

Hisense

Hisense Group Holdings Co., Ltd.

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Hisense

2024 White Paper on the Low-carbon Development of Hisense

Hisense

Hisense Group Holdings Co., Ltd.'s

Towards Carbon Neutrality

White Paper on the Low-carbon Development of Hisense

2024



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Hisense

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Executive Letters

As we celebrate the 55th anniversary of Hisense Group, we hereby solemnly pledge to all sectors of society that we will achieve peak carbon emissions in our operations by no later than 2026, and attain carbon neutrality in our operations by no later than 2050. This commitment is grounded in our past practices, our readiness in technology, and our future business development plans.

Combating climate change is an important theme that accompanies human development. Reflecting on the events of 2023, nations successfully completed the initial inventory of the Paris Agreement at COP 28, achieving a consensus on the urgent need to transition away from fossil fuels. Concurrently, China's dual-carbon strategy has made significant progress, actively fostering the low-carbon transition of energy-intensive industries while implementing energy-saving and carbon-reduction measures in key sectors. This commitment accelerates the promotion of a low-carbon mode of production and lifestyle.

Hisense has progressively evolved from a consumer-focused business centered on smart home appliances to a more diversified business model that includes automotive electronics, smart cities, smart healthcare solutions, and optical communications. Throughout this transformation, we have remained dedicated to sustainable development, firmly believing that this is a challenging yet essential pursuit. Achieving decarbonization not only fosters the sustainable growth of our company but is also crucial for creating a positive societal impact in terms of high-quality development.

In the face of the opportunities and challenges associated with a low-carbon transition, Hisense remains steadfastly committed to a long-term perspective on our journey. Our dedication to low-carbon and high-quality development has increasingly garnered recognition within society. To date, Hisense has been included three times on Fortune China's ESG Impact List and has been honored as a domestic best practice case in the APEC Business Leaders' Forum for the 'Sustainable China Industrial Development Initiative'. As we celebrate the 55th anniversary of Hisense Group, we hereby solemnly pledge to all sectors of society that we will achieve peak carbon emissions in our operations by no later than 2026, and attain carbon neutrality in our operations by no later than 2050. This commitment is grounded in our past practices, our readiness in technology, and our future business development plans. To underscore our commitment to achieving these goals, we are proud to release our first "Carbon Neutrality White Paper," which outlines Hisense Group's low-carbon development objectives, milestones, and action roadmaps.

Our long-term strategy is anchored in three core principles: technology leadership, perseverance, and collaboration. Hisense consistently prioritizes the dual themes of "green" and "intelligent" throughout our business transformation and upgrade, supported by increasing investments in technology research and development. Simultaneously, by integrating low-carbon principles across the entire industry value chain and product life cycle, we ensure that low-carbon considerations are embedded in all our processes, including technology innovation management, quality management, manufacturing management, and supply chain management. Moreover, by emphasizing care for our users, employees, and society, we aim for mutually beneficial outcomes, ultimately fostering the development of a Hisense green ecosystem that advances both industry and societal progress.

Our commitment to achieving peak carbon emissions by 2026 and carbon neutrality by 2050 marks the beginning of Hisense Group's journey toward sustainability. We will actively address climate challenges, broadening the scope of our carbon neutrality initiatives while remaining true to our legacy and embracing innovation. This endeavor involves the integration of low-carbon principles into emerging business sectors, such as renewable energy and automotive electronics, thereby accelerating our progress toward high-quality development that harmonizes sustainability with enhanced productivity.

As the world steadily moves toward carbon neutrality, Hisense remains unwavering in our commitment to providing an enhanced intelligent living experience for individual users. We are dedicated to offering greener intelligent solutions to government and enterprise clients while fostering technological advancement across the industry. Additionally, we aim to promote the development of a harmonious and sustainable society, positioning Hisense as a trusted enterprise committed to sustainable development for the next century.



Shaoqian Jia

Chairman of Hisense Group

About Hisense

Company Profile

Hisense Group Holdings Co., Ltd. (referred to as 'Hisense Group', 'Hisense' or 'the Group' in this report) was established in 1969 and owns Hisense Visual, Hisense HA, Sanden Holdings, Changelight, and Kelin Electric, which are listed in Shanghai, Shenzhen, Hong Kong, and Tokyo, and owns a number of brands such as Hisense, TOSHIBA, Ronshen, gorenje, and ASKO. Hisense has been one of the top 10 globalized brands in China for 8 consecutive years, and its products are exported to more than 160 countries and regions.

Strive for excellence and longevity, achieving lasting success through stability. Over the past 55 years, Hisense has adhered to the core values of 'Integrity, Innovation, Customer Focus, Sustainable Management' and the development strategy of 'technology-based enterprise with steady operation', and has developed the B2C (consumer-facing) industry centered on displays and smart home appliances, and the new B2B industry (government and enterprise) represented by automotive electronics, smart city, smart medical care, and optical communications.

Hisense is committed to technological innovation, emphasizing the dual themes of "Green" and "Intelligent." We lead the advanced manufacturing sector through intelligent solutions, enhancing the lives of millions of families with our high-quality products and services.



Hisense has been ranked among the top 10 Chinese global brands

for **8** years



Products are now exported to

160 countries and regions worldwide



Hisense Group's Brand Matrix

Hisense	Ronshen	KELON
ASKO	gorenje	HITACHI 日立中央空调
TOSHIBA	YORK VRF	SANDEN
Changelight 卓之照	Vidda	KE ELECTRIC 科林电气

Vision

- Building a century-old Hisense
- To become the most reliable brand in the world



Mission

- To pursue scientific and to technological innovation
- To take the lead in the advanced manufacturing with intelligence as the core
- To bring happiness to millions of families with high-quality products and services



Value

- Integrity
- Innovation
- Customer Focus
- Sustainable Management



Development Strategy

- Technology-based enterprise with steady operation



Business Layout

Hisense Group has established a globally-coordinated R&D, production, manufacturing, and sales system, with quality products and services reaching all over the world. Currently, the Group's business covers a wide range of fields, including audiovisual and multimedia, smart HA, Intelligent terminal and system solutions, property and modern services. The Group has 34 industrial parks and production bases in Qingdao, Shunde, Jiangmen, Slovenia, South Africa and Mexico, 26 R&D centers in Qingdao, Shenzhen, the United States and Germany, and 64 overseas companies and offices.

Worldwide **34** industrial parks and production bases

26 R&D centers

64 overseas companies and offices



Audiovisual and Multimedia

laser TV, ULED TV, Art TV, Display, Hisense smart touch screen



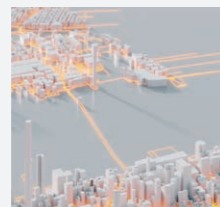
Smart HA

Refrigerators, Air conditioners, Freezers, Washing machines, Kitchen and bathroom appliances, Commercial cold chain, Central air conditioning



Intelligent Terminal and System Solutions

Digital government, Intelligent transportation, Rail transit, Intelligent buildings, Medical devices, Juhaakan, Optical communication, Three-proof communication terminals, Network energy



Property and Modern Services

Mould design & manufacturing, Intelligent precision engineering, Property, Services, Premium department store chain



Executive Summary

Since its 55th anniversary, Hisense Group has consistently embraced a long-termism to its development. In 2024, Hisense released its inaugural carbon neutrality white paper, which outlines the current status of the Group's carbon emissions, clarifies its carbon neutrality objectives, and details its achievements and plans in areas such as low-carbon manufacturing, low-carbon industrial value chain, low-carbon products and services, and a low-carbon operational culture. This document not only charts the course for the Group's business and product development but also presents a promising outlook for its low-carbon transition.

01 Unwavering Commitment Low-carbon Development Strategy (P. 10 – P. 19)

Hisense Group has established a clear objective of 'achieving peak carbon emissions in our operations by no later than 2026, and attaining carbon neutrality in our operations by no later than 2050'. To ensure timely attainment of this goal, the Group has developed a comprehensive carbon neutrality management system along with a scientifically grounded emission reduction strategy

02 Sustained Dedication Low-carbon Operations (P. 20 – P. 37)

Focusing on the dual themes of "green" and "smart" in manufacturing, Hisense leverages a digital platform and intelligent manufacturing systems to decarbonize operations. This is achieved through a systematic approach that prioritizes maximum energy efficiency improvement, followed by a step-by-step path of Improving Energy Efficiency – Transitioning to Clean Energy – Choosing High-quality Offsets

03 Relentless Pursuit Low-carbon Industrial Value Chain (P. 38 – P. 55)

To accelerate the green transition of the industrial value chain, Hisense promotes supply chain management and empowers suppliers in the upstream sector, while fostering the greening and intelligentization of logistics, warehousing, and product recycling in the downstream sector

04 Persistent Drive Low-carbon Product Innovation (P. 56 – P. 75)

Supported by research and development in green technology, Hisense integrates the principles of low-carbon development throughout all stages of the product life cycle. Additionally, the Group empowers the low-carbon transition of other industries by providing intelligent solutions

05 Enduring Endeavor Low-carbon Future (P. 76 – P. 87)

Hisense Group is actively exploring advanced low-carbon technologies and expanding its low-carbon business initiatives to enhance its capabilities and collaboratively create a sustainable future with industry and societal partners

Hisense Low-carbon Development Philosophy

Embracing the Concept of Long-Term Action:

Insisting on doing every small yet correct task, while boldly pursuing every challenging yet meaningful endeavor.

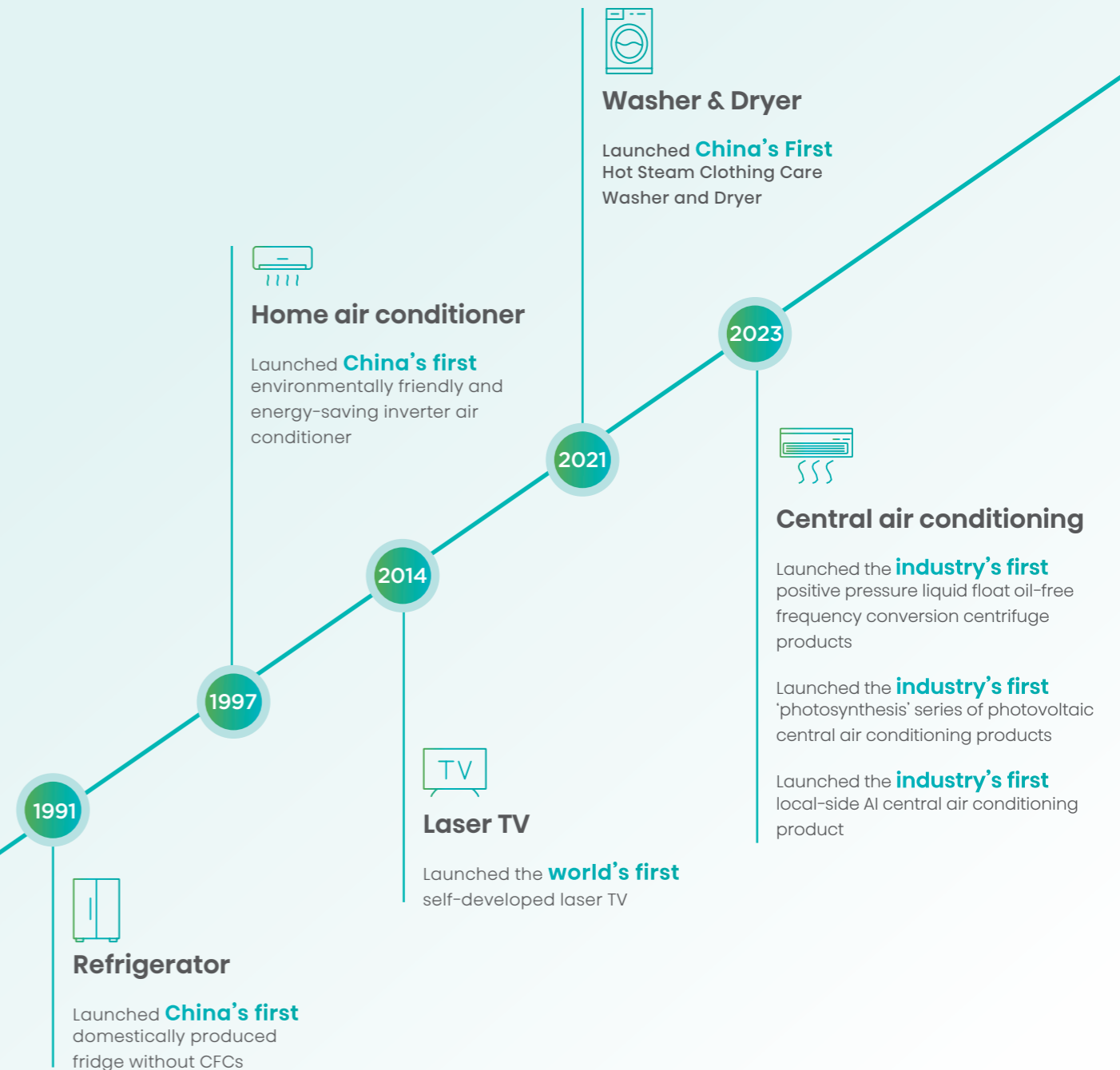
Upholding the Five Principles of 'Perseverance':

Unwaveringly integrating low-carbon concepts into all aspects of corporate governance and operations, ensuring that sustainability becomes a foundational pillar of Hisense for the next century.



A leap towards qualitative change through the accumulation of quantitative change

Hisense Breakthrough of Green-Innovation



Unwavering Commitment 01

Low-carbon Development Strategy

Hisense integrates low-carbon requirements into its development strategy, promoting high-quality development through long-term ESG practices



Responding to Climate Change

Responding to Climate Change

A low-carbon transition is an essential pathway for humanity to achieve long-term sustainable development. To meet the temperature control goals outlined in the *Paris Agreement*, member states reached a significant consensus at the 28th United Nations Climate Change Conference to "transition away" from fossil fuels' within the energy system. This consensus reflects the international community's commitment to accelerating the shift toward a low-carbon economy. In alignment with China's strategic objectives of 'carbon peak and carbon neutrality', the '1 + N' policy framework has been established and continues to be implemented, facilitating a comprehensive green transition of the economy and society. As a leading enterprise in the home appliance sector, Hisense has long embraced the concept of sustainable development, making this an opportune moment for the Group to actively pursue its carbon neutrality goals during its 55th anniversary.

Green transition of the household appliance industry has become a major trend

- In the past two years, China has issued consensus programs and policy documents on the green transition of the home appliance industry, and has clearly put forward the development of energy-saving technologies, improved product energy efficiency, and strengthened the green-design of the whole life chain and other requirements for the development of the home appliance industry
- Consumer demand for home appliances is gradually shifting towards more energy-efficient, green and smart

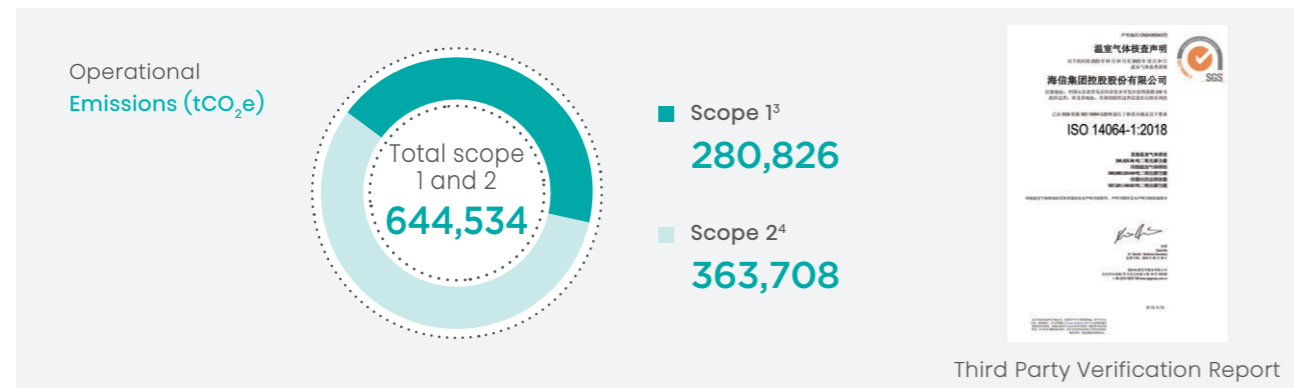
In the transition to a low-carbon development model, Hisense Group considers the 'triple bottom line' of financial, social, and environmental benefits. This transformation not only reflects the Group's commitment to fulfilling its social responsibility but also fosters innovation, leading to the emergence of new technologies, processes, and business models. The development of these new-quality productivity initiatives is essential for promoting high-quality development and serves as a key focus area, significantly contributing to Hisense's sustainable development.



Targeting Carbon Neutrality

As a responsible global enterprise, Hisense Group recognizes its critical role in the collective effort to combat climate change. Concurrently, increasing consumer demand for energy-saving and low-carbon products, along with the promotion of both domestic and international policies, has accelerated Hisense's commitment to establishing low-carbon development goals.

In line with authoritative greenhouse gas accounting standards¹, Hisense conducted its 2023² carbon inventory, which included 32 domestic production bases and the Laoshan R&D Center. For the first time, a comprehensive carbon emission inventory was organized and completed, encompassing 15 categories across Scope 1, 2, and 3. This data has been validated by a third-party authoritative verification agency.



¹ This carbon inventory is mainly based on the *The Greenhouse Gas Protocol* jointly published by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), including *GHG Protocol: Corporate Accounting and Reporting Standard* and *GHG Protocol Corporate Value Chain Accounting and Reporting Standard*, as well as ISO 14064-1: 2018 *Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*

² The timeframe for this carbon inventory is January 1, 2023 to December 31, 2023

³ Scope 1: Direct GHG emissions, including stationary combustion, mobile combustion emissions, process emissions and fugitive emissions

⁴ Scope 2: Indirect GHG emissions, including emissions from purchased electricity and purchased steam

Based on the completion of the carbon inventory, Hisense has formulated its first programmatic goal to guide the low-carbon transition, taking into account business development plans and stakeholder expectations. Hisense has made a solemn commitment to society:

Hisense Group will attain carbon neutrality in our operations by no later than 2050⁵

In order to reach this carbon neutrality goal, Hisense has set clear Scope 1 and 2 phased emission reduction goals and realization paths:

Long-Term Goal 2050

- Carbon emission reduction goal:** Achieve scope 1 and 2 carbon neutrality by 2050
- Clean electricity use goal:** 100% clean electricity share

Medium-Term Goal 2040

- Carbon emission reduction goal:** 50% absolute reduction in Scope 1 and 2 by 2040 from a 2023 base year
- Clean electricity use goal:** 60% clean electricity share

Near-Term Goal 2030

- Carbon peak goal:** Achieve peak carbon emissions in our operations by no later than 2026
- Carbon emission reduction goal:** 40% reduction in scope 1 and 2 intensity by 2030 from a 2023 base year
- Clean electricity use goal:** 30% clean electricity share

National dual control system for carbon emissions
Mentioned in the 2030 Carbon Peak Policy:

After carbon peak

Implementation of a predominantly aggregate control
Dual control of carbon emissions supplemented by intensity control

2030 Carbon peak

The Fifteenth Five-Year Plan Period

Implement a double control degree of carbon emissions with intensity control as the main control and total control as the supplement

In its low-carbon transition journey, Hisense is committed to fostering an open attitude toward learning and pursuing ecological win-win outcomes. The Group actively seeks to engage with global climate initiatives to broaden its international perspective. The Science Based Targets Initiative (SBTi), co-sponsored by the Carbon Disclosure Project (CDP), the United Nations Global Compact (UNGC), the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF), aims to encourage companies to establish emissions reduction targets grounded in climate science. Hisense Group views participation in the SBTi as a key direction for its future efforts. Notably, its subsidiary Sanden Holdings has emerged as a leader in carbon reduction, successfully setting a short-term emission reduction target in 2023 and committing to achieving 100% renewable electricity by 2030.



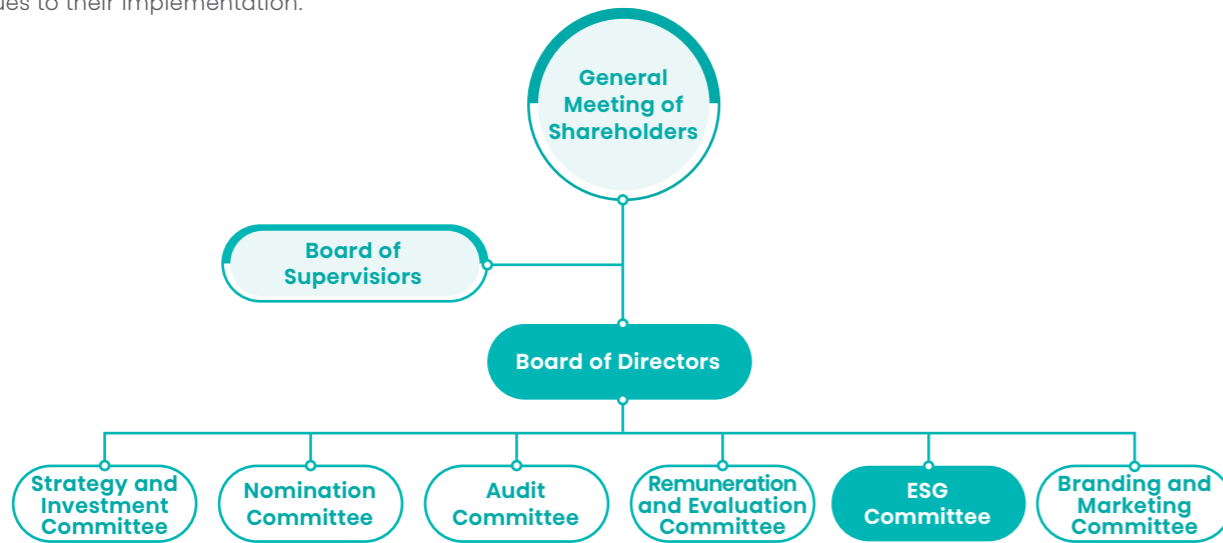
⁵ The boundary of carbon neutrality in our operations is the same as the carbon inventory boundary

Strengthening Carbon Management System

Strengthening Carbon Management System

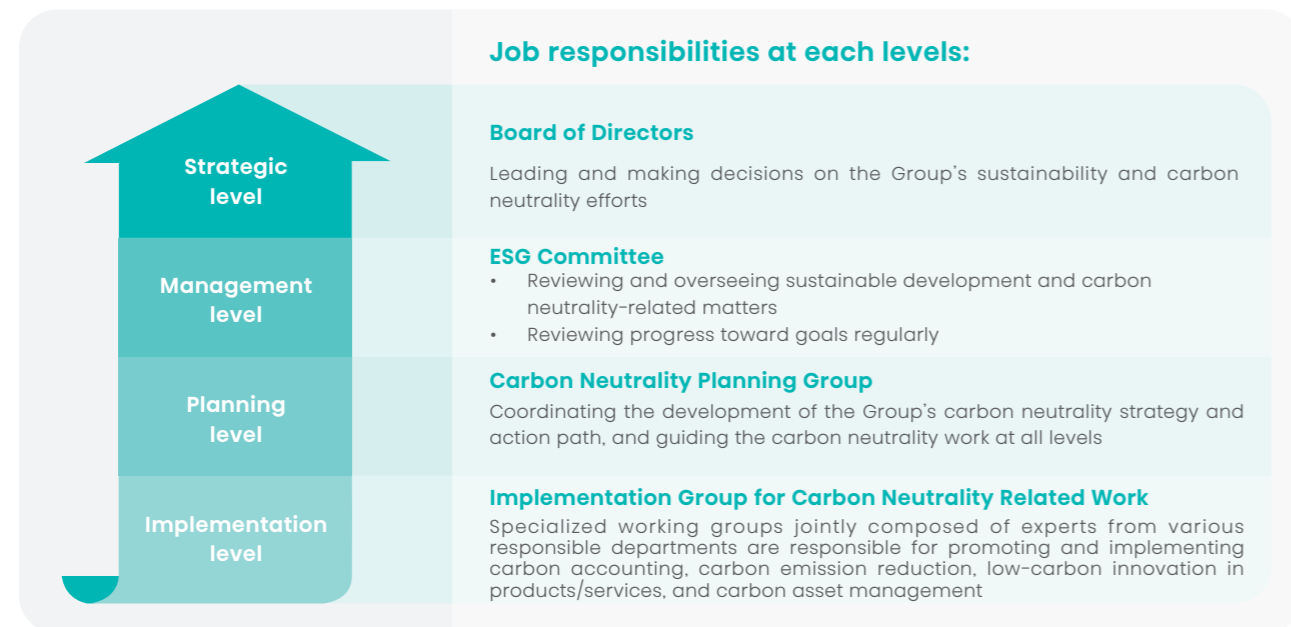
Hisense Group has established a governance structure consisting of the General Meeting of Shareholders, the Board of Directors, the Professional Committee, the Supervisory Board, and the Executive Management. With a strong focus on the Group's sustainable development, Hisense established the Environmental, Social and Governance (ESG) Committee to serve as the Group's overarching department for ESG-related issues.

The leadership of the ESG Committee consists of members of Hisense's Board of Directors. As a professional organization, the ESG Committee is responsible for overseeing the Group's planning and implementation of ESG-related issues, including climate change, and reporting regularly to the Board of Directors on the progress of ESG-related matters, providing effective support for the entire process from the proposal of carbon-neutrality-related issues to their implementation.



