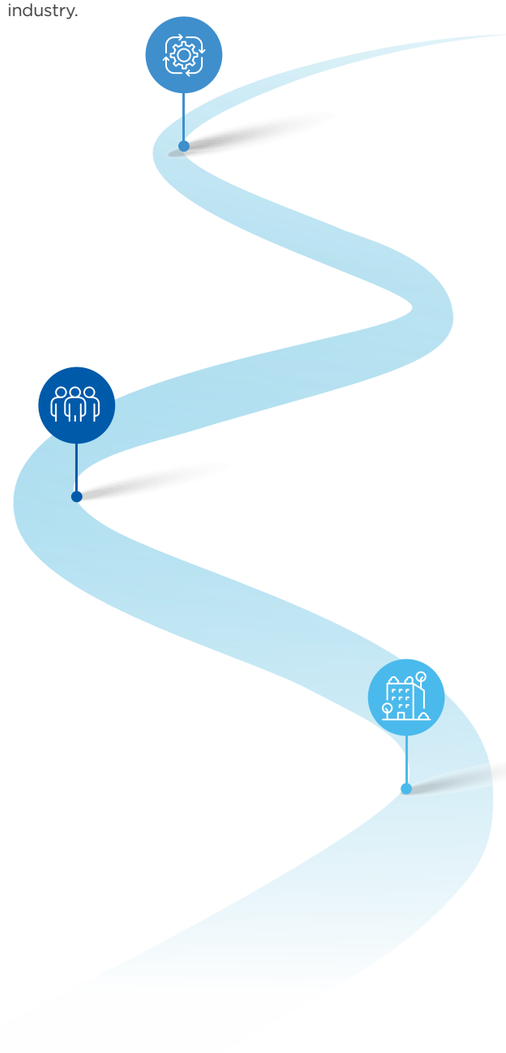
**Haier Smart Home's "6-Green" full lifecycle strategy achieves comprehensive coverage from R&D and manufacturing to supply chain and circular regeneration.** This represents not merely environmental responsibility fulfillment but a profound reshaping of the industrial ecosystem—driving value chain upgrades toward low-carbon, circular, and intelligent operations. Through continuous innovation, the company has achieved breakthrough progress in key areas including green intelligent manufacturing, circular economy systems, and low-carbon technology R&D.

Today, Haier Smart Home is systematically extending these proven green practices and solutions throughout its value chain, actively partnering with global value chain participants to pool collective strengths, exporting mature green capabilities to the global industrial chain, and demonstrating the innovative capacity and responsible leadership of Chinese enterprises in the global green transition.



# AI + Sustainability: The Smart–Green Convergence

In the era where digitalization meets carbon neutrality, Haier Smart Home is pioneering a new commercial paradigm of "Smart-Green Fusion." By deeply integrating artificial intelligence into the strategic core of sustainable development, we are building a complete value cycle that extends from our own operations to users' daily lives, and further empowers the entire industry.



## On the industry side

**We empower "scenarios" with "smart strategies,"** productizing and turning our verified "AI+Sustainability" capabilities into solutions. From smart platforms helping global commercial buildings achieve dual control of energy and carbon, to a ten-billion-scale industry leading the magnetic levitation market, we are translating Haier's green technological wisdom into deployable, verifiable zero-carbon commercial solutions for various industries.

## On the user side

**We enable "appliances" with a "smart brain,"** making energy saving an active, imperceptible smart experience. Smart appliances equipped with the "Smart Home Brain" learn user habits and synergize with home energy systems, transforming the home from an energy consumption unit into an efficient, economical energy node.

## On the enterprise side

**We reshape "manufacturing" with "intelligence."** Through AI-driven digital twins, intelligent scheduling, and precise energy control, we enable data streams to actively optimize carbon flows across R&D, procurement, production, and logistics, shifting energy efficiency improvement and cost control from passive management to predictive decision-making.

**We believe true sustainability represents the synchronized resonance of corporate growth and social value. Haier Smart Home's "Smart-Green Convergence" journey is demonstrating that the most intelligent technology should serve the greenest future, and the most steadfast sustainability commitment will ultimately forge the most enduring competitive advantage.**

# Sustainability Highlights

## Climate Commitment

### Carbon Strategy Targets

Haier Smart Home has released its **2050 carbon neutrality target framework**, with global **operational carbon neutrality** at its core and **value chain emission reduction** as a key extension, enabling comprehensive management of carbon emissions.

## Low-Carbon Operations

### Zero-Carbon Industrial Parks

Haier's Jiaozhou SCO Industrial Park and Haier's Qingdao Sino-German Industrial Park have both received the **first batch of "Zero-Carbon Park"** certifications in China, issued by the China Quality Certification Centre (CQC) and the China Energy Conservation Association.

### Sustainability Lighthouse Factory

Tianjin Haier Washing Machine Interconnected Factory has been included in the World Economic Forum's (WEF) fourth batch of **"Sustainable Lighthouse Factory"** list, marking the **first sustainable lighthouse from China**.

### Lighthouse Factories

Spanning Haier Smart Home's Refrigerator, Home Air Conditioner, Laundry, Smart Buildings, and Water Heaters& Purifiers businesses, making it the Chinese company with the most **"Lighthouse Factories"** globally

### Green Factories

**16** National-Level Green Factories

### Zero-Waste Factories

**9** Zero-Waste Factories

## Green Low-Carbon Products

### Green Circular Design

Haier Langjing X11 washer-dryer set, Casarte AI Dynamic Five-Constant Air System, and Leader Super Energy-Saving Pro cabinet and wall-mounted units received the **2026 German Design Award Green Circular Design Special Award**

### High Energy Efficiency Products

In the Chinese market, **home air conditioning products** lead with high energy efficiency standards; internationally, they also set the benchmark for regional energy efficiency standards such as Europe's A+++, Thailand's 5-star rating, and the U.S. ENERGY STAR certification.

European washing machine products exceed European A+++ energy consumption standards and have received German VDE certification, delivering **70%** greater energy savings than the new European standard

Haier launched the "A-30%" most energy-efficient refrigerator in the industry, receiving German VDE **"Super Energy-Saving"** certification

## Sustainable Solutions

### Multi-Energy Complementary Solutions

Haier has ranked No.1 in global sales of Air To Water Heat Pumps for **six consecutive years.** achieving cross-sector clean heating with ultra-high energy efficiency ratios, driving energy structure transformation

### Magnetic Levitation Technology

**#1 market share in China's magnetic levitation market**, reshaping efficient power systems with zero-friction, zero-loss air suspension technology, leading the central air conditioning energy-saving revolution

## Green Ecosystem

### Recycling Factory

**Haier Green Recycling (Laixi) Industrial Park**

The home appliance industry's first recycling interconnected factory. Dismantling capacity of **2** million units; plastic regeneration capacity of **30,000** tons.

**Cumulative recovery of waste home appliances in China**

nearly **30** million units

**Comprehensive recycling utilization rate in China**

over **95%**

### Green Supply Chain Management

**12** National-Level Green Supply Chain Management Enterprises

Residential air conditioning received the home appliance industry's first **"ISO 20400 Sustainable Procurement Conformity Statement,"** establishing a new global ESG benchmark

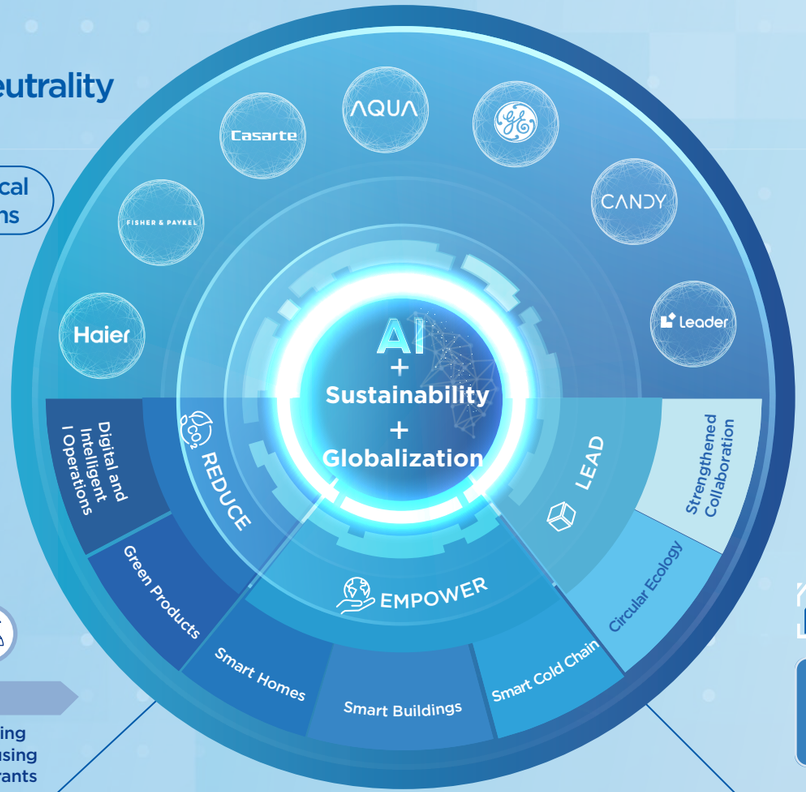
# Charting a Zero-Carbon Future: The Carbon Neutrality Action Plan and Vision of Haier Smart Home

**Vision: Advancing intelligent, zero-carbon lifestyles through technological innovation, promoting green development to empower future generations**

## Laying the Foundation for Green Manufacturing and Reducing Emissions from Operations

- Implementing Energy-Saving and Efficiency Enhancements
- Optimizing Energy Structure
- Diversifying Carbon Reduction Approaches
- Promoting Low-Carbon Office Practices

## Advancing Low-Carbon Transformation Across Product Lifecycles by Focusing on Five Key Areas


## Collaborates with suppliers, recyclers, industry associations, and consumers to establish a value co-creation network


## Closed-loop ecosystem: Leading a resource revolution by creating the industry's first full-chain circular system

Where interconnected factories and high-value recycling enable 'waste to be as good as new,' fostering a new industrial ecosystem.

## Beyond Home Appliances: Providing Full-Scenario Energy Solutions and Customizing Carbon-Neutral Pathways for Industrial Parks, Cities, and Sectors

**Ecosystem-level intelligence reshapes zero-carbon lifestyles**

Centered on the "Smart Home Brain," the system integrates whole-house energy management and utilizes AI-driven self-adaptive optimization to enable proactive energy savings while enhancing comfort.

**System-level control empowers building renewal**

The AI-powered "Building Brain" centrally coordinates electricity, cooling, and heating systems, providing customized dual energy and carbon control pathways for diverse building types, driving enhanced efficiency and sustainability.

**Technology-level innovation redefines the green cold chain**

Centered on SPI and transcritical $CO_2$ technology, achieving cascaded energy utilization and delivering an efficient and reliable low-carbon foundation for cold chain applications across all scenarios.

## Our Climate Strategy

**2024**

- Conduct first systematic global carbon inventory
- Establish carbon target baseline

**2025**

- Release the Haier Smart Home Carbon Neutrality Report
- Set carbon neutrality goals and develop a greenhouse gas reduction roadmap

**2030**

- Increase renewable energy usage in operations to **15%**
- Reduce global Scope 1 and 2 emissions intensity by **10%**

**2035**

- By 2035, the emission intensity per value added in the use stage of Refrigerator, Home Air Conditioner, Laundry, Smart Building, Water Heaters & Purifiers, and Kitchen Appliances sold domestically will decrease by **25%**

**2050**
**Achieve Operational Carbon Neutrality**

# Strategic Leadership: Advancing into the Carbon Neutrality Era

Haier Smart Home drives low-carbon transformation through innovation, deeply integrating green and low-carbon principles into its smart ecosystem strategy to shape a new paradigm for sustainable development.

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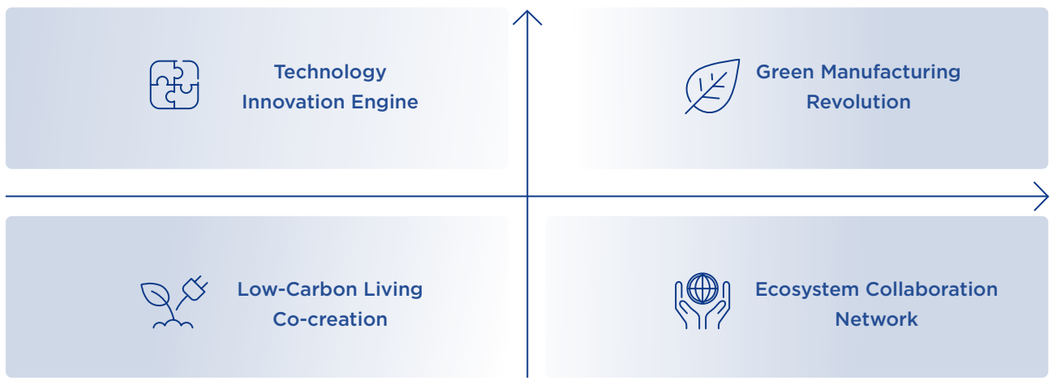
# Climate Action

The year 2025 marks the 30th anniversary of the UN Climate Change Conference (COP30), the 10th anniversary of the signing of the Paris Agreement, and the 5th anniversary of China's "Dual Carbon" goals. Global climate action has entered a new phase oriented towards implementation. The consensus on adaptation funding mechanisms and just transition reached at COP30, combined with the 2035 economy-wide absolute emission reduction targets established in China's "15th Five-Year Plan," collectively inject certainty into global low-carbon development and demand that enterprises shift from promises to systemic practice. **At this pivotal historical juncture connecting past achievements with future aspirations, Haier Smart Home solemnly releases its carbon neutrality commitment, honoring the "30th anniversary" of global climate governance and resolutely implementing the long-term objectives of the Paris Agreement and China's Dual Carbon strategy.**

As a global enterprise, Haier Smart Home constructs a carbon neutrality roadmap covering the full product lifecycle. Relying on our global R&D system and supply chain network, we are dedicated to providing leading low-carbon living solutions for families everywhere. Anchored in the strategic origin of "Technology Empowering Better Life," the company establishes carbon neutrality as a core corporate strategy, dedicated to creating low-carbon solutions across the product lifecycle. With the mission of "Leading Digital & Intelligent Green Transformation," we drive green concepts through the entire process of R&D, manufacturing, products, and services, building a zero-carbon ecosystem from the user end to the industry end.

