



TIANNENG POWER  
INTERNATIONAL LIMITED  
天能動力國際有限公司

(於開曼群島註冊成立之有限公司)

股份代號：00819

(Incorporated in the Cayman Islands with Limited Liability)

Stock Code:00819



TIANNENG POWER  
INTERNATIONAL LIMITED  
天能動力國際有限公司

地址 Address：香港灣仔港灣道 18 號中環廣場 32 樓 3202 室

Room 3202, 32/F Central Plaza, 18 Harbour Road,  
Wanchai, Hong Kong

電話 Tel：(852) 2877-1398

傳真 Fax：(852) 2827-9398

電郵 Email：info@tianneng.com.hk

網址 Website：http://www.tianneng.com.hk

# 2024

## 環境、社會及管治報告

Environmental, Social and Governance Report

## 報告概覽 Report Overview

關於本報告/01-02

About the Report

匯報範圍	Scope of the Report
匯報原則	Reporting Principles
參考標準	Reference Standards
報告保證	Report Assurance
報告形式	Report Format
免責聲明	Disclaimer

## 3-16

## 可持續發展戰略 Sustainability Strategy

公司概況 Company Overview/03-04

ESG全年亮點績效 ESG Performance Highlights for the Year/05-08

量化績效明細表 /05-06
Quantitative Performance Breakdown
2024 年榮譽獎項 /07-08
2024 Honors Awards

ESG理念與願景 ESG Philosophy and Vision/09-12

ESG 目標管理 /9-10
ESG Goal Management
ESG 管治體系 /10-11
ESG Governance System
董事會聲明 /12
Board Statement

持份者溝通 Stakeholder Engagement/12-13

重大議題分析 Materiality Assessment/14-16



## 17-32

## 公司治理 Governance

企業治理與合規 Corporate Governance and Compliance/17-19

治理架構 /17-18
Governance Structure
合規管理 /19
Compliance Management

風險管理與控制 Risk Management and Control/20-23

信息安全與隱私保障 Information Security and Privacy Protection/23-25

反腐敗與商業道德 Anti-Corruption and Business Ethics/26-28

廉潔反貪污 /26-27
Integrity and Anti-Corruption
反壟斷 /28
Anti-Monopoly

知識產權 Intellectual Property/28-30

文化建設 Cultural Development/30-32

## 33-48

## 環境 Environment

碳中和與能源轉型 Carbon Neutrality and Energy Transition/33-40

氣候風險管理 /33-34
Climate Risk Management
能源管理 /35-36
Energy Management
新型儲能 /37-39
New Energy Storage
清潔能源推廣 /40
Promotion of clean energy

資源節約與污染防控 Resource Conservation and Pollution Control/41-48

污染物管理 /41-46
Pollutant Management
循環經濟與資源再生 /47-48
Circular Economy and Resource Regeneration

附錄：指標索引

Appendix: Pointer Index

Page 95-100

## 49-80

## 社會 Social

產品責任與客戶保障 Product Responsibility and Customer Protection/49-54

產品責任 /49-50
Product Responsibility
客戶服務 /50-54
Customer Service

科技創新與產業發展 Technological Innovation and Industry Development/55-57

員工關懷與職業發展 Employee Care and Career Development/58-67

僱傭及勞工 /58-60
Employment and Labor
人才儲備 /60-61
Talent Reserve
員工發展 /62
Employee Development
員工培訓 /63-66
Employee Training
員工滿意度 /66-67
Employee Satisfaction

職業安全 Occupational Safety/68-70

供應鏈管理 Supply Chain Management/70-71

投資者權益 Investors' Equity/72-73

社區參與與公益 Community Engagement and Public Welfare/73-75

就業與納稅 Employment and Taxes/75-76

鄉村振興 Rural Revitalization/76-78

建言獻策 Proposals and Suggestions/79-80

## 81-94

## 專題展示 Thematic Section

專題一 智慧製造與數字化轉型/81-85  
Topic I Smart Manufacturing and Digital Transformation

專題二 打造電池循環全生態產業鏈/86-94  
Topic II Creating a Battery Cycle Ecological Industrial Chain