Establish Management Structure

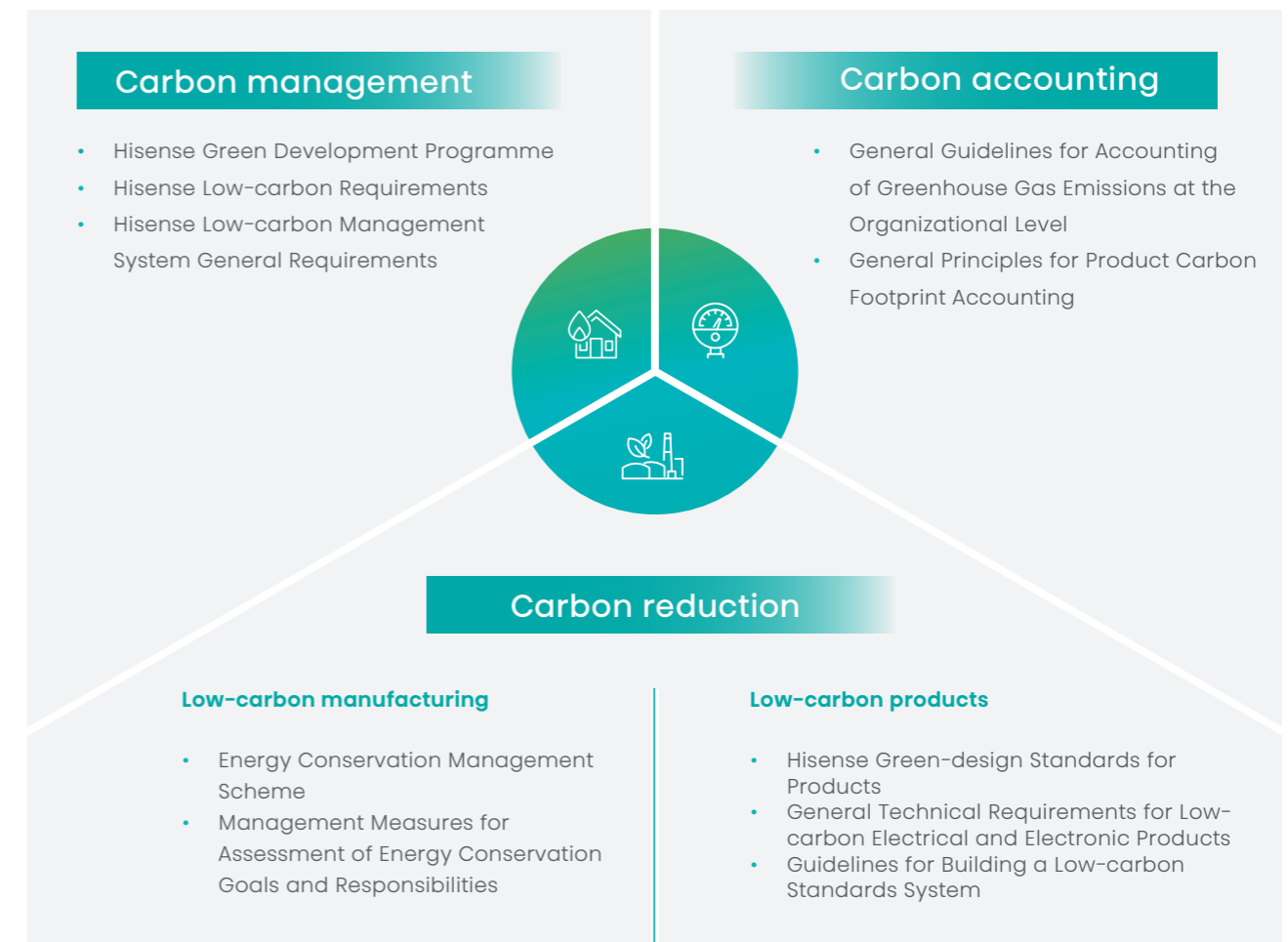
In order to promote the efficient and orderly implementation of low-carbon transition, Hisense has further refined the internal settings of the ESG Committee and established a clear four-tier management structure of 'Strategic level - Management level - Planning level - Implementation level' for carbon neutrality-related issues, covering the Group, product companies, and factories, so as to effectively push forward the implementation and realization of carbon neutrality work through the cooperation of all levels.



Improve Management System

In order to further guide and standardize the long-term low-carbon transition work, Hisense Group has initiated the formulation and improvement of a series of internal relevant systems and issued corresponding system documents, including the *Hisense Green Development Outline*, *Hisense Low-carbon Requirements*, *Hisense Low-carbon Management System* and other programmatic documents, which provide a strong guarantee for the advancement of carbon neutrality work.

Example of internal low-carbon system documents:



Creating Sustainable Workplace Culture

Creating Sustainable Workplace Culture

In a people-centered sustainable environment, employees' awareness of carbon reduction and carbon-reducing behaviors have become an important internal driving force for the green transition of enterprises. Through the introduction of a series of standardized management documents, the organization of internal and external training, and the holding of fun knowledge contests, Hisense Group has raised employees' awareness of low-carbon in their daily offices and production, and promoted the development of the company's operational culture in a more sustainable direction. In the future, Hisense will continue to strengthen its low-carbon operation concept and call on more employees to participate in low-carbon actions.

Employee Travel Management Measures:

- Employee travel management measures have been introduced to encourage employees to use cars or railroads instead of airplanes for travel, and to take public transportation as much as possible in the premises for low-carbon travel

Hisense Green Development Programme:

- Hisense's cadres and employees are explicitly required to abide by their commitments, and to earnestly practice the provisions and requirements of the Program regarding green development in all aspects of operation and management, as well as in the specific actions of each individual

Initiative on Diligence and Thrift:

- Launched for more than 100,000 Hisense, it advocates saving resources and energy such as water, electricity and paper

Develop Low-carbon Skillsets

Hisense Group combines internal and external training to enhance employees' knowledge and professional skills in the low-carbon field. These training effectively enhances employees' low-carbon skills and professionalism, and at the same time provides a strong talent 'reserve army' for the Group's low-carbon transition. In 2023, a total of 56 large-scale trainings were organized in each factory, with more than 45,000 people participating in these trainings.

Internal training

Energy-saving knowledge training, such as key energy-consuming units of energy-saving control measures, cutting-edge technology

Code of practice for Inventory

Product carbon footprint

Energy flow diagrams and energy maps training

Green Factory related training

...

External training

Carbon management job training

training in the basic course for GHG verifiers

Green manufacturing demonstration creation training

...

Case Responding to the national dual-carbon policy, supporting employees to obtain carbon verification certificates

With the proposed national dual-carbon goal, enterprises will face higher standard requirements for carbon management level. Hisense Group actively responds to the trend by encouraging employees to enhance their professionalism and supporting them in obtaining certificates of competence related to carbon management. 2023, members of the low-carbon management core team of a number of the Group's product companies participated in professional training organized by authoritative third-party institutions, and passed a rigorous examination to obtain ISO 14064 greenhouse gas internal verifier certificates, effectively improving the professionalism and standardization of each product company in carbon inventory. Hisense Group is steadily promoting a more comprehensive low-carbon transition through the continuous cultivation of its employees' carbon management expertise.

Increase Low-carbon Awareness

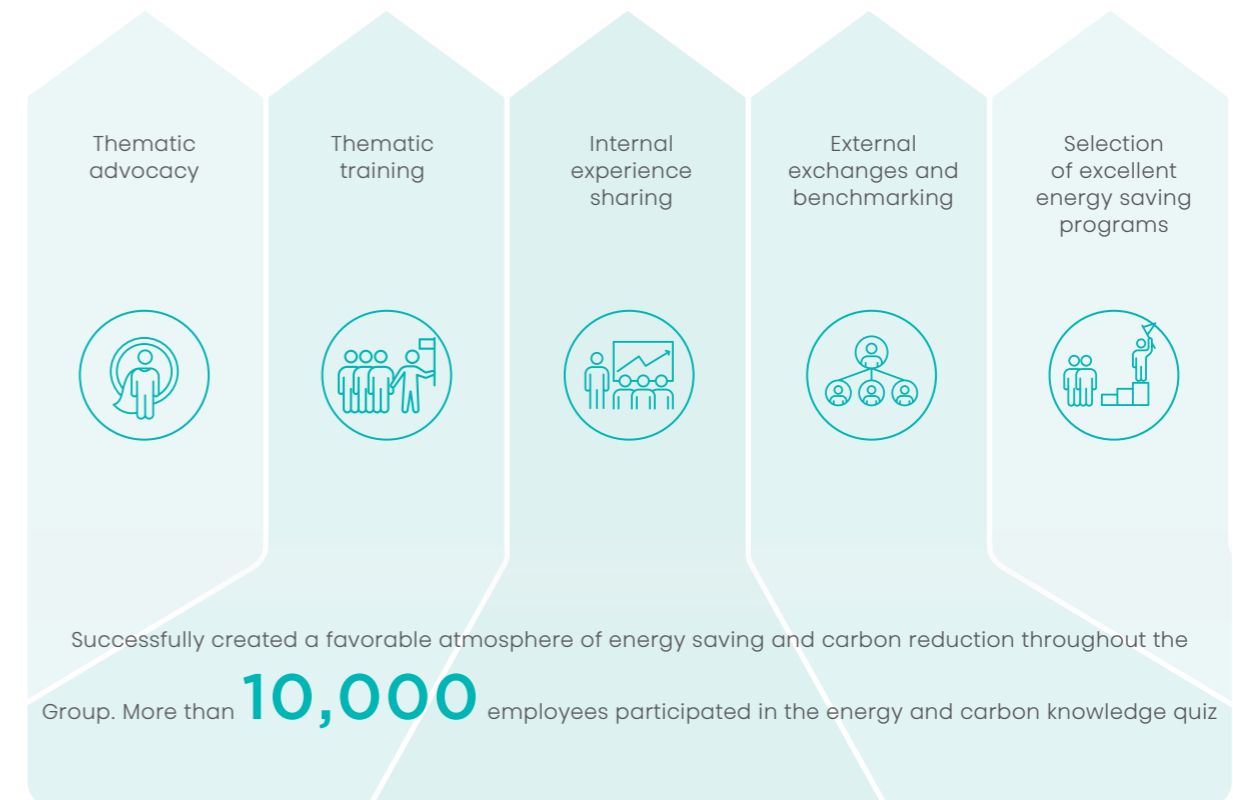
In the journey of low-carbon transition, the spontaneous low-carbon behavior of employees plays a crucial role. In order to further enhance employees' low-carbon awareness in their daily work and life, Hisense Group has carefully organized a variety of low-carbon themed activities, such as sharing and exchanging energy-saving cases, quizzes on low-carbon knowledge, and proposal of 'energy-saving and carbon-reduction' ideas. In addition, energy-saving and carbon-reduction posters and signboards are put up in workshops, restaurants, and other areas of heavy traffic, creating an immersive publicity environment and enhancing employees' perception of low-carbon environmental awareness. In addition, posters and billboards are posted and hung in high-traffic areas, such as workshops and restaurants, to create an immersive publicity environment and enhance employees' awareness of low-carbon and environmental protection.

Case

'Green Factory' theme activities to enhance the low-carbon knowledge of all employees

In 2024, Hisense Group formulated a 'Green Factory' thematic activity program in order to fully implement its ESG strategy and accelerate its low-carbon transition. The Group, together with its subsidiaries, launched a low-carbon initiative under the slogan 'Low-carbon, Beautiful China'.

The program of activities covers:

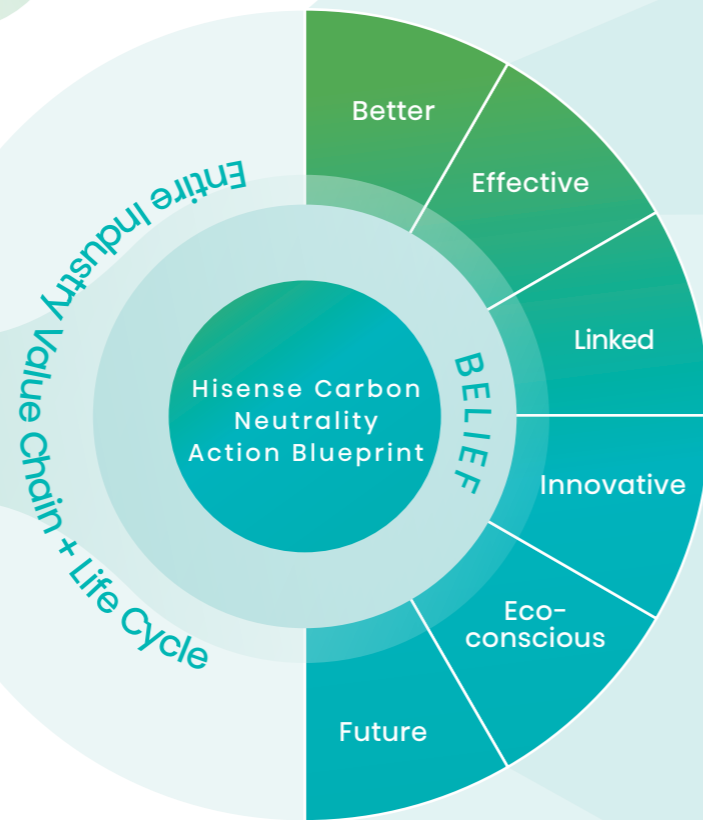


The successful organization of the 'Green Factory' theme event not only promoted the typical cases and advanced experiences of Hisense Group, but also significantly improved the energy efficiency and low-carbon management level of its subsidiaries, achieving effective publicity and practical results. The event demonstrated Hisense Group's firm commitment to sustainable development and promoted the green development of the Group as a whole through practical actions.

Hisense Carbon Neutrality Blueprint

Hi GREEN
Believing in the unseen

Hisense Group will use innovative green technology as the engine to lead the entire industry value chain to a low-carbon future.



Hisense Carbon Neutrality Blueprint

Based on the dual-carbon strategy, Hisense Group takes the green concept as development guideline, the green technology research and development as support, and makes efforts to build low-carbon operation, low-carbon industrial chain, low-carbon products and services under the leadership of the overall carbon-neutrality goal, and creates a low-carbon future together with all partners. In conjunction with this low-carbon development goal, Hisense has put forward the 'Hi Green' carbon neutrality blueprint, which represents Hisense's low-carbon development path that will bring together the Six-fold policy of 'Better, Effective, Linked, Innovative, Eco-conscious, and Future', and will drive its partners to build a green and intelligent ecology for the 'entire industrial value chain + life cycle'.

Low-carbon Strategy

Targeting Carbon Neutrality

Low-carbon Operation

Low-carbon Industry Value Chain

Improving Energy Efficiency

Improving the Efficiency of Green Operations
Enhance the efficiency of energy use in the production process through energy-saving technological reforms
Promoting a culture of low-carbon operation in office buildings

Digital Intelligence for Empowerment
Realize dynamic monitoring and digital management of key energy media through EMS, CMS and intelligent automatic control technology

Low-carbon Products/Services

Low-carbon Future

Strengthening Carbon Management System

Carbon Neutrality Management Framework
A four-tier management structure running through the 'Strategic level - Management level - Planning level - Implementation level', covering carbon accounting, carbon emission reduction, carbon assets, low-carbon products/services and other management contents

Management System Documentation
Release internal energy-carbon system document from energy to dual-carbon performance management

Low-carbon Future

Low-carbon Future

Transitioning to Clean Energy

Taking the index of enhancing the proportion of green power as a traction, continue to lay out the park PV, energy storage, and realize the integration of light and storage

Explore diversified clean energy sources such as hydropower, nuclear power, wind power, hydrogen energy, etc.

Low-carbon Future

Low-carbon Future

Choosing High-quality Offsets

Actively explore nature-based carbon sequestration and removal projects to complete the 'last 1 mile' of carbon neutrality

Low-carbon Future

Low-carbon Future

Upstream-Implementing Green Procurement

Renewal of Management
Establishment of a four-step process of 'admission, management, performance assessment, withdrawal' management process
Use online platforms to achieve more digital and intelligent management

Promoting Win-win Partnerships
Collaborate with supplier partners through training and R&D

Low-carbon Future

Low-carbon Future

Downstream-Green Sales & After Sales

Optimizing Logistics and Warehousing
Promote logistics visualization, warehousing and cleaning, and transform to a greener and smarter logistics and warehousing

Robust Recycling System
The 'dual-wheel drive' recycling system operates efficiently by establishing online recycling platforms and expanding offline recycling channels

Low-carbon Future

Low-carbon Future

Innovating Sustainable End-products

Digital Simulation Platform Supporting
Apply DFX concepts to virtualize the design of the entire product lifecycle

Material Upgrading
Increase the marketability of recycled materials, low GWP blowing agents and refrigerants in end-products and packaging

Structural Optimization
Product structure modularization, generalization, lightweight, easy to disassemble packaging structure lightweight

Energy Consumption Reducing and Energy Efficiency Enhancing
Self-developed energy efficiency enhancement technology, AI algorithm variable frequency control

Low-carbon Future

Low-carbon Future

Developing Green Key Components

Promoting the Greening of Materials
R&D of alternative technologies for green materials
Recycle end-of-life materials

Reduced Energy Consumption for Product Use
Launch low-energy appliance components to help downstream customers save energy and increase efficiency

Low-carbon Future

Low-carbon Future

Identifying New Drivers

Layout of new energy, automotive electronics and other strategic emerging industries industry, driving the Group's low-carbon development

Low-carbon Future

Low-carbon Future

Promoting Low-carbon Development in Various Industries

Smart Building
Self-developed energy optimization algorithms for real-time regulation of building loads

Smart Transportation
Smart control of traffic signals Automatic optimization of traffic routes

Smart City
Unified construction, management and sharing of digital systems

...

Low-carbon Future

Low-carbon Future

Advancing in a New Direction

Lead the new trend of products and create new standards in the industry
Develop new low-carbon technologies

Low-carbon Future

Sustained Dedication

02

Low-carbon Operations

In an era of significant change, Hisense firmly believes that intelligent, efficient, and sustainable production and operation are essential for low-carbon development within the manufacturing sector



Roadmap with Data

Path to Achieve

Current Effectiveness⁶

Future Goals

First Choice

Improving Energy Efficiency

Enhance the efficiency of energy use through technical energy saving, process energy saving, management energy saving, intelligent energy use, etc.

Green Manufacturing

122%

The number of "Green Factories" has increased by 122% in the past three years, including 14 at the national level and 6 at the provincial level



17.3%

Since 2020, the comprehensive energy consumption per unit of output value has dropped by 17.3%



Green Office

Hisense International Center was awarded LEED Gold certification, the highest level of green building



Green Manufacturing

100%

Full coverage of "Green Factories" in domestic manufacturing bases by 2030



40%

Achieve a 40% reduction in carbon emission intensity per unit of output value of our operations in 2030, with 2023 as the base year



Green Office

Apply energy intelligent and efficient management initiatives such as "one-button intelligent control" to more Hisense office buildings



Second Choice

Transitioning to Clean Energy

Promote clean energy such as distributed photovoltaic and wind power in the park, expand the application scenarios in the park, explore new types of energy such as geothermal and hydrogen energy, supplemented by green power and green certificate procurement to realize clean energy transformation

3

Created 3 "Zero Carbon Factories" in the past two years



19.2%

Domestic factories' green power share reached 19.2%



75%

PV power consumption increased by 75% in the last 3 years

• Photovoltaic installed capacity

70 MW

• Battery storage installed capacity

52 MWh

5

Create more than 5 "zero carbon factories" by 2030



100%

Green power share of domestic factories reaches 30% by 2030, 60% by 2040 and 100% by 2050



• New factory roof utilization rate of 60% or more

• Construction of the first decentralized wind power project in the park

Third Choice

Choosing High-quality Offsets

Actively develop corporate carbon assets, participate in the carbon trading market, and explore carbon negative projects such as ecosystem carbon sinks

4,000 tCO₂e

Achieved sand fixation of 700,000 square meters and carbon sequestration of more than 4,000 tCO₂e over 10 years of sapling growth



"last 1 mile"

Participate in ecosystem carbon sink projects to complete the "last 1 mile" of carbon neutrality



⁶ As of the date of publication of the white paper

Improving Energy Efficiency

Improving Energy Efficiency

Improving energy efficiency is the preferred solution for manufacturing companies to reduce carbon emissions. Hisense Group focuses on energy-saving renovation of factories and offices, and utilizes digitalization to enhance its ability to monitor and manage energy, and to achieve the optimal solution for energy use.

Improving the Efficiency of Green Operations

In the process of long-term low-carbon development, Hisense Group insists on taking 'green' as a theme, focusing on energy-saving technological transformation in factories, and at the same time paying attention to daily energy conservation in office buildings, and committing itself to continuously improving the effect of energy-saving technological transformation and the level of low-carbon offices, so as to realize a greener and lower-carbon mode of operation.

Deploying of Green Manufacturing

Hisense is committed to strengthening the green deployment of manufacturing across the Group, requiring each factory to implement goaled low-carbon manufacturing strategies based on the characteristics of its product production process. Energy efficiency is improved and carbon emissions are reduced through the adoption of energy-saving technological improvements such as equipment upgrades, process optimization and waste heat recovery. In the case of air-conditioning products, for example, Hisense is concerned about the problem of escape during refrigerant charging in the production process, and has made unremitting efforts to reduce the leakage rate. In 2024, Hisense set up a special internal research team to further control and reduce refrigerant leakage through industry exchanges and research on refrigerant leakage reduction technology.

Looking ahead, Hisense Group will continue to increase low-carbon technological innovation in the manufacturing field, constantly explore and apply cutting-edge technologies, and promote manufacturing in the direction of greener and lower carbon.



Statistics of Hisense Group's national-level 'Green Factories' awarded:

Up to now,

14 factories of Hisense Group have been awarded national 'Green Factories' and

6 factories have been awarded provincial 'Green Factories'



National level Distribution of 'Green Factories'

Shandong Qingdao 5	Jiangsu Yangzhou 1	Zhejiang Huzhou 1	Jiangxi Nanchang 1	Guizhou Guiyang 1	Guangdong Jiangmen 3 Foshan 2
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Improving Energy Efficiency

Case Equipment upgrades to optimize energy use patterns

Hisense Group advocates that all factories take energy-saving technological reforms as the primary means of emission reduction, and seeks to realize year-on-year reductions in the energy consumption intensity of each product company by replacing and remodeling equipment, improving energy efficiency in manufacturing, and meeting the actual energy needs of workshops.

◆ Modification of the air-conditioning system in the clean plant and completion of a high-efficiency machine room

In 2023, the factories under the optical communication business implemented a series of measures to overhaul the air-conditioning systems of clean plants:

• Technology upgrade

The company introduced magnetic levitation inverter centrifugal units with a cooling capacity of up to 500 cooling tons, using advanced magnetic levitation technology and inverter control technology to effectively improve the energy efficiency ratio of air-conditioning systems.

• Equipment upgrade

Replaced five modular air-conditioning units to improve air-conditioning performance and reduce the risk of downtime due to equipment failure.



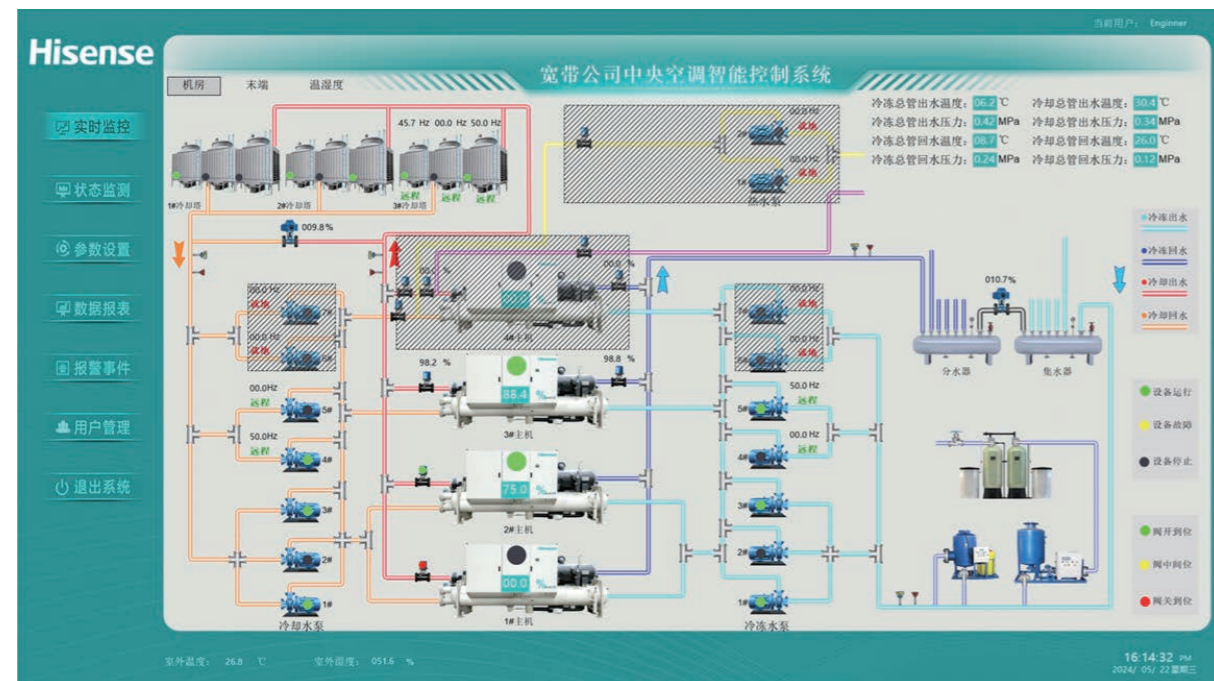
System integration

Connected the chilled water pipeline of the third floor and the first floor, replaced the original air-cooled heat pump unit, and realized the optimized configuration of the air conditioning water system.

Intelligent control

Built an intelligent control system to realize real-time and efficient cooperative operation of machinery, cooling tower, water pump and air conditioner through optimized control strategy.

Through the implementation of the above initiatives, the plant's air-conditioning system has achieved an energy-saving rate of more than **40%**, and has successfully constructed a high-efficiency, energy-saving server room.