Haier Smart Home is building the full-link "Haier Paradigm" from green design and intelligent manufacturing to circular regeneration, promoting systemic change from single-product energy saving to low-carbon reshaping of the entire value chain. From the silent energy saving of a refrigerator to the smart energy use of a household, and further to the low-carbon transformation of the entire industrial value chain, Haier Smart Home is driving a comprehensive evolution from concept to system with solid technical accumulation and ecological synergy, contributing Chinese wisdom and pragmatic action to the green transformation of global manufacturing.

**Every Haier Product Embodies Our Carbon Neutrality Commitment**



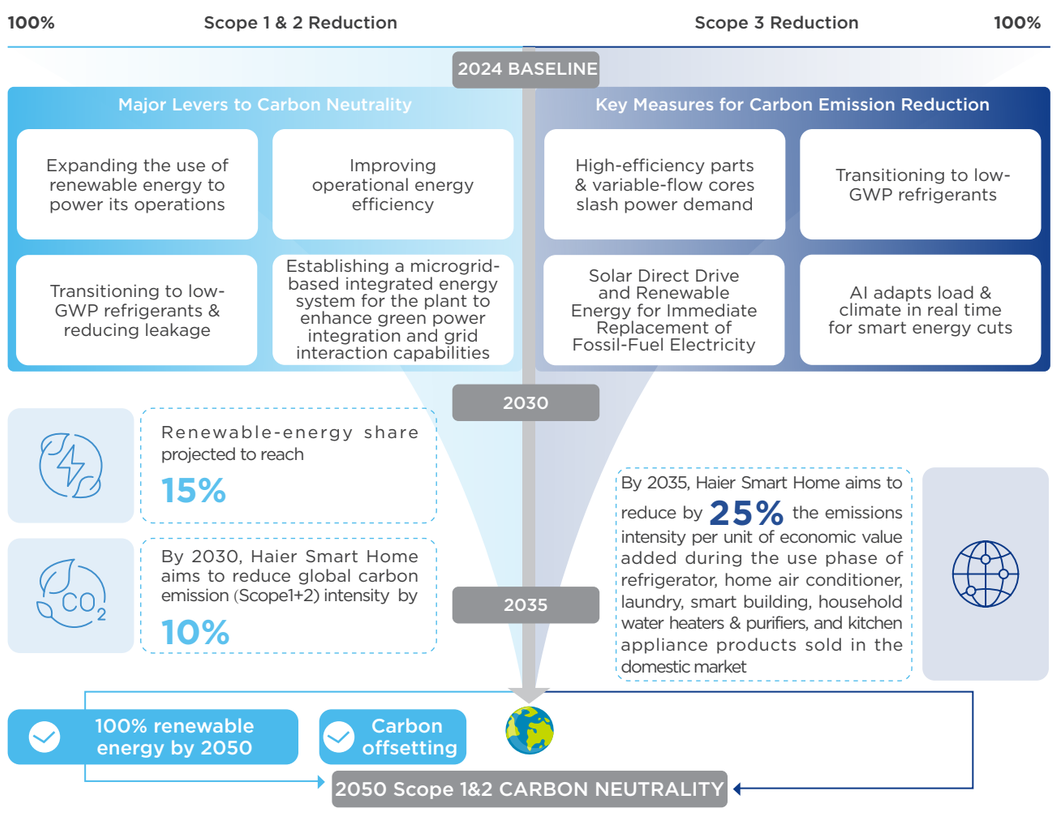



# Climate Targets and Progress

Haier Smart Home adopts the **Science Based Targets initiative (SBTi)** as the core framework for its emission reduction strategy, strictly following its target setting rules to systematically construct emission reduction paths covering operations and the value chain. We are dedicated to translating the ambition required by the 1.5°C temperature control goal into measurable, trackable practical actions, promoting the deep integration of scientific carbon management into the core of corporate strategy and operations.

Guided by this strategic vision, **Haier Smart Home solemnly commits to achieving global operational carbon neutrality no later than 2050**. To realize this goal, the company has mapped a clear phased emission reduction pathway and will systematically construct a "strategy-operations-assessment" closed-loop management mechanism through hardcore technology R&D, global supply chain collaboration, and energy structure optimization, ensuring the entire carbon neutrality journey remains fully trackable, measurable, and closed-loop.

**Haier Smart Home Commits: To Achieve Scope 1 and Scope 2 Carbon Neutrality No Later Than 2050[1]**




[1]Covered areas include all operational factories and office spaces of Haier Smart Home worldwide.

As a steadfast practitioner of global climate action, Haier Smart Home actively responds to China's "Dual Carbon" targets while strictly aligning with Paris Agreement international standards, deeply engaging in the Science Based Targets initiative, and systematically advancing green commitments from conceptual promises to measurable, verifiable implementation:

**In China**

Qingdao Haier Special Electric Freezer Co., Ltd., as Haier Smart Home's first subsidiary to achieve SBTi validation, successfully obtained approval for 1.5°C pathway-based near-term and long-term net-zero targets in 2024. This achievement represents not only a breakthrough in local practice but also provides methodology and practical foundations for the group's comprehensive advancement of SBTi certification.

**Overseas**

European brand Candy SpA simultaneously achieved SBTi validation in 2024, committing to near-term science-based carbon targets covering Scope 1, 2, and Scope 3, demonstrating Haier Smart Home's systematic determination to implement unified low-carbon standards across global operations.

Using science-based carbon targets as its strategic framework, Haier Smart Home deeply integrates carbon management into corporate operations and decision-making. From Qingdao to Milan, from freezer production lines to smart homes, the company is using unified global scientific methods to build low-carbon competitiveness covering R&D, manufacturing, products, and services, realizing the systemic implementation and global synergy of green transformation.

## Carbon Emission Baseline

In 2024, Haier Smart Home systematically measured and reported carbon emissions across its global operations in accordance with the Greenhouse Gas Protocol standards, referencing authoritative emission factors issued by the IPCC and relevant Chinese and international authorities. The inventory results have been verified by the internationally accredited body TÜV Rheinland, with the verification process complying with ISO 14064 and the Greenhouse Gas Protocol standards[2].

[2]The reporting period for this verification was from January 1 to December 31, 2024, and the verification boundary includes all operational entities within Haier Smart Home's global operational scope.

**2024 Emissions (10,000 $tCO_2e$)**

| Scope 1 | Scope2 | Scope3[3] |
|---|---|---|
| 43.63 | 86.54 | 16,501.42 |

Total **16,631.59**

**1 Scope 1**

Direct emissions from operations owned or controlled by Haier Smart Home. In 2024, direct emissions within Haier Smart Home's global operational scope totaled 436.3 thousand $tCO_2e$, including stationary source combustion emissions (backup generators, gas boilers, etc.), mobile source emissions (company-owned fuel vehicles such as fleet vehicles, etc.), and fugitive emissions (refrigeration equipment, septic systems, etc.).

**2 Scope 2**

Indirect emissions from purchased or acquired electricity and steam consumed by Haier Smart Home. In 2024, greenhouse gas emissions from purchased energy (electricity, steam) within the operational control boundary totaled 865.4 thousand $tCO_2e$, including purchased energy for production bases, trading centers, office locations, etc.

**3 Scope 3**

Emissions from Haier Smart Home (China) value chain. In 2024, emissions generated by Haier Smart Home (China) value chain totaled 165.01 million $tCO_2e$, including 2 categories of upstream emissions (purchased goods and services[4], business travel) and 1 category of downstream emissions (use of sold products[5]). Notably, The use of sold products accounted for 95.9% of Scope 3 emissions. This is a primary reason why we have set near-term climate targets specifically for the value chain.

[3]Scope 3 results represent emission data from Haier Smart Home's operations in China.

[4]The accounting scope for purchased goods and services includes steel and plastic products procured by Haier Smart Home in China.

[5] The accounting scope for the use of sold products covers all products sold in China across the following business sectors: Refrigerator, Laundry, Home Air Conditioner, Smart Building , Water Heaters & Purifiers, and Kitchen Appliances.

# Scientific Decarbonization Roadmap

Haier Smart Home views emission reduction as a systematic endeavor spanning the entire product lifecycle, adhering to the strategic principle of "active emission reduction as the core, carbon offsets as supplementary," and systematically planning emission reduction pathways covering both operations and the value chain. The company is committed to achieving significant carbon intensity reduction and effective absolute emission control while sustaining business growth.

## Deep Operational Decarbonization: Reshaping the Green Manufacturing System

In the Scope 1 and 2 emission reduction pathway, Haier Smart Home systematically constructs a green manufacturing system with energy efficiency improvement, energy structure optimization, and process innovation as core pillars.

### Energy Efficiency Enhancement and Intelligent Transformation

AI energy efficiency optimization platforms and IoT monitoring terminals to analyze production line energy consumption data in real-time, precisely identify high-energy-consuming links, and implement dynamic regulation. By deploying flexible scheduling, high-efficiency motors, and waste heat recovery systems combined with digital energy-saving diagnostics, annual reductions in energy consumption per unit of product are achieved, effectively hedging against carbon emission increments caused by capacity expansion.

### Systematic Renewable Energy Application

Accelerating scale-up of factory rooftop photovoltaic construction to increase the proportion of self-supplied green electricity, while simultaneously exploring diversified green electricity acquisition models including "direct green power connection + green certificate trading + multi-energy complementarity." This supports the company's goal of achieving 15% renewable energy utilization by 2030.

### Source-Grid-Load-Storage Coordinated Optimization

Constructing a comprehensive energy system centered on micro-grids at factory sites, integrating weather forecasting algorithms, load forecasting models, and diversified energy storage technologies to achieve dynamic matching and intelligent scheduling of source, grid, load, and storage. Through electrochemical storage and virtual power plant technology, green electricity absorption capacity and grid interaction efficiency are improved, promoting energy system transformation from one-way supply to bidirectional interaction.

### Refrigerant Green Transition and Fugitive Emission Control

Comprehensively advancing replacement of high-GWP refrigerants with eco-friendly alternatives , implementing low-GWP principles in product design and production line modification. Meanwhile, through automated charging processes, infrared leak detection technology, and closed-loop monitoring systems, real-time monitoring and precise prevention of refrigerant fugitive emissions are achieved, substantially reducing production phase carbon footprint and environmental impact.

## Value Chain Collaborative Emission Reduction: Building a Green Ecological Community

In the Scope 3 emission reduction pathway, Haier Smart Home is committed to driving upstream and downstream collaboration, constructing a low-carbon ecosystem spanning the entire product lifecycle.

### Green Product Design and Innovation

Integrating low-carbon principles throughout the product lifecycle, achieving source resource conservation through eco-friendly material substitution, innovative design, and modular design, improving product energy efficiency through high-efficiency component applications and innovative energy-saving technology applications (AI technology, photovoltaic direct-drive technology, variable diverter technology), systematically reducing carbon emissions across the full product lifecycle.

### Smart Energy-Saving Technology Promotion

Integrating artificial intelligence and big data to develop smart appliances and energy management systems with self-learning and self-optimization capabilities, achieving refined user-end energy consumption management.

### Green Value Chain Co-creation

Incorporating carbon performance into supplier evaluation systems, driving upstream partners to collaboratively implement emission reduction actions through capability building and incentive mechanisms. Establishing "recycling-dismantling-regeneration-reuse" closed-loop systems, promoting dual reduction in resource consumption and carbon emissions through high-quality recycled material applications and easy-to-disassemble structural design.

### Consumer-End Clean Energy Guidance

Developing products and smart energy solutions compatible with green electricity, encouraging users to transition to clean energy, helping increase clean energy consumption proportions at the user end.

**Reshaping the Green Manufacturing System**

**Building a Green Ecological Community**

# Strengthening Climate Governance

Haier Smart Home has formally established a Climate Change Committee led by the highest decision-making level, with four specialized sub-committees covering carbon inventory and disclosure, carbon reduction execution, green product innovation, and low-carbon strategic planning. This structure aims to deeply integrate carbon neutrality goals into corporate strategy and daily operations, ensuring end-to-end connectivity and efficient advancement from top-level design to implementation.

## Haier Smart Home Carbon Management Framework

| | | |
|---|---|---|
| Highest Governance Level | Haier Smart Home Board of Directors | Review and supervise overall ESG strategy and low-carbon development plan execution, ensuring company operations comply with domestic and international low-carbon requirements and corporate development strategy. |
| Governance Level | ESG Committee | Guide and manage ESG objectives and low-carbon action implementation, assess risks and opportunities, ensure governance effectiveness, coordinate business synergy and resource support, provide decision-making recommendations to the Board. |
| Management Level | ESG Executive Office | Advance and coordinate ESG strategic objectives, information disclosure, and rating improvement; ensure efficient operation of ESG management system through internal training and institutional development. |
| | Climate Change Committee | Plan and advance corporate dual-carbon, targets, and implementation pathways; coordinate key low-carbon project implementation to ensure achievement of low-carbon transformation objectives. |
| Executive Management Level | Carbon Accounting and Disclosure Sub-committee | Coordinate annual organizational and product-level carbon inventory, data accounting, and information disclosure across the company, ensuring data completeness, accuracy. |
| | Carbon Reduction Sub-committee | Supervise and advance company operational and value chain emission reduction target implementation, coordinate resources to support key emission reduction projects, ensure effective implementation of emission reduction actions. |
| | Green Products Sub-committee | Establish and improve green product full lifecycle management systems, advance product eco-design, energy efficiency improvement, and low-carbon material application, supporting Haier Smart Home product low-carbon transformation objectives. |
| | Low-Carbon Strategy Planning Sub-committee | Coordinate company low-carbon strategic planning and special investments, manage carbon assets and related risks; provide policy research, analytical support, and management tool development services for dual-carbon strategy. |

# Low-Carbon Operations: Digital Intelligence Driving Sustainable Manufacturing

Guided by the principle of "Low-Carbon Operations and AI-Driven Sustainable Manufacturing," Haier Smart Home establishes a decarbonization practice model that spans the entire operational process through the systematic integration of clean manufacturing, sustainable procurement, smart logistics, and closed-loop recycling.

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# Comprehensive Energy Efficiency Enhancement

Haier Smart Home adheres to the Energy Conservation Law of the People's Republic of China and relevant regulations in global operating locations, developing and implementing the Energy Management Manual to establish a systematic, standardized energy management framework. The company leverages digital platforms to construct a closed-loop energy-saving management process of "monitoring-analysis-optimization-verification," creating a leading manufacturing energy efficiency improvement model through production line energy-saving technical transformation and network-side intelligent control.