# 目錄

## CONTENTS



# 報告概覽 Report Overview

## 關於本報告 About the Report

### 匯報範圍

本報告涵蓋天能動力國際有限公司(「本公司」)及其附屬公司(統稱「集團」、「本集團」或「天能」)於2024年1月1日至2024年12月31日的環境、社會及管治表現,部分內容根據需要追溯至以前年份。

### 匯報原則

本報告為本集團自2014年以來編制的第十一份環境、社會及管治(ESG)報告,報告編制遵循以下原則:

**重要性:** 本集團重視與內外部利益相關方的定期溝通,識別並關注與公司運營相關的重大主題,這些主題涵蓋對投資者及其他利益相關方可能產生重要影響的環境、社會及管治事項,並將其作為本報告的核心內容。本集團通過報告展示公司在這些領域的戰略、措施及成果,助力利益相關方全面瞭解公司的可持續發展實踐。

**量化性:** 本報告盡可能以定量形式披露關鍵績效指標,以確保透明度和可比性。報告所用數據來源於年度報告、正式檔案及統計數據,主要覆蓋2024年,同時部分包含前幾年的對比數據。除特別說明外,本報告中涉及的貨幣金額均以人民幣列示。

**平衡:** 本報告力求以客觀、公正的方式全面反映集團在ESG領域的管理表現,重點展示公司在實現可持續發展過程中取得的成績及面臨的挑戰。

**一致性:** 本報告採用一致的披露統計方法,確保ESG信息在歷年及未來具有可比性,並提供數據變化的相關分析。通過標準化的方法論和指標框架,本集團能夠系統性地展示其在可持續發展領域的長期表現及趨勢。

### Scope of the Report

This report covers the environmental, social, and governance performance of Tianneng Power International Limited (the "Company") and its subsidiaries (collectively referred to as the "Group" or "Tianneng") for the period from January 1, 2024, to December 31, 2024. Certain sections may refer to data from prior years as necessary.

### Reporting Principles

This report is the 11th Environmental, Social, and Governance (ESG) report prepared by the Group since 2014. The preparation of this report follows the principles outlined below.

**Materiality:** The Group values regular communication with internal and external stakeholders to identify and address material topics relevant to its operations. These topics encompass ESG matters that may have a significant impact on investors and other stakeholders, forming the core content of this report. Through this report, the Group demonstrates its strategies, initiatives, and achievements in these areas, helping stakeholders gain a comprehensive understanding of its sustainability practices.

**Quantitative:** Wherever possible, this report discloses key performance indicators in a quantitative manner to ensure transparency and comparability. The data presented is sourced from the Group's annual reports, official records, and statistical materials, primarily covering the year 2024, with some comparative data from previous years. Unless otherwise stated, all monetary amounts in this report are presented in RMB.

**Balance:** This report strives to provide an objective and fair reflection of the Group's ESG management performance. It highlights the achievements made in advancing sustainability while also acknowledging the challenges encountered.

**Consistency:** The report applies consistent disclosure and statistical methodologies to ensure the comparability of ESG information over time. It also provides meaningful analyses of data trends. By employing standardized methodologies and indicator frameworks, the Group systematically presents its long-term sustainability performance and trends.

### 參考標準

本報告的編制參考以下標準:

香港聯交所發佈的《香港聯合交易所有限公司證券上市規則》(「《上市規則》」)附錄C2《環境、社會及管治報告守則》(「《ESG報告守則》」)

全球報告倡議組織《可持續發展報告標準》(「《GRI準則》」)

對應聯合國發佈的17個可持續發展目標

遵守《ESG報告守則》中的「強制披露規定」「不遵守就解釋」條文和盡可能遵守「氣候相關披露」。

### 報告保證

本報告中的數據和案例主要來源於本集團的統計報告、相關數據及文檔。本公司董事會「董事會」及本集團全體董事保證本報告內容不存在任何虛假記載、誤導性陳述或者重大遺漏,並對內容的真實性、準確性和完整性承擔個別及連帶責任。

### 報告形式

本報告以繁體中文和英文兩種語言發佈,並以電子版本形式提供。如不同語言版本的內容存在歧義或差異,則以繁體中文版為準。投資者可通過公司官網或香港聯合交易所有限公司(「香港聯交所」)網站下載本報告,以便查閱。