Intelligent Control System for Central Air Conditioning in Optical Communication Business Factory

◆ Air compressor cooling and heating supply, solving the problem of waste heat in the non-heating season

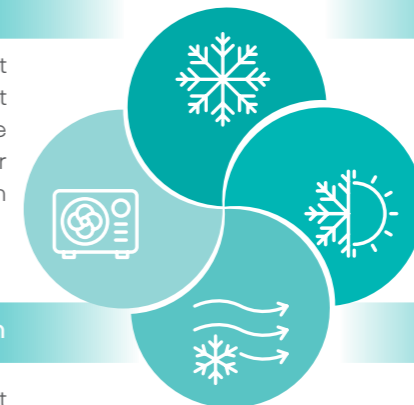
Based on the lower heat demand during the non-heating season, the Qingdao factory, a subsidiary of the audiovisual and multimedia business, has taken innovative measures to make full use of the waste heat resources generated by the operation of air compressors to realize combined cooling and heating supply to effectively control energy waste. The specific initiatives are as follows:

• Waste heat recovery

Added a number of waste heat recovery units to collect the heat energy generated during the operation of the air compressor and store it in the heat preservation water tank for winter heating.

• Summer cooling

The company installed evaporative lithium bromide units, which utilize recovered waste heat resources for cooling in summer to supplement air-conditioning cooling requirements.



• Intelligent conveying system

High-efficiency conveying of hot water through the pump piping conveying system to provide kinetic energy for the cold and hot continuous supply system.

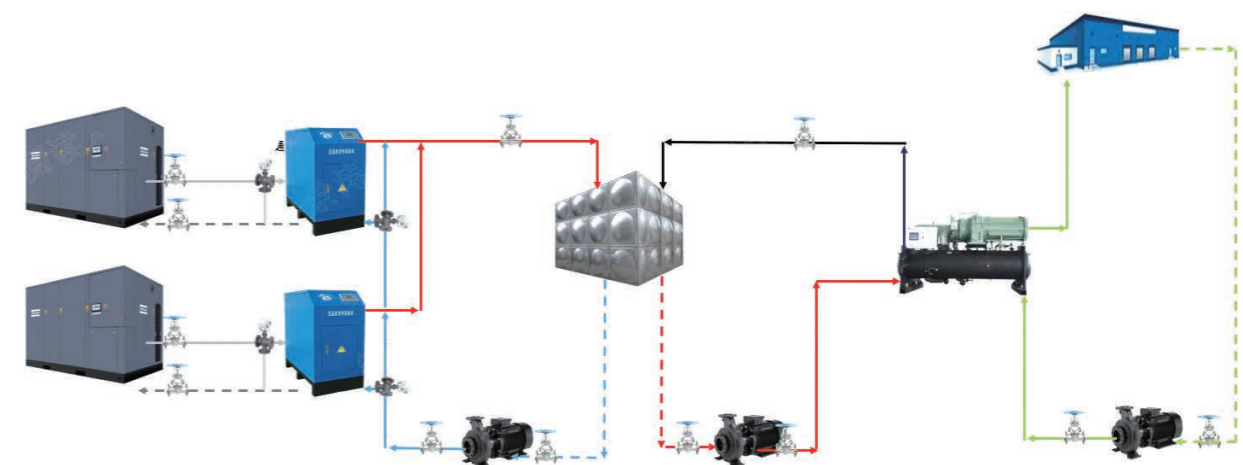
• Operation mode of combined cooling and heating supply

Combined the refrigeration station and waste heat recovery system to establish a high-efficiency operation mode of combined cooling and heating supply and realize diversified utilization of energy.

The implementation of these initiatives meets **80%** of the plant's heating steam requirements

reduces cooling power consumption by **21%**

and reduces greenhouse gas emissions by **1,269** tCO₂ per year



Schematic Diagram of the Principle of Combined Cooling and Heating

Improving Energy Efficiency

|| Optimizing Energy Use in Building

Hisense Group attaches great importance to energy efficiency in non-production areas and reducing energy waste in office buildings. In the office area and its supporting service scenarios, Hisense promotes energy-saving and low-carbon operation modes, optimizes and manages energy use through intelligent control and automated regulation of equipment, and provides employees with an immersive, full-scene low-carbon office experience.

||| Office Scenario Emission Reduction

In the daily office, Hisense Group focuses on the intelligent control of power consumption in the office area to realize the optimization of power usage; deepens the system solution of paperless office to reduce the waste of paper and improve the efficiency of the office; and combines the IBMS platform to carry out graded and accurate statistics and comparative analysis of energy consumption to realize the refined energy management.



Case Hisense International Center wins LEED Green Building Gold Certification

In April 2024, Hisense International Center, the global headquarters of Hisense Group, was officially opened. Adhering to the concept of 'intelligent' and 'green' development, Hisense International Center applies independent technology to provide employees with a new office experience represented by 'one-button intelligent control' for office scenes and 'one-face access' for elevators.

◆ Office scenarios 'one-button intelligent control'

Hisense International Center uses innovative scene-based control technology to equip each office floor with control screens. It allows employees to select and switch to the most appropriate preset office scenes according to different time periods and natural light changes. Through simple touch operation, employees can adjust the lighting, air-conditioning and curtain settings in their area with one click to adapt to different time periods for work, off work and lunch breaks as well as different sunlight conditions, creating a comfortable and efficient working environment.

Hisense Group realizes centralized management and scenario control of 6,000 devices in the building through 'one-button intelligent control', which greatly improves the convenience of use for employees and significantly reduces energy consumption at the same time.



Hisense International Center LEED Gold Certification

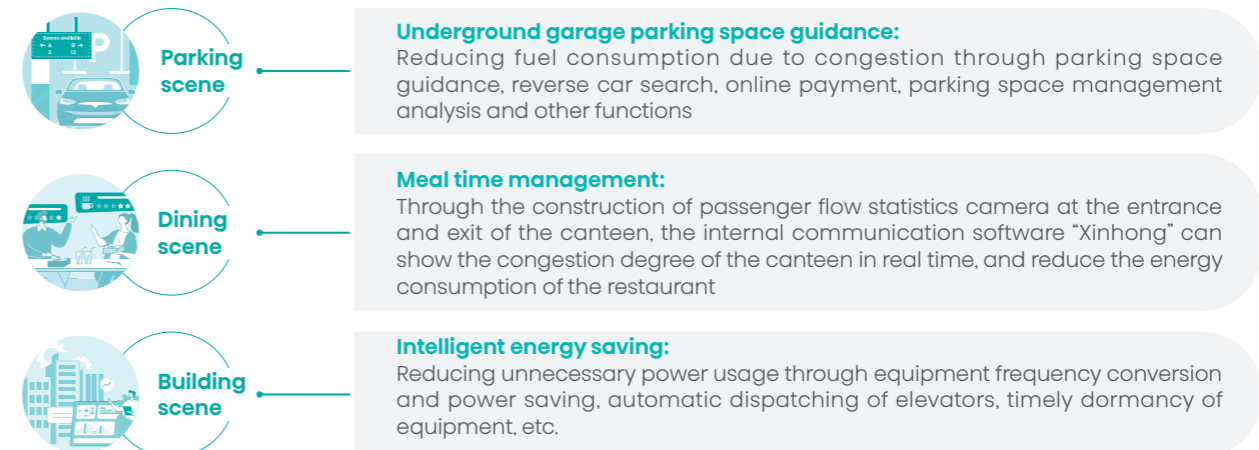
◆ Elevator 'one face pass'

Entering the Hisense International Center building, the access control system can quickly identify personnel identity information, and use AI algorithms to automatically and orderly assign elevators according to the office floor where the personnel are located, assigning employees on the same floor to the same elevator, reducing one floor and one stop, and effectively reducing the peak congestion and power consumption during commuting.

In addition, many types of sensors are set up in the office area, which can realize the functions of automatic sensing of lights, automatic opening of the fresh air system, and automatic dormancy of the conference room, etc., which can bring a smarter and more efficient office experience for the employees and realize a significant reduction of the energy consumption of the building.

||| Supporting Services to Reduce Emissions

In addition to the daily operation of the office area, Hisense Group implements a series of energy-saving and emission-reduction measures in parking, dining, building and other ancillary service scenarios, including intelligent guidance of garage parking spaces, dining time management, and energy saving of dormant equipments, etc., which reduces wastage due to inadequate energy management of the ancillary services, and effectively promotes further emission reduction of office buildings.



Improving Energy Efficiency

Digital Intelligence for Empowerment

Hisense Group insists on practicing low-carbon development around long-termism, takes 'intelligence' as the other theme, builds industry-leading energy management platforms and carbon management platforms, empowers factories through digitalization, realizes comprehensive monitoring and analysis of energy and carbon data, ensures high efficiency and refined energy and carbon management, and presses the accelerator button on energy saving and emission reduction for the Group's production and manufacturing with the intelligent-green fusion.

Digital Platforms Helping

Hisense Group is accelerating its transformation into a high-end, intelligent and green manufacturing plant. Taking the Energy Management System (EMS) as the core, combined with the Carbon Management System (CMS), Hisense Group is making every effort to build a multi-functional, integrated, intelligent and green plant by applying the strategies of informatization construction, digital management and intelligent operation.

Intelligent Energy Management System



The Intelligent Energy Management System covers functional modules such as data mining statistics, energy consumption analysis and monitoring, intelligent alarms, settlement management, etc. By means of advanced intelligent integration technology, it carries out centralized and flat dynamic monitoring and digital management of key energy media such as 'electricity, water, gas, heat', and combines data analysis and modeling technology to provide the management with accurate and real-time energy analysis results and effectively improve the efficiency of energy consumption management. Its management scope includes factory areas, workshops, production lines, and individual key energy-using equipment, realizing three-dimensional intelligent energy management for manufacturing plants. Since its launch in 2020, the platform has been applied to the Group's seven major product companies and nine production parks, realizing full coverage of domestic manufacturing bases.



EMS Large Screen Module Display

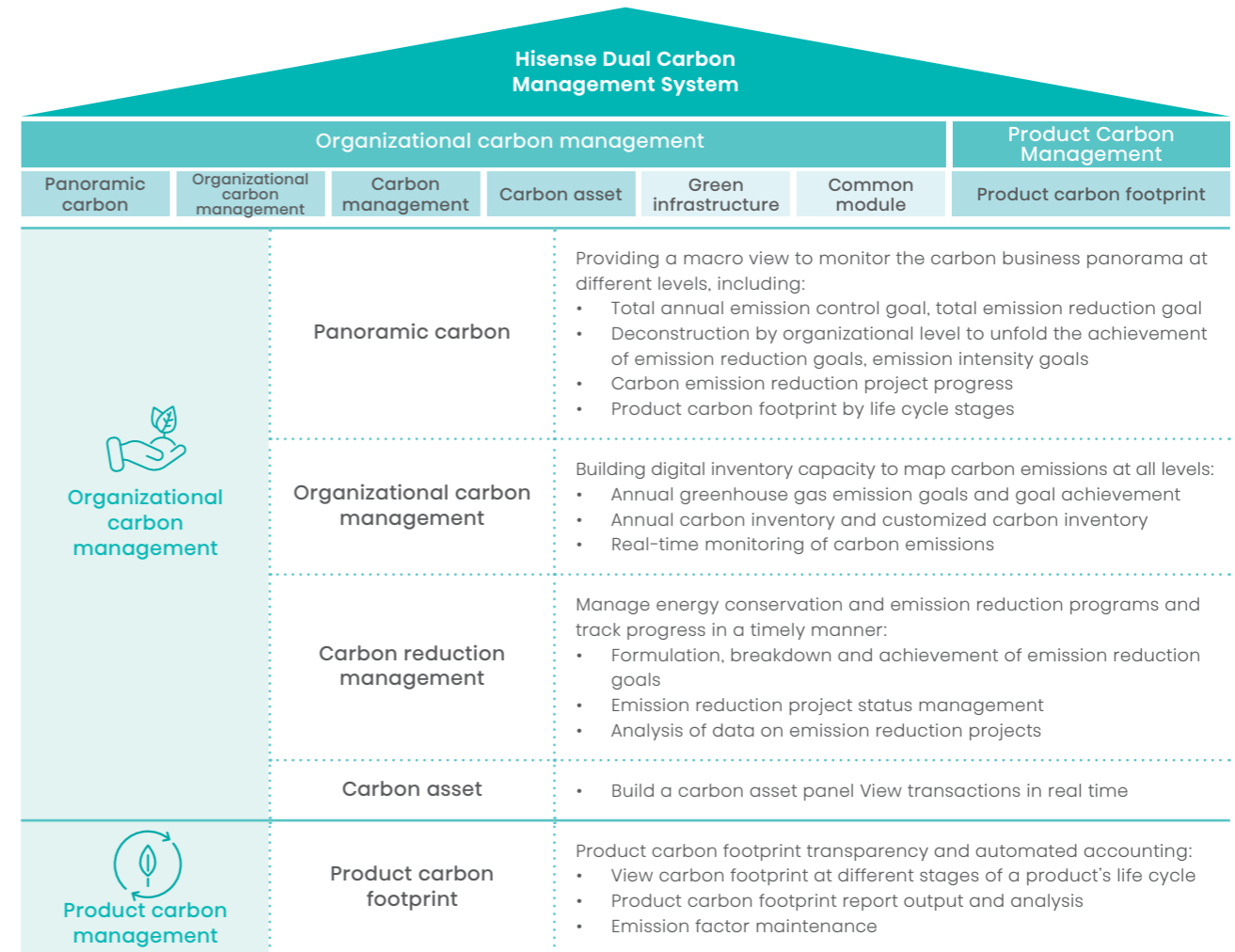
'Dual carbon' Management System



The 'Dual Carbon' management system creates a 'Panoramic Carbon Cockpit', which supports managers in quickly grasping the panoramic view of carbon emissions at each organizational level with efficient real-time monitoring and accurate data analysis capabilities. Relying on the two key dimensions of 'organization carbon management' and 'product carbon management', the system combines seven functional modules, comprehensively collects carbon emission data from each region, and carries out online integrated management of key information such as organization carbon emissions, product carbon footprints, and carbon assets, which helps to digitize and make carbon emission-related information transparent, laying the foundation for the Group to quickly identify carbon emission problems, formulate and implement effective emission reduction strategies, and track and evaluate implementation effects.



Carbon Panorama Cockpit Interface



Case

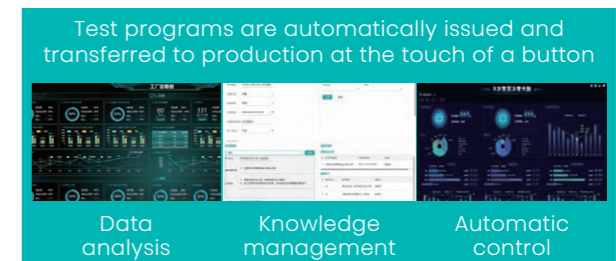
Going live with Digital Intelligent Workshop Operation Center to help improve energy efficiency

The system refines the factory into production line level, workshop level, and factory level, and tailors the auxiliary management interface for users at each level. Managers can directly monitor the production operation data in real time through the panoramic cockpit and view the visualized data analysis. Through the use of the Digital Intelligent Workshop Operation Platform, the equipment abnormality loss rate of the factories under the Intelligent precision engineering, business has been reduced by 50%, and the loss rate of transferring production has been reduced by 35%, which reduces energy wastage due to the lag of manual adjustment, etc., and effectively improves energy efficiency.



Smart warning Incident management Visual management

Real-time Monitoring System for Production and Operation



Data analysis Knowledge management Automatic control

Data Analysis and Automation

Improving Energy Efficiency

Accelerating Smart Carbon Reduction

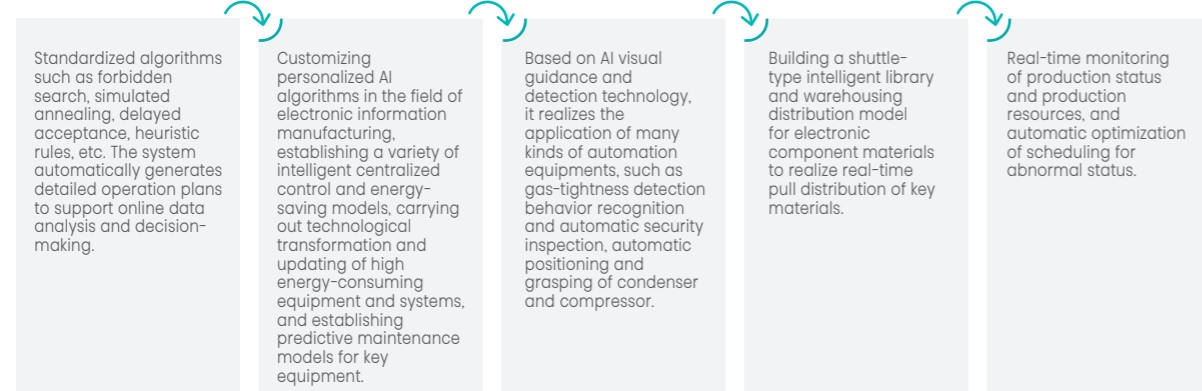
By applying AI algorithms, building energy consumption models, and intelligent centralized control of energy consumption, Hisense Group improves the drawbacks of lagging and inaccuracy caused by traditional manufacturing that relies on manual regulation and detection of energy-using equipment, and realizes the intelligent regulation of energy-using equipment and real-time monitoring of abnormalities, so as to accelerate the Group's transformation to intelligent low-carbon manufacturing.

Case Development of the 'Xinzhi AI Platform' solution to build a digitalized smart factory

Hisense has long insisted on the construction of enterprise automation, digitization and intelligence, building a comprehensive intelligent manufacturing system, realizing end-to-end collaborative technological upgrading of research and development, process and manufacturing, and focusing on the 'three drives' to create an advanced manufacturing model of 'double rise in quality and efficiency'.

Hisense's central air conditioning business innovatively creates the 'Xinzhi AI platform' smart factory solution, through the construction of the Xinzhi AI platform encapsulating a large amount of data analysis, AI visual inspection, machine learning models, the knowledge and skills of the personnel platform, software, visual AI inspection, equipment predictive maintenance, drying furnace process parameter optimization, Air Pressure Station intelligent energy saving and other functions, effectively making intelligent predictions and assisting decision-making in many business aspects.

The five advantages of the AI platform:



The establishment of the 'Xinzhi AI Platform' signifies that Hisense Group has the ability to independently develop AI applications in the field of intelligent manufacturing, which is of great significance to improving the automation and intelligence of its energy management. The innovation and practical effect of 'Xinzhi AI Platform' has also been recognized by the industry, and it was awarded as 'Excellent Case of Digitalization Enabling New Industrialization Innovation and Practice' at the 2023 Digital Science and Technology Innovation and Development Conference.



'Xinzhi AI Platform' Interface



'Xinzhi AI Platform' Smart Factory Solution Selected as Outstanding Case of Innovative Practice of Digitalization Enabling New Industrialization

Case Applying AI intelligent control system to realize intelligent energy management

Hisense builds an energy prediction model, utilizing real-time database technology, data analysis and prediction technology to provide real-time, accurate and clear energy analysis for the management; Hisense established an intelligent centralized control system to achieve on-demand regulation and control of equipment and accurate energy supply, which lays a solid foundation for the construction of a more comprehensive and efficient energy management.

Taking the factories under the audiovisual and multimedia business as an example, the intelligent management of energy-using equipment is realized through the application of AI algorithms to build energy-using models and the implementation of intelligent centralized control of large-scale equipment:

Modeling Energy Use

Chilled water temperature optimization model

Based on the meteorological data and water temperature of the chilled water host, establishing AI time series prediction model (LSTM) for temperature and humidity at each end, according to the predicted trend and exceeding situation, comprehensively monitor the upper limit of temperature and humidity in the workshop and the current equipment operation status, and solve the optimal setting value of the chilled water temperature of the chilled water host through the convex optimization solver to meet the premise of temperature and humidity not exceeding the standard of the various ends.

Frequency control model of chilled water pump

Using AI algorithm to predict the end load change in the next two hours, predict the change of chilled water inlet and outlet temperature, flow rate and other changes under different control parameters in the next two hours through the model of heat transfer mechanism, combine with the performance model of chilled water pump and the safety range of each parameter, and determine the number of chilled water pumps and frequency that minimize the performance and energy consumption of the equipment to satisfy the premise of the safety range.

Intelligent centralized control of energy consumption

Refrigeration machine

Through the AI algorithm to achieve equipment combination optimization, system coupling control, host dynamic water temperature adjustment and other intelligent centralized control of the central air-conditioning system, to achieve the central air-conditioning system to improve energy efficiency by 15%, saving power consumption of 880,000 kWh/year, carbon emission reduction of 490 tCO₂/year.

Air compressor

The air pressure centralized control system is configured to control the starting and stopping of air compressors according to the configuration of production activities to complete the energy scheduling and comprehensive monitoring of air compressor operation, realizing energy saving of the system by 1.4%, saving 276,000 kWh of electricity/year, and reducing carbon emission by 154 tCO₂/year.

Suction dryer

The electrical centralized control design of the suction dryer enables it to regulate autonomously, reduces compressed air loss by 3.5%, saves electricity consumption by 210,000 kWh/year, and reduces greenhouse gas emissions by 117 tCO₂/year.



Central Air Conditioning Intelligent Monitoring System



Intelligent Air Pressure Station

Transitioning to Clean Energy

Transitioning to Clean Energy

In order to build a cleaner and more efficient energy structure, Hisense Group is actively promoting the use of clean energy in the manufacturing phase. The Group fully exploits the existing industrial plant roofs, carports and other spaces in various parks at home and abroad to lay out distributed photovoltaic projects, so as to achieve the public building photovoltaic 'can be installed as much as possible'; the simultaneous deployment of energy storage systems, supplemented by hydropower, nuclear power and other clean energy market procurement, to enhance the proportion of clean power in all aspects.

Up to now, the proportion of green power in domestic manufacturing bases has reached **19.2%**⁷, and three **'Zero-carbon Factories'** have been successfully built

Layouting Optical Storage Integration

Hisense Group makes full use of the extensive floor space of its manufacturing bases to lay photovoltaics on the roofs of factories, office buildings and carports of its factories in accordance with the local conditions, and also lays out and builds energy storage facilities to provide stable and green power support for the daily operation of its factories.

At present, the installed capacity of distributed photovoltaic in the manufacturing bases has reached

70 MW

and the installed capacity of battery energy storage

is **52** MWh



effectively optimizing the Group's energy consumption structure

Case

Hisense Huangdao Information Industrial Park builds Intelligent Battery Energy Storage System to improve power utilization efficiency

Through the EMS platform to monitor the Huangdao Information Industrial Park at noon time the natural decline in the grid load, after analyzing and researching, the phenomenon is due to the reduction of power demand during the lunch break and the efficiency of photovoltaic power generation at lunch time to improve the cause. In order to solve this problem, Huangdao Information Industrial Park goaled the deployment of high-efficiency lithium battery packs and advanced energy storage converter battery storage system, through intelligent means, low-cost time at night to store power, in the daytime peak time to release energy.

Hisense Huangdao Information Industrial Park connects the energy storage containers to the existing power grid, effectively optimizing the allocation of power resources and enhancing the efficiency of energy use.



Factory Roofing with Photovoltaics



Hisense Huangdao Information Industrial Park Energy Storage Equipment

In addition, in terms of energy storage, Hisense has built an ice storage and cold storage system that operates in conjunction with the central air-conditioning system, which effectively realizes the shifting of power peaks and filling in valleys through the energy management strategy of 'making ice and storing cold in the low valley, melting ice and releasing cold in the peak'.

⁷ Green power percent data statistics as of the white paper publication date

Exploring Diversified Clean Energy Sources

Hisense pursues innovative and diversified development in its strategic layout in the new energy field. Hisense adopts differentiated energy procurement strategies according to the characteristics of different regions and strengthens the use of new green energy sources. For example, in Guangdong and Southwest China, Hisense utilizes local resource endowments and procures clean energy sources, such as nuclear power and hydropower, through the power trading market. In the future, Hisense will further introduce other green power resources such as wind power and hydrogen energy, and explore a wider range of clean energy acquisition methods.

Type of clean energy used



Hydropower

Hisense Refrigerator Business Chengdu Plant is located in the Sichuan and Chongqing regions, which are rich in hydropower resources, and uses hydropower as an important source of

electricity, purchased about **12,520** MWh of hydropower directly in 2023



Nuclear power

181,000 MWh

of nuclear power to be purchased in Guangdong by 2022



Natural gas

Continuously exploring the first step of transition from 'traditional fossil energy' to 'clean fossil energy', Hisense Hitachi has now realized **100%** conversion from coal to natural gas;

Sanden Holdings introduces green natural gas synthesized from carbon dioxide and hydrogen to its French plant for manufacturing.

Future clean energy layout



Wind power

Hisense Huangdao and Pingdu Industrial Park is located in Qingdao, which is extremely rich in offshore wind power resources. Hisense Group will follow the policy trend of Qingdao's future 100-billion offshore wind power development, and continue to explore more possibilities for the use of wind power.

Choosing High-quality Offsets

Creating Three Industry-leading 'Zero Carbon Factories'

Jiangmen Factory, a subsidiary of the audiovisual and multimedia business

In 2023, the Jiangmen Factory of the audiovisual and multimedia business was awarded the 'Zero Carbon Factory' certificate by a third-party certification organization, making it **the first and only 'Zero Carbon Factory'** in China's domestic TV industry. Through green energy substitution, technical energy saving and emission reduction and other new production methods, the Jiangmen Factory has achieved an annual emission reduction of nearly **8,000 tCO₂e**, successfully realizing net-zero emissions in operations.