**As of 2024**

**100%** of Haier Smart Home's factories in China have achieved ISO 14001 environmental management system certification

## Accelerating Transformation through Energy-Saving Retrofits

Energy-saving retrofits are a core initiative for Haier Smart Home's green manufacturing system development. The company systematically advances comprehensive transformation encompassing process optimization, process innovation, and equipment upgrades. In 2024, the company implemented over 500 energy-saving and emission reduction projects covering high-carbon-emission segments including electricity, steam, and natural gas, empowering system efficiency through technology and continuously driving manufacturing system transformation toward low-carbon and intelligent operations.

**Process Optimization**

Reconstructing key energy efficiency nodes in production processes through digital means or advanced technologies, achieving optimal resource allocation in manufacturing processes, logistics scheduling, and other segments.

**Technology Upgrades**

Adopting innovative technologies to revolutionize traditional production and processing methods, effectively reducing energy and resource consumption in production processes through promotion of low-temperature processing, cooling system optimization, digital intelligent control, and other advanced technologies.

**Process Upgrades**

Equipment upgrades encompass systematic replacement and intelligent transformation of traditional high-energy-consuming devices, with focus on innovative applications of variable frequency technology and AI algorithms. This measure directly reduces unit energy consumption in production processes by improving equipment energy conversion and operational efficiency.

## Digital Intelligence Empowering Emission Reduction

Digital transformation is the core driving force for green manufacturing. Haier Smart Home actively embraces the digitalization wave, positioning digital intelligence as a key lever for improving green manufacturing capabilities, and focusing on constructing digital systems covering the entire production operations and energy-carbon management process. Through integration of Manufacturing Execution Systems (MES), Advanced Planning and Scheduling (APS), and the "Smart Home Green Carbon System" focusing on comprehensive energy management (water, electricity, gas). The company has achieved comprehensive refined management spanning production execution, energy scheduling, and carbon management.

### Jiaozhou No. 1 Refrigerator: Energy Digitalization Management

The Jiaozhou No. 1 Refrigerator Factory has achieved remarkable results in advancing energy conservation and carbon reduction through multiple dimensions, with digital twin factory construction and energy digitalization management system development as core initiatives.

**Constructing Digital Twin Factory**

The factory bridged data barriers between equipment assets and information systems including MES, SCADA, WMS, leveraging twin technology to create high-fidelity, real-time synchronized virtual entities, precisely mapping refrigerator production scenarios, providing precise digital foundations for energy management

**Energy Digitalization Management System**

Centering on digital transformation strategy, achieving digitalization on platforms, data analysis, mining energy-saving opportunities, and achieving energy consumption reduction


Jiaozhou No. 1 Refrigerator: Energy Digitalization Management

# Energy Mix Optimization

The systemic innovation of energy structure has become a core driver of green transformation in manufacturing. Haier Smart Home comprehensively advances energy structure innovation by building a clean energy application system of production, substitution, and procurement.

**Photovoltaic Deployment**

Haier Smart Home actively promotes clean energy supply system construction, fully exploiting factory space resources to establish distributed photovoltaics including rooftop photovoltaics, photovoltaic carports, and photovoltaic curtain walls. Currently, 8 industrial parks including Huangdao, Jiaonan, and Jiaozhou have achieved **100%** photovoltaic deployment, effectively reducing dependence on traditional fossil energy.

**Energy Transition**

**Heat Pumps Replacing Steam**

Smart Building Factory uses electrically-driven heat pump systems to replace original steam heating devices, leveraging efficient heat pump thermal energy conversion characteristics to transfer environmental heat to process water, achieving energy transition in the hot water washing segment of powder spraying processes. This reduces steam consumption by **6,100** GJ annually, corresponding to greenhouse gas emission reduction of **671** $tCO_2e$

**Multi-Energy Exploration**

**Wind-Solar Complementary Street Lights**

Using independent wind-solar hybrid streetlights with latitude/longitude time controllers to automatically adjust switching based on local sunrise/sunset and light intensity. By harnessing both solar and wind energy for power generation, dependence on fossil fuels is reduced. This practice has been deployed at 7 factories including Hefei Refrigerator and Hefei Top-Loading, saving **46** MWh of electricity annually, equivalent to **24.68** $tCO_2e$ reduction

**Regional Clean Energy Procurement**

Haier Smart Home will continue introducing more clean energy based on factory geographical characteristics, such as hydropower resources in Yunnan-Guizhou region and exploration of wind and nuclear power resources in coastal regions, further enriching clean energy supply and promoting energy structure development toward cleaner, more efficient directions

**Turkey Clean Energy Application**

In 2024, Haier Europe's Turkey Industrial Park achieved **100% renewable energy** for manufacturing and operations electricity, leveraging a 5.6 MW solar power system and sourcing the remaining energy from renewable sources with i-RECS certificates.



# Green Operation

Haier Smart Home deeply integrates green low-carbon principles into organizational operations and daily office scenarios, systematically constructing a low-carbon workplace system with full employee participation through digital collaboration promotion, space energy-saving transformation implementation, and green behavior advocacy. The company is committed not only to optimizing energy use efficiency but also to cultivating employee sustainability awareness, internalizing low-carbon practices as an organic component of corporate culture, jointly shaping a new green work ecosystem for the future.

**Paperless Office**

- Promoting electronic and paperless operations to reduce paper usage
- Setting up centralized waste paper collection bins to promote resource recycling

**Champion Proactive Low-Carbon Behavior**

- Using remote communication and online meetings to reduce unnecessary business travel, reducing energy consumption and emissions from transportation
- Encouraging employees to travel in a low-carbon manner by promoting the use of public transportation to reduce carbon emissions from commuting
- Promoting low-carbon behaviors in office areas, such as turning off lights and air conditioning when not in use

**Promoting Energy-Saving Equipment**

- Replacing traditional lights with energy-saving fixtures
- Using sensor faucets to replace manual faucets, preventing water resource waste

**Digital Collaboration**

***Apartment Energy Digital Management***

Establishing independent energy monitoring units for rooms, automatically triggering power-off protection when real-time consumption exceeds standards. Saves **2,059.88** MWh annually (**1105.33** $tCO_2e$).

***Intelligent Lighting Management Platform***

Upgrading traditional lighting to digital control, integrating all lighting circuits into a unified platform for centralized monitoring and intelligent regulation. Saves **254.57** MWh annually in certain scenarios. (**136.60** $tCO_2e$).

Feature

# Building Sustainability Benchmarks, Leading Industrial Zero-Carbon Transformation

Amidst the global tide of industrial green transformation, Haier Smart Home is forging a new paradigm of deeply integrated smart manufacturing and low-carbon development, with “Sustainable Lighthouse Factories” and “Zero-Carbon Certified Parks” as its twin pillars. We are not only responding to trends but also committed to shaping the future of green manufacturing.

To date, Haier Smart Home operates 11 Lighthouse Factories, including one Sustainable Lighthouse Factory and one Talent Lighthouse Factory, spanning five core industries: refrigeration, household air conditioning, laundry, smart buildings, and water solutions. This portfolio makes Haier Smart Home the Chinese enterprise with the largest number of Lighthouse Factories worldwide, underscoring its global leadership in intelligent manufacturing and sustainable operations.

In the development of its green manufacturing ecosystem, the company has established 16 national-level Green Factories, 12 national Green Supply Chain Management Enterprises, and 9 Zero-Waste Factories, alongside multiple provincial- and municipal-level green manufacturing demonstration sites. Notably, green factories now account for one-third of Haier Smart Home’s domestic manufacturing footprint, reflecting a systematic and forward-looking approach to end-to-end green transformation.

From zero-carbon upgrades at individual factories to the holistic reconfiguration of entire industrial parks, Haier Smart Home is leveraging mature green manufacturing solutions into scalable practice—offering a practical blueprint for low-carbon industrial transformation in China and around the world.

**To date, Haier Smart Home**

| Lighthouse Factories | Sustainable Lighthouse Factory | Talent Lighthouse Factory |
|---|---|---|
| 11 | 1 | 1 |

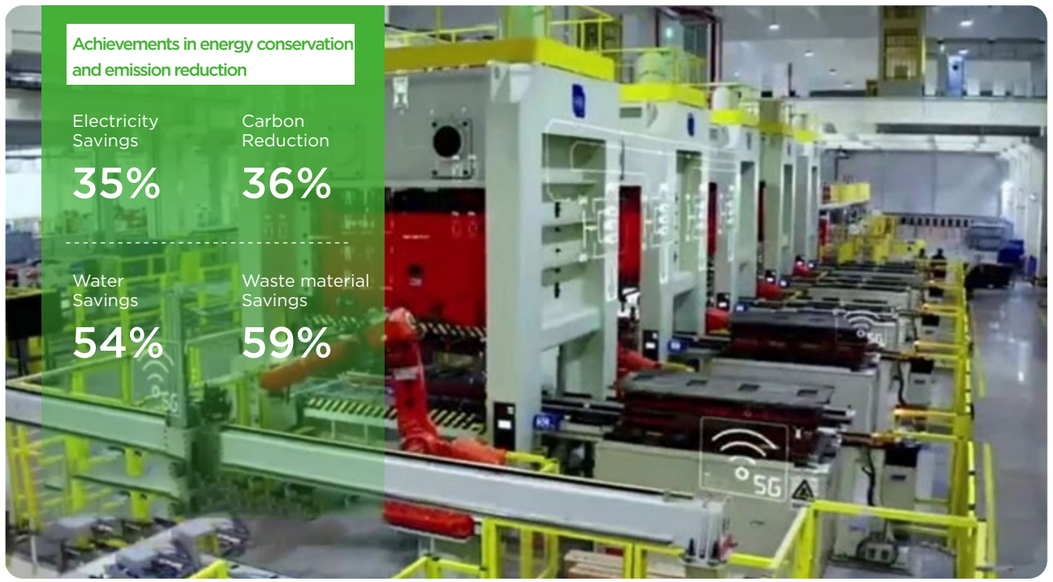
Spanning Haier Smart Home’s Refrigerator, Home Air Conditioner, Laundry, Smart Buildings, and Water Heaters& Purifiers businesses, making it the Chinese company with the most **“Lighthouse Factories”** globally

| National-level Green Factories | National Green Supply Chain Management Enterprises | Zero-Waste Factories |
|---|---|---|
| 16 | 12 | 9 |

## Sustainability Lighthouse Factory

In January 2023, Tianjin Haier Washing Machine Interconnected Factory was selected for the 4th cohort of "Sustainability Lighthouse Factories" announced by the World Economic Forum (WEF). From becoming the world's first end-to-end "Lighthouse Factory" in the washing machine industry in 2021 to becoming the first Chinese domestic enterprise selected as a "Sustainability Lighthouse Factory" in 2023, this achievement represents not only a "dual lighthouse" breakthrough for the Chinese washing machine industry in intelligent manufacturing but also marks international leadership in the integration of innovative technology and carbon neutrality practices.

As a pioneer of green transformation in global manufacturing, Tianjin Haier Washing Machine Interconnected Factory began exploring dual-carbon practices in 2020, innovatively constructing an intelligent energy management system through deep integration of Industry 4.0 technologies including 5G, AI, and big data with advanced manufacturing processes. By establishing equipment power load models and per-unit production energy consumption models, the factory achieved automatic diagnostic optimization of high-energy processes and minimum-energy production scheduling. This digital solution has not only significantly enhanced operational resilience but has also achieved outstanding energy-saving and emission reduction results.



## Zero-Carbon Industrial Parks

Haier's Jiaozhou SCO Industrial Park and Haier's Qingdao Sino-German Industrial Park represent two key initiatives by Haier Smart Home in practicing green manufacturing and developing zero-carbon parks. Both have been awarded the first batch of "Zero-Carbon Park" certifications (with serial numbers No. 001 and No. 002, respectively) issued by the China Quality Certification Centre (CQC) and the China Energy Conservation Association, **making them the first parks in the home appliance industry to receive such certification.**


"Zero-Carbon Park" Evaluation Certificate for Haier Jiaozhou SCO Industrial Park


"Zero-Carbon Park" Evaluation Certificate for Haier Qingdao Sino-German Industrial Park

### Haier Qingdao Sino-German Industrial Park

**Clean Energy Efficient Utilization**

- **Building Rooftop Distributed PV:** Park rooftop completed construction of 13.5 MW photovoltaic power generation system with annual power generation exceeding 15 million kWh.
- **Building Photovoltaic Storage and Charging Carports:** Covering photovoltaic power stations, energy storage systems, and new energy charging pile construction, meeting factory employee new energy vehicle charging needs, reducing park carbon dioxide emissions.
- **Building Wind-Solar Complementary Street Lights:** Utilizing solar and wind power generation to reduce reliance on grid electricity.

**Full-Process Green Manufacturing**

- **Equipment Innovation:** Advancing production equipment energy-saving transformation, such as water pump room frequency conversion transformation, adding pressure sensors, reducing water pump operating time, extending pump service life, achieving energy savings.
- **Energy Cascade Utilization:** Recovering waste heat from power generation and air compression systems for heating and cooling, achieving energy cascade utilization.

**Digital Collaboration for Carbon Reduction**

- **Constructing Smart Energy Big Data Platform:** Leveraging energy platform to provide comprehensive energy supply and management services for factories, improving energy use reliability, safety, stability, cleanliness, and economics.
- **Designing Air Compressor Station Cloud Control System:** Uniformly configuring inter-factory air supply pipeline network in the park, activating corresponding equipment based on production intensity requirements, equipped with high-precision detection modules and measuring instruments, achieving constant-pressure air supply from air compressor stations, improving operating efficiency.



### Haier Jiaozhou SCO Industrial Park

**Clean Energy Efficient Utilization**

- Adopts "Roof PV + Carport PV + BIPV PV Curtain Wall" integrated design. PV area >100,000 $m^2$, annual generation >50 million kWh, accounting for >35% of total park electricity.

**Full-Process Green Manufacturing**

**Introducing Energy-Saving Production Equipment:** Continuously upgrading and transforming, introducing advanced energy-saving equipment and processes to reduce energy consumption at source, including:

**Injection molding segment:** using new injection molding machines and energy efficiency improvement technologies to reduce per-unit product energy consumption.