### 免責聲明

本報告中部分內容可能包含前瞻性陳述,包括但不限於公司未來發展計劃、目標及策略等。這些陳述基於公司管理層當前的預期和假設,但可能會受到各種已知和未知風險、不確定性及其他因素的影響,導致實際結果可能與前瞻性陳述中描述的內容存在重大差異。

公司不對前瞻性陳述的更新或修訂承擔任何責任,無論是由於新信息、未來事件或其他原因引起的變化。此外,本報告中所提供的數據僅供參考之用,並不構成任何投資建議或決策依據。投資者需自行評估相關風險,並對其投資決策負責。

### Reference Standards

The preparation of this report is based on the following standards:

Appendix C2-Environmental, Social and Governance Reporting Code ("ESG Reporting Code") to the Rules Governing the Listing of Securities on the Stock Exchange ("Listing Rules").

Global Reporting Initiative Sustainability Reporting Standards ("GRI Standards")

The 17 Sustainable Development Goals (SDGs) issued by the United Nations

Compliance with the Mandatory Disclosure Requirements, "Comply or explain" Provisions and, to the extent possible, Climate-related Disclosure of the ESG Reporting Code.

### Report Assurance

The information and cases presented in this report are primarily sourced from the Group's statistical reports, relevant data, and documents. The board of directors of the Company (the "Board of Directors" or "Board") and all directors of the Group confirm that the content of this report does not contain any false statements, misleading representations, or material omissions, and they bear individual and joint responsibility for the truthfulness, accuracy, and completeness of its content.

### Report Format

This report is published in both Traditional Chinese and English and is available in electronic format. In the event of any discrepancies or differences between the two language versions, the Traditional Chinese version shall prevail. Investors can download this report from the Company's official website or the website of the Stock Exchange of Hong Kong Limited (the "Hong Kong Stock Exchange") for their reference.

### Disclaimer

Some of the content in this report may contain forward-looking statements, including but not limited to the Company's future development plans, goals, and strategies. These statements are based on the current expectations and assumptions of the Company's management, but they may be influenced by various known and unknown risks, uncertainties, and other factors, which could cause actual results to differ materially from those described in the forward-looking statements.

The Company does not assume any responsibility for updating or revising the forward-looking statements, whether due to new information, future events, or other reasons. Furthermore, the information provided in this report is for reference only and does not constitute any investment advice or decision-making basis. Investors should evaluate the associated risks independently and are responsible for their investment decisions.

# 02

# Sustainability Strategy 可持續發展戰略



## 公司概況 Company Overview

ESG全年亮點績效 ESG Performance Highlights for the Year

量化績效明細表 Quantitative Performance Breakdown

2024年榮譽獎項 2024 Honors Awards

## ESG理念與願景 ESG Philosophy and Vision

ESG目標管理 ESG Goal Management

ESG管治體系 ESG Governance System

董事會聲明 Board Statement

## 持份者溝通 Stakeholder Engagement

## 重大議題分析 Materiality Assessment





# 可持續發展戰略 Sustainability Strategy

## 公司概况 Company Overview

本集團創始於一九八六年，是中華人民共和國（「中國」）新能源電池行業的領軍企業，也是中國輕型電動車動力電池的龍頭企業，於二零零七年在香港聯交所主板上市（股份代號：00819.HK）。本集團經過近四十年的發展，現以鉛蓄電池為主業，聚焦電動輕型車動力電池市場，並拓展其在汽車起動啓停系統、通信基站備用電源能等多元場景的應用，同步佈局鋰離子電池、氫燃料電池、鈉離子電池及固態電池的研發、生產、銷售，以多技術路線電池產品覆蓋電動特種工業車輛、儲能系統等應用場景。同時，本集團圍繞主業強化循環經濟，通過鉛回收與鋰回收雙軌體系，實現資源高效再生利用，打造新能源產業生態矩陣。

作為新能源動力電池行業的領導者，本集團業務戰略以「核心鞏固、技術創新、全球化拓展」為主軸，聚焦新能源技術與循環經濟兩大核心領域。公司在穩固鉛蓄電池傳統業務優勢的同時，積極佈局鋰電池、氫燃料電池、鈉電池、儲能技術及資源回收等創新領域，構建了涵蓋研發、生產、回收再利用的閉環產業鏈，為實現全球領先的新能源企業目標奠定了堅實基礎。