Carbon Offset Certificate for Jiangmen Factory of the Audiovisual and Multimedia Business

Choosing High-quality Offsets

Carbon-negative technologies are an important tool as well as an inevitable step towards carbon neutrality for society as a whole.

According to the *Direct Air Capture 2022* report released by the International Energy Agency (IEA), in order to achieve net-zero global emissions by 2050, more than 85 million tons of carbon dioxide will need to be captured from the air by 2030, and nearly 1 billion tons of carbon dioxide will need to be captured by 2050.

In the process of achieving carbon neutrality in operations, Hisense Group will realize carbon offsetting through carbon negative technology as the 'last 1 mile' after production and manufacturing emission reduction and clean energy substitution.

The Jiangmen Factory has achieved 'zero carbon' through the following three main paths:

Path 1 Management system optimization

Through the energy management system, cloud intelligent control system and ice storage cooling system, the annual electricity consumption is saved

905 MWh, and carbon emissions are reduced by **513 tCO₂**

Path 2 Clean Energy Alternatives

Carbon emissions were reduced by **7,372 tCO₂e** through the construction of rooftop PV and **34 tCO₂e** through the replacement of natural gas by solar thermal

Path 3 Carbon offsets

Offset carbon emissions of **355 tCO₂e** through the third-party VERM

Ronshen Plastic Factory, a subsidiary of the mould business

In January 2024, Ronshen Plastic Factory achieved **100%** renewable energy use in the production process through waste heat recovery, construction of roof photovoltaic and other measures, and offset the remaining emissions, and was awarded the certificate of 'Zero Carbon Factory', which is the first to realize zero-carbon manufacturing in the plastic products industry.



Certificate of 'Zero Carbon Factory' for Ronshen Plastic Factory of the Mould Business

Guangdong Factory, a subsidiary of the refrigerator business

In June 2024, the Guangdong Refrigerator Factory achieved **100%** renewable electricity usage and was awarded the title of 'Zero Carbon Factory' after verification by a third-party organization.



Certificate of 'Zero Carbon Factory' for the Guangdong Factory of the Refrigerator Business

In a report by the United Nations Environment Programme (UNEP), it was noted that the best way to control carbon emissions is through 'natural carbon sinks'. 2021, in *the Action Plan for Carbon Dioxide Peaking Before 2030* issued by China, the consolidation and enhancement of the capacity of carbon sinks was listed as one of the 'Ten Actions for Peak Carbon'. In the future, Hisense plans to fully explore the resource advantages of the location in the global scope, through multi-party cooperation mode to participate in ecosystem carbon sink projects, and actively promote the development of corresponding technology, to contribute to the mitigation of global climate change.



Relentless Pursuit

03

Low-carbon Industrial Value Chain

As a 'chain master' enterprise, Hisense positions itself as a pivotal partner, encouraging collaboration among upstream and downstream stakeholders to achieve carbon reduction and jointly advance the green development of the industrial chain



Roadmap with Data

Path to Achieve

Raw Material Procurement

Logistics Warehousing

Recycling Industry

Step 1

Green Departure

Strengthening low-carbon requirements, insight into underlying behavioral data

Current Effectiveness

35%

Identified, analyzed carbon performance of 35% (percentage of vendor-related indicators on this page are based on purchases) of suppliers



Future Goals

50%

Bring 50% suppliers under carbon control by 2025



Step 2

Green Mutual Enhancement

Enhancing upstream and downstream synergies and promote partners to accelerate low-carbon actions

Current Effectiveness

30%

Promoted 30% suppliers to sign *Hisense's Carbon Reduction Action Commitment* and set emission reduction targets



Future Goals

40%

By 2025, drive 40% suppliers to set carbon reduction targets



Step 3

Green Win-Win

Creating green cooperation opportunities to achieve a win-win situation for business and carbon reduction

Future Goals

Before 2030 Promote research and application of recycled plastics, recycled metal materials and bio-based materials in cooperation with upstream suppliers



5

The downstream logistics carbon watchtower has covered 5 categories of products: TV, air conditioners, central air conditioning, refrigerator, kitchen and bathroom appliances



100%

Achieve 100% coverage of end-product⁸ by logistics carbon emissions dashboard



90%

Warehousing segment 90% realized electric forklift replacement



100%

100% electric forklift replacement in warehousing by 2026⁹



Before 2030 Promote research and application of new energy logistics vehicles and biofuels in cooperation with logistics providers



1,894,700

Establishment of online and offline "dual-wheel drive" recycling system, recycling of home appliances of various brands since 2023, over 1,894,700 units



year-on-year increase

Continuously improve the recycling system and realize year-on-year increase in the number of appliances recycled



30

Signed the *Recycling Cooperation Agreement* with 30 regional recyclers, and worked together to carry out the action of household appliance producers' recycling target responsibility system



100

Increase the number of regional cooperation recyclers to 100 recycling to cover more categories of home appliances



Before 2030 Promote recycling and reuse of post-consumer plastics and other materials in collaboration with dismantling partners



⁸ Refers to end products within the scope of Hisense's rights of ownership

⁹ In the absence of abnormalities in the power supply

Implementing Green Procurement

Implementing Green Procurement

In upstream procurement management, Hisense Group emphasizes and advocates working hand in hand with its industrial chain partners on the road to green development and making concerted efforts to create green products. Based on this goal, Hisense continuously improves its internal management level, strengthens its external empowerment capability, shares the results of its own low-carbon practices with its partners, and actively assumes the responsibility of reducing emissions as a 'chain owner'.

Up to now, Hisense has driven the common development of more than **2,400** upstream and downstream enterprises

Hisense already has **4** national 'Green Supply Chain Management Enterprises'

5 provincial 'Green Supply Chain Management Enterprises'

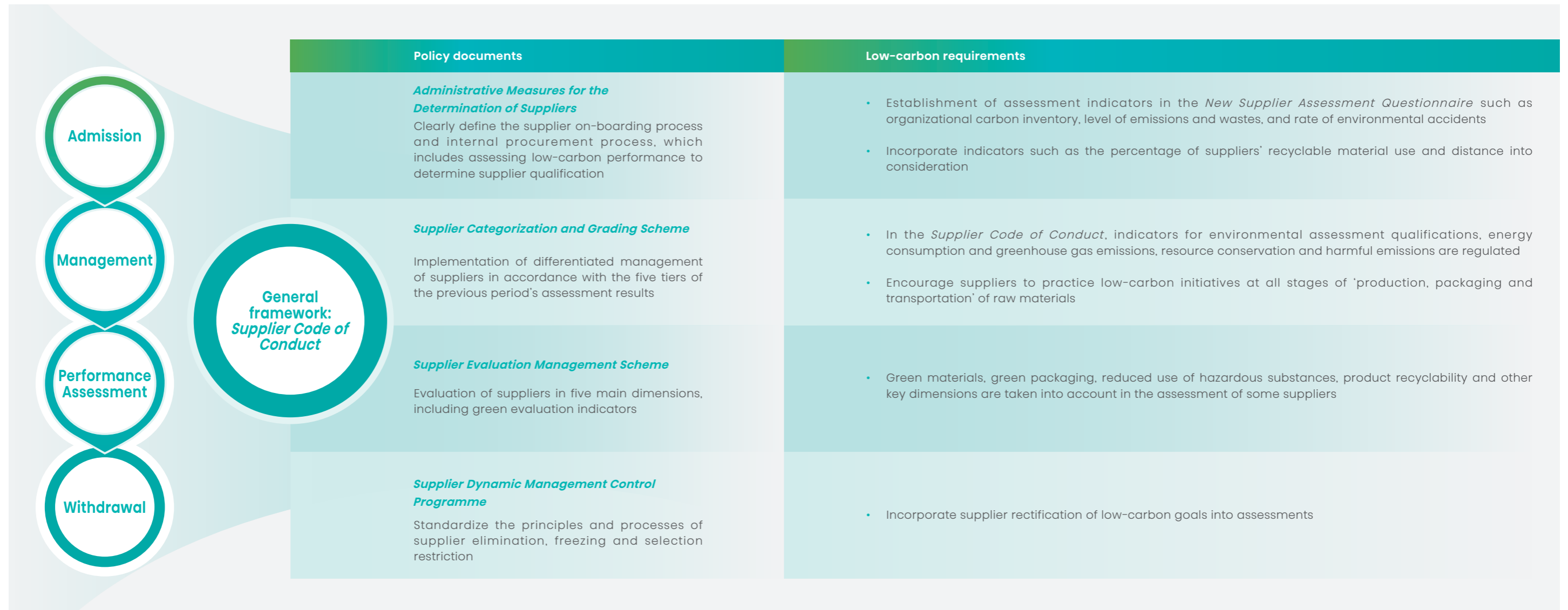
In the future, Hisense will continue to run the green concept through the upstream and downstream of the industrial value chain, and fully promote the low-carbon development of the 'entire industrial value chain'.

Renewal of Management

Based on a perfect management structure, Hisense integrates the low-carbon concept into the whole process of supply chain management, covering the stages of supplier Admission, supplier management, supplier performance assessment and supplier withdrawal, and realizes efficient management of suppliers by combining a multi-integrated digital platform.

Supplier 'End-to-End' Management Process




Hisense Group establishes green procurement systems and programs, and implements the whole process of 'supplier admission, supplier management, supplier performance assessment, supplier withdrawal' to supervise its suppliers, improving the standardization and standardization of management through the continuous improvement of the relevant management documents, and improving the scientificity and effectiveness of management through the differentiation of management strategies. Hisense always hopes to establish long-term, win-win cooperative relationships with suppliers that share the same green development philosophy.




III Admission of New Suppliers



In the supplier introduction stage, Hisense Group has started to build a green supplier screening mechanism, formed a set of rigorous identification procedures, and incorporated green evaluation indicators into the assessment process, focusing more on its existing performance in the low-carbon field and its willingness to develop, in addition to assessing the supply's traditional business capabilities. In the future, Hisense will further refine the low-carbon assessment indicators at the supplier introduction stage and establish more comprehensive green assessment requirements for new suppliers.

• **Examples of low-carbon assessment indicators in the *New Supplier Assessment Questionnaire***

 <p>Assessment of organizational carbon inventory performance</p> <p>Whether the supplier has conducted a carbon inventory within two years, and if not, the supplier will be advised to initiate the carbon inventory process in the opinion issued</p>	 <p>Assessment of sewage and waste disposal</p> <p>The Supplier shall confirm that the handling of pollutants and waste is in accordance with the relevant provisions of the Environmental Protection Law</p>	 <p>Assessment of environmental accident</p> <p>The supplier must confirm that there have been no EHS accidents, such as environmental accidents, in recent years</p>
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• **Other key assessment indicators for the supplier introduction phase**



	<p>Percentage of recyclable materials</p> <p>Encourage suppliers to increase the percentage of recyclable materials used in raw materials, such as prioritizing the purchase of Kingfisher-certified recycled steel</p>
	<p>Supplier distance</p> <p>Taking into account the distance of suppliers from Hisense factories to reduce carbon emissions from upstream logistics and transportation by reducing the supply-side radius</p>

Implementing Green Procurement

III Existing Supplier Management

Hisense Group deeply recognizes that green management of the supply chain is a long-term and continuous process. In order to ensure that suppliers can follow Hisense's every step towards low-carbon transition, Hisense implements low-carbon routine management for existing suppliers according to the strategic direction of low-carbon development in the supply chain, including requiring suppliers to comply with the low-carbon related requirements in the *Supplier Code of Conduct*, sharing annual carbon emission data, and randomly checking the implementation of carbon reduction in on-site audits, etc. For strategic and core suppliers, Hisense continues to push forward the commitment to emission reduction effectively.

• **Examples of low-carbon indicators in the *Supplier Code of Conduct***

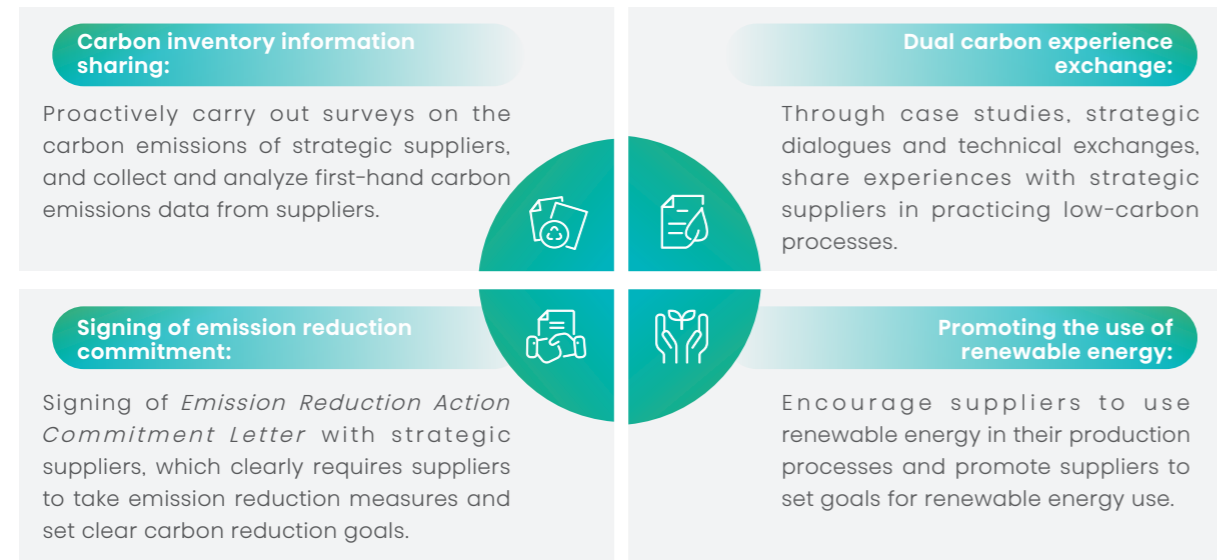
<p>EIA permits and reports</p> <ul style="list-style-type: none"> Suppliers should obtain all required environmental licenses, approvals or registrations, keep them up to date and comply with the operating and reporting requirements therein 	<p>Energy consumption and greenhouse gas emissions</p> <ul style="list-style-type: none"> Energy consumption and greenhouse gas emissions should be tracked and recorded Commitment to improve energy efficiency and reduce energy consumption and greenhouse gas emissions
<p>Resource conservation</p> <ul style="list-style-type: none"> Reduce the use of natural resources through production process optimization, equipment maintenance, material substitution, recycling, etc. 	<p>Gas emission</p> <ul style="list-style-type: none"> Daily monitoring of the performance of the gas emission control system For greenhouse gases and other harmful gases generated by the production process, should be detected and treated as required prior to emission

• **Other key requirements for the supplier management phase**

<p>Raw material production</p>	<ul style="list-style-type: none"> Encourage suppliers to make material substitutions to reduce the carbon footprint of their products
<p>Packaging of raw materials for transportation</p>	<ul style="list-style-type: none"> Advise suppliers to use recyclable turnover kits for deliveries instead of disposable packaging Suggest that suppliers use recyclable materials for packaging instead of single-use plastics, such as replacing PE bags with paper bags Encourage suppliers to recycle and reuse their own packaging used in transportation

Case Driving strategic suppliers to accelerate low-carbon development

Hisense Group is committed to building a low-carbon supply chain ecology, and actively leads its supply chain partners to work together toward a sustainable future. For strategic suppliers, Hisense has implemented a series of proactive management measures to promote the joint enhancement of carbon emission reduction capabilities:



Through these measures, Hisense Group not only promotes suppliers to find out the status of their own carbon emissions and set up clear emission reduction goals, but also accelerates the process of low-carbon development of the entire supply chain.

Case Comprehensive mapping of suppliers' low-carbon processes to support Hisense's low-carbon strategy development

In 2024, Hisense Group launched a comprehensive low-carbon work mapping of its Tier 1 suppliers through a questionnaire to know suppliers' carbon emissions, renewable energy use, and key information such as planning, emission reduction goals, and third-party certification. By the time the report was released, Hisense had

collected more than **1,500** responses and analyzed the feedback in detail, with some of the results as follows:



In the future, Hisense will continue to increase the breadth and depth of management requirements related to suppliers' low-carbon, clarify carbon reduction requirements for suppliers, push suppliers to disclose carbon emission information, and set up more scientific carbon goals. Hisense looks forward to working with all supplier partners to realize a more sustainable future.

Implementing Green Procurement

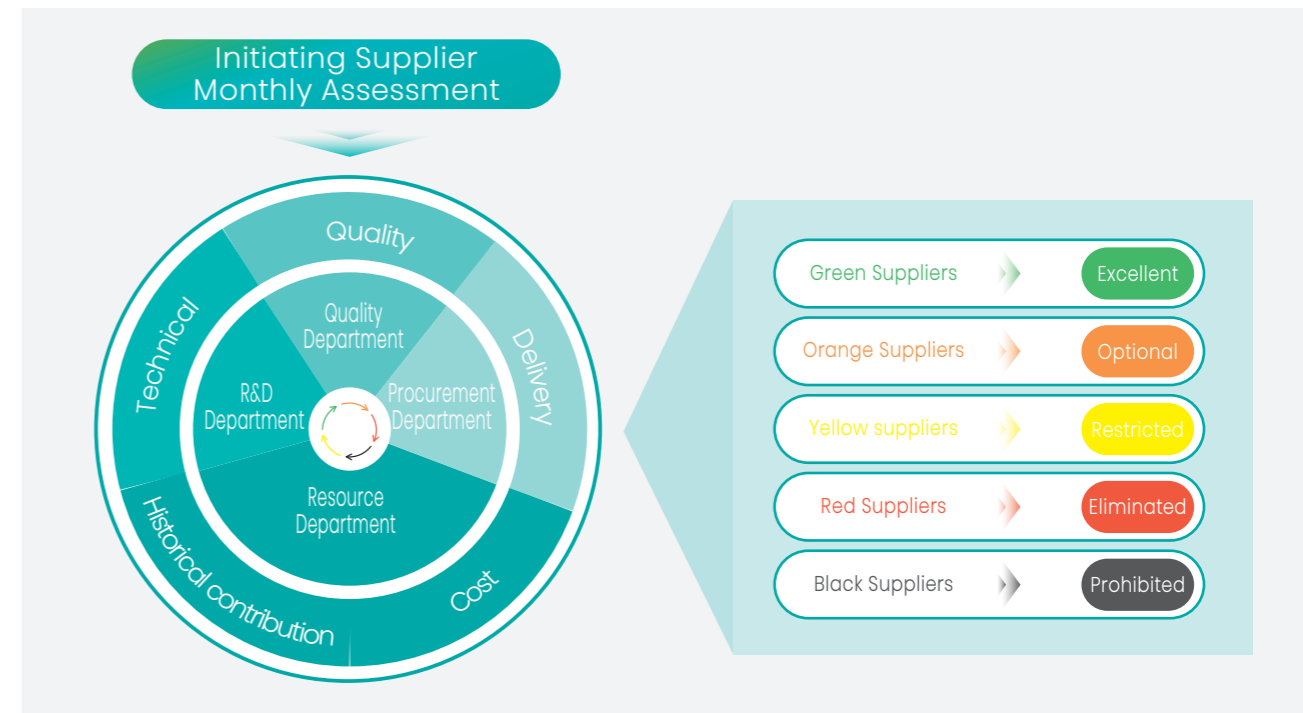
Supplier Performance Evaluation

Hisense Group strengthens the innovation and assessment of green performance and green performance, and implements a 'dual five-dimensional' supplier evaluation and assessment system to evaluate and assess suppliers on a monthly basis:

Five-dimensional evaluation: In the performance evaluation stage, different roles such as R&D engineers and procurement executives conduct a comprehensive and dynamic evaluation of suppliers from five main dimensions: technology (T), quality (Q), delivery (D), cost (C) and historical contribution (H);

Five-dimensional assessment: The results of the five-dimensional evaluation are taken as the core factor for distinguishing suppliers, and suppliers are divided into five tiers represented by five colors. For green suppliers (excellent), they will be encouraged with appropriate inclination in resource planning, new product development, share allocation, long-term agreements, etc. For black suppliers (prohibited), they will terminate their cooperation immediately and completely within the Group and will not carry out future cooperation.

In particular, in the process of quality assessment of ODM/OEM supplier factories, Hisense not only examines conventional indicators, but also takes into account key dimensions affecting the low-carbon performance of products, such as green materials, green packaging, reduction of the use of hazardous substances, and product recyclability.



Supplier Exit Mechanisms

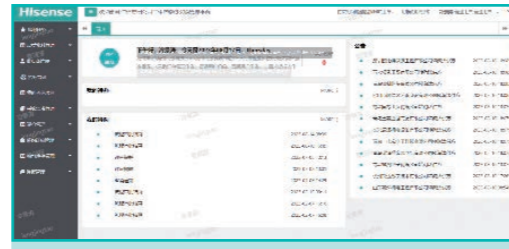
According to the results of the five-dimensional evaluation of suppliers, for suppliers whose final evaluation results are yellow and below, timely rectification opinions are put forward, and according to the results of the supplier's feedback are evaluated to give freezing, elimination and other treatments.

Supply Chain Digital Management Platform

Hisense has built a whole-process integrated supply chain management platform to realize fast interaction with upstream and downstream, and continues to iterate and upgrade, gradually shifting from automation to intelligence. Relying on the Supplier Relationship Management (SRM) system, Material Requirement Planning (MRP) system, and Product Life Cycle Management (PLM) system, the company realizes efficient management of the whole process of suppliers and timely monitoring of the implementation of green procurement.

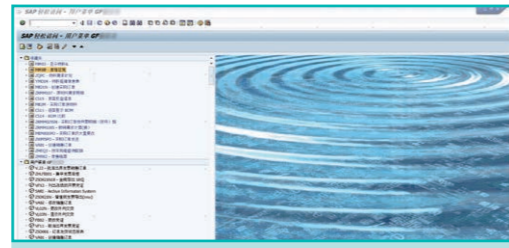
SRM system

strictly manages suppliers in the whole life cycle of 'admission - withdrawal', realizing centralized management of supplier information on one hand and optimizing the procurement process on the other hand, which significantly improves management efficiency



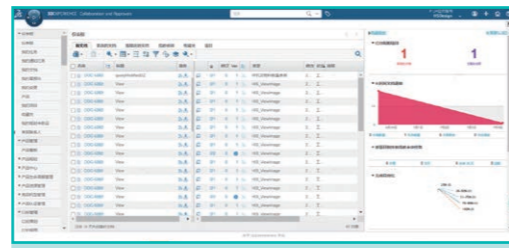
MRP system

is used to manage the green material database, in which the RoHS label, test report and harmful substance content of all materials can be clearly viewed and controlled in a timely manner to ensure that all in-use materials comply with the green environmental protection requirements



PLM system

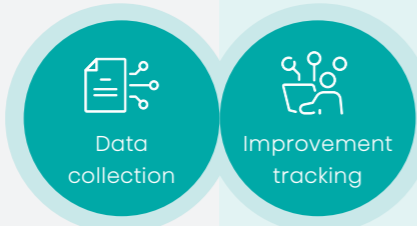
can trace back the product to the order number, and product code as the product identity information, tracing the whole process of its warehousing, warehousing, etc., and at the same time, effectively control and track the logistics and costs of warehouse operations, to achieve a perfect enterprise warehousing information management



Case Carbon Management through SRM Systems

Hisense Group adopts SRM system to optimize its interaction with suppliers and improve the efficiency and transparency of its supply chain. In the context of realizing the carbon neutrality goal, the SRM system plays a crucial role in Hisense's carbon management of suppliers:

Hisense utilizes the questionnaire module of the SRM system to uniformly distribute customized questionnaires to suppliers to collect key carbon emissions data and emissions reduction goal setting in a convenient and efficient manner.



After suppliers conduct on-site verification, Hisense releases the verification results to suppliers through the SRM system and tracks the rectification status online.

Implementing Green Procurement

Promoting Win-win Partnerships

Hisense Group is committed to strengthening communication and collaboration with its suppliers, collaborating with them through training and empowerment, collaborative research and development, and actively leading them to embark on a journey of low-carbon development.

Supplier Training

Hisense Group focuses on communication with suppliers and strives to promote the realization of supply chain emission reduction synergy between suppliers and Hisense. The Group encourages product companies to organize supplier training from time to time, and dispatches professional teams to go deep into the production sites of suppliers to provide face-to-face guidance and support, deepen the suppliers' knowledge of the green supply chain, and assist suppliers in improving their own carbon management systems and realizing more low-carbon manufacturing.

Case

Organized the Global Supplier Partner Summit to discuss low-carbon co-creation with suppliers

In April 2023, Hisense organized the Technology Sub-Forum of the Group's Global Supply Chain Partner Summit under the theme of 'Joint Innovation, Co-Creation, and Mutual Win-Win', and among the three major themes of the Sub-Forum, the themes of 'Low-carbon' and 'Energy Saving' are closely related to the Group's sustainable development.

of green development with industrial value chain partners, and jointly build a green ecosystem, in order to realize the national '30-60 Dual-carbon Strategy' joint efforts.

Mr. Yu Zhitao, then Executive Vice President of Hisense Group, released and agreed on the six basic concepts of Hisense's industrial chain development in the theme report, among which, 'leading 'zero-carbon manufacturing' and promoting green and sustainable development' was put forward as a major concept. Mr. Yu emphasized that Hisense will do a good job of energy saving and consumption reduction on the basis of focusing on and advocating the promotion



Group Global Supply Chain Partner Summit Technology Sub-Forum

Case

Organize special training to invite supply chain partners to join the low-carbon transition journey

Hisense Group is committed to leading its supply chain partners to realize the goal of green and sustainable development. In order to achieve this vision, the Group encourages each product company to organize several supplier training activities each year, in which they share their rich experience accumulated in low-carbon development practices, listen to suppliers' difficulties in low-carbon transition and give them practical advice and assistance through case studies, strategy seminars and interactive exchanges. Taking Hisense Visual as an example, the training activities can attract the active participation of thousands of suppliers every year, deepening the understanding of the importance of low-carbon transition with suppliers and contributing to the joint promotion of the green transition of the whole industrial chain.