**Refrigeration system:** applying magnetic levitation chillers to improve refrigeration efficiency while reducing electricity consumption.

**Strengthening Resource Conservation and Intensification:** Constructing "Energy-Water-Solid Waste" full-chain circulation system, achieving efficient coordinated resource utilization

**Energy**

Establishing smart energy management platform implementing energy cascade scheduling, with industrial high-grade steam prioritizing high-temperature processes, low-pressure waste heat used for heating, waste heat recovery utilization rate exceeding 45%, smart chillers linked with waste heat achieving "refrigeration-waste heat recovery-heating" circulation.

**Water**

Constructing reclaimed water reuse systems, with industrial wastewater deeply treated for cooling and greening, over 90% reuse of treated sewage.

**Solid Waste**

Creating solid waste closed-loop processing chains, with metal/plastic scraps professionally sorted and regenerated, slag resourcefully producing new building materials, hazardous waste safely disposed, 100% industrial solid waste comprehensive utilization rate, forming conservation model minimizing resource consumption and maximizing environmental benefits.

**Digital Collaboration for Carbon Reduction**

- **Constructing Energy Digitalization Management System:** Leveraging COSMOPLAT industrial internet platform, achieving "three flows in one" integration of energy flow, data flow, and carbon traceability flow, implementing centralized, intuitive dynamic monitoring and refined digital management of entire "production, transmission, distribution, consumption" energy process.

# Green Product Innovation: Leading the Low-Carbon Consumer Revolution

Throughout the R&D phase, the Company reduces environmental impact across the product life cycle through the innovative application of environmentally friendly materials. Modular standardization lowers resource consumption and avoids redundant development, while packaging optimization improves material efficiency. Continuous breakthroughs in energy efficiency enhance energy conversion rates during product use, and refrigerant recovery effectively controls HFC emissions. In this way, green principles are deeply embedded into every stage—from design and development to use and recycling—forming a comprehensive low-carbon product system.

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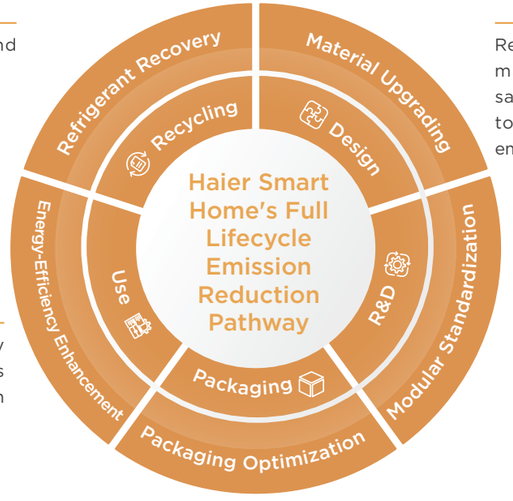
Recovering refrigerants and enabling resource reutilization

Replacing traditional high-impact materials with biodegradable, safe, and non-toxic alternatives to reduce full-life-cycle carbon emissions at the source

Applying high-efficiency components and AI technologies to reduce energy consumption and enhance user value

Sharing technologies to reduce redundant R&D; optimizing physical tools to minimize resource loss




Reducing packaging volume and optimizing materials while ensuring protective performance

In parallel, Haier Smart Home continues to strengthen its product life-cycle carbon footprint management system. By promoting carbon footprint certification and life cycle assessment (LCA), the Company provides consumers with credible low-carbon decision-making references while reinforcing its green brand positioning.



# Innovating Materials to Reduce Carbon at the Source

Material upgrading focuses on systematically replacing traditional high-impact materials with biodegradable, safe, and environmentally friendly alternatives. This approach effectively reduces carbon footprints across product life cycles, promotes waste resource recovery, decreases reliance on conventional petrochemical materials, and gradually builds a more resilient and sustainable industrial ecosystem.

## Environmental Impact Assessment and Substitution of Foaming Agents and Refrigerants

**Eco-Friendly Foaming Agents**

### Polyurethane (PU) foaming agents

Through innovation within the Water IoT ecosystem, Haier adopts low-GWP LBA (PU) foaming agents, achieving an annual carbon reduction of **0.06** $tCO_2e$ per unit.

### Fluorine-free low-carbon foaming agents

Chest freezers have fully transitioned to fluorine-free foaming systems, reducing fluorinated foaming agent use by 400 tons annually and cutting emissions by **412,000** $tCO_2e$.

### Cyclopentane foaming agents

Refrigerators and freezers have comprehensively adopted cyclopentane foaming technology to replace high-GWP HFC/HFO-based agents.

### Bio-based foaming agents

Compared with conventional petrochemical materials, bio-based foaming agents reduce carbon emissions by approximately **50%**.

**Eco-Friendly Refrigerants**

### R290 natural refrigerant

With an ODP of 0 and a GWP of only 3, R290 delivers 1–2 times higher heating efficiency and 10% higher cooling efficiency compared with R32 air conditioners, reducing carbon emissions by approximately **0.4** $tCO_2e$ per unit.

### Haier Pearl R290 Air Conditioner

The Haier Pearl R290 air conditioner represents a major breakthrough by Haier Europe in sustainable cooling technology. The product uses R290 refrigerant with extremely low GWP, significantly reducing climate impact while achieving coordinated optimization of energy efficiency improvement and operational safety. Its excellent environmental performance and comfort experience provide an ideal solution for users pursuing sustainable living.

## Reducing Environmental Impact Through Lightweight, Recycled, and High-Efficiency Materials

**Lightweight Materials**

- High-melt-flow PP: Applied in refrigerators, reducing weight by approximately 15 g per kilogram, lowering material waste and indirectly reducing transportation energy consumption.

**Recycled Materials**

- **Recycled Plastics:** Widely used in water heaters (internal supports, installation panels) and refrigeration products (non-food-contact parts such as clips and control boxes), promoting circular plastic reuse.

**High Energy Efficiency Materials**

- Low-carbon noise-reduction materials: Optimized grille fan designs reduce power consumption by approximately 20%.
- Advanced sealing materials: Reduce heat transfer losses during operation, improving refrigeration efficiency and delivering further energy savings.

# Modular Standardization and Circular Sharing

Haier Smart Home promotes green transformation through modular standardization across two dimensions: platform standardization and tooling standardization. Platform standardization enables cross-industry R&D resource sharing, reducing testing cycles and material consumption. Tooling standardization streamlines component categories, reducing resource waste at the source.

This practice integrates lean design and green manufacturing, eliminating R&D redundancy through technological sharing and enhancing resource efficiency through physical integration—jointly building an efficient and clean manufacturing system.

### R290 natural refrigerant

**Smart Building industry**

Unified platforms across domestic and overseas markets and across refrigerant- and water-based systems, significantly reducing duplicated testing.

**Refrigerator**

A unified design platform centered on 15% shared cabinet modules, shortening development cycles.

### Module Standardization

**Refrigerator**

Standardized metal liner interfaces enable mold sharing across freezer models, reducing tooling needs and enabling efficient automated production.

**Laundry**

Integrated cabinet and door-seal modules increase capacity by 15%.

**Smart Building**

DFX-driven modular design increases cross-platform component sharing from 13% to 35%.

**Home Air Conditioner**

Innovative integrated sheet-metal wall panels reduce labor and equipment needs, doubling mass-production efficiency.

# Reshaping Packaging Through Lightweight and Simplified Design

Haier Smart Home adopts a dual-engine strategy centered on packaging reduction and material optimization, systematically reducing packaging-related environmental footprints while ensuring product safety during transportation.

## Packaging Reduction

Haier Smart Home focuses on lightweighting and paper-free technologies, pursuing source reduction of packaging materials.

**Light weighting**

*Structural optimization*

Honeycomb cartons replace double-corrugated cartons, reducing paper use by 20%. Applied to refrigerators under 300L, cutting 3,000 tons of paper annually. Currently applied in refrigerators, freezers, washing machines, water heaters, and other products with application rate of **50%.**

Laser Printing

Replacing ink-based printing with laser engraving eliminates consumables and pollution. Qingdao and Wuhan factories achieve 66% application rate, reducing ink printing area by 50,000 $m^2$.

Dual-Density Foam bases

While ensuring packaging protection, optimizing foam packaging cushion density, upgrading from traditional single-density foam cushion to dual-density foam cushion, achieving 10% overall packaging cushion weight reduction. Multiple sectors implemented transportation simulation methods to develop dual-density packaging pads, achieving over **500** tonnes/year carbon reduction.

**Paper-Free**

Using electronic manuals to replace traditional paper manuals, reducing packaging paper usage, reducing tree cutting and water resource consumption. For instance, all domestically sold products in the home air conditioner and refrigerator industries have adopted electronic manuals, achieving an annual carbon reduction of over **800** tons.

## Material Optimization

On the pathway to green packaging material upgrades, focusing on two key directions—eco-friendly plastic substitution and recycled material application—systematically advancing packaging material system transformation from traditional models to circular low-carbon.

**Eco-Friendly Plastic Substitution**

Packaging foam upgraded from EPS to recyclable, easily degradable EPP eco-friendly packaging materials, improving material circular utilization value, reducing over **1,600** tons of carbon emissions annually in the air-conditioning sector.

**Recycled Material Application**

Innovatively mixing eco-friendly recycled granules with new materials in specified proportions to manufacture eco-friendly heat-shrink film, replacing traditional cartons, reducing corrugated paper usage by **70%**.

# Ultra-High Efficiency: Setting New Benchmarks

Haier Smart Home has established energy efficiency enhancement as the core pathway for product carbon reduction, adhering to a "technological innovation and intelligent integration" dual-driver philosophy, significantly reducing use-phase energy consumption through systematic high-efficiency component upgrades and deep embedding of artificial intelligence algorithms. While ensuring or even enhancing user experience, the company continuously breaks through energy efficiency technology boundaries, achieving coordinated growth of energy-saving performance and user value. This practice not only significantly lowers the full life-cycle carbon footprint of products, but also pioneers an industry pathway in which “intelligent energy saving” and “experience-first design” advance in parallel.

## High-Efficiency Component Innovation

Haier Smart Home focuses on energy-efficiency innovation across core components, advancing system-level optimization spanning power, heat exchange, control, sensing, and auxiliary systems, thereby laying a solid foundation for sustained efficiency improvement.

### Power System

**High-efficiency compact compressors**

Through optimization of motor magnetic circuits, mechanical friction reduction, and high-efficiency valve group design, compressor COP has increased by 8%.

**High-efficiency motors**

Stepless high-efficiency DC inverter motors deliver a 22% increase in magnetic performance and a 17% improvement in motor efficiency, significantly reducing input power consumption.

## Heat Exchange System

### Compact High-Efficiency Heat Exchanger

- **Microchannel heat exchangers:** Compact microchannel flow structures reduce refrigerant charge by 30%. Turbulence-enhanced heat transfer improves heat transfer coefficients by over 30%, lowering electricity consumption by 8%. High corrosion resistance enables service lives of 10–15 years, reducing replacement frequency and resource consumption.

### High-Efficiency Heating Elements

- **High-efficiency finned heat exchangers:** Featuring proprietary dual-valve zone control and capillary refrigerant distribution technology for more uniform refrigerant flow and enhanced heat exchange.
- **High-efficiency shell-and-tube heat exchangers:** Distributor-welded structures deliver superior heat transfer, pressure resistance, strength, freeze resistance, and corrosion resistance, improving heat exchange efficiency by 20%.

## Auxiliary System

### Energy-efficient display components

Applied in water purification filters, combining low-power chips, active sleep technology, and low-power design. Standby power consumption reduced by 43%, from 28 μA to 16 μA.

### High-efficiency low-noise fans

Bionic airfoil blade designs improve airflow efficiency, reducing fan power by 10% and noise levels by 2–3 dBA at the same airflow.

### High-efficiency lighting systems

Adoption of low-power, long-life, health-oriented LED lighting.

### Energy-saving door seals

Optimized design and simulation modeling enhance sealing durability and effectiveness, reducing energy loss.


## Control System

### High-Efficiency Inverter Controllers

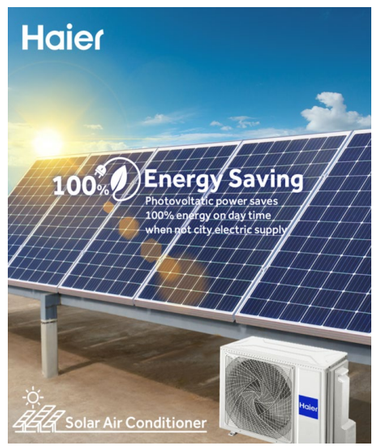
- **Inverter compressors:** COP improved by 6%, delivering average energy savings of 8%–15% per refrigerator.
- **Inverter controllers:** Hardware–software coordinated energy-saving design integrates low-power switch-mode power supplies and inverters, alongside low-runtime-power software and multi-stage vector modulation technologies, achieving 5% energy savings at the system level.
- **Photovoltaic direct-drive AC/DC hybrid inverter controllers**: Air conditioners equipped with PV direct-drive hybrid technology support three operating modes—pure PV, hybrid power, and grid power—maximizing renewable energy utilization to support energy conservation and emission reduction.

### High-Efficiency Integrated Sensors

- **Integrated sensing-and-communication chips:** Two chips integrated into one, significantly reducing total power consumption. Already deployed at scale in Haier Xingyue cabinet air conditioners, delivering estimated annual electricity savings of 3,000 MWh.
- **Voice–ultrasonic sensing technology:** Enables detection of human presence, distance, and orientation; deployed at scale in Haier and Casarte floor-standing air conditioners, delivering estimated annual electricity savings of 5,000 MWh.
- **SiC power devices:** Reduce control-board heat generation and increase efficiency from 80% to 90% when applied to heat pump drive boards.

### Solar-Powered Hybrid Air Conditioners in Pakistan

Haier Smart Home introduced Pakistan's first new-energy air conditioner, pioneering the use of photovoltaic direct-drive AC/DC hybrid power technology. Through direct solar panel integration, the system eliminates conventional inverter stages, reducing energy conversion losses. Under sufficient daylight, the unit operates fully off-grid with 100% solar power.An integrated intelligent energy management chip automatically adjusts the proportion of solar and grid power, prioritizing renewable energy use while ensuring stable operation—delivering significant energy-saving and environmental benefits.