秉持深度融合 ESG 理念的經營方針，本集團不斷強化可持續發展實踐，推動綠色製造、低碳運營與循環經濟模式的應用。公司致力於為全球能源轉型提供創新解決方案，不僅實現環境與社會效益的平衡，更憑藉突出的行業領導力與資本市場表現，為利益相關方創造長期價值。

Founded in 1986, the Group is a leading company in the new energy battery industry and light electric vehicle battery industry in the People's Republic of China (the "PRC" or "China"). In 2007, the Company was listed on the Main Board of the Hong Kong Stock Exchange (Stock Code: 00819.HK). With nearly 40 years of development, the Group currently focuses on lead-acid batteries as its core business, specifically catering to motive batteries for light electric vehicle market and expanding its application in different fields such as starter and start-stop systems for automobiles and uninterruptible power supply for communication bases. The Group is also committed to conducting research and development ("R&D"), production and sales of lithium-ion ("Li-ion") batteries, hydrogen fuel cells, sodium-ion batteries and solid-state batteries to encompass the application fields of special industrial vehicles and energy storage systems ("ESS") through a diverse range of battery technology products. Meanwhile, the Group reinforces the circular economy by focusing on its core business. By implementing a dual-track system for lead recycling and lithium recycling, it ensures the efficient reuse of resources, thereby establishing a new energy industry ecological matrix.

As a leader in the new energy motive battery industry, the Group's business strategy is centered on "core consolidation, technological innovation, and global expansion," with a focus on two core areas: new energy technology and the circular economy. While consolidating its traditional lead-acid battery business, the Group actively invests in innovative areas such as lithium batteries, hydrogen fuel cells, sodium-ion batteries, energy storage technologies, and resource recycling. It has established a closed-loop industrial chain that covers R&D, production, and recycling, laying a solid foundation to achieve its goal of becoming a global leader in the new energy sector.

Adhering to an operational approach deeply integrated with ESG principles, the Group continues to strengthen its sustainable development practices, promoting green manufacturing, low-carbon operations, and the application of the circular economy model. The Company is committed to providing innovative solutions for global energy transformation, achieving a balance between environmental and social benefits, while creating long-term value for stakeholders through its industry leadership and strong capital market performance.