Supply Chain R&D Collaboration

Hisense Group strengthens R&D cooperation with upstream and downstream partners in the industrial value chain in the field of product technology and continues to develop leading green technology solutions that are more energy-efficient and low-carbon through the establishment of joint laboratories and the signing of strategic cooperation agreements.

Establishing a joint laboratory with Wanhua Chemical, and the ultra-low-density thin-wall foaming technology developed in cooperation will reduce the wall thickness of Hisense ultra-thin products by 44% compared with ordinary products, breaking through the limit of 33 mm, and reducing the foaming material by 1.92 kg per product, which can reduce carbon emissions by 6.86 kg.

Cooperating with upstream and downstream enterprises in the global supply chain, such as BASF, Honeywell, and Texas Instruments, to build a green ecosystem by sharing or co-developing leading technologies and solutions.

Optimizing Logistics and Warehousing

Logistics and warehousing, as a channel connecting product production and manufacturing enterprises and consumers, is an important part of the downstream of the industrial chain and plays a key role in realizing the low-carbon field of the whole industrial chain. Hisense Group promotes the process of high efficiency, intelligence and greening of the logistics link by building a digital logistics system, paperless warehousing, electric vehicle transportation and visualized carbon emission signage.

Digital Logistics System

Introducing warehouse network optimization model and 'local production, local marketing early warning and pre-control' screen to promote local production and local marketing

Building a digital direct delivery ratio warning pre-control dashboard, to improve the proportion of orders sent directly to the merchant, reducing the secondary transit in the branch

In 2023, the trunk one-way distance of refrigerator products will decrease by **3.9%**

In 2023, Hisense Visual direct hair ratio increased by **4.28%** year-on-year

Warehouse Paperless office

Promoting electronic signatures on inventory forms and merchant pick-up authorization forms

Annual savings of approximately **212,390** sheets of paper in the warehouse

Electric Vehicle Use

Central Regional Distribution Center (RDC) to merchants and users using electric vehicles for delivery

Replacing diesel forklifts with electric forklifts in the warehousing segment

Beijing, Chengdu, and Chongqing centers have realized electric vehicle transportation, and the proportion of electric forklifts has reached **94.65%**

Logistics Carbon Emission Dashboard

Developing an online logistics carbon management dashboard, which can be used to measure the carbon emission value of transportation links by product company, production base, etc.

Enabled carbon emissions exclusion and optimization of logistics processes

Logistics Carbon Emission Dashboard

Hisense Logistics Carbon Emission Dashboard accurately tracks and displays the carbon emission values of the transportation link from the dimensions of product types, time zones and production bases through data capture and analysis. The application of this innovative tool not only provides intuitive data support for carbon emission exclusion and optimization in the logistics link, but also provides detailed carbon emission data reference for each product company.

Using this management dashboard, product companies can monitor the carbon footprint of their logistics processes in real time, identify high-emission links in a timely manner and optimize them by adjusting transportation modes, improving route planning and other measures. At the same time, the dashboard provides decision-making support to product companies, helping them to formulate more reasonable production and logistics plans according to their own carbon emission goals, and effectively reducing the overall carbon emissions of the logistics process.



Hisense Logistics Carbon Emission Dashboard Interface

Optimizing Logistics and Warehousing

Case Importing WMS system, empowering intelligent low-carbon warehousing

Hisense original warehousing system relied on manual operation and management, and the management software and hardware equipment did not realize effective cooperation, which had the disadvantages of low efficiency and high error rate. In order to solve this problem, the Group introduced the advanced WMS (Warehouse Management System) warehousing system, the highlights of which are as follows:

Digitalized and fine management of cargo location information to avoid additional energy consumption of forklifts in the process of finding cargo.

Achieving paperless tracking of orders and reducing the waste of human resources and paper consumption of manually recording products.

Intelligent analysis can be performed to optimize scheduling based on order demand and inventory to ensure efficient flow of goods and achieve intelligent scheduling.

Through the use of WMS system, Hisense has significantly reduced the carbon emissions generated by goods in and out of the warehouse and warehouse operations, and the intelligence level of warehousing operations has been significantly improved.

In the future, Hisense Group will introduce intelligent loading algorithm engine and intelligent video monitoring technology to optimize the loading method, reduce additional transportation, and reduce carbon emissions in logistics transportation and warehousing.

Future Planning

1

Intelligent loading algorithm engine

According to the type, volume and weight of goods and distribution routes and other factors, automatically generate the optimal loading scheme to maximize the use of space and load capacity of the transport means

Reducing the number of shipments

Reducing transportation distances

2

Intelligent video surveillance technology

AI intelligent system automatically recognizes the standardization of personnel operation and equipment operation, and provides early warning on the violation of the action, thus reducing the loss of goods and cargo discrepancy

Avoiding additional transportation

Robust Recycling System

Robust Recycling System

The traditional recycling of used home appliances is characterized by 'scarce channels, lack of trust, meager returns and poor experience', which has brought many challenges. China has successively issued a number of policies to promote the establishment of a sound recovery and recycling system, innovate recycling modes, standardize treatment methods, and accelerate the green transition and intelligent upgrading of home appliance recycling.

To meet these challenges, Hisense Group realizes the proper treatment and reuse of used and end-of-life home appliances through online and offline 'dual-wheel drive'. Online, Hisense has established a large platform for the recycling of used home appliances and an IT information system; offline, Hisense participates in several national home appliance recycling activities without limiting the brands, and has signed the *Home Appliance Recycling Cooperative Agreement* with 30 recycling suppliers covering 333 prefectural-level administrative districts, the county-level cities under their jurisdiction, and most of the townships and villages under their jurisdiction, so that the recycling, transportation, and dismantling of used home appliances can be managed, thus building a green reverse logistics system of Hisense Group.

Since 2023¹⁰, through the active implementation of the home appliance recycling strategy, Hisense has successfully recycled over **1,894,700** units of home appliances of various brands.

Online

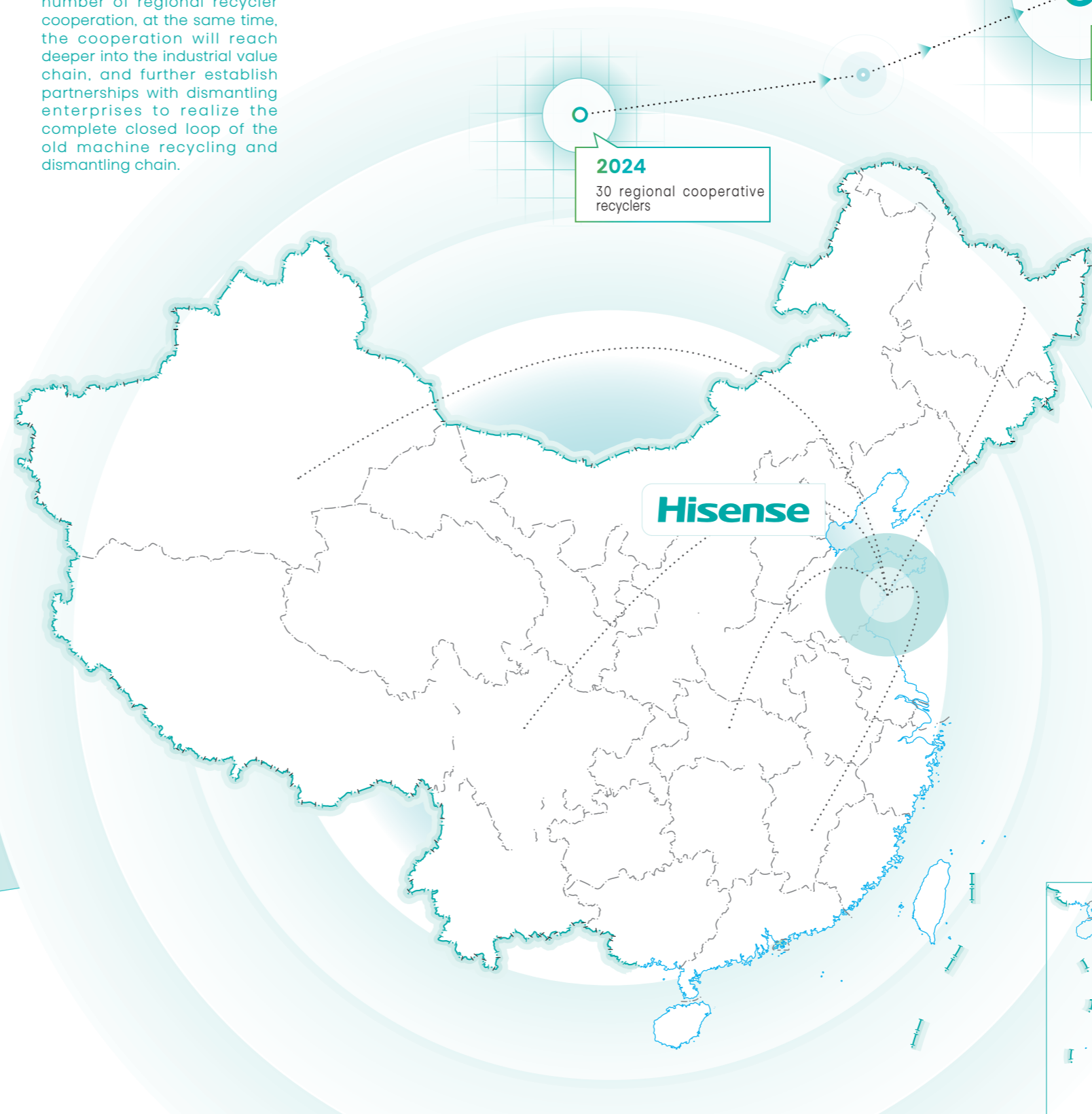
'Internet + Recycling' Platform



Offline

Unlimited brand exchange program Cooperation with regional recyclers

In the future, Hisense plans to continue to expand the number of regional recycler cooperation, at the same time, the cooperation will reach deeper into the industrial value chain, and further establish partnerships with dismantling enterprises to realize the complete closed loop of the old machine recycling and dismantling chain.

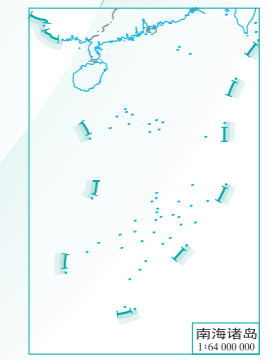


2024
30 regional cooperative recyclers

Future
Exceeding one hundred regional cooperative recyclers

Recycling is not limited to brands Contracted with **30** regional recyclers

Covering **333** prefecture-level administrative regions



¹⁰ Data as of July 2024

Establishing Online Recycling Platform

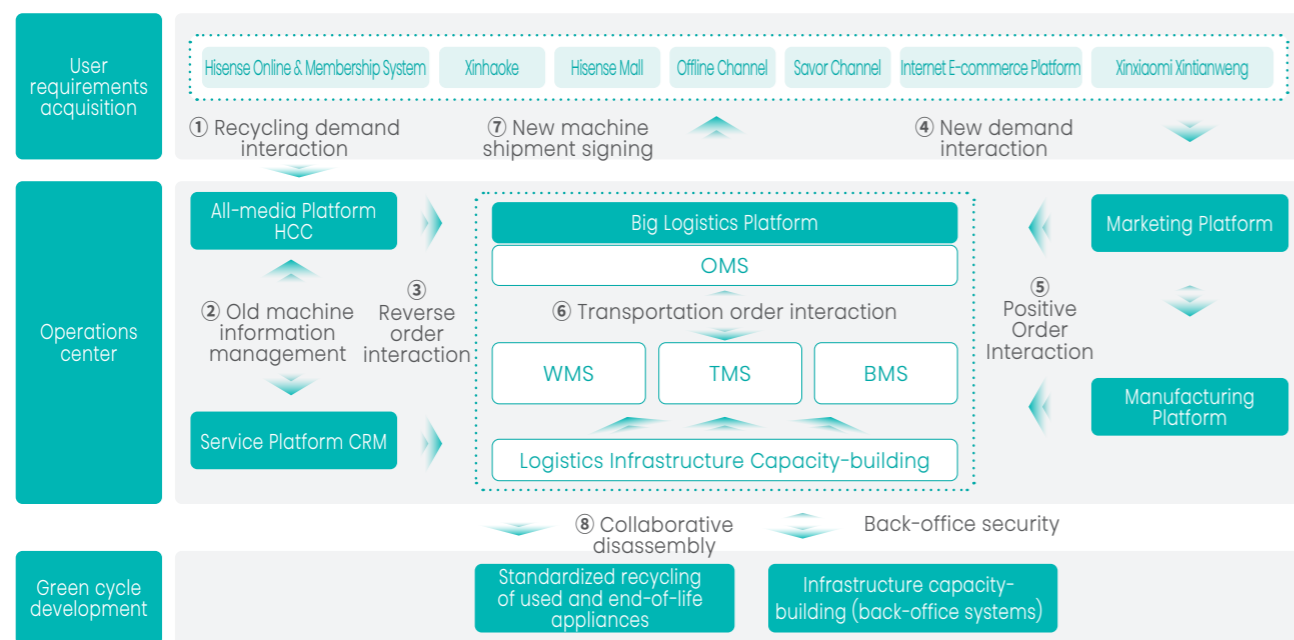
Hisense Group actively builds an information management network, creates an 'Internet + Recycling' platform for used home appliances that integrates platforming, ecology, and technology, and builds an intelligent, highly efficient, traceable, online and offline integrated reverse logistics recycling system for used home appliances by using channels such as distribution, installation and maintenance.



Improving recycling network Hisense collects information on old home appliances eliminated by users through front-end digital channels such as Hisense Home public account, Hisense Home small program, Hisense Mall; and collects consumer feedback information uploaded to CRM system through software systems such as all-media call center, engineer APP, intelligent shopping guide, and merchants' middle station, and the marketing platform manages, filters, and integrates the information to build a complete information management system from front-end to logistics.

Optimizing Recycling Channels Relying on the enterprise information management system, Hisense improves the coverage of the recycling system through the integrated development of online and offline; utilizes sales outlets, service outlets, distribution, installation and maintenance channels to build a reverse logistics recycling system to open up the recycling channels of used home appliances and form a diversified recycling pattern, while recycling used home appliances through the formal channels.

Hisense is committed to establishing close cooperative relationships with fully qualified home appliance dismantling enterprises to realize scientific classification and efficient treatment of used home appliances, in order to reduce the risk of environmental pollution, promote the recycling and reuse of resources, and contribute Hisense strength to the construction of a conservation-oriented society for the development of a circular economy.



Waste and Old Household Appliances 'Internet + recycling' Platform Architecture Diagram

Robust Recycling System

Broadening Recycling Channels Offline

Launching of the 'Green Planet Renewal Program'

Hisense Group actively responded to the *Notice on Doing a Good Job in Promoting the Consumption of Green and Intelligent Home Appliances in 2023* by participating in and organizing more than 30,000 trade-in operations. Hisense launched an unprecedented trade-in policy offering an unlimited subsidy budget for about 300 models of TVs, air conditioners, refrigerators, washing machines and kitchen appliances. Consumers can exchange their used home appliances of any brand for a subsidy of up to RMB2,000. In addition, Hisense has set up four themed showrooms to showcase its low-carbon philosophy, offering a comprehensive range of replacement options from individual products to scenario-based programs, which has been widely praised by consumers. The 'Green Planet - Renewal Program' series of activities share with users the latest achievements of Hisense Group's green technology, effectively promote green consumption in the home appliance industry, and are of great significance to the realization of social sustainable development.



'Green Planet Renewal Program' Activity Site



Inside the 'Green Planet Renewal Program' Showroom

Signing Cooperation Agreements with Recyclers

In order to actively respond to the national dual-carbon strategy and take the initiative to assume the responsibility of early and pilot implementation, Hisense Group carries out the household appliance producer goal responsibility system action. In accordance with the *Law of the People's Republic of China on the Prevention and Control of Solid Waste and Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products* and other laws and regulations, Hisense signed the *Home Appliance Recycling Cooperative Agreement* with compliant recyclers to jointly explore an advanced model for the recycling and disposal of used home appliances.

Hisense cooperates with recyclers to build a recycling system for used home appliances in Hisense channels, in which Hisense uses its own sales channels, after-sales service network and online platforms as a reverse recycling channel for used home appliances to obtain consumer demand, and recyclers complete the recycling of used home appliances. For example, after users report their recycling needs for refrigerators, TVs, washing machines, air conditioners and other household appliances on the 'Hisense Home' platform, the recycler will accept the orders and carry out recycling, transportation and dismantling.



'Green Planet Renewal Program' Poster

Persistent Drive

04

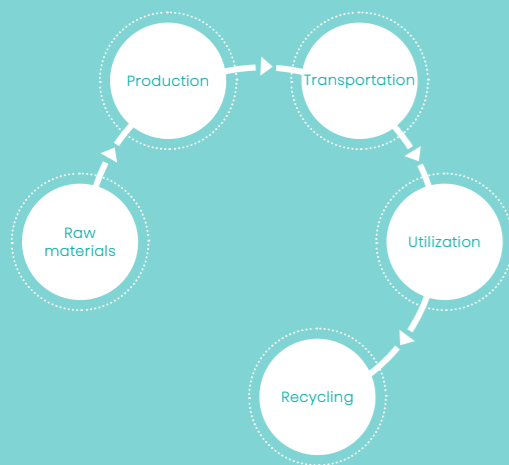
Low-carbon Product Innovation

From individual products to comprehensive system solutions, Hisense is committed to delivering low-carbon principles to users through lifecycle-oriented green design, establishing meaningful connections with users in the 'carbon neutrality' era



Roadmap with Data

Total Life Cycle Green Design Concept



¹ The five major product types refer to: TV, refrigerators, washing machines, air conditioners, central air conditioning

² Expandable Polystyrene

Three Key Design Elements

Material Upgrading

Increasing the market application of green materials on the premise of ensuring product quality and performance

Product Material

Increasing the proportion of **three** environmentally friendly materials – recycled plastics, recycled metals and bio-based materials – in products, and actively use **low-GWP** refrigerants and foaming agents

TV:
Optimized glue bonding technology, reducing the use of adhesive materials by more than 60%

Refrigerator:
Cyclopentane + HFO-1233zd Blowing Agent Replacement Technology was awarded China Patent Excellence Award

Air Conditioner:
Promoted the use of the environmentally friendly refrigerant R290 in products such as dehumidifiers and portable air conditioners

Packaging Material

Using paper and recycled materials instead of EPS² materials

TV:
Launched the world's first EPS material with 15% recycled content

Refrigerator:
All-paper packaging, recycled HDPE bags have been widely used

more than 700,000t

In 2030, more than 700,000t recycled plastics, recycled metals and bio-based materials will be used in the five major product categories¹

5%

Realize the annual reduction of packaging EPS materials of TV, washing machines and air conditioners by more than 5% in 2025 from a 2023 base year

Product Carbon Footprint

Establishing a product carbon footprint management mechanism, and implement carbon management for the entire life cycle of products in conjunction with the Carbon Management System (CMS)

Structural Optimization

Maximizing the use and reuse of resources

Product Structure

5,000t

In 2023, through product structure optimization, the five major product categories saved more than 5,000t materials in total

Packaging Structure

4,000t

In 2023, by improving the packaging structure design, the five product types reduced the amount of foam materials such as EPS by more than 4,000t

Continue to deepen product structure innovation and further improve the efficiency of plastic, metal and other materials from a 2023 base year

Through the improvement of packaging technology and structural optimization, the annual use of packaging foam materials will be reduced in the five product types from a 2023 base year

Current Effectiveness

20

More than 20 products of five product categories have completed carbon footprint accounting

Energy Consumption Reducing and Energy Efficiency Enhancing

Self-developed Energy Efficiency Enhancement Technology AI Algorithm Variable Frequency Control

White household electric appliance

70%

Over 70% of products reach Energy Efficiency Grade 1

White household electric appliance

By 2030:

Refrigerator:
100% meets or exceeds the new National Standard Energy Efficiency Grade 1

Washing Machine:
More than 90% of product models reach the National Standard Energy Efficiency Grade 1

Central Air Conditioning:
The carbon emission intensity of a single product during use is reduced by more than 30%

Black household electric appliance

Laser TV:
A 100-inch laser TV consumes only 1/3 to 1/2 the power of an LCD TV of the same size

Black household electric appliance

From a 2023 base year:

Laser TV:
Reduce energy consumption by more than 10% per year within 3 years

Future Goals

100%

By 2026, achieve 100% carbon footprint coverage of new products in the five product categories

100%

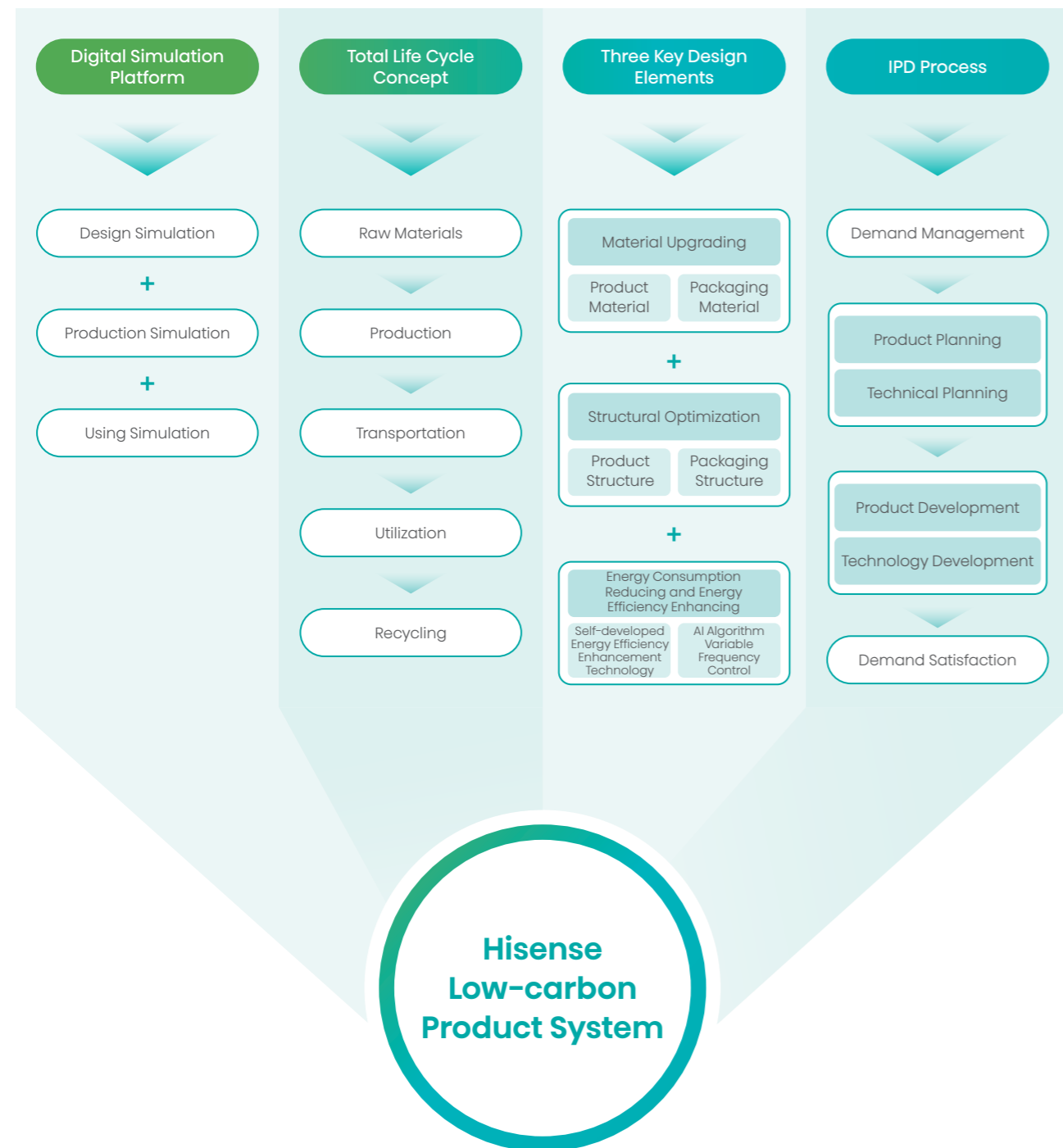
By 2030, achieve 100% coverage of the carbon footprint of all products in the five product categories

Innovating Sustainable End-products

Innovating Sustainable End-products

In terms of end-product creation, Hisense Group adheres to LCA's concept of full life-cycle green-design and the Integrated Product Development (IPD) process, giving full consideration to the impact of products on resources and the environment and striving to minimize the overall negative impact on the environment at all stages of product development. Based on this goal, Hisense continues to promote the iterative optimization of green products by taking 'material upgrading, structural optimization, energy consumption reducing and energy efficiency enhancing' as three key design elements.

At the same time, Hisense further relies on a digital simulation platform to realize systematic adjustment and comprehensive innovation for multiple processes such as production, transportation, use and recycling within the framework of product design, providing solid support for green product research and development.



Digital Simulation Platform Supporting

During the initial product design stage, Hisense Group applies the DFX (Design for X, design for all aspects of the product life cycle) concept, establishes a multidisciplinary, multi-system integrated simulation and test platform, and realizes the virtualized design of the entire product life cycle. This innovative approach not only significantly shortens the R&D cycle and accelerates the transformation of products from concept to market, but also reduces unnecessary material and energy waste in the R&D process through accurate simulation.

In the future, Hisense will expand the application of the simulation platform to a wider range of fields to further realize the intelligent upgrade of green-design.