### Leader Ultra Energy-Saving Pro Series—Making Low-Carbon Living Accessible

The Leader Ultra Energy-Saving Pro series addresses the core needs of everyday households. Equipped with high-efficiency compressors and intelligent control systems, the products significantly reduce energy consumption and carbon emissions while maintaining excellent heating and cooling performance. Fully compliant with green building energy-efficiency standards, the series delivers long-term electricity cost savings for families.

Integrated fresh-air functionality continuously exchanges indoor and outdoor air, improving air quality and reducing health risks associated with enclosed environments. With high cost-effectiveness and easy installation, the series lowers the affordability barrier for green appliances—transforming low-carbon consumption from concept into everyday reality for millions of households.



## Artificial Intelligence Technology Application

Haier Smart Home deeply integrates AI technologies into product core architectures. Intelligent algorithms continuously optimize operational logic and energy performance, significantly improving energy and resource utilization while systematically reducing overall environmental impact.

This approach not only advances appliance performance toward precision and adaptability but also enables smarter, greener, and more sustainable lifestyles—realizing the unified creation of technological value, user value, and environmental value.

### Power Scheduling

- **AI energy-saving algorithms**

**Refrigerators**

AI algorithms learn user behavior and sense environmental changes, integrate local electricity policies, identify low-carbon power periods, automatically match operating modes, and dynamically adjust food storage conditions—achieving over 15% energy savings globally across all refrigerator categories.

**Air Conditioners**

AI gorithms adapt to dynamic changes in room load and building characteristics, constructing objective functions incorporating energy consumption, thermal discomfort, and soft constraints. Optimization modules compute optimal control parameters to achieve maximum energy savings while maintaining comfort.

### Parameter Optimization

- **A Class WashPass:** Through the hOn app, users are guided to use the correct detergent type and dosage, significantly reducing water, energy, and detergent consumption. Compared with conventional washing machines, this technology reduces carbon emissions by 26%, land-use impact by 11%, and overall environmental impact by 3%.
- **Intelligent Sensors:** AI-driven programs combine sensor data to monitor load weight in real time and precisely dispense dishwasher detergent, reducing chemical residue and water waste.

### Eco-Friendly Drying

- **AI-enabled auto door opening:** Dishwashers automatically open doors at the end of washing cycles, leveraging natural airflow to enhance drying efficiency with zero additional energy consumption.

### Customized Services

- **Zoned washing:**The “half-load” function allows users to wash designated baskets only, achieving over 25% energy savings and over 20% water savings compared with ECO modes.
- **Closed-loop AI control systems:**Drawer dishwashers integrate proprietary hydrodynamic suspension technology with inverter motors and intelligent sensors, forming a closed-loop AI system for water monitoring, power adjustment, and cleaning assurance—improving cleaning performance by 12.5% and reducing water consumption by over 20%.
- **Human-centric energy saving:**Air conditioners equipped with globally pioneering Wi-Fi integrated sensing technology combine radar antennas with Wi-Fi modules. Using micro-Doppler effects, the system detects human movement within a 6-meter range and dynamically adjusts operating parameters, enabling energy-saving operation in unoccupied spaces.

### X11 Series Washing Machine Equipped with AI System, Certified as World's Most Energy-Efficient Washing Machine

The Haier Langjing X11 washer–dryer set, redefines high-end laundry through the integration of green technology and health-focused scenarios.

**In terms of intelligence and energy conservation**

AI systems automatically identify garments and optimize washing cycles, while auto-dosing systems precisely calculate detergent usage to minimize waste. High-efficiency direct-drive motors and dual-inverter technology reduce components while improving durability and noise control. Overall energy efficiency exceeds the new EU A-class standard by **70%**, significantly reducing energy consumption at the source.

**In terms of health experience**

The Ultra-Fresh ventilation system actively introduces fresh air into the drum, preventing wrinkles, odors, and bacterial growth—achieving the integration of energy efficiency and healthy care.



### Casarte AI Dynamic Five-Constant Air System: Defining New Standards for Comfortable Living

The Casarte AI Dynamic Five-Constant Air System adopts system-level green design to achieve both comfort and energy efficiency. End-to-end optimization across “source–terminal–control” enables uniform indoor heating and cooling through heat pump systems combined with radiant ceiling and floor terminals—eliminating drafts and reducing airflow resistance.

The integrated air-guardian system monitors air quality in real time and automatically adjusts fresh air, humidity, and cleanliness. Multi-device coordinated intelligent control reduces overall equipment energy consumption by 30%, delivering constant temperature, humidity, cleanliness, and oxygen levels without high energy costs.

### Smart Wind Series Equipped with AI Energy-Saving Technology, Energy Consumption Reduced by Over 40%

Haier’s Smart Wind Series 1.5 HP inverter wall-mounted air conditioners integrate AI energy-saving technologies through coordinated operation of AI intelligent energy-saving algorithms and cloud-based adaptive technologies.

**AI intelligent energy-saving algorithms**

Dynamically construct room load models based on temperature change rates and preemptively optimize energy-saving paths.

**Cloud adaptive technologies**

Integrate regional climate data, seasonal characteristics, and user behavior patterns for adaptive control.

Compared with conventional air conditioners, energy consumption is reduced by over **40%**.

## Refrigerant Recovery for Environmental Protection

Haier Smart Home recognizes refrigerants as a critical factor influencing product life-cycle carbon footprints. HFCs, for example, possess GWPs thousands of times higher than $CO_2$. In response to the Kigali Amendment to the Montreal Protocol and China’s Green and Efficient Cooling Action Plan, the Company has positioned refrigerant recovery and circular reuse as a core pillar of product carbon management.

In the U.S. market, Haier’s refrigerant recovery practices have been certified by the EPA. In 2024, the Company recovered 686 kg of refrigerants, achieving emission reductions of 2,538 $tCO_2e$. Multiple patents covering refrigerant recovery and leakage detection have been deployed to enhance efficiency and standardization.

Looking ahead, Haier Smart Home will continue expanding recovery networks, improving user participation, and accelerating the application of patented technologies—driving refrigerant management toward higher efficiency and global standardization.

**In the U.S. market**

Total Refrigerant Recovered

**686** kg

Emission Reduction Achieved

**2,538** $tCO_2e$

# Sustainable Solutions: Enabling Zero-Carbon Transformation

Haier Smart Home uses technology as the cornerstone for sustainable development, with a commitment to creating the best user experience. The company has built green solutions covering three core scenarios: smart low-carbon homes, green buildings, and commercial cold chains. By deeply integrating IoT, big data, and AI technologies, Haier Smart Home creates integrated solutions combining hardware products and software systems, applied across diverse scenarios including home living, commercial buildings, and commercial cold chains. These solutions not only provide comfortable cooling and heating but also help customers improve energy efficiency and reduce carbon emissions.

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# Advancing Toward Zero-Carbon Homes: A New Paradigm for Sustainable Living

Haier Smart Home constructs a new paradigm for sustainable living, from low-carbon products to smart scenarios and ultimately to zero-carbon home living, through localized innovation and global collaboration.

### At the scenario experience level

Haier's smart home platform, with the “Smart Home Brain” at its core, integrates IoT full-domain perception, Uhome big-model natural interaction, and big data learning. This enables a shift from “single product control” to “scene intelligent control”. The system can perceive real-time movement, device status, and environmental parameters, autonomously adjusting temperature, humidity, lighting, and energy consumption across different spaces such as the living room, kitchen, and bedroom. This creates a constantly evolving smart home energy strategy. From heat pump water heaters to whole-house solar energy storage, from voice interaction to invisible energy-saving, Haier Smart Home is building a zero-carbon ecosystem for homes covering energy generation, smart management, and scenario services. This system not only creates a more cost-effective and comfortable green living experience for users but also provides a complete solution for the global low-carbon transformation of households.


## New Zealand "Living House"

The Living House is an 85 $m^2$ gable-roofed, three-bedroom home designed by architects RTA Studio to be a working model for low-cost, low-carbon living in New Zealand. Carbon modelling shows a balance of –12,056 $kgCO_2e28$, meaning this modular home is not only affordable but climate-positive.

As a key partner, Fisher & Paykel Home Solutions contributed to thermal design modelling and the specification of HVAC, solar and hot water systems.

The solar system, sized for a low energy home, supported a 40%reduction in overall energy use. With a 7.12 kW solar package, including battery storage, modelling showed that electricity consumption could be reduced by up to 75-80%. Through this partnership, we helped ensure that the Living House would be warm, dry and comfortable year-round, while costing less to run than a typical New Zealand household.

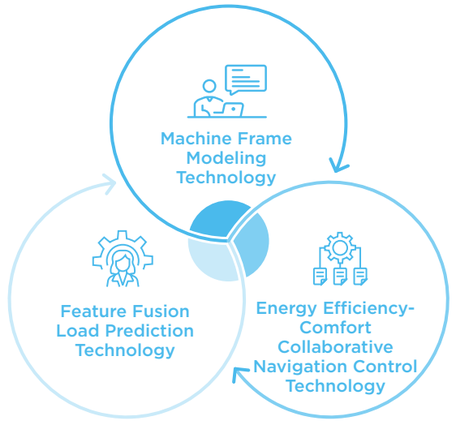
By proving that modest, accessible housing can be carbon-positive, The Living House sets a new benchmark. It shows how design and technology together can reduce construction costs and emissions, paving a practical pathway towards climate-zero living in New Zealand.

# Smart Building Solutions: Dual Control of Energy and Carbon

Haier Smart Home's Smart Building Solutions are centered around an AI-driven building brain, deeply integrating high-efficiency energy-saving equipment and multi-energy complementary technology systems to create carbon-neutral solutions that cover the entire building life cycle. These solutions offer systematic low-carbon transformation support for commercial, industrial, and public buildings.

Utilizing Haier's cloud service and its massive operational data from various regions, scenarios, and climates across the country, a hybrid modeling approach combining mechanism models and data-driven models is adopted. This method not only addresses the lack of accuracy of mechanism models in describing complex real-world operating conditions but also overcomes the limitations of data-driven models, which rely heavily on high-quality training data and often exhibit poor generalization capabilities.

This technology enables higher-frequency and more accurate predictions during manufacturing. It operates effectively with a lower load range and reduced personnel input, leading to superior forecasting of future loads.




This technology employs target balancing strategies and methodologies. It achieves rapid and precise control while simultaneously ensuring optimized pathways.

### Platform Layer: Comprehensive Smart Building Control Platform for Energy Coordination

The comprehensive smart building control platform breaks traditional boundaries, achieving unified dispatching and optimization of multiple energy types including electricity, water, cooling, and heating. The system features four core capabilities—data overview, carbon management, energy consumption forecasting, and intelligent configuration—to build a complete management loop from monitoring and analysis to decision-making and execution, significantly enhancing energy efficiency and operational economics.

### Product Layer: Next-Generation IoT Multi-Connection Units Redefine Industry Standards

The next-generation IoT-enabled multi-connected units upgrade systems across efficient heat exchange, precise temperature control, intelligent airflow, and water-fluorine-electric separation architectures. With an industry-leading maximum single module capacity of 48HP and a smaller footprint, these products achieve dual breakthroughs in energy-saving and reliability under complex environments, while laying the foundation for large-scale applications of low-GWP (global warming potential) refrigerants.

### Application Layer: Multi-Scenario Practical Applications Establish Industry Transformation Models

The solutions have already been implemented in industrial parks, transportation hubs, public works, and cultural heritage buildings, providing customized carbon and energy planning and system optimization. These practices effectively reduce carbon intensity while ensuring functionality and comfort, offering efficient zero-carbon implementation pathways for multiple industries.

## Smart Parks

### BYD Changsha Industrial Park Project

To meet the precision cooling requirements in high-temperature conditions, Haier Smart Home developed an integrated high-efficiency machine room system, achieving both energy savings and reliability breakthroughs.

**Containerized Integrated Design**

Modular layout integrates the main unit, water pump, and cooling tower, optimizing the pipe system to reduce water flow resistance and auxiliary energy consumption.

**Intelligent Control System**

Real-time perception of environmental and load changes enables dynamic adjustment of operating status, ensuring precise matching of cooling output with demand.

This solution has achieved an integrated energy efficiency ratio of over 5.0 year-round, improving energy efficiency by over **40%** compared to traditional machine rooms, providing a replicable energy-saving and decarbonization pathway for high-energy-consuming industries.

BYD Changsha Industrial Park


Integrated High-Efficiency Machine Room

## Smart Transportation

### Shenzhen Metro Line 14—"Wind-Water Synergy" Solution

To address challenges of high energy consumption, limited space, and noise control in rail transit, Haier Smart Home created the "Wind-Water Synergy" smart energy-saving system for Shenzhen Metro Line 14, achieving dual breakthroughs in energy efficiency and space utilization.

**High-Efficiency Equipment Upgrades**

High-efficiency magnetic levitation chillers, optimized pump and cooling tower configurations reduce system resistance and power consumption.

**Intelligent Operation and Maintenance**

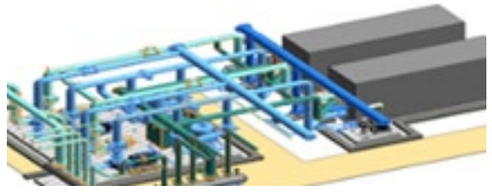
Demand-driven cooling based on load prediction, automated operation and maintenance platform for continuous energy-efficiency optimization.

**System Integration Design**

BIM technology optimized equipment layout, saving 24% in equipment space and reducing power consumption by over 3% through optimized piping systems.

This solution achieves 50% energy savings compared to conventional machine rooms and over 30% savings compared to traditional systems. It not only addresses energy and space challenges in metro operations but also sets an industry standard for green low-carbon transit transformation, winning several technical innovation honors.

Shenzhen Metro Line 14 Platform



BIM Model

## Smart Public

### Welfare-Nanjing Drum Tower Hospital—Magnetic Levitation Technology Empowering Green Healthcare

Addressing hospitals' stringent requirements for cleanliness, silence, and continuous operation, Haier Smart Home launched smart environmental solutions centered on magnetic levitation variable frequency units, providing green, stable, efficient smart environmental assurance for modern hospitals.