## ESG全年亮點績效 ESG Performance Highlights for the Year

### ■ 量化績效明細表 Quantitative Performance Breakdown

ESG 認可 ESG Recognition	環境保護 Environmental Protection	價值貢獻 Value Contribution
連續 5 年獲得 MSCI ESG 評級 A 級以上 MSCI ESG rating of A or above for 5 consecutive years	ISO14001 環境管理體系認證 ISO14001 Environmental Management System Certification	2024 年在全國各地納稅合計 36.9 億元 Paid a total of 3.69 billion in taxes across the country in 2024
合規運營 Compliance Operation	全年售出動力電池可減少 18,774.6 萬噸二氧化碳排放, 相當於種植松樹 5.14 億棵 Motive batteries sold in a year can reduce 187.746 million tons of carbon dioxide emissions, equivalent to planting 514 million pine trees	湖州市營收 50 強、納稅 50 強、研發投入 50 強、就業 50 強均位列第一名 Ranked 1st in Huzhou's Top 50 Enterprises for Revenue, Taxation, R&D Investment, and Employment
員工 100% 簽署個人廉潔承諾書 100% of our employees signed a personal integrity pledge	鉛蓄電池產品中各組分回收率超過 99% Recycling rate of lead-acid batteries exceeds 99%	全年對外捐贈資金及物資總額、公益項目、鄉村振興投入合計人民幣 624.42 萬元 The total amount of external donations, public welfare project expenditures, and rural revitalization investment for the year amounted to RMB 6,244.2 thousand yuan
廉潔教育培訓 85 場次 85 training sessions on integrity education	鋰離子電池產品回收率超過 90% Recycling rate of lithium-ion batteries exceeds 88%	科創發展 Innovation and Development
通過 ISO 27001 信息安全管理体系認證 Passed ISO 27001 Information Security Management System Certification	5 家國家工業產品綠色設計示範企業 5 National Green Design Demonstration Enterprises for Industrial Products	累計擁有授權專利 5,825 項 Accumulated 5,825 authorized patents
未發生用戶隱私數據洩露事件 No incidents of user privacy data leakage	10 家國家綠色工廠 10 National Green Factories	1 家子公司獲國家級科技型中小企業認證 1 subsidiary was certified as a state-level technology-based SME
供貨商行為準則簽訂覆蓋率 100% 100% coverage of signing of Code of Conduct for suppliers	10 家國家綠色供應鏈管理示範企業 10 National Green Supply Chain Management Demonstration Enterprises	3 家子公司通過國家認定企業技術中心評價 3 subsidiaries have passed the evaluation of national enterprise technology center
未發生不正當競爭行為 No unfair commercial practices or behaviors	獲 22 項國家綠色產品等國字型大小榮譽 Won 22 national green products and other national honors	2 家博士後工作站 2 post-doctoral workstations
卓越質量 Superior Quality	參與制定國家、行業等各類標準 265 餘項 Participated in the formulation of more than 265 national and industry standards	員工管理 Employee Management
ISO9001 質量管理認證 ISO9001 Quality Management System Certification	已建成屋頂光伏項目約 99.23MW, 每年可產生 77,605.76MWh 綠電 Existing and planned photovoltaic projects will generate 239 million kWh of green electricity annually	組織培訓考核人員 11,892 人次 Organized training and assessment for 11,892 personnel
獲得 CNAS 國家認證 Obtained CNAS National Accreditation	直接(範圍 1)溫室氣體排放總量: 344,636 噸二氧化碳當量 Direct (scope 1) greenhouse gas emissions: 344,636 tons of carbon dioxide equivalent (CO2e) 間接(範圍 2)溫室氣體排放總量: 1,908,055 噸二氧化碳當量 Indirect (Scope 2) greenhouse gas emissions total: 1,908,055 tons of carbon dioxide equivalent (CO2e)	各類員工人均受訓時長超 33.69 個小時 The average training hours per capita of all kinds of employees exceeded 33.69 hours
IATF16949 汽車行業質量管理體系認證 IATF16949 Automotive Quality Management System Certification	職業安全 Occupational Safety	培訓考核通過率達到 92.39% the training assessment pass rate has reached 92.39%
100% 客戶回饋響應率 100% customer feedback response rate	未發現職業病或疑似職業病 No occupational diseases or suspected occupational diseases detected	投資者權益 Investors' Equity
ISO45001 職業健康安全管理體系認證 ISO 45001 Occupational Health and Safety Management System certification	未發現生產相關重傷或死亡事件 No production-related serious injuries or fatalities	截至 2024 年底, 累計分紅 16 次, 累計現金分紅 46.78 億港幣 Accumulated cash dividends of HK\$4,678 million through 16 dividends at the end of 2024

## 2024年本集團（含附屬子公司）所獲榮譽獎項

### Honours and Awards Received by the Group (Including Its Subsidiaries) in 2024

- 第十屆香港 HKIRA 投資者關係大獎  
The HKIRA 10th Investor Relations Awards
- 獲 MSCI 機構 A 級 ESG 評級  
Awarded MSCI ESG Rating of A
- 2024 年度 ESG 競爭力企業  
The 2024 Sustainable Competitiveness Enterprise of the Year
- 港股 100 強研究中心小型企業 50 強  
Top 50 Small Enterprises of the Hong Kong Stock 100 Research Center
- 港股 100 強研究中心新能源榜單  
New Energy Ranking of the Hong Kong Stock 100 Research Center
- 2024 年上市公司可持續發展最佳實踐案例  
The Best Practical Case in Sustainable Development for Public Companies in 2024
- 中國工程機械工業協會工業車輛分會理事單位  
Council Member Unit of the Industrial Vehicles Branch of the China Construction Machinery Association (CCMA)
- 上榜年度儲能電池十大品牌  
Listed as One of the Top 10 Energy Storage Battery Brands of the Year
- 董事長榮獲「年度 ESG 探索人物獎」  
Chairman of the Board honored with "ESG Explorer of the Year"
- 新質企業金牛獎  
Golden Bull Award for Innovative Quality Enterprises
- 2024 上市公司董事會優秀實踐案例  
2024 Best Practice Case for Public Company Boards
- 中國新型儲能百大品牌  
Top 100 Brands in China's New Energy Storage Industry
- 中國綠色能源影響力品牌  
China Green Energy Influential Brand