Case Application of digital simulation platform in real scenarios

Hisense has widely applied its digital simulation platform to the simulation of product use and manufacturing processes, significantly reducing resource and energy consumption. By combining self-developed energy consumption reduction technologies with energy-saving and efficiency measures in the production process, it not only optimizes product performance, but also realizes efficient synergy between design and manufacturing, and effectively promotes green upgrading of the overall production process.

Optimizing product performance

The factories under the domestic air conditioning business have greatly simplified the post-commissioning process and reduced carbon emissions by using digital simulation platforms for product design, making a leading example of low-carbonization for air conditioning companies.

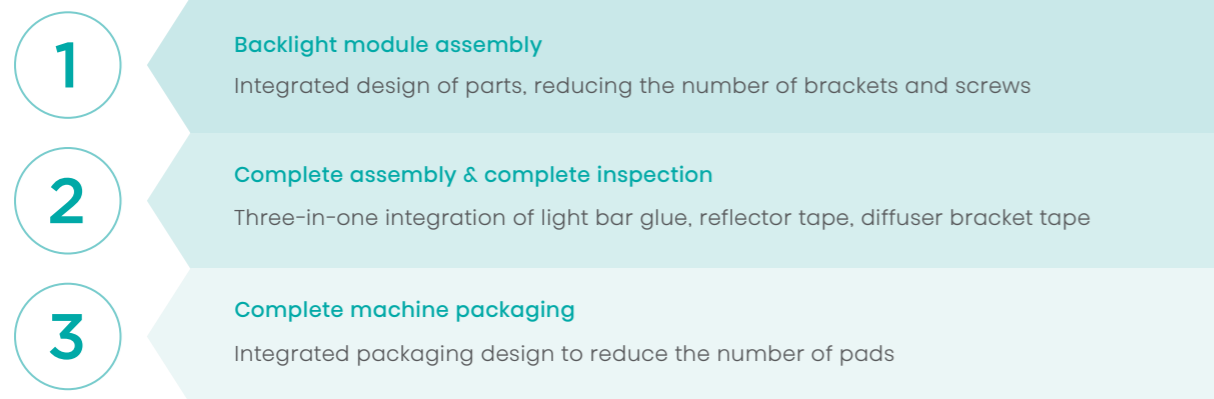
- Numerical analysis platform for heat exchanger**
Copper tube diameter, internal thread shape, fin parameters and geometry, air temperature, humidity, flow rate and other parameters can be set to accurately evaluate the heat exchanger U-tube heat load and flow path distribution rationality, to provide direction for the optimization of the heat exchanger, to avoid the waste of resources caused by the empirical design and experimental means;
- Complete machine performance simulation platform**
Optimization of the machine design can reduce the refrigerant charge, the platform covers the compressor model, heat exchanger model, throttle element model, piping model, etc., which can accurately calculate the performance of the whole machine, and guide the selection of refrigeration system components to match.

Calculation Process of the Whole Machine Performance Simulation

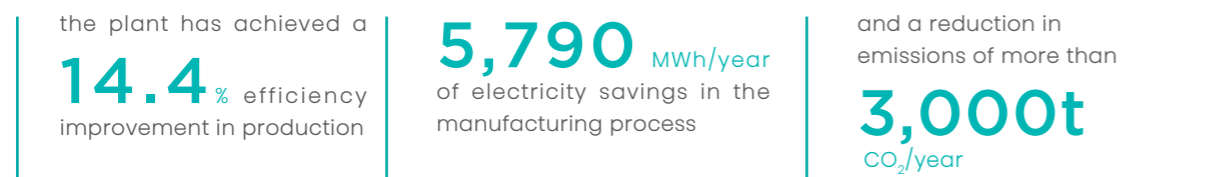
Innovating Sustainable End-products

◆ Realizing design and manufacturing collaboration

With the introduction of a digital simulation platform, the factories of the audiovisual and multimedia business have revolutionized the product design process, achieving both design efficiency and energy savings.



By applying the above design to the production process and combining it with manufacturing process synergies,



Material Upgrading

Hisense Group deeply understands the far-reaching impact of materials on the entire life cycle of products. By increasing the marketable application of green materials in end products and packaging, Hisense not only ensures the safety and health of products, but also helps the technological development of green materials, which Hisense understands to be its responsibility as an end-product enterprise.

Product Material Upgrading

Hisense mainly enhances the green characteristics of product materials by increasing the proportion of recycled materials, bio-based materials and other environmentally friendly materials in its products. For refrigerators, air conditioners, heat pumps, etc., which involve the application of refrigerants and blowing agents, the use of these two raw materials is an important factor that affects the carbon footprint of the products, and Hisense is gradually promoting the decarbonization of related products through the continuous promotion of the research and development of low GWP (Global Warming Potential) materials and the use of these materials.

In the future, Hisense will further focus on the research and application of green materials to promote the green advancement of the industrial chain with responsible material selection.

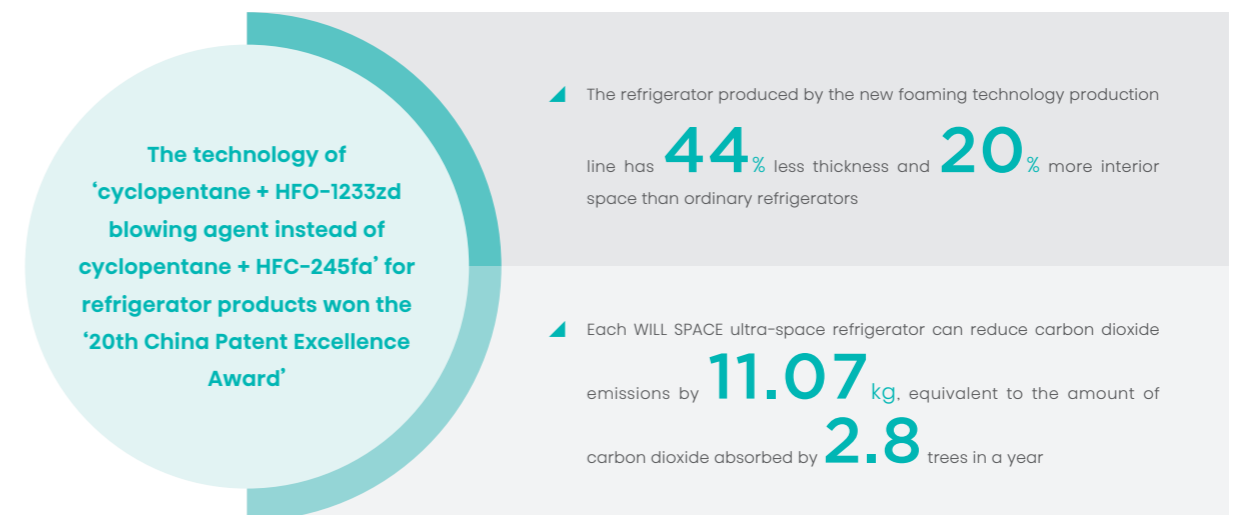
Case Promoting all-round optimization of materials for refrigerator and air-conditioner products

Traditional blowing agents and refrigerants have high GWP values, refrigerators and air-conditioning products generate a certain amount of greenhouse gases that escape into the atmosphere during the filling and use of blowing agents and refrigerants, accelerating greenhouse gas changes. Hisense seeks to clean up blowing agents and refrigerants, combining them with the substitution of low-carbon materials in its products to ensure that its products achieve a lower carbon footprint throughout their life cycle.

◆ Blowing agent and refrigerant cleaning

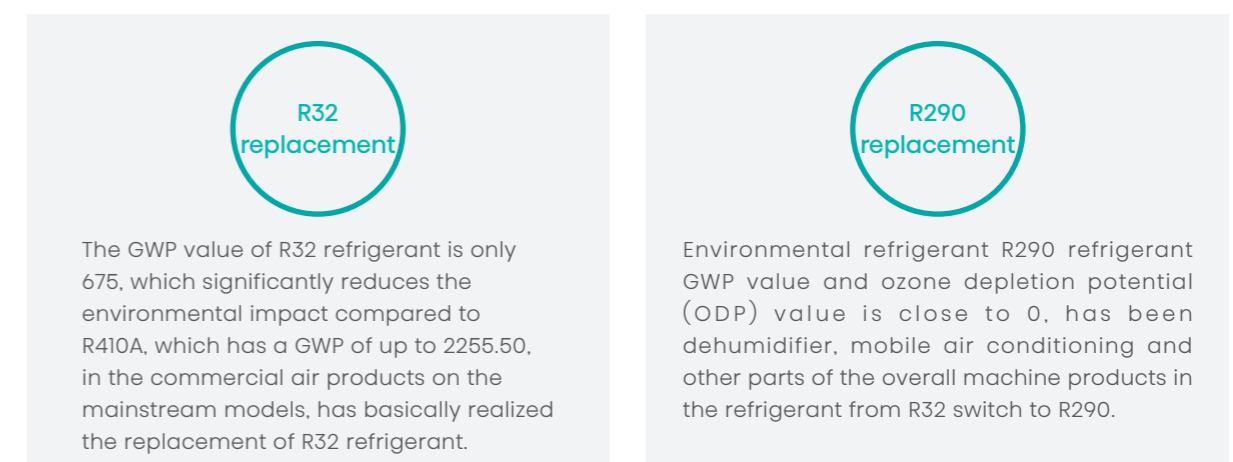
Refrigerator

• Foaming agent



Air Conditioning

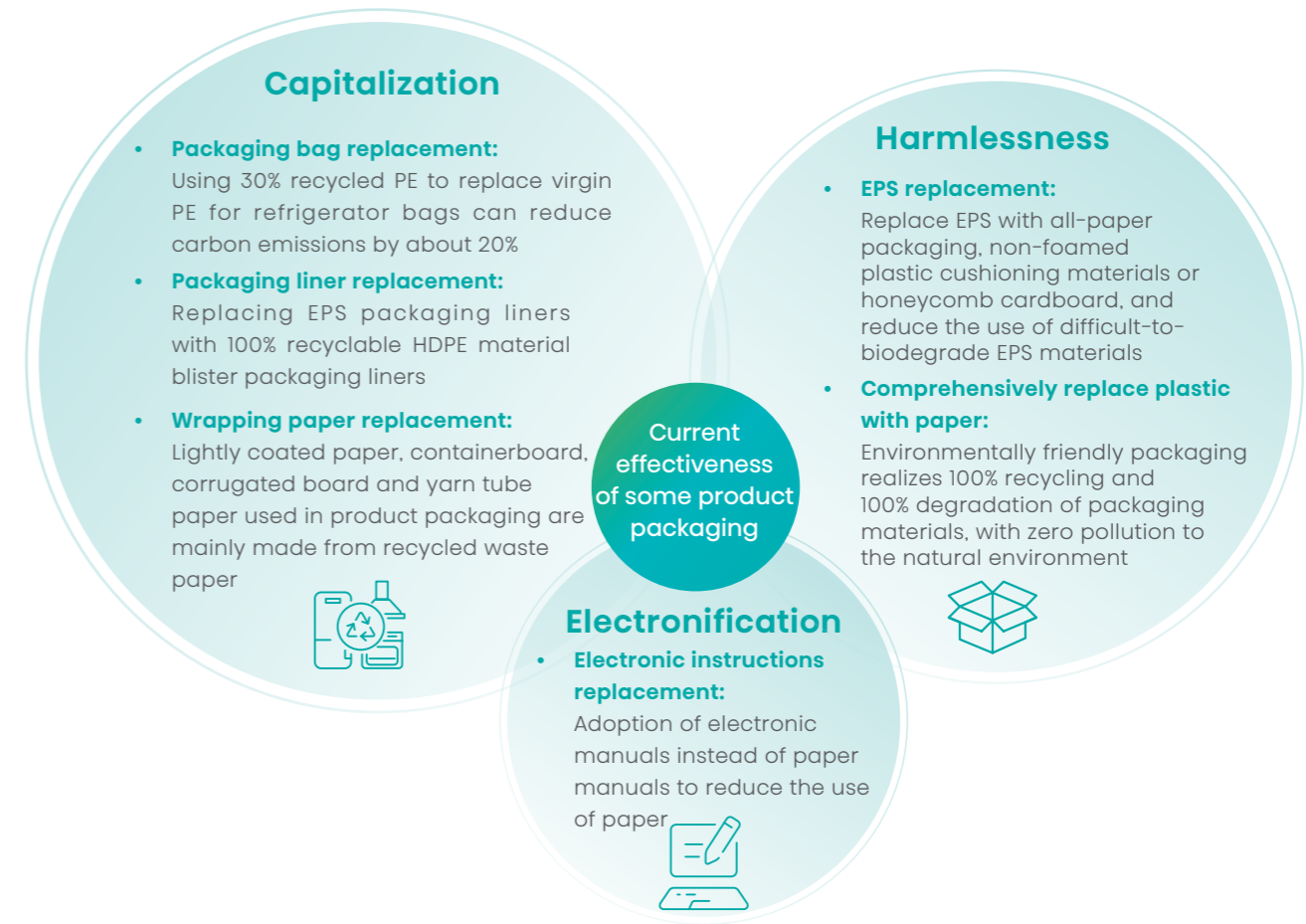
• Refrigerant



Innovating Sustainable End-products

|| Packaging Material Upgrade

In terms of packaging materials, Hisense adopts the three optimization directions of 'capitalization, harmlessness, and electronification' to gradually reduce the use of ordinary plastics and paper in packaging, and improve the sustainability of packaging materials.



Case Refrigerator products upgraded packaging appearance, annual ink saving can print 484,000m²

In October 2022, Hisense achieved a comprehensive upgrade and switch to the outer packaging of refrigerator products. By refining the information, simplifying the color and optimizing the layout of the carton appearance, each new version of the packaging box can save 0.33m² of ink, and if used for printing the area that can be printed in a year will reach 484,000m².

The appearance of the new version of the packaging is also more in line with Hisense's simplicity and technology product tone, but also reflects Hisense's pursuit of green products.

Hisense Refrigerator Products New Version of Packaging Display

◆ Product Low-carbon Material Substitution

Refrigerator

Material substitution for high-strength structural parts:

The use of bio-based materials instead of petroleum-based materials to make high-strength structural parts for refrigerators, creating an industry precedent for the application of bio-based materials

Air Conditioning

<p>Air conditioner shell material substitution</p>	<p>Development of polypropylene (PP) modified material for air conditioner shells, compared to PC/ABS material:</p> <ul style="list-style-type: none"> Substrate carbon footprint reduced by 30% The density and weight can be reduced by 6%, which can reduce the carbon emission during transportation Processing temperature and pressure are reduced by 10%, reducing the consumption of electrical and thermal energy during processing
<p>In-mould decorating technology</p>	<p>Using in-mould decorating technology instead of painting for panels can achieve colorful effects while reducing energy consumption and harmful emissions by eliminating the painting and baking process</p>
<p>Material substitution for electrical box</p>	<p>Developing halogen-free flame-retardant PP material for electrical box, compare with flame-retardant ABS material:</p> <ul style="list-style-type: none"> Substrate carbon footprint reduced by 30% Processing temperatures are reduced by 20°C and injection pressures by 5 bar, which helps to reduce electrical and thermal energy consumption in the production process
<p>Cabinet top cover material replacement</p>	<p>Development of micro-foam PP material for cabinet top cover, injection moulding temperature reduced by 10°C, moulding cycle shortened by 8%, injection pressure reduced by 10%, reducing the energy consumption of equipment in the process</p>

In the future, Hisense will further reduce carbon emissions at the raw material acquisition stage and continue to increase the proportion of recycled materials used, in response to growing consumer demand for low-carbon products.

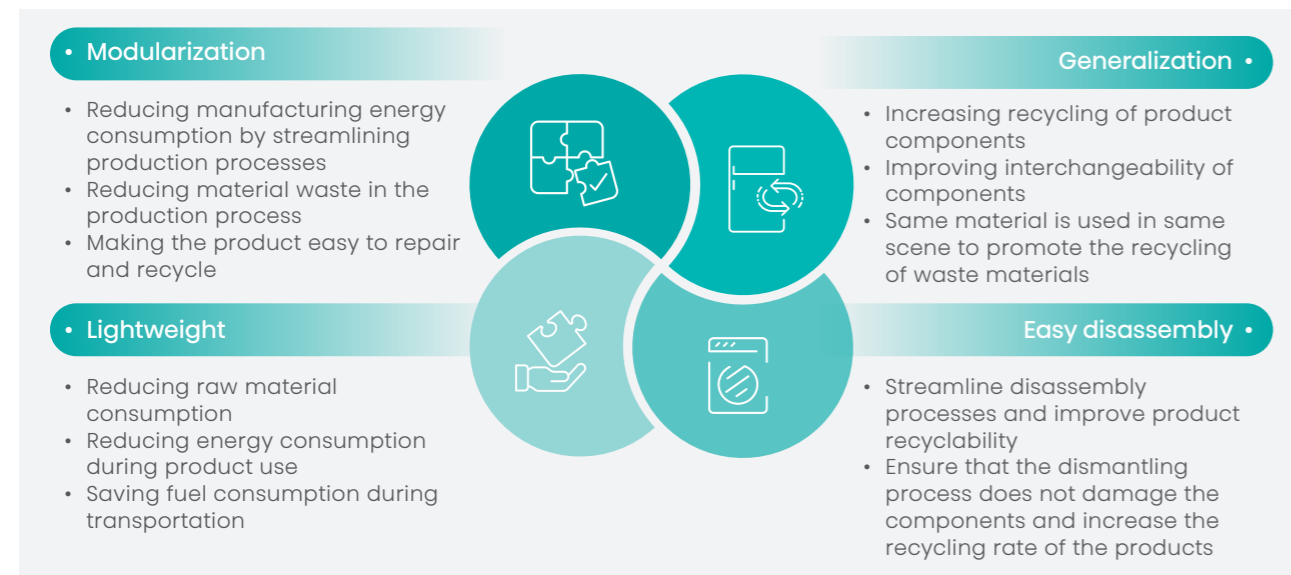
Innovating Sustainable End-products

Structural Optimization

Hisense promotes the development of a circular economy by implementing a series of clear strategies in the optimization of product and packaging structures. Hisense's product structure design is based on the main principles of modularization, generalization, lightweight and easy disassembly to maximize the use and reuse of resources, while the optimization of the packaging structure is based on the strategy of reduction to reduce the use of unnecessary materials on the premise of ensuring the safe transportation of products.

Product Structure Optimization

Hisense is committed to reducing the waste of materials and energy in the manufacturing process by optimizing the product structure, and strives to maximize the use of resources in every step of manufacturing; at the same time, Hisense focuses on the recyclability of products at the end of the life cycle, and improves the recycling rate of each component.



Case Promoting component generalization to reduce material waste throughout the life cycle

The audiovisual and multimedia business has implemented a number of innovative strategies in promoting a low-carbon transition of the entire product lifecycle to reduce resource wastage through component commonality.

- R&D innovation:** Adopt serialization and specification design at the early stage of product design to ensure high reusability of materials, so as to reduce the unnecessary use of materials at the R&D stage
- Product optimization:** Simplify the production bill of materials by driving the retirement of inefficient material references and reducing waste due to material diversity while improving the efficiency of the manufacturing process
- Service upgrading:** In the after-sales service field, ensure the compatibility of spare parts across product lines, effectively reduce spare parts inventory and improve the utilization efficiency of materials
- Recycling:** Adopt the design principle of the same scene and same material, and use internationally recognized material identification, so as to facilitate the classification and recycling of materials after product end-of-life

In the future, Hisense will continue to optimize the material management process and promote material specification and serialization.

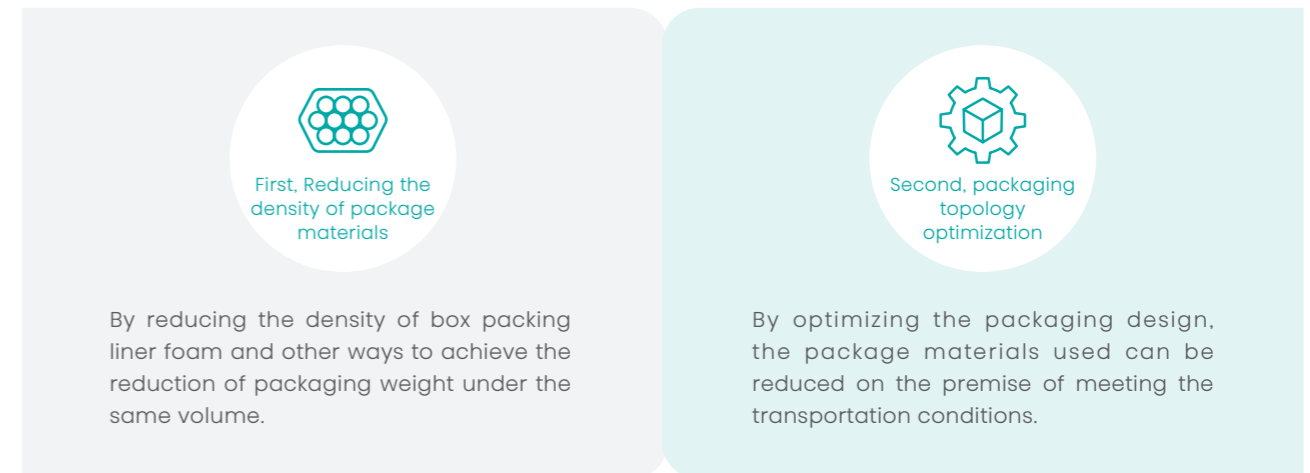
Case Applying modular design throughout to ensure system independence

The modular air-cooled heat pump (chilled water) unit, as the heart of the central air-conditioning system, is designed to provide efficient and stable supply of chilled (hot) water for the terminal equipment. Hisense designed the unit with an innovative modular design concept, which not only realizes centralized control and flexible configuration of each module, but also gives the system higher flexibility and reliability.

The advantage of modular design is that each module is independent of each other and does not affect each other. Even if a module fails, it will not affect the normal operation of other modules, thus ensuring the continuity and stability of the entire system. This design not only simplifies the maintenance and repair process and reduces downtime, but also significantly improves the recyclability and reusability of the unit, reflecting Hisense's deep understanding of sustainable development.

Packaging Structure Optimization

On the basis of ensuring the safety attributes of packaging, Hisense Group continues to optimize packaging design to reduce the carbon footprint of the whole life cycle:



Case Optimization of the packaging structure of air-conditioning products, achieving an annual packing reduction of nearly 100t

Hisense has realized the reduction and optimization of box packaging materials through the iteration of air conditioner packaging design. Combining the two ways of box packaging liner foam density reduction and material-saving design, Hisense reduces the use of EPS packaging materials by hundreds of grams per product, saving hundreds of tons of EPS materials per year.

This optimization not only reduces the amount of packaging materials used, but also reduces upstream and downstream transportation pressure, effectively reducing the environmental impact of plastic materials and carbon emissions during transportation.

Innovating Sustainable End-products

Energy Consumption Reducing and Energy Efficiency Enhancing

Compared with ordinary consumer electronics, household appliances have a longer service life, which means that improving product energy efficiency is especially critical to the end-use appliance business of enterprises. In order to achieve this goal, Hisense Group is committed to making green and energy-saving home appliances with lower power consumption through self-developed product energy-efficiency enhancement technology and the application of cutting-edge AI algorithms, gradually reducing energy consumption during the product use phase and taking an important step toward the manufacture of low-carbon products.

Case Development of a number of energy efficiency improvement technologies for TV products

As the core of Hisense Group's B2C industry, the audiovisual and multimedia business independently develops a number of cutting-edge consumption reduction technologies to improve product energy efficiency and reduce carbon emissions during product use:

Adaptive Backlight Energy Control Algorithm	Backlight low-power control and image enhancement technology with multiple zones	Effectively reduced energy consumption by more than 20% while improving product image quality performance
High Voltage LED Light Source and Drive Technology	Symmetric segmentation design and hidden cascade technology utilizing 8-CELL chip	Significantly improved the light output efficiency of LED, effectively reduce energy consumption by 3%
High Transmittance Panel Technology	<ul style="list-style-type: none"> Developing high-transparency color film Increasing in pixel openings 	Achievement of improved luminous efficiency, resulting in a 2% reduction in product energy consumption
Digital Control of Power Supply and Digital-analog Hybrid Dimming Technology	<ul style="list-style-type: none"> Power Feedback Precision Control PWM, Analog Dimming 	<ul style="list-style-type: none"> Achieved conversion efficiency Realized backlight small current precision control, the whole machine energy consumption reduced by 5%

Through the R&D team's continuous technological innovation, the average energy consumption of TV products has been reduced by more than

30%

which is equivalent to an annual reduction of

470,800 tCO₂ emissions

Case Central air conditioning positive pressure liquid float oil-less frequency conversion centrifuge wins Gold Award at China Product Refrigeration Exhibition

With its self-developed central air-conditioning positive pressure liquid-float oil-free frequency conversion centrifuges, Hisense has achieved a major breakthrough in isentropic compression efficiency of centrifugal compressors, reaching an industry-leading level of **91.6%**. Combined with advanced high-efficiency permanent magnet synchronous motor technology, the coefficient of cooling (COP) is raised to 7.20, which is **13%** higher than the national standard of Grade 1 energy efficiency.

Compared with traditional fixed-frequency centrifuges, this product shows significant advantages in terms of energy saving:

it is estimated that every 1,000 units of this product can save **222,930,000 kWh** of electricity per year, which is equivalent to a reduction of about **127,100t** carbon dioxide emissions.

In 2024, this achievement was honored with the 'Gold Award Product' at the China Refrigeration Expo.



2024 China Product Refrigeration Expo Gold Award Product

Case A number of energy-saving technology innovation breakthroughs, help refrigerator energy efficiency upgrade

Refrigerator is one of the most commonly used home appliances in the family scene, and the characteristic of constant power supply makes it produce non-negligible energy consumption. By applying a series of advanced intelligent technologies, Hisense R&D team has succeeded in creating a new-age smart refrigerator that is more energy-efficient and environmentally friendly, and in line with users' habits:

Composite throttling technology

Wide range of high-precision flow regulation with capillary composite throttling, to achieve optimal matching of compressor speed and flow and take into account the use of return heat to improve the efficiency of the refrigeration system, the whole machine to reduce energy consumption by 5%.