**Magnetic Levitation Variable Frequency Units**

Using oil-free friction magnetic bearing systems, precisely matching differentiated loads across departments, achieving efficient partial-load operation, simultaneously achieving energy saving and noise reduction

**Intelligent Zone Control**

Based on departmental functional characteristics, implementing independent temperature control for outpatient, operating rooms, wards, and other areas, eliminating energy waste and ensuring precise environmental management

Nanjing Drum Tower Hospital



## Smart Cultural

### Heritage Conservation Sanxingdui Archaeological Excavation Facility

To meet the precise requirements for temperature, humidity, air cleanliness, and airflow comfort in the excavation warehouse—while enabling intelligent control—Haier Smart Home's central air-conditioning division collaborated with the Sichuan Provincial Institute of Cultural Relics and Archaeology to develop an innovative integrated total-air solution for the Sanxingdui Archaeological Site. Through the synergy of precision climate control, energy recovery, and intelligent regulation, the system not only ensures environmental stability for archaeological conservation but also achieves significant optimization in energy consumption, paving the way for a new approach to environmental management in specialized cultural heritage preservation scenarios.

**Precision Temperature and Humidity Control**

A combined solution integrating fluorine-based refrigeration systems with fresh-air humidification enables independent regulation of temperature and humidity. Exhaust air heat recovery technology replaces conventional electric heating, significantly reducing overall energy consumption.

**Air Cleanliness Assurance**

Multi-stage filtration combined with over 30 configurable functional modules ensures compliance with stringent air purification and sterilization requirements. At the same time, airflow organization is optimized to reduce fan energy consumption.

**Comfort-Oriented Airflow Regulation**

Based on real-time environmental monitoring data, a demand-based air supply mode is activated, dynamically adjusting airflow volumes to ensure uniform and comfortable air distribution within the excavation facility, while avoiding energy waste caused by excessive air supply.

**Intelligent Operation and Management**

Leveraging a customized cloud platform integrated with environmental sensors and AI algorithms, the system automatically adjusts air-conditioning operating parameters, reduces manual intervention, and continuously enhances energy efficiency performance.

Sanxingdui Smart Air Cloud Platform

Sanxingdui Exhibition Hall

# Smart Cold Chain: Reshaping the Refrigeration Ecosystem

As a global leader in cold chain technology, Haier Carrier Commercial Refrigeration leverages breakthrough technologies such as SPI (Frozen Heat-Pump Synergy System) and subcritical $CO_2$ systems to create smart cold chain solutions for a full range of applications, including snow and ice entertainment, food retail, and airport hubs. These solutions provide end-to-end services, from design and planning to intelligent operations, driving the global cold chain industry's transition to high-efficiency, low-carbon solutions.

## National Speed Skating Oval Subcritical $CO_2$ Direct Cooling Ice System

### The National Speed Skating Oval uses an innovative subcritical $CO_2$ refrigeration system as a green ice-making solution.

This system consists of six single compressors, each with a cooling capacity of 600 kW, utilizing $CO_2$ gas compressed to high temperature and pressure. After cooling, the $CO_2$ is throttled into an expansion tank and finally completes the refrigeration cycle in the evaporator.

**Adjustable Injector**

Recovers low-pressure gas during $CO_2$ throttling to save compressor work and improve system efficiency.

**Direct Cooling Ice Technology**

$CO_2$ evaporates in concrete floor coils, controlling ice surface temperature differences to ≤0.5°C. This reduces operational energy consumption by 30%, saving 2,000 MWh of electricity annually. The waste heat generated during ice-making is fully recovered.

**Heat Recovery**

High-temperature heat recovery (80°C/470 kW) for ice-making, dehumidification, and hot water; medium-temperature heat recovery (35°C/680 kW) for ice melting and floor frost prevention. This technology saves about 5,400 GJ of heating annually and reduces compressor energy consumption.

This system's $CO_2$ charge is 43 tons, with direct carbon emissions nearing zero, resulting in an annual carbon reduction of 45,900 $tCO_2e$, showcasing the exceptional environmental performance of green refrigeration technology in large venues.


2021-2022 Cold Chain Industry Excellent Case Collection


National Speed Skating Oval Carbon Dioxide Units

National Speed Skating Oval "Ice Ribbon"

## Hysan Supermarket Hong Kong SPI Water-Cooled Inverter System

Haier Carrier designed an "air-conditioned cold chain solution without machine room" for Hysan Supermarket in Hong Kong, featuring Mendos refrigeration cabinets, ChaoYue series freezers, and AIW frozen island cabinets, all powered by customized SPI water-cooled inverter units to achieve energy efficiency improvements.

### SPI Water-Cooled Inverter Units

**Independent inverter control**

Each refrigeration or freezing unit is equipped with its own inverter compressor, allowing for infinitely adjustable cooling power based on real-time temperature needs, minimizing energy losses from frequent on/off cycles.

**Environmental refrigerants**

Uses R448A, which has a lower GWP than traditional refrigerants and reduces direct emissions risk through optimized design.

**Heat recovery design**

100% waste heat recovery for domestic hot water use, enabling energy cascading.

### Refrigeration and Freezing Cabinets

**Mendos Series**

Optimized design increases storage by 25% and display area by 10% while reducing energy consumption by 10%.

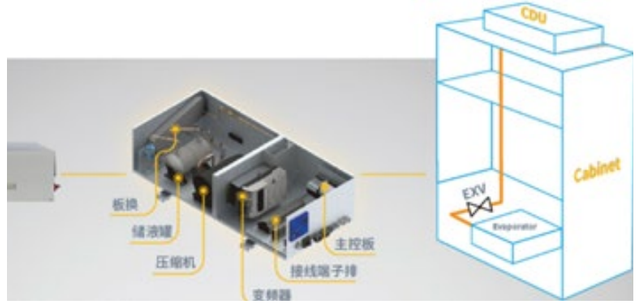
**Velando Series Freezers**

Operating temperature increased from -35°C to -28.5°C, reducing compressor energy consumption by 17% and using three-layer hollow anti-fog glass doors to improve insulation and reduce cold loss.

**AIW Plus Dual-compartment Island**

Integrated horizontal design ensures high-efficiency operation under harsh conditions.

Hysan Supermarket




SPI System

# Green Ecosystem: Co-creating a Circular and Zero-Carbon Future

Driven by industry transformation, grounded in public participation, and connected through a circular system, we are building an end-to-end low-carbon solution that spans production, lifestyle, and ecology—ushering in a new era of sustainable development.

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Driving Circular Economy and Resource Regeneration 63

Setting Industry Paradigms and Co-Creating a Low-Carbon Ecosystem 69

Advocating Green Consumption and Delivering Sustainable Value 74

# Value Chain Collaboration for Low-Carbon Impact

Haier Smart Home is reshaping the sustainability landscape of its value chain by establishing a closed-loop system that integrates green procurement, low-carbon logistics, and circular regeneration. Beyond embedding low-carbon commitments into its own operations, the Company extends its environmental responsibility upstream to suppliers, across logistics networks, and throughout the full product lifecycle—driving the entire industrial ecosystem toward a carbon-neutral future

## Advancing Green Procurement

Haier Smart Home regards green procurement as a strategic cornerstone for achieving value-chain carbon neutrality. Guided by the *Special Framework for Low-Carbon Supply Chain Development*, the Company has systematically built a full-lifecycle supplier management system, spanning supplier admission, ongoing management, performance evaluation, and exit mechanisms.

Carbon management performance is incorporated as a core indicator within supplier ESG assessments. Through targeted capability-building initiatives and digital tools, Haier Smart Home empowers partners to strengthen their carbon governance—transforming supplier engagement from *"requiring emission reductions"* to "enabling collaborative progress."

To date, Haier Smart Home has issued carbon-reduction initiatives to 100% of its suppliers, and 12 factories have been recognized as national-level *Green Supply Chain Management Enterprises*, underscoring the Company's leadership in supply-chain green transformation.

From target-setting to capability co-creation, from performance guidance to system empowerment, Haier Smart Home is building a clear-accountability, capability-aligned, data-driven green supply chain ecosystem, providing solid support for value-chain-wide carbon-neutrality goals.

### Haier Air Conditioning Becomes China's First Home Appliance Company to Receive ISO 20400 Sustainable Procurement Conformity Statement

In April 2025, Haier Air Conditioning received ISO 20400 certification from the international authority BSI, validating the effectiveness of its *Green Procurement Ecosystem*. The Company has built a sustainable procurement system through three key innovations:


**01** Strategic Leadership and Source Control

Sustainability requirements are deeply embedded into corporate strategy through the innovative *First-Class Resource Introduction Process*, which establishes 28 admission criteria covering social responsibility and environmental performance, embedding sustainability standards at the product design stage.

**02** Digital Enablement and End-to-End Transparency

A digital platform enables transparent, end-to-end management of over 400 core suppliers, establishing full traceability from rare-earth sourcing to packaging material recycling—forming an industry-leading digital supply-chain infrastructure.

**03** Closed-Loop Ecosystem and Value Co-Creation

By operating an industry-leading appliance dismantling and recycling facility with annual capacity exceeding one million units, and establishing a supplier collaboration platform with tiered management, Haier Smart Home achieves dual optimization of procurement costs and environmental benefits.

## Full-Process Low-Carbon Management

Haier Smart Home has established a low-carbon management system[6] covering the entire supplier lifecycle—from admission, management, evaluation, to elimination—with differentiated strategies tailored to supplier categories, ensuring closed-loop execution from system design to operational implementation.


### Supplier Admission

**Supplier Selection**

**Green Procurement**

Prioritizing products aligned with lifecycle principles—such as low-carbon steel and recycled plastics—and partnering with suppliers demonstrating advanced clean manufacturing and carbon-management capabilities.

**Best Practice: Compared with conventional electrolytic aluminum, low-carbon aluminum produced using renewable energy significantly reduces emissions. Fisher & Paykel has formed strategic partnerships with premium low-carbon aluminum suppliers, enabling large-scale adoption and reducing 7,911 $tCO_2e$ annually.**

**Localized Procurement**

Giving priority to suppliers near manufacturing sites to reduce transport emissions while supporting local employment.

**Best Practice: In 2024, approximately 70% of procurement was localized. Haier Smart Home will continue increasing this proportion.**

[6]The assessment dimensions of carbon management level include carbon emission data disclosure, carbon reduction planning setting, and carbon reduction progress implementation.

## Supplier Management

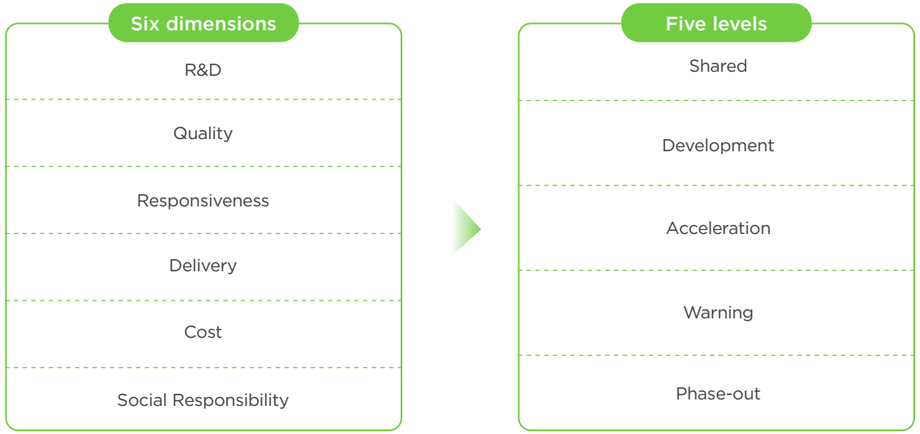
### Supplier Surveys

A dynamic sustainability survey mechanism systematically collects and analyzes supplier carbon-management data.

**Best Practice: In 2024, a dual-carbon survey covering 451 suppliers was conducted via the Haida Source system, addressing carbon targets, renewable energy plans, clean technology adoption, and future reduction goals.**

## Supplier Evaluation

Suppliers are evaluated using a performance scorecard across six dimensions: R&D, quality, responsiveness, delivery, cost, and social responsibility, and classified into five tiers: Shared, Development, Acceleration, Warning, and Elimination.




Social responsibility assessment includes carbon management specialized indicators, using combined qualitative and quantitative indicators to comprehensively examine suppliers' current carbon management levels across multiple key dimensions:

**Carbon-management indicators within social responsibility assessments include:**

- Existence of carbon accounting systems
- Defined energy-efficiency and emission-reduction plans with annual targets
- Actions related to green material adoption

## Comprehensive Low-Carbon Empowerment

### Building Capability Foundations: Developing Future-Oriented Green Supply Chain Professional Teams

Haier Smart Home positions internal capability building as core engine driving green supply chain transformation. The company systematically improves team professional capabilities in green procurement evaluation, supplier carbon management, and closed-loop governance through constructing professional training systems covering key areas including green procurement standards and supplier carbon data management, integrating internal specialized training, external expert guidance, and digital platform courses.

From standard formulation to data governance, from capability cultivation to systematic empowerment, Haier Smart Home is driving the entire supply chain toward a more transparent, efficient, and low-carbon future through systematic internal capability upgrades.

| Internal Specialized Training | External Expert Training | Digital Platform Courses |
|---|---|---|
| Conducting internal employee training covering full-process supplier carbon management content | Launching "Spark Plan" on procurement platform, organizing 5 external training sessions with over 100 participating employees, with training content including supplier carbon management and green procurement | empower employees, launching 107 online courses including multiple courses that can improve internal supply chain carbon management levels |

**Digital Empowerment — Communicating Haier Smart Home's carbon management requirements for suppliers through Haidayuan supplier management system**

Internal Employee Training Site

## Ecosystem Co-creation: Empowering Value Chain Collaborative Carbon Reduction

Haier Smart Home positions suppliers as important partners in achieving full-chain carbon neutrality, driving industrial chain green low-carbon transformation through systematic capability co-creation and digital empowerment.

The company regularly hosts supplier conferences to share industry-leading carbon management methodologies and practical experiences, and more actively promotes connecting the Haidayuan system with self-developed carbon management digital platforms, planning to provide suppliers with full-process support from carbon accounting, data analysis, to management level improvement in the near term.

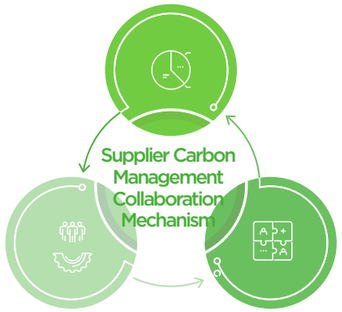
By constructing "concept sharing—capability building—tool empowerment" three-in-one collaboration mechanism, Haier Smart Home is working with suppliers to construct a transparent, efficient, sustainable carbon management ecosystem, achieving transformation from single-point emission reduction to systematic collaboration, providing implementable pathways for overall industrial chain carbon neutrality objectives.