## 企業榜單 Enterprise List

全球新能源 500 強企業 Top 500 Global New Energy Enterprises	位列 20 Ranked 20 <sup>th</sup>
2024 浙江省百強企業 2024 Zhejiang Top 100 Enterprises	位列 9 Ranked 9 <sup>th</sup>
中國企業 500 強 Top 500 Chinese Enterprises	位列 129 Ranked 129 <sup>th</sup>
2024 浙商全國 500 強 2024 Zhejiang Entrepreneurs Top 500	位列 10 Ranked 10 <sup>th</sup>
民營製造業企業 Private Manufacturing Enterprises	位列 20 Ranked 20 <sup>th</sup>
浙江省高新技術企業創新能力 500 強 Top 500 Advance-Tech Enterprises in Zhejiang Province for Innovation Capability	位列 28 Ranked 28 <sup>th</sup>
長三角企業 100 強 Top 100 Enterprises in Yangtze River Delta	位列 28 Ranked 28 <sup>th</sup>
中國製造業企業 500 強 China's Top 500 Manufacturing Enterprises	位列 56 Ranked 56 <sup>th</sup>
2024 浙江省製造業百強企業 2024 Zhejiang Top 100 Manufacturing Enterprises	位列 7 Ranked 7 <sup>th</sup>

## ESG理念與願景 ESG Philosophy and Vision

### ■ ESG目標管理 ESG Goal Management

作為行業領先的電池技術企業，本集團通過持續的技術創新，推動電池產品在電動輕型車、儲能、工程機械等領域的廣泛應用。積極響應全球綠色發展的號召，通過優化資源利用效率和推動電池回收與再生技術，實現能源的高效循環利用，助力環境保護和碳排放的減少。

**在環境方面**——我們堅持綠色製造，優化能源消耗和資源利用效率，通過擴大鉛、鋰循環經濟的技術投入和產業規模，降低生產碳足跡，並積極研發氫燃料電池、鈉離子電池等低碳、長壽命新型電池技術，助力實現碳中和目標，以綠色創新支援生態環境的保護和修復。

As an industry-leading battery technology enterprise, the Group drives the widespread application of battery products in electric light vehicles, energy storage, construction machinery, and other fields through continuous technological innovation. We actively respond to the global call for green development by optimizing resource utilization efficiency and promoting battery recycling and regeneration technologies, achieving efficient energy circulation and contributing to environmental protection and carbon emission reduction.

**In terms of the environment**——we uphold green manufacturing, optimize energy consumption and resource utilization efficiency, reduce production carbon footprints by expanding investments in lead and lithium circular economies, and actively develop low-carbon, long-life new battery technologies such as hydrogen fuel cells and sodium-ion batteries. These efforts contribute to achieving carbon neutrality and support the protection and restoration of the ecological environment through green innovation.



集團總部  
Group Headquarters

**在社會方面**——我們在全球範圍內擁有數十個生產基地，促進當地經濟發展並提供了大量就業機會。本集團以人為本，構建安全、高效的工作環境，注重員工成長與供應鏈的可持續管理，同時通過綠色能源解決方案支援社區發展，為社會提供可靠的能源支援，助力區域經濟發展與環境保護。

**在公司治理方面**——我們秉承高度透明、負責任的治理原則，強化信息披露與風險管理，推動董事會多元化和專業化建設，確保戰略執行的穩健性，並通過加強與利益相關方的溝通，提升企業的長期價值創造能力。

本集團將以實際行動踐行綠色發展承諾，履行企業公民責任，為「綠水青山」變為「金山銀山」貢獻力量，為全球可持續發展注入新動能。我們將繼續強化綠色技術創新，重點推進新能源產業的轉型升級，煥發鉛蓄電池長遠的生命力，構建全生命週期閉環綠色產業體系。同時，完善社會責任體系，提升治理水準，努力成為全球領先的綠色能源企業，並為推動全球經濟、社會與環境的協調發展貢獻力量。

**In terms of social responsibility**——The Group has numerous production bases worldwide, promoting local economic development and providing substantial