High-efficiency defrosting technology

According to the amount and distribution of frost, the heater structure layout and power distribution are innovated to achieve defrosting on demand and reduce defrosting power consumption by 20%.

AI energy-saving technology

Through the application of machine learning and other AI technologies to build a neural network model, according to the actual operating conditions of the refrigerator adaptive adjustment of the control parameters, the refrigerator to use the process of energy consumption reduced by 10%.

Developing Green Key Components

Developing Green Key Components

In the construction of key components, Hisense Group has gained a precise insight into the different needs of users and the market for different types of components. In terms of material optimization, Hisense vigorously promotes the use of raw materials with recycled content and the recycling of end-of-life materials to enhance the efficiency of material use; in terms of power consumption reduction, Hisense is committed to the development of low-power-consumption appliance components to meet the market's urgent demand for energy-saving and consumption-reducing products. Through these initiatives, Hisense is helping cross-industry customers realize the low-carbon development of their manufacturing and operation processes.

Promoting the Greening of Materials

For plastic products such as moulds, Hisense develops a variety of recycled plastic substitution and biomaterial substitution technologies, and recycles end-of-life materials after technological treatment to create greener and low-carbon parts for its own use and that of its downstream customers.

Case Research and development of a variety of mould low-carbon environmental protection technology

The manufacturing process of mould products uses a large amount of plastic raw materials. By using green materials such as recycled plastics and biomaterials to replace the originally used plastic materials, optimizing the production process and packaging methods to reduce the consumption of materials and packages, the factories under the mould business have manufactured more low-carbon and environmentally friendly plastic parts:

Material savings in the production process

- Hot runner moulds are used to achieve structural optimization, reducing raw material and energy consumption from the source.

Green and low-pollution of products

- Using plastic particles with recycled content in Some injection-moulded products
- Using recyclable and degradable hemp fiber bio-based materials
- Using biomaterials such as pulp fibers and rice straw fibers instead of glass fibers in plastic particles

Reducing industrial value chain emissions

- Recycling PET flakes for injection moulding production, omitting the intermediate processing link of recycling and granulation by suppliers.
- Optimizing the packaging method to improve the utilization of packaging materials and reduce the consumption of product package materials

Leading Green Innovation in Plastic Recycling Materials

Since 2016, Shunde Plastic Factory, a subsidiary of the mould business, has been committed to the R&D and application of recycled plastics, and as of the release of this year's whitepaper, has successfully developed 50 grades of recycled materials:

Post-Industrial Recyclables (PIR)
Modified with color PP, ABS, HIPS, PA

Post-consumer recycled material (PCR)
Recycling PET flakes, recycling PET bottle flakes

Among the products in the children's contact level, Hisense has especially launched organizers using recycled PP materials to ensure the safety of product use and at the same time demonstrate its commitment to low-carbon environmental protection. Currently, the percentage of recycled materials recycled at the plant has reached **50%**, with the dark series of recycled PP reaching as high as **70%**, an achievement that signifies that Hisense's mould business has made significant progress in plastics recycling and reuse.

Case Recycling of end-of-life epitaxial wafers

LED epitaxial wafers are one of the major products of Qianzhao Optoelectronics' factory under the chip business. In the end-of-life treatment of the products, Changelight adopts the advanced CVD (Chemical Vapor Deposition) recycling technology for the end-of-life epitaxial wafers.

This technology not only significantly reduces the generation of waste, but also transforms the recovered epitaxial wafers into reusable substrates, realizing **100%** recycling of materials and reducing carbon emissions in the production process while reducing the waste of a large amount of materials.

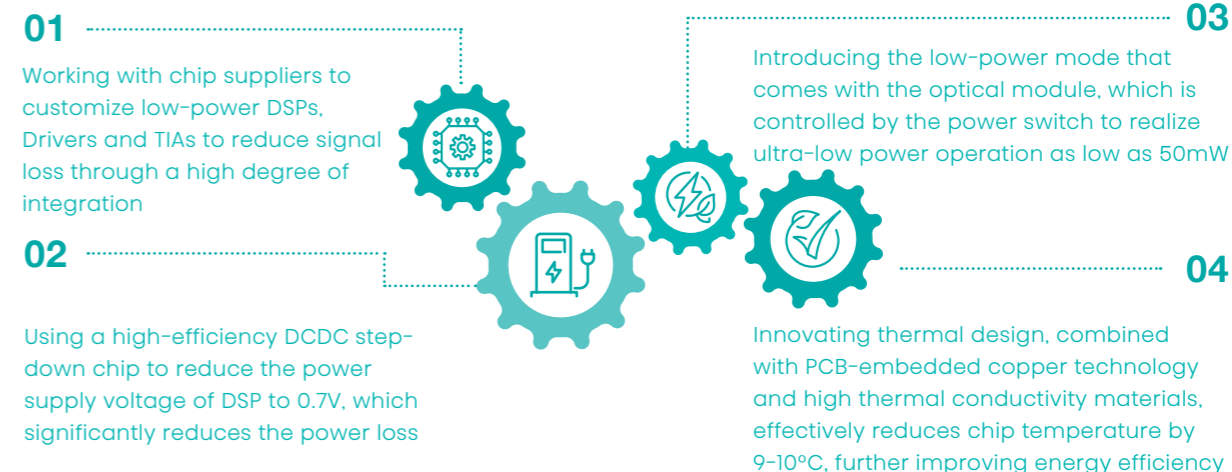
Reducing Energy Consumption for Product Use

On the premise of ensuring stable product performance, Hisense takes energy consumption into account during the research and development stage of key components. Through innovative design and the use of advanced technology, Hisense has successfully launched a series of low-energy-consumption products, which, in addition to meeting the market's demand for high performance, have effectively promoted downstream customers to take a solid step forward on the road to energy conservation and carbon reduction.

Case Optical module products lead a new era of data center energy efficiency

As the data center industry moves toward scale and intensification, Hisense Group's optical communication business segment is committed to researching and developing low-power technologies to drive data center emissions reduction. 400G SR8 and AOC products are the embodiment of this commitment, with their new-generation low-power versions reducing power consumption by 1.5W compared to previous-generation products to achieve excellent performance of less than 8W.

Low power design strategies for products including:



Hisense optical communication business has always been committed to providing customers around the world with efficient, energy-saving and reliable data transmission solutions and promoting the green transition of the data center industry.

Promoting Low-carbon Development in Various Industries

Promoting Low-carbon Development in Various Industries

In addition to the low-carbon innovation of its own products, Hisense Group is also actively engaged in the research and innovation of intelligent technology, and has successfully developed a series of intelligent solutions independently. Hisense's self-developed smart buildings, smart city, smart transportation, etc. provide smart green solutions for government and enterprise partners, promoting the intelligent and green transition of multiple industries.

Smart Building

Self-developed energy optimization algorithms for real-time regulation of building loads

Smart Transportation

Urban intelligent traffic signal control

Through the integration of multi-source traffic data, realizing the closed-loop and automated signal optimization from the analysis of urban traffic pattern, recommendation of control strategy, generation of timing scheme, evaluation of control effect to updating of timing scheme, so as to achieve the best effect of whole-area cooperation and slowing down traffic jam and keeping smooth flow

Travel plan optimization

For the operation department, through the analysis and prediction of the temporal and spatial pattern of passenger flow and one-way time, under the service assessment standard, combined with the full load rate, departure interval and other line departure conditions, to generate the optimal resources of the line in line with the supply and demand of the passenger flow of the traffic plan, and to improve the effective utilization rate of public transport capacity resources

Smart City

Establishing an urban digital resource platform to realize unified construction, management and sharing of digital resources

Smart Healthcare, etc.

Other Smart Solutions

Smart Building

Energy saving and emission reduction is a practical need in building operation, and air conditioning systems, which account for up to 40% of energy consumption, have become a key area of energy saving and consumption reduction in buildings. However, due to the lack of precise control, the air conditioning system often exists the phenomenon of 'big horse pulling small car', that is, the output capacity of the cooling equipment is much larger than the actual demand, which not only increases power consumption, but also raises the operating costs, and puts pressure on the management of the building.

Based on this situation, Hisense reconstructs the relationship between people, buildings, and the environment, integrating IoT, sensors, and AI technology into buildings to provide full life cycle management and operation and maintenance services for buildings. The service is oriented to the five major fields of commercial enterprises, industrial and mining plants, governmental public buildings, education and training, medical and healthcare, and extends to nineteen industry scenarios.

Commercial enterprises

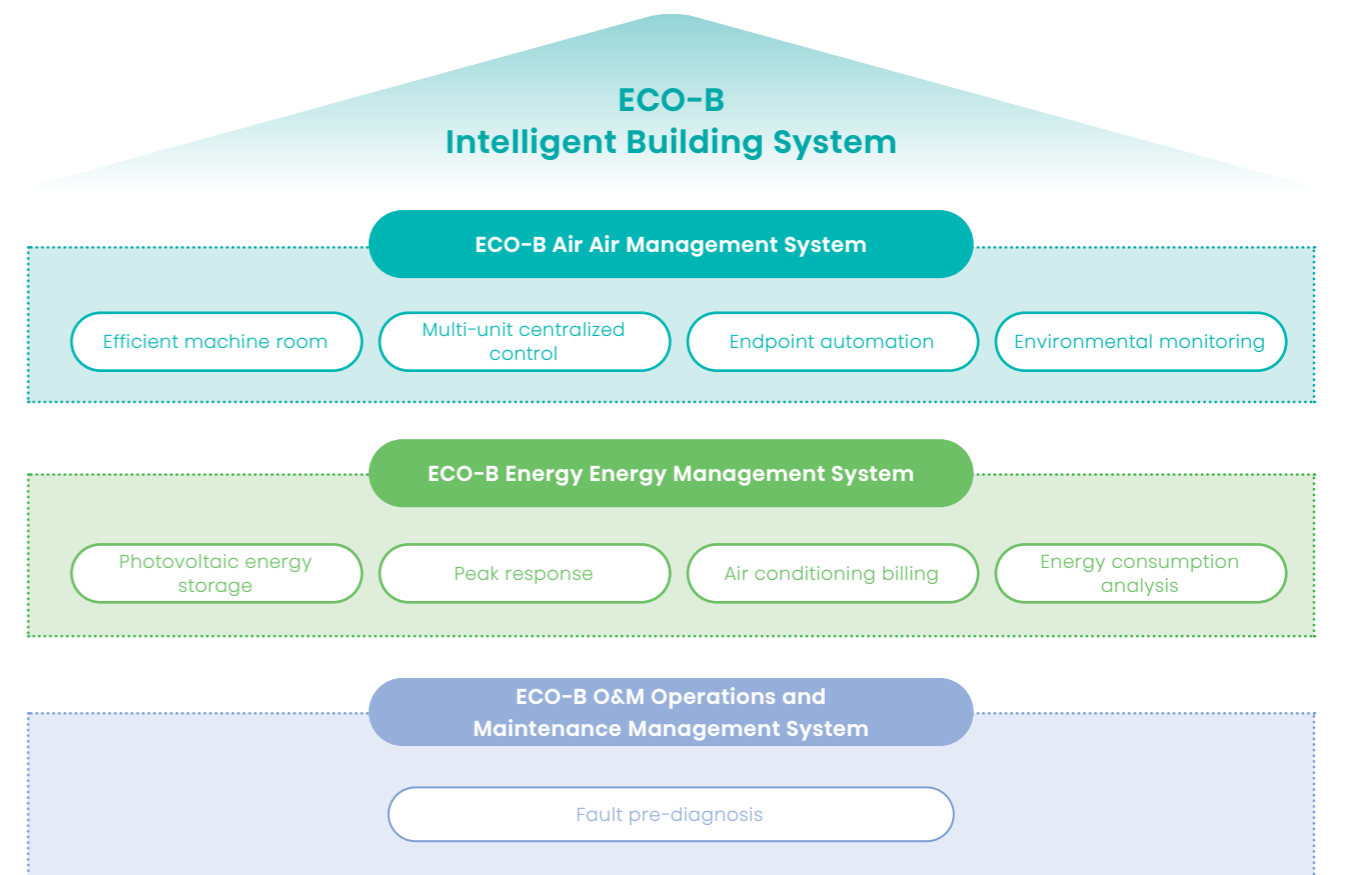
Industrial and mining plants

Governmental public buildings

Education and training

Medical and healthcare

ECO-B is a system for intelligent building and energy management, which serves as the control center of the building, and contains three major management subsystems, namely, air management, energy management, and operation and maintenance management, and the main structure of the system is as shown below:



Promoting Low-carbon Development in Various Industries

Core functions that can be realized by a smart building system:

Efficient management:

Reducing management and inspection workload, can reduce management personnel input by more than

70%

Intelligent O&M:

Reducing project resident staff and improving service provider staff efficiency by

400%



Energy control:

Analyzing energy consumption operation data and trends from the dimensions of space, time and users

This system can save up to 30% energy in air-conditioning operations, improve predictive maintenance efficiency by up to 60%, and allow the building to 'breathe' as if it were a living organism.

Taking Qingdao Metro Line 1 Wawuzhuang Parking Complex as an example, after applying Hisense ECO-B energy management solution,

the average EER of the system's summer cooling supply is about

5.5

which saves 30% of energy per year, saves 92.2t standard coal

and reduces CO₂ emissions by

227.7t



ECO-B Intelligent Building System Interface

Intelligent Transportation

Urban Intelligent Traffic Signal Control

In the field of urban transportation, Hisense is committed to improving the travel experience through technological innovation by taking the public's keen interest in smooth travel as an entry point. Hisense has created a signal intelligent tuning system:

Accurately identifies and optimizes traffic flow, automatically analyzes the best driving routes and time periods, and realizes 'green band' traffic

Automatic tracking of results and continuous optimization to reduce the number of stops and even achieve parking-free travel

Hisense Signal Intelligent Tuning System can significantly improve the efficiency of road traffic, while reducing motor vehicle fuel consumption and tailpipe emissions. Data show that after a city applies Hisense intelligent transportation system,



Hisense City Intelligent Traffic Signal Control System

the traffic passage rate increases

by 10%

the number of parking, vehicle road time is reduced by

30%

tailpipe emission pollution is reduced

by 20%, which effectively reduces the carbon emission caused by traffic congestion



Travel Plan Optimization

In intelligent public transportation sector, Hisense Group is committed to achieving the reduction of public transportation operating costs, the improvement of efficiency and the optimization of service level through scientific and technological means. Hisense has developed a travel plan optimization system that analyzes passenger travel patterns in depth, uses intelligent algorithms to make precise adjustments to the travel plan, and meets passenger travel needs with the most optimal allocation of human and vehicle resources. This innovative solution effectively solves the problem of wastage of human and vehicle resources and energy caused by idling and bunching of buses.

In Xining, for example, Hisense has intelligently optimized the travel plans of 60 bus routes in the city. The optimized travel plans significantly improved operational efficiency, reducing inefficient mileage by about 22,000 kilometers per day. This result not only reduces the cost waste of the bus company, but also provides passengers with more efficient and convenient travel services, demonstrating significant advantages.



Bus Route Trip Plan Optimization System Interface

Enduring Endeavor

05

Low-carbon Future

On the pathway to low-carbon development, Hisense adopts a strategy that balances progress with stability, continually promoting exploration and practice. This approach aims to create greater value for users, enterprises, and society, while positioning 'green' as a vital cornerstone of Hisense's legacy for the next century

Advancing in a New Direction

- Leading new product trends
- Pioneering new industry standards
- Development of new low-carbon technologies

Identifying New Drivers

- New layout of photovoltaic energy storage
- New Business in Automotive Electronics

Shaping a Sustainable Future



Advancing in a New Direction

The wind maker does not merely pursue the last gust but instead creates the next one. As a 'technology controller', Hisense Group boldly ventures into the uncharted territories of scientific and technological innovation, demonstrating a willingness to challenge conventions and forge new pathways. By manufacturing cutting-edge low-carbon products, establishing industry low-carbon standards, and conducting research and development in innovative low-carbon technologies, Hisense consistently remains at the forefront of the low-carbon transition within the consumer electronics industry.

Leading New Product Trends

The shift in consumption concepts to 'green' is bringing about profound changes in human lifestyles, prompting the low-carbon transition of high-energy-consuming products, and household appliances are the second largest source of energy consumption for residents. Since then, Hisense Group has been adhering to the low-carbon heart and the concept of 'people-oriented technology', focusing on user needs, and constantly plowing into the field of low-carbon products, with industry-leading low-carbon products in a variety of categories, such as laser TVs, centralized air conditioners, and household air conditioners.

Low-carbon Star Products:

Laser TV

With low energy consumption, high recycling rate and other category qualities, laser TV has become a representative product of Hisense Group's low-carbon technology in the display field since its birth. Compared with traditional TV products, laser TV can save energy by 50%, and the recyclable ratio is as high as 92%.

As the size of the TV increases, the energy-saving advantage of laser TV becomes more and more obvious – 100-inch laser TV, for example, its power consumption is only one-third to one-half of the LCD TV of the same size, and each 100-inch laser TV can reduce carbon emissions by 525.6 kgCO₂e in 5 years.



The UX series laser TV product reduces energy consumption during use through the use of backlight adaptive adjustment technology and dynamic energy-saving dimming technology. Coupled with an environmentally friendly recycled material casing, it has become a greener, lower-carbon product.



Laser TV 80L9H Product Carbon Label Evaluation Certificate



Hisense 110UX Wins 2023 Innovation Award at the US International CES



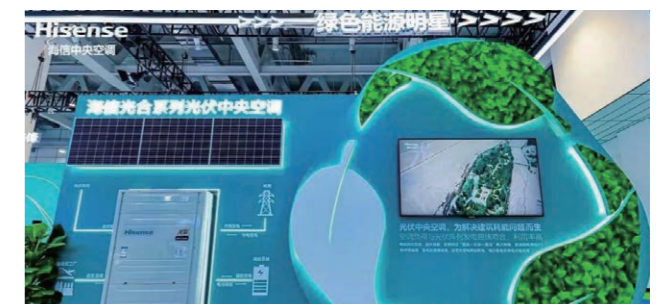
Laser TV PL1 Series Receives Full Life Cycle Carbon Footprint Certification

Central Air Conditioning PV Combined Series

Hisense central air conditioning R & D team in the technology to seek breakthroughs and innovations, heavily launched the PV combined series of photovoltaic central air conditioning. This series of air conditioners adopts photovoltaic power generation to drive the work of air conditioners, and has industry-leading advantages in many aspects:

<p>More efficient</p> <p>Adoption of direct-drive photovoltaic technology, system operation without the need for existing photovoltaic air conditioners on the market after the 'DC-AC-DC' two conversions, energy loss reduced by 8%, high power conversion rate</p>	<p>Save more money</p> <p>Adopting direct-drive technology, the DC power output from the photovoltaic can be directly used for air conditioning without calculating the difference between the two electricity bills, which is more economically efficient</p>	<p>Long life</p> <p>Adoption of optical storage direct flexible technology, with professionally customized PV inverters, the whole system has low daily maintenance cost and longer service life</p>	<p>Generating capacity</p> <p>Can be the user's energy transfer station, providing advanced visualized energy management system, providing electricity for household appliances, lighting, etc., so as to achieve self-generation and self-consumption, and the surplus power on-line</p>
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Fortune pointed out that Hisense took advantage of the opportunity of the country's construction of 'photovoltaic energy storage direct flexible' buildings to create a variable frequency central air conditioning system with advanced self-developed technology, turning air conditioners from major power consumers into transfer stations in a distributed energy system. This improves the utilization rate of photovoltaic energy while ensuring the stability of air conditioner operation, solving the drawbacks of traditional air conditioners, which consume a lot of power and have high carbon emissions. It has achieved technological innovation in the traditional air conditioning industry.



Hisense PV Combined Series Central Air Conditioner

Kelon Little Ear LT Split Air Conditioner

Hisense continues to promote the deepening application of green technology, and carefully sculpts and optimizes its products in a number of key aspects, from product energy-efficiency design to material selection. At this year's China Appliance&electronics World Expo (AWE), Kelon launched the new Little Ear LT Split Air Conditioner. This series of products integrates intelligent AI power-saving mode and achieves the new Grade 1 energy efficiency standard. Through a total of six temperature sensing probes on the indoor unit, outdoor unit and remote control, combined with big data analysis, it realizes the comfort and stability of temperature and humidity in the room with one click. When the AI mode is turned on, the energy-saving effect of the LT wall-mounted unit can reach 24-36%, while the energy-saving rate of the LT cabinet unit is between 15-28%.



Kelon Little Ear LT Split Air Conditioner at AWE Show



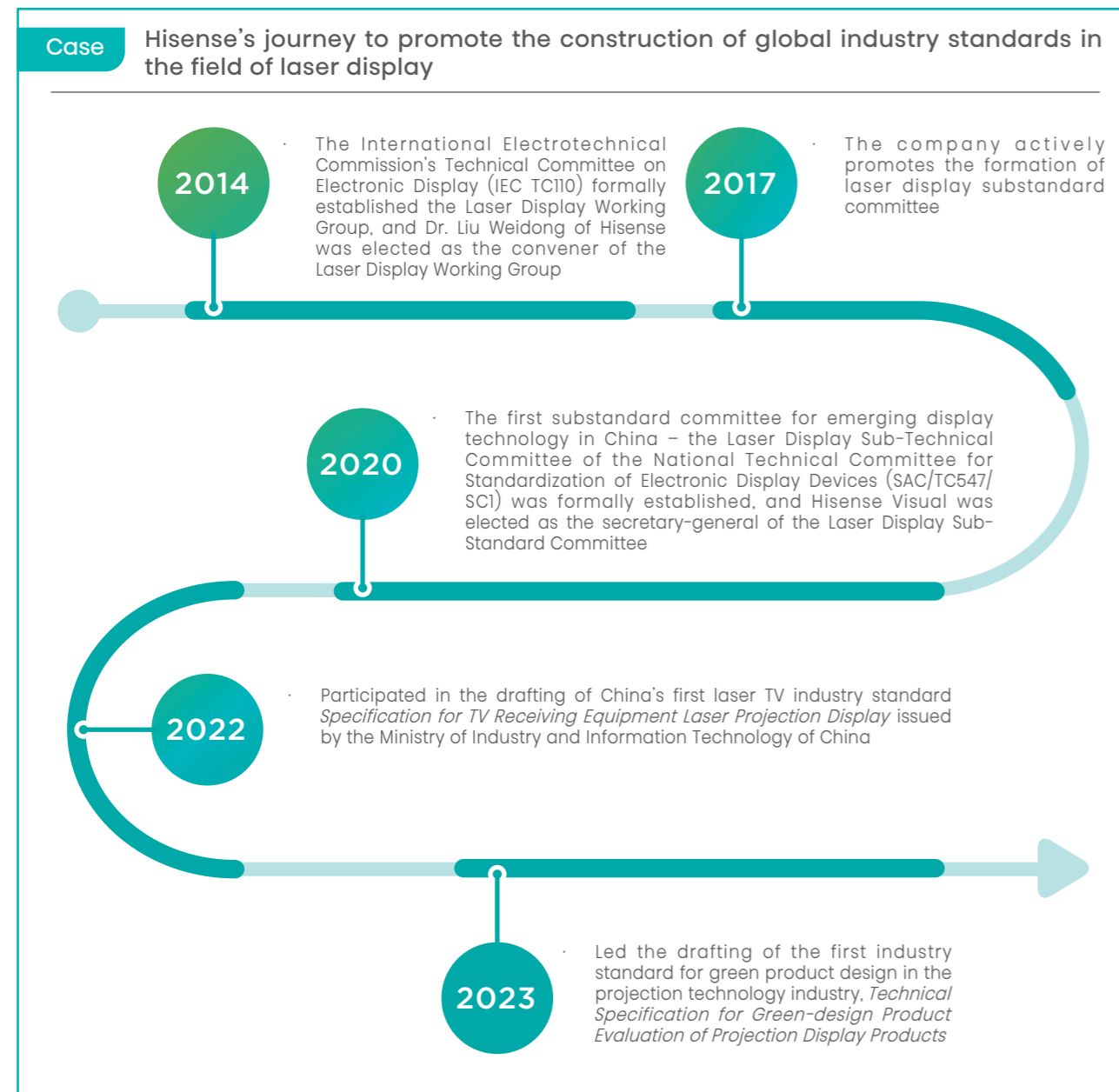
Intelligent AI power-saving mode enables Kelon Little Ear LT series of cabinet-hung units to save **270** kWh of electricity per year and reduce **210** kg of CO₂ emissions, which is equivalent to the carbon reduction effect brought by planting 11 trees.

Pioneering New Industry Standards

Hisense Group actively participates in the formulation of low-carbon industry standards, transforms leading technical achievements into industry standards in a timely manner, and cooperates with scientific research institutions and friends to jointly promote industry-wide technological progress and low-carbon transition. Involving a wide range of products such as display, central air conditioning, air conditioners, refrigerators and freezers, etc., and covering various fields such as product green-design, energy-efficiency rating evaluation, product carbon footprint evaluation, green supply chain evaluation, etc., so as to promote the technological advancement of the green industry of the home appliance industry and enhance its international competitiveness.