### Philosophy Sharing

Disseminate Haier Smart Home's carbon neutrality strategy and green procurement standards to suppliers, promoting consensus on sustainable development across the value chain.

### Tool Empowerment

Connect suppliers' carbon management systems with Haier's Carbon Management Platform to enable precise collection and comparative optimization of carbon emission data.




### Capacity Building

Systematically enhance suppliers' carbon management capabilities through customized training and resource support.


| | | |
|---|---|---|
| Concept Sharing | Supplier Conference Communication | · We position supplier conferences as key platforms for driving supply chain low-carbon transformation, clearly communicating Haier Smart Home's low-carbon development requirements and support measures to supplier partners, empowering leading partners to share their insights and achievements, stimulating innovation vitality across the network, jointly advancing toward a more sustainable future |
| Tool Empowerment | Digital Platform Assistance | · We plan to achieve one-click synchronization and automated accounting of supplier carbon data by connecting Haidayuan with Smart Home carbon management platform. The platform will simultaneously provide suppliers with year-over-year carbon emission trends and comparison analysis with industry averages, supporting precise positioning and management |
| Capability Building | Supplier On-Site Training | · We have established tiered supplier carbon management empowerment systems: on one hand, regularly organizing carbon management training for nearby suppliers at Haier Smart Home factories, conveying energy-saving and emission reduction practices and accounting methods through production line site visits and excellent case studies; on the other hand, for key focus suppliers, conducting one-on-one carbon management capability specialized diagnosis and improvement coaching using offline audit opportunities |





Supplier Conference Site

## Enabling Green Logistics

Haier Smart Home actively explores new technologies and applications, advancing logistics efficiency improvement and carbon reduction. In warehousing, Haier Smart Home has constructed smart warehouses in China including Jimo, Huangdao, and Jiaozhou, achieving unmanned operations for large items from inbound to outbound, optimizing warehousing operation cycles and dynamic energy consumption management, significantly improving operational efficiency while reducing energy intensity, achieving warehousing carbon reduction; in transportation, Haier Smart Home has constructed its own transportation fleet RRS and smart logistics systems, achieving delivery route self-optimization while actively using new energy vehicles, reducing carbon emissions.

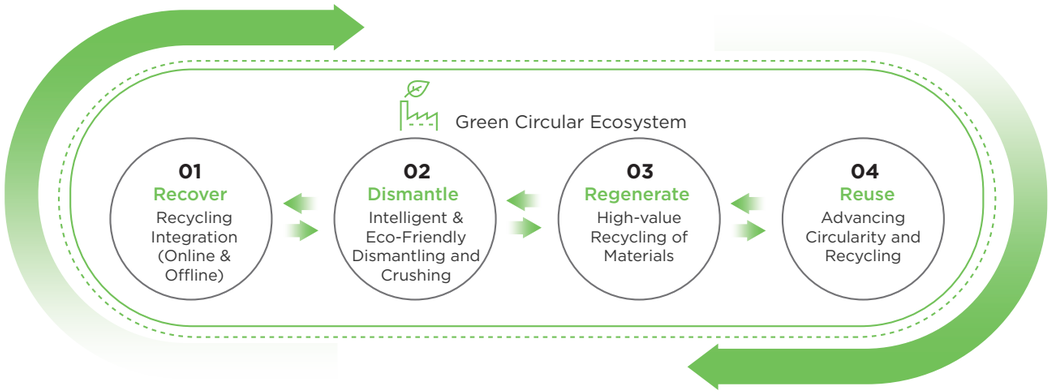
Going forward, Haier Smart Home will continue deepening green logistics construction, continuously exploring innovative technologies and models. In warehousing, accelerating intelligent and green upgrading of warehousing facilities, introducing more advanced energy-saving technologies and renewable energy utilization technologies, achieving warehousing energy-saving and carbon reduction objectives. In transportation, continuing to increase clean energy vehicle promotion. Meanwhile, strengthening cooperation with upstream and downstream supply chain enterprises, driving green transformation of logistics across the entire home appliance industry.

# Driving Circular Economy and Resource Regeneration

Over the past half century, global resource consumption has surged over threefold and continues growing at 2.3% annually[7]. As core engine of green transformation, circular economy demonstrates dual missions: both alleviating increasingly severe resource supply pressures and becoming a key pillar for achieving "dual carbon" objectives.

In this profound industrial transformation, Haier Smart Home has taken the lead, constructing the home appliance industry's first "recycling—dismantling—regeneration—reuse" full-chain circular system. Leveraging efficient recycling networks covering 2,728 districts and counties nationwide and leading re-circulation interconnected factories, it drives resource circular utilization upgrades toward high-quality, digital, and green directions, pioneering exploration of new green circular economy development models.

### Haier Smart Home Circular System





Home Appliance Re-Circulation Process Diagram

[7]UNEP《Global Resource Outlook 2024》

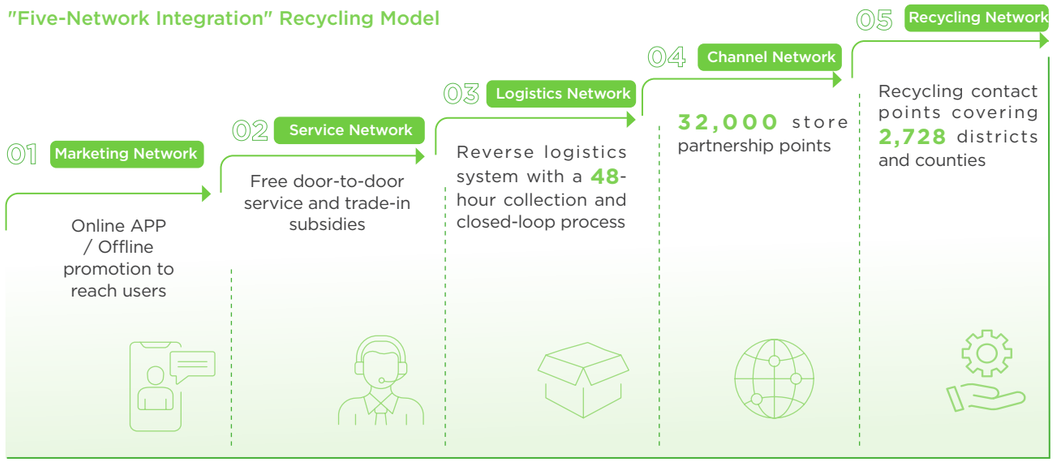


# Building a Closed-Loop Recycling System

Traditional waste home appliance recycling systems have long faced pain points including dispersed channels, low efficiency, and insufficient public participation, constraining scale and standardization development of resource regeneration. Facing this systematic challenge, China has intensively issued multiple policies in recent years, comprehensively advancing recycling system modernization upgrades across dimensions including network construction, standard improvement, mechanism optimization, and supervision strengthening.

Haier Smart Home, as industry leader, has pioneered construction of circular ecosystem closed-loop spanning "recycling-dismantling-regeneration-reuse" full processes. The company innovatively created front-end "Five Networks Integration" recycling model, achieving omnichannel online and offline coverage through organic coordination of marketing network, service network, logistics network, channel network, and recycling network, providing users with convenient "trade-in" one-stop service experience. In back-end operations, Haier Smart Home leverages "Five Flows in One" digital platform to achieve full-process visibility and traceability of orders, goods, funds, information, and invoices, ensuring standardized disposal and resourceful utilization of every waste home appliance.

### "Five-Network Integration" Recycling Model




### Digitalized Recycling Innovation: Reshaping User Participation in Green Circular Experience

Haier Smart Home, with "Haijing Green Recycling Platform" as core, has constructed digital service systems covering home appliance circulation full lifecycle. The platform deeply integrates "Internet + recycling" model, leveraging the group's full-domain channels, logistics, and service networks to create convenient, transparent, trustworthy one-stop green recycling experience for users.

Users can initiate recycling requests with one click through multiple entry points including Haier Smart Home APP, Haijing Recycling Mini Program, and official accounts. The platform leverages intelligent dispatch and national service networks to achieve rapid response within 2 hours and complete full-process closed loop from recycling to disposal within 48 hours, promoting extreme simplification and low-carbonization of home appliance update processes through mechanisms including "trade-in" and "old-for-smart." More notably, the platform innovatively introduces "carbon points incentive mechanism," quantifying users' green behaviors into accumulatable, exchangeable carbon assets. Users can obtain points after completing recycling and redeem benefits in Haier points mall, achieving "low-carbon behavior—user value" bidirectional conversion.

## Haijing Recycling Platform

From Old-for-New to Old-Promotes-New: "Five Networks Integration" Recycling Model Innovatively Leading Industry

### Main Functions

- One-Click Appointment Recycling
- One-Click Valuation
- Transparent Fulfillment
- Carbon Points Incentive

### Innovative Practices

**Digitalized Recycling Services**
- Digital Platform
- User Experience
- Data Traceability

**Multi-Category Recycling Expansion**
- Home Appliance Recycling
- 3C Electronics Recycling
- Used Clothing Recycling

**Efficient Settlement and Green Credit**

### Results and Impact

**Environmental Results**

Platform has cumulatively recycled nearly **30** million electronic and electrical products, effectively converting waste resources into recycled materials through large-scale recycling and resourceful processing, significantly reducing environmental loads, supporting popularization of low-carbon circular lifestyles

**Social Impact**

Platform innovatively created "doorstep, trade-in" one-stop service model, strictly practicing standardized disposal of recycled products, improving public participation convenience while effectively ensuring environmental action implementation

## Global Circular Network: Constructing Boundless Green Recycling New Ecosystem

Haier Smart Home, with "Global Operations, Local Practice" as core philosophy, weaves a deeply integrated, efficiently coordinated green recycling network worldwide.

**China Practice: Systematic Recycling Leading Green Consumption:** Through nationwide offline stores, malls, and other multi-channel recycling points, combined with free mailing and door-to-door pickup services, effectively lowering consumer participation barriers. The company strictly implements "zero-fee recycling" policy, protecting consumer rights and promoting green consumption concept popularization.

### Offline Recycling: Offline Stores or Malls

**32,000** Offline Stores

Over **100,000** Service Personnel

Over **100** Logistics Distribution Centers

**3,000** Recycling Network Points

Coverage: **31** provinces/autonomous regions/municipalities, **317** prefecture-level cities, **2,728** districts and counties nationwide

Haier Smart Home adheres to "collect all that should be collected" operating guidelines, continuously strengthening home appliance recycling responsibility practices:

- Participated in home appliance recycling target responsibility action for **three consecutive years** and exceeded recycling targets
- Cumulatively recycled and processed nearly **30** million waste home appliances through all channels
- 2024 annual recycling volume reached **7.69** million units, **10%** year-over-year increase

**Global Collaboration, Localized Practices Driving Circular Transformation:** In global operations, Haier Smart Home respects environmental regulations and commercial practices of different markets. Overseas subsidiaries have constructed recycling mechanisms tailored to local requirements based on localized characteristics.

### Haier Smart Home Global Subsidiary E-Waste Recycling Practice Cases

**Haier Europe (European Market)**

Joined local WEEE (Waste Electrical and Electronic Equipment) recycling systems, becoming member of France Ecologic and Italy ERION, promoting compliant recycling

**GE Appliances (North American Market)**

Participated in US Environmental Protection Agency (EPA) "Responsible Appliance Disposal (RAD) Program," reducing greenhouse gas emissions and landfill waste through recycling old appliances

**FPA (Australian & New Zealand Market)**

Advancing waste landfill reduction at four distribution centers in Australia, with packaging and product waste recycling rate improved to 95%

## Innovation-Led Circular Manufacturing

As the home appliance industry's first Recycling Interconnected Factory, the Haier Smart Home Laixi Recycling Interconnected Factory focuses on end-of-life appliance dismantling, high-value recycled material production, and full-process digitalized recycling and utilization. The facility is capable of dismantling 2 million end-of-life appliances annually and producing 30,000 tons of modified recycled pellets[8] each year.

In addition, the factory actively adopts renewable energy sources such as photovoltaic power and extensively deploys green, energy-efficient equipment to reduce carbon emissions, achieving zero exhaust gas emissions. By building an end-to-end, integrated closed-loop green ecosystem, the facility delivers an annual carbon reduction of approximately **17,000** tons, equivalent to planting **1.55** million trees.


Fully Automated Dismantling Line at the Qingdao Laixi Recycling Interconnected Factory

Following the successful launch of the Qingdao Laixi project, Haier Smart Home has continued to lead the circular economy frontier. In 2024, the Company further expanded its footprint by initiating construction of an industry-leading, large-scale, and technologically advanced green recycling industrial park in Gong'an County, Hubei Province. Going forward, Haier Smart Home will continue promoting the nationwide rollout of its integrated, high-quality circular model, achieving efficient end-to-end connectivity across appliance recycling demand, standardized treatment, and resource reutilization.


Groundbreaking Ceremony of the Gong'an Recycling Industrial Park

[8]After sorting and cleaning the mixed plastics from discarded home appliances, they are subjected to melt extrusion with the addition of modifying agents such as compatibilizers and stabilizers, ultimately being repurposed into high-purity, high-performance plastic pellets.

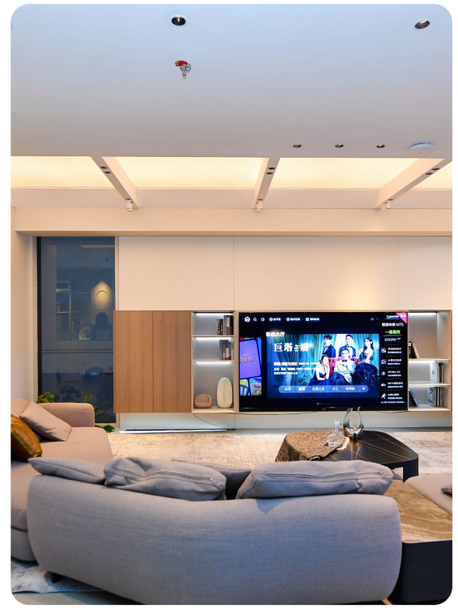
## Innovative Circular Recycling Technology

In the deepening phase of the circular economy, Haier Smart Home has taken another decisive step forward—extending its green efforts into the core of material regeneration and reshaping plastics from "waste" into "new resources."

By deploying intelligent sorting systems and high-precision modified pelletizing production lines, Haier Smart Home has established a comprehensive plastics recycling technology system. Each piece of discarded plastic undergoes dozens of precise processes—including cleaning, sorting, pelletizing, and modification—to ultimately achieve a purity level of 99.9%, with mechanical performance and stability comparable to virgin materials, truly realizing the concept of "waste reborn as new."

Today, these high-quality recycled materials are widely applied across multiple sectors, including home appliances, automotive manufacturing, green packaging, and building materials, forming a cross-industry circular ecosystem. Haier's recycling business has taken the lead in formulating standards such as the Technical Specifications for the Use of Recycled Plastics in Household Appliances, guiding the industry toward standardized application and high-quality development of recycled plastics.

This represents not only an improvement in resource efficiency, but also a fundamental redefinition of the concept of "waste." Within Haier Smart Home's circular system, there is no true waste—only misplaced resources.



### Circular Regeneration Cases

#### Metals

After precision disassembly of discarded home appliances, metallic materials such as iron, copper, and aluminum are channeled through a closed-loop pipeline to strategically partnered professional facilities, including steel mills and aluminum plants. Following remelting and refining, these materials are reintroduced into manufacturing sectors such as home appliances and automotive production. According to research by the China Association of Circular Economy, utilizing one ton of scrap steel, scrap copper, or scrap aluminum can reduce carbon dioxide emissions by approximately 1.6 tons, 2.8 tons, and 14.6 tons, respectively, compared to extracting primary resources.

#### Plastics

Plastics recovered from disassembled waste home appliances undergo a sophisticated recycling process: first through high-purity automated cleaning lines, then high-precision intelligent sorting systems, and finally high-performance pelletizing lines for recycled new materials. The output is customized modified materials suitable for circular reuse, achieving a purity of up to 99.9% and performance comparable to virgin plastics. These materials are widely used in industries such as home appliances, automotive, and daily chemicals. According to research by the China Association of Circular Economy, utilizing one metric ton of recycled plastic can reduce carbon dioxide emissions by approximately 2.9 metric tons.

# Setting Industry Paradigms and Co-Creating a Low-Carbon Ecosystem

At this critical juncture of global low-carbon transformation, Haier Smart Home, as an industry leader, is reshaping the value logic of the home appliance sector through technological breakthroughs, standards development, and ecosystem empowerment. Beyond driving deep decarbonization across its own value chain, the Company also accelerates low-carbon transformation across the entire industry through open technologies, shared standards, and integrated resources.

## Open Collaboration for Ecosystem Empowerment

Haier Smart Home remains firmly committed to advancing global green and low-carbon transformation. By actively participating in authoritative domestic and international sustainability organizations and initiatives, the Company not only advances its own carbon-neutral goals but also provides clear direction for industry development through innovative practices.

With forward-looking strategic deployment and practical low-carbon solutions, Haier Smart Home continues to lead the home appliance industry toward greener and smarter transformation, contributing Chinese solutions to global ecological civilization.

### United Nations Global Compact (UNGC)

In 2021, Haier Smart Home officially joined the United Nations Global Compact (UNGC), committing to uphold the UNGC's Ten Principles across human rights, labor, environment, and anti-corruption, while deeply aligning its dual-carbon goals with the United Nations 2030 Sustainable Development Goals (SDGs).

Owing to its outstanding performance in green innovation and sustainable business practices, Haier Smart Home has been listed on *Fortune China ESG Impact List* for four consecutive years and ranked first in its industry. Its "6-Green" strategy has also been recognized as a model for SDG implementation in the manufacturing sector.

**Practice Highlights: Implementing UNGC Environmental Principles Through the "6-Green" Lifecycle Strategy**

- **Green Operations**: **100%** of self-owned supply chain factories in China certified under ISO 14001 Environmental Management System
- **Green Procurement**: Carbon reduction initiatives issued to **100%** of suppliers, with comprehensive supplier carbon management surveys conducted
- **Green Design**: Sustainability pursued across modular commonality, materials and processes, product packaging, and efficiency enhancement
- **Green Manufacturing**: Haier's Jiaozhou SCO Industrial Park and Haier's Qingdao Sino-German Industrial Park have been awarded the Zero-Carbon Park Certificate.
- **Green Disposal**: Industry-first Recycling Interconnected Factory achieving **30%** efficiency improvement and over **95%** recycling utilization rate
- **Green Recycling**: Development of a digital, traceable online recycling platform through five-network integration, delivering optimal user experience

### China Energy Conservation Association Carbon Neutrality Committee

Haier Smart Home joined as a founding core member of this Committee (established in 2021). The committee was spearheaded by the China Energy Conservation Association with the aim of promoting carbon neutrality standard formulation, technology dissemination, and policy research for key industries.

#### Key Areas of Involvement

**Standard Development**

- Participated in compiling group standards such as the *Guidelines for Carbon Neutrality Enterprise Evaluation and the Guidelines for Carbon Footprint Accounting of Household Appliances*, providing an implementation framework for the industry.

**Certification Practice**

- In 2022, Haier's Tianjin Washing Machine Interconnected Factory received a "Carbon Neutrality Certification" from the Committee (among the first in the home appliance industry).
- Multiple products have undergone carbon footprint verification with technical support from the Committee.

**Industry Advocacy**

- Co-initiated the *Home Appliance Industry Carbon Neutrality Action Initiative*, proposing a full lifecycle emission reduction pathway covering "R&D-Manufacturing-Recycling".

#### Specific Collaboration Cases

**Technical Seminars**

Shared insights on the "Carbon Management System Based on the Industrial Internet" at the Committee's annual forum, contributing Haier Smart Home's experience in digital carbon reduction.

**Green Finance**

Leveraged the Committee's platform to connect with carbon emission reduction financial instruments. Issued green bonds in 2023 to fund low-carbon technology research and development.

## Showcasing Leadership at Global Exhibitions

Haier Smart Home is a constant presence at world-class industry exhibitions—not merely as a participant, but as a trend-setter and a messenger of technological innovation. From Berlin to Shanghai, from IFA to AWE, the Company showcases how Chinese smart manufacturing is reshaping the green future of the global home appliance industry through continuously evolving energy-saving technologies and circular concepts.

At IFA 2025, Haier Smart Home—achieving its 16th consecutive year as the world's No.1 large home appliance brand by retail volume—demonstrated its comprehensive evolution from *global sales leadership* to *smart ecosystem leadership*. From debuting streaming media TVs at IFA in 2005 to redefining industry benchmarks today with cutting-edge AI Vision technology and a full portfolio of green products, Haier Smart Home continues to establish Chinese brands as global leaders in the smart home arena.


2025 Berlin IFA Consumer Electronics Exhibition

### Exhibition Excellent Product Case Collection

#### Haier Super Energy-Efficient Refrigerator

Developed under a *localized innovation strategy*, this refrigerator is certified by Germany's VDE as the industry's most energy-efficient model—**30%** more efficient than the highest EU A-grade standard, representing the highest European benchmarks in energy efficiency, safety, and reliability.

Haier A-30% Super Energy-Saving Refrigerator

#### hOn Smart App

homes in Europe, hOn has surpassed 10 million registered users, with total overseas users exceeding 20 million. It enables unified management of Haier, Candy, and Hoover products and scenarios. Recently, hOn partnered with the global sustainability engagement platform AWorld, integrating environmental challenges and knowledge into daily user interactions—marking its evolution from product connectivity to a platform promoting green lifestyles.


hOn Smart Application



Meanwhile, at AWE, China's premier industry exhibition, Haier Smart Home continues to shape the green narrative through innovation. In 2024, the Company introduced the industry's first closed-loop system spanning *"appliance recycling to plastics recycling,"* enabling large-scale, high-value utilization of PCR plastics through advanced cleaning, sorting, and recycled material production lines. In 2025, this strategy was further upgraded—leveraging AI empowerment and smart energy management to transition from single-product energy saving to whole-home net-zero solutions, achieving a green leap from products to scenarios.

### 2024 & 2025 AWE: Haier Smart Home Circular Application Systems

- **2024 AWE:** Launch of the industry's first closed-loop system from appliance recycling to plastics recycling, producing high-quality recycled materials based on the most advanced production lines in the industry
- **2025 AWE:** Debut of next-generation high-quality recycled materials with 99.9% purity, near-zero performance degradation, and wide application across home appliances, automotive, luggage, 3C electronics, and office equipment


Circular Material Product Series

### Exhibition Excellent Product Case Collection

The world's most energy-efficient dishwasher, consuming **40%** less electricity than EU A-grade standards, certified as A-40% under the new EU energy labeling system


Heat Pump Dishwasher

Official release of the industry standard led by Haier; products under this standard achieve 20% higher washing efficiency and **30%** higher cleaning performance


AI Direct-Drive Washing Machine

## Co-creating Rules to Lead Development

As a builder of industry rules and a driver of green transformation, Haier Smart Home regards standards development as a critical lever for industrial change. Leveraging deep technological expertise and forward-looking practical experience, the Company has actively participated in and led the formulation of multiple key green and low-carbon standards—covering carbon footprint accounting, energy efficiency evaluation, circular design guidelines, and factory carbon-neutral pathways—continuously establishing scientific, unified, and actionable frameworks for the industry.

### Filling Industry Gaps with "Haier Solutions"

*Technical Specification for Green Design Product Evaluation – Household and Similar Electrical Appliances*

· First to incorporate modular disassembly and remanufacturing compatibility into green design evaluation

*Green Product Evaluation – Household Appliances*

· Establishes 27 quantitative indicators across energy efficiency, noise, hazardous substance restriction, and recyclability; adopted as the basis for national green product certification

*Low-Carbon and Environmental Evaluation Guide for Smart Home Appliances*

· Introduces additional carbon emission coefficients for AI adaptation and OTA upgrades to prevent energy rebound from "pseudo-intelligence"

*General Principles for Carbon Footprint Accounting of Household Appliance Products*

· Unifies system boundaries, data quality levels, and allocation principles, filling domestic standard gaps

*Green Supply Chain Management Evaluation Specification*

· Based on the "6-Green" strategy, incorporates supplier carbon audits, renewable energy ratios, and closed-loop recycling rates into star-rating evaluations

## Advocating Green Consumption and Delivering Sustainable Value

Through strategic market deployment, Haier Smart Home deeply integrates green and low-carbon concepts into the global consumption transformation process. By closely aligning energy-efficient product attributes with real user needs—supported by digital communication matrices and scenario-based experiential marketing—the Company systematically builds consumer recognition of green product value and promotes a shared global consensus on sustainable consumption.

In China, Haier Smart Home continues to reinforce the brand pillars of *"smart"* and *"energy-efficient"* through multi-dimensional marketing innovation, accelerating the mainstreaming of green consumption. Internationally, its premium brand Fisher & Paykel has pioneered green consumption guidance mechanisms in mature markets such as New Zealand and Australia, steadily steering appliance consumption toward low-carbon transition through the dual drivers of product upgrades and value communication. Key Initiatives

**Building a Smart Energy-Efficient Brand Image**

· Coordinated public media campaigns with central-level media outlets to enhance credibility and social influence
  – CCTV documentary *"Made in China with Intelligence"*
  – Xinhua documentary series *"Toward a Carbon-Free World"*
· **Industry standards leadership:** Developed the industry's first evaluation standards for smart building operation management and the national standard for magnetic levitation technology, promoted the inclusion of Haier's magnetic levitation technology in the list of low-carbon technologies for public institutions, and strengthened the technical authority.

**Strengthening Consumer Awareness**

· Deployment of professional tools at retail terminals to visualize estimated energy consumption and lifecycle value
  – Case: Heat pump dryers demonstrate significantly lower lifecycle costs compared to traditional electric dryers despite higher upfront investment

**Differentiated Experiential Marketing**

· Tailored engagement strategies for different consumer segments to reinforce expertise in smart energy-saving solutions

**Advocating Energy Transition**

· Active response to regional clean energy policies; cooking appliances are transitioning from gas to electricity

Here, we call on global consumers:

- Choose high-efficiency green products to reduce carbon footprints at the source
- Participate in trade-in and recycling programs to promote resource circulation
- Utilize smart energy-saving modes to optimize household energy management
- Mind the carbon footprint and choose for a greener future

Together with consumers, Haier Smart Home is turning every choice into a vote for a better future. We believe that when green consumption becomes habit and low-carbon living becomes the norm, our shared planet will move toward a more sustainable tomorrow.

# Conclusion

### Advancing Toward Carbon Neutrality: In Step with Our Time, In Symbiosis with the Future

Carbon neutrality is not an endpoint, it represents a profound transformation of development models, industrial logic, and the very fabric of civilization. In this journey—one that transcends borders and shapes the future—Haier Smart Home chooses innovation as its pen and responsibility as its ink, writing a green answer worthy of our time.

We firmly believe that carbon reduction is not a cost, but an investment; not a burden, but an opportunity. It serves as a new engine for high-quality corporate growth and a strategic inflection point for value redefinition across the home appliance industry. Confronted with shared challenges such as efficiency improvement bottlenecks, the complexity of carbon footprint management, and the absence of standardized recycling systems, Haier Smart Home consistently adopts the mindset of a pathbreaker—transforming challenges into drivers of innovation and obstacles into opportunities for collaboration.

Grounded in technology and inspired by real user scenarios, we have built a green product portfolio spanning the entire lifecycle. Anchored by an open ecosystem, we connect green design, intelligent manufacturing, and circular regeneration into a complete closed loop—making every appliance a node of low-carbon living and every factory a lighthouse of green manufacturing.

**Those who walk alone may move faster; those who walk together go further. Carbon neutrality has never been a solo performance—it requires resonance across the entire value chain.**

Haier Smart Home is committed to serving as the green link that connects all stakeholders across the industrial chain. Together with global partners, we will pool wisdom, share achievements, and co-create standards for a sustainable future.

On the road toward achieving carbon neutrality across our own operations by 2050, Haier Smart Home will continue to take innovation as its vessel and responsibility as its sail. Beyond laying a solid foundation for its own sustainable development, the Company is committed to paving practical pathways for the industry's green transition and contributing Chinese wisdom and industrial strength to the realization of global carbon neutrality goals.

Because we believe that every technological breakthrough, every green product, and every circular journey helps lighten the burden on our planet and store energy for tomorrow. The road ahead is long—but it is one we are moving toward together.


海尔智家
Haier smart home