Up to now, Hisense Group has led and participated in the formulation and revision of more than **150** low-carbon national/industry/group technical standards

Up to now, Hisense Group has led and participated in the formulation and revision of more than **150** low-carbon national/industry/group technical standards



Some of the Industry-focused Low-carbon Standards That Hisense Group Has Participated in Formulating

Standard type	Standard number	Standard name
Green-design	SJ/T 11771-2020	Technical specification for green-design product assessment – Televisions
	SJ/T 11923-2023	Technical specification for green-design product assessment – Projection display products
	JB/T 14568-2023	Technical specification for green-design product assessment – Air Source Heat Pump Water Chiller Unit
	JB/T 14569-2023	Technical specification for green-design product assessment – Multi-connected Air Conditioners (Heat Pumps) and Similar Units
	JB/T 14572-2023	Technical specification for green-design product assessment – Vapor Compression Recirculating Water Chiller (Heat Pump) Unit
	T/CESA 1110-2020	Technical specification for green-design product assessment – Liquid crystal display device
	T/CESA 1125-2020	Technical specification for green-design product assessment – Interactive touch machine
	T/CESA 1126-2020	Technical specification for green-design product assessment – Active Speaker
	T/CESA 1018-2018	Technical specification for green-design product assessment – Televisions
	T/CESA 1068-2020	Technical specification for green-design product assessment – Monitor
T/CESA 1033-2019	Technical specification for green-design product assessment – Projectors	
Green factory	T/CESA 1090-2020	Assessment requirements for green factory in television manufacturing industry
	T/CESA 1093-2020	Assessment requirements for green factory in projector manufacturing industry
	T/GDES 42-2020	Directives for assessment of green factory in LCD TV manufacturing
Green product	CQC 5301-2019	Room air conditioner green product certification technical specifications
	CQC 53-439162-2019	Green product (GP) certification rules of room air conditioners
Green supply chain	GB/T 41505-2022	Specification of green supply chain management for manufacturing enterprises in electronics information industry
	T/CESA 1074-2020	Specification for assessment of Flat panel TV industry green supply chain management
Carbon footprint	T/CAQI 339-2023	Comprehensive assessment of carbon emissions of civil buildings during operation
Product carbon footprint	T/DZJN 127-2022	Assessment for carbon footprint of electrical and electronic products Part 5: Room Air Conditioners

Development of New Low-carbon Technologies

Hisense Group adheres to the development support of 'green technology innovation' and continuously explores technological innovation. The Group has deeply rooted the concepts of low-carbon in the core values of its R&D team, and has continued to increase its R&D investment in green technology, and has achieved a series of industry-leading results.

Low-carbon Technology:

Air conditioners develop AI algorithms for intelligent temperature control

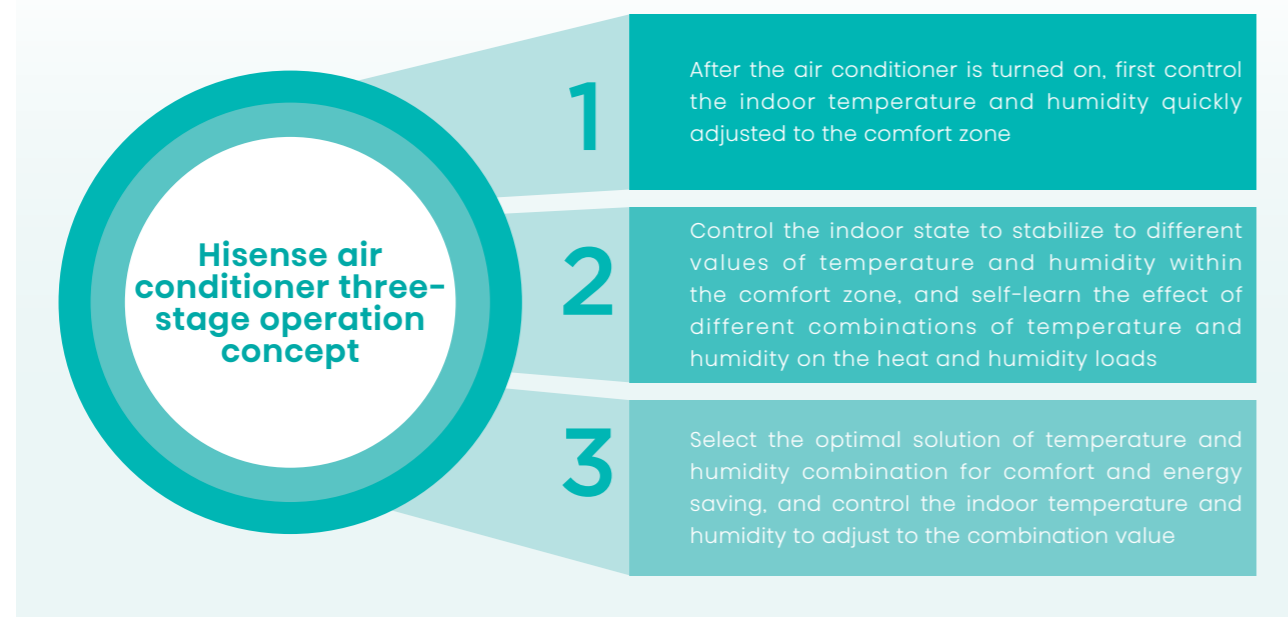


Hisense adopts an independently developed air conditioner temperature and humidity self-optimization control algorithm to transform the complex PMV calculation equation into a temperature and humidity decoupling lookup table. Based on the basic theory that the output capacity of the air conditioner matches the heat and humidity load of the building during stable operation, the air conditioner heat and humidity coupling data plane is simulated by artificial neural network, and when the air conditioner output capacity is obtained for multiple temperature and humidity combinations, the heat and humidity load of the goal building is deduced to change with the temperature and humidity, and the temperature and humidity combinations that make the air conditioner energy efficiency optimal are then solved.



Technology included in the '2022 Energy Saving and Ecological Environment Technology Catalog of the China Institute of Refrigeration'

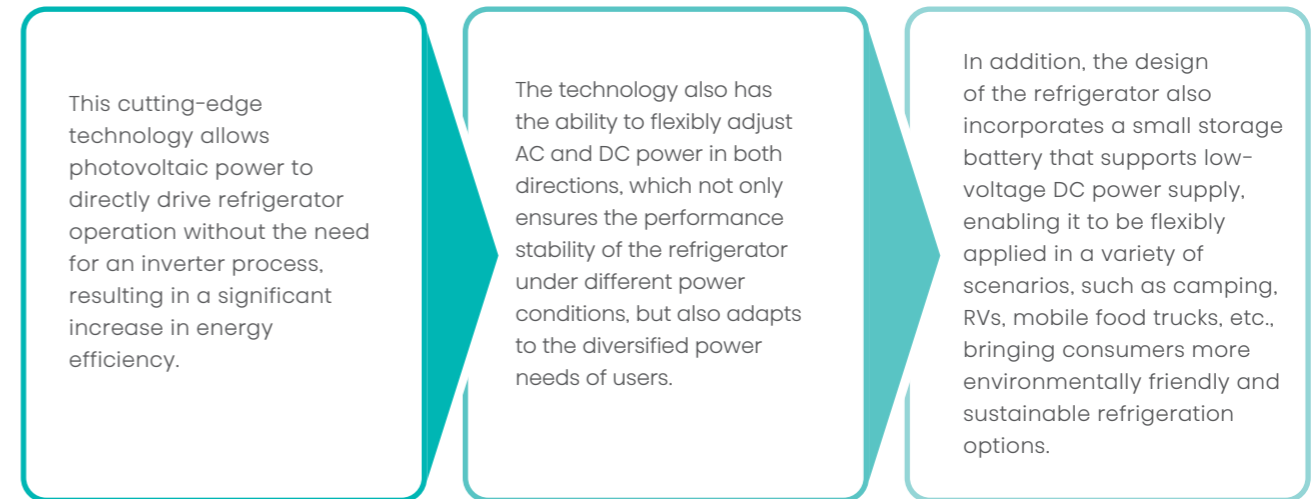
Under the premise of meeting the user's comfort needs, the temperature and humidity through the self-seeking optimal control algorithm can save up to 36% of energy, to achieve rapid cooling and heating, comfort and energy saving in three.



Refrigerator R&D optical storage direct flex control module



To meet the growing market demand for convenient, environmentally friendly cold storage solutions, Hisense has developed an innovative photovoltaic storage direct flex control module for refrigerators.



Developing power semiconductors



Power semiconductors are one of the most core devices in the modern electronics industrial value chain, and they play a crucial role in power conversion, distribution and control, which can improve the energy efficiency of the power system, and can be applied to renewable energy systems, electric vehicles, smart grids and other low-carbon areas. However, power semiconductors have key technical problems in localized substitution, which constrains the development of domestic electronic manufacturing enterprises.

In 2022, Hisense Group decisively established the power semiconductor R&D department, focusing on power chip technology research and industrialization. Adhering to the R&D strategy of 'bold thinking, careful verification, small but quick steps, fast iteration', the power semiconductor department built a product matrix covering three major categories of power devices, IPM modules, and IGBT modules in two years based on technological innovation, among which the key technology of high-reliability RC-IGBT and the IPM product development project have passed expert evaluation and achieved the international leading level in some key technical indicators. The key technology of high reliability RC-IGBT and IPM product development project has been evaluated by experts, and some of the key technical indexes have reached the international leading level, and the conditions for industrialization have been met.



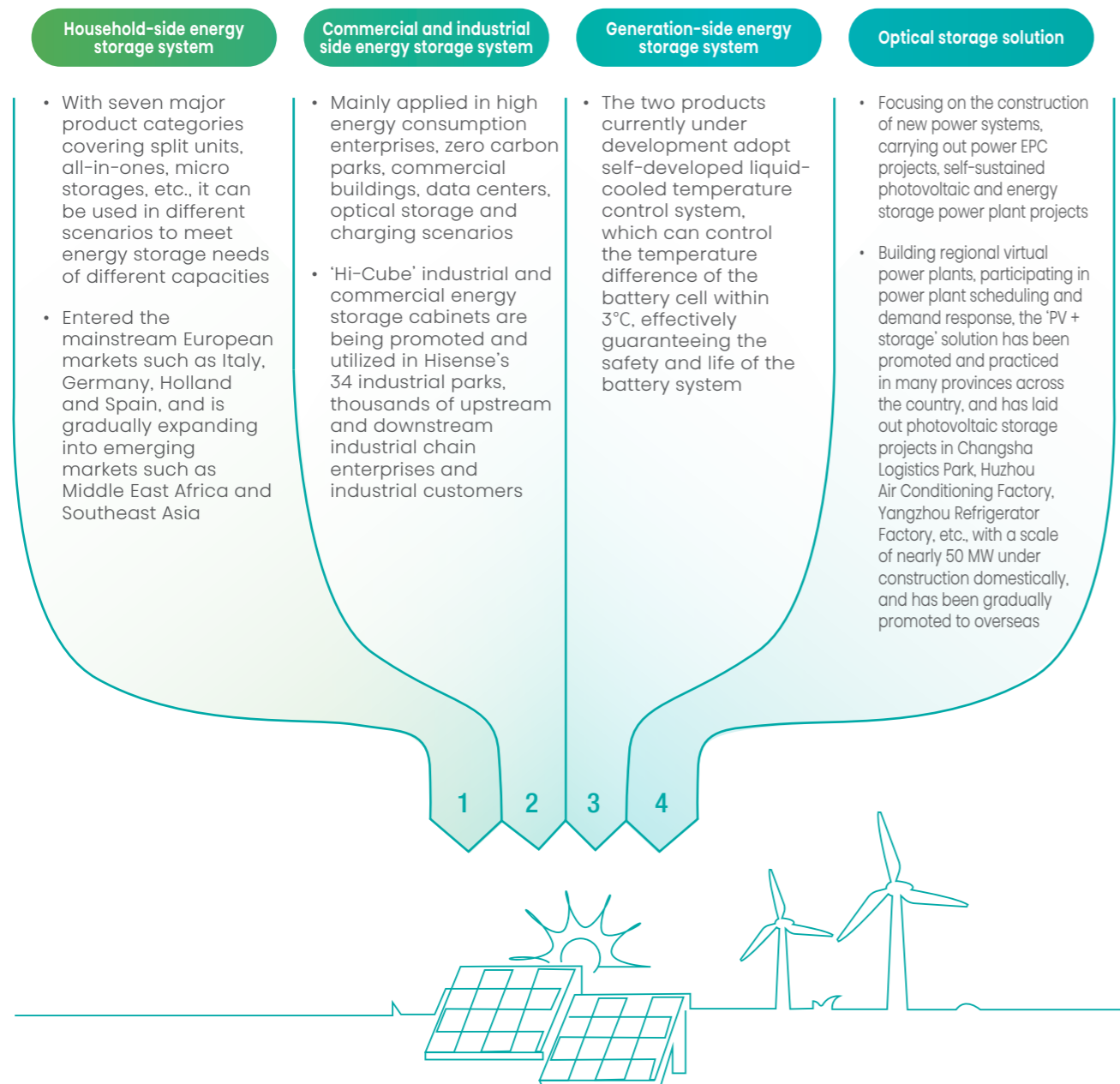
Hisense power semiconductors have been used in a variety of own products such as air conditioners, refrigerators, etc. In the future, Hisense plans to extend the power semiconductors from home appliances to industrial control, optical storage, automotive and other fields, to achieve a comprehensive development from point to point.

Identifying New Drivers

While realizing steady development in the home appliance industry, Hisense Group is actively developing strategic emerging businesses. Responding to the global call for low-carbon transition, Hisense continues to expand its layout in the new energy industrial value chain, striving to become an aggregator of distributed energy, energy storage systems, controllable loads, electric vehicles and other energy sources.

New Layout of Photovoltaic Energy Storage

Adhering to Hisense development strategy of 'technology-based', Hisense has a unique competitive advantage in the market by virtue of its rich experience and excellent R&D capability. In the field of energy storage temperature control, Hisense network energy business has been deeply engaged in precision environmental temperature control for 19 years, and its products and services cover a wide range of temperature control scenarios, and it has become the world's leading provider of energy-saving temperature control system solutions by virtue of its leading temperature control technology; in the field of energy storage systems, Hisense has comprehensively set up the energy storage system on the household side, the industrial and commercial side, and the power generation side, and created a full-stack solution in the field of 'light, storage, and charging'.



New Business in Automotive Electronics

Automotive electronics is one of the strategic emerging businesses of Hisense Group. By entering into new energy vehicle thermal management system and in-vehicle display, Hisense Group will continue to transform on the path of B2B diversification.

Case New Integrated Thermal Management System for electric vehicles raises eyebrows

Electric vehicles are becoming more and more popular nowadays, but they face a significant pain point: they cannot utilize engine waste heat as effectively as traditional fuel vehicles. To solve this problem, Hisense's automotive air conditioning business has innovated an integrated thermal management system (ITMS).

The system applies the technology cultivated in the field of automobile air conditioning to the field of automobile thermal management, adopting advanced heat pump technology, secondary circulating water circuit and waste heat recovery technology to provide precise temperature regulation for the cockpit, battery pack, motor and electronic control unit of the electric vehicle. This technological modification not only realizes a significant improvement in driving comfort and winter range, but also reduces the consumption of electricity during vehicle operation.




Integrated Thermal Management System at the Tokyo Motor Show

Case In-vehicle laser display turns windows into screens

Beyond the home scene, Hisense's audiovisual and multimedia business carries out the concept of full-scene products and expands the application of its representative low-carbon product, the laser TV, to the field of in-vehicle displays.

Hisense's full-color laser display technology is the preferred solution for in-vehicle display systems due to its more compact size, wider display area and clearer image quality. Through advanced in-vehicle optical technology, Hisense transforms car windows into huge image screens, enabling every car to be turned into a mobile immersive theater, which not only revolutionizes the driving and riding experience, but also significantly reduces the power consumption of in-vehicle display products.



In-Vehicle Display Scene Debuts at CES 2024

Shaping a Sustainable Future

Shaping a Sustainable Future

As the adage states, 'To lift and move the people of the world is called a cause'.

Hisense Group firmly believes that the true measure of an enterprise's development lies not only in its market competitiveness and business scale but also in its commitment to social responsibility. Engaging in public welfare is a vital extension of Hisense's dedication to fulfilling this responsibility and reflects the company's principles of harmonious coexistence with the world and society.

Through public welfare initiatives, Hisense promotes the concept of low-carbon development beyond the industrial chain. The establishment of the Low-carbon Fund exemplifies the company's sense of responsibility and mission, encouraging society as a whole to participate in efforts to create a greener planet.

Over the past decades, Hisense has addressed challenging climatic conditions both domestically and internationally, launching a series of public welfare initiatives, including environmental education programs and desert tree planting, thereby actively contributing to local development. Moving forward, Hisense will continue to embed "sustainable public welfare" within its corporate culture, generating a broader and more enduring force of goodwill, and inspiring all partners to effect positive change.

Case FIFA's focus on 'disappearing stadiums' and local youth's awareness of environmental protection

Hisense and FIFA share a common vision and goal of focusing on climate change and supporting youth development, and have worked closely together on the 'Football for Schools' (F4S) public service program. During the 2022 rainstorms and floods in South Africa, Hisense and FIFA jointly initiated an environmental protection classroom to popularize environmental protection knowledge and skills for local youths, and invited the youths to draw a picture of the 'stadium in my mind' to inspire them to save more green stadiums through practical actions. In addition to the public welfare class, Hisense also donated advanced products, including laser TVs, to support the development of education with cutting-edge technology.



'The Stadium in My Mind' Painting

Case Join hands with public welfare organizations to go deep into the desert and build a green pike forest together

2022 Hisense in environmental protection 'Pathfinder' conference announced the launch of the 'energy-saving forest' program, the commitment to sell every ultra-space environmentally friendly refrigerator, in the name of consumers to the Alxa Desert to plant a pike tree. According to the program plan, Hisense and SEE Foundation in the name of the user in the desertification area of Alashan, Inner Mongolia planted 30,000 pike trees.

2023 On the occasion of the 'World Day to Combat Desertification and Drought', Hisense joined hands with the Green Life Public Welfare Organization to go to the Yangguan Forest in Dunhuang, Gansu Province, which is the lifeline of windbreak and sand fixation in Northwest China, to open the 'Carbon Dreamer' program – the 'Carbon Green Silk Road' Hisense Desert Oasis Construction Action, converting the running mileage of volunteers participating in the Hisense 'Healthy Nanshan Run' public welfare activity into 10,000 haloxylon seedlings, and planting the 'Hisense Healthy Public Welfare Forest'.

Previously, Hisense also cooperated with the Desert Post Office to launch the 'Hitachi Date Palm Tree Public Welfare Forest' project in the Tengger Desert in Alxa, protecting and repairing the ecosystem and preserving biodiversity through afforestation and restoration of natural vegetation.

2024 Hisense continued to practice the 'Energy Saving Forest Program', and once again joined with the SEE Foundation to donate 30,000 pikes to the Alxa region and restarted the 'Energy Saving Forest Program' green public welfare tour. The activity went deep into the desertified area of Alxa, and witnessed the continuous landing and implementation effect of Hisense's 'Energy Saving Forest Program' through on-site inspection and personal experience.

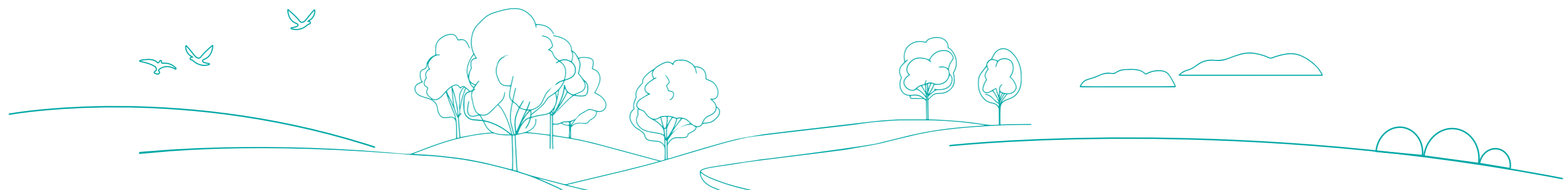


'Carbon Dreamer' Public Welfare Forest Activity



Pike Forest Charity Program

As of 2024, Hisense has managed to stabilize about **700,000** square meters of sand by planting **70,000** pokeweed trees across the country.



Conclusion

Becoming a century-old enterprise is Hisense's unwavering goal.

Over the past 55 years, alongside Qingdao's opening to the world, Hisense has evolved from a local enterprise into a multinational conglomerate valued at over 100 billion dollars. In the next 55 years, high-quality development will be the key growth imperative for Hisense. In addition to uncertainties stemming from geopolitical and economic cycles, climate change and energy issues have emerged as global challenges. Hisense acknowledges that low-carbon transition is not only a hallmark of corporate social responsibility but also a vital pathway to achieving long-term sustainable development.

As the adage goes, 'True strength is built over time, and wisdom fades without continuous learning'¹³. Perseverance is a fundamental condition for success, and long-termism is the core principle guiding Hisense's ESG practices and green initiatives.

Since the early years of this century, an awareness of sustainable development has taken root within Hisense. By concentrating on improving manufacturing efficiency, fostering win-win partnerships along the industry value chain, and developing energy-saving products, Hisense has steadily advanced its green agenda. After decades of consistent efforts, the company has established 14 national "green factories" and three industry-leading "zero-carbon factories," driving more than 2,400 upstream and downstream enterprises toward low-carbon transition. A series of initiatives has also earned Hisense numerous international awards for its products that feature cutting-edge low-carbon technologies.

Hisense firmly believes that we are in an era filled with both challenges and opportunities. It is through adversity that courage is revealed.

In these uncertain times, the desire for a better intelligent life among users represents the greatest certainty we can embrace. Hisense is committed to researching and developing fundamental, authentic, and breakthrough technologies that facilitate decarbonization, allowing us to offer high-end, intelligent, and sustainable products. At the same time, the company is creating smarter and greener solutions to meet the increasingly complex needs of our users. Furthermore, Hisense is integrating green concepts into strategically emerging business sectors such as renewable energy and automotive electronics, thereby empowering other industries and contributing to the societal goal of carbon neutrality.

Green is not only the signature color of the Hisense logo but also a vital element of its corporate DNA.

Hisense Group solemnly commits to achieving peak carbon emissions by 2026 and carbon neutrality in its operations by 2050. Guided by this leadership goal, the company will diligently implement its long-term strategy with a sense of responsibility and commitment, continuously pursuing the ideals of "technology for good" and "business for good." Hisense will actively explore and implement ESG and low-carbon initiatives to create meaningful green value and impact.



¹³ Xunzi: Encouraging Learning

Appendix

I Key Milestones and Events¹⁴

II Low-carbon Certificates and Accreditations



Lighthouse Factory

- Hisense Hitachi Huangdao Factory successfully selected as global 'Lighthouse Factory', which is the world's first VRF 'Lighthouse Factory'

Zero Carbon Factory

- In 2023, Hisense Visual Jiangmen Factory became the first and only 'Zero Carbon Factory' in the domestic TV industry
- In 2024, Hisense Ronshen Plastic Factory became the first 'Zero Carbon Factory' in the plastics industry
- In 2024, Hisense Ronshen Freezer Factory became a 'Zero Carbon Factory'

Green Factory

- 14 national 'Green Factories' and 6 provincial 'Green Factories'

Green-design Demonstration Enterprise

- 6 national 'Green-design Demonstration Enterprises'

Green Supply Chain Management Enterprises

- 4 national 'Green Supply Chain Management Enterprises' and 5 provincial 'Green Supply Chain Management Enterprises'

Carbon Footprint Certificate

- Hisense Laser TV received 'Whole Life Cycle Carbon Footprint Evaluation Certificate'
- Hisense Washing Machine Products received 'Whole Life Cycle Carbon Footprint Evaluation Certificate'
- Nine Hisense Hitachi products were awarded 'China Refrigeration and Air Conditioning Industry Product Carbon Footprint Certificate'

Carbon Labeling Evaluation Certificate

- Hisense Laser was awarded the 'Enterprise Carbon Label Evaluation Certificate' and the 'Product Carbon Label Evaluation Certificate' for its laser TV products
- Hisense Air Conditioning Products won the first 'Three Star' Carbon Labeling Product in China's Air Conditioning Industry in 2023

Green Product Certificate

- Four Hisense Refrigerator Products won the 'Low-carbon Electrical Appliance and Machine Component Product Certificate'

¹⁴ Time frame: as of the white paper publication date

Major Sustainability Awards

	China's Top Runner for Industrial Carbon Peaking in 2023	
Name of certificate/award	Hisense Visual	
	Green Sustainable Development Contribution Award	
Affiliated product companies	Hisense Refrigerator	
	ESG Practice Innovation Award	
	Hisense Refrigerator	
	ESG Development Model Case of the Year	
	Hisense Refrigerator	
	ESG Development Excellence Case of the Year	
	Hisense Central Air Conditioning	

Hisense Home Appliances Group

	ESG Golden Bull Award Top 100			China Corporate ESG Gold Responsibility Award	
	Carbon Neutrality Exemplary Enterprise Award			The First Batch of Green Brand Demonstration Enterprise	

Low-carbon Honors

2023 Central Radio and Television (CMG)

- Hisense was selected for the 2023 ESG Excellence Report for its outstanding performance in actively practicing ESG development concepts, developing green and energy-saving home appliances through technological innovation, and building 'zero-carbon factories'

2022-2024 Fortune

- Hisense was named to *Fortune* China's ESG Influence List for three consecutive years for its continuous research and development of greener home appliances and active fulfillment of its social responsibilities

2022 Asia-Pacific Economic Cooperation (APEC)

- Hisense has been selected as one of the annual industrial cases in APEC's 'Sustainable China Industrial Development Initiative' and honored as a best practice case in China for its outstanding performance in low-carbon manufacturing, clean production, and concern for employee growth

2021 United Nations Development Program (UNDP)

- The UNDP praised Hisense by name in its official document, saying that Hisense's substitution and upgrading of refrigerator production foam technology drove China's ice-cooling industry to develop in the direction of low-carbon and environmental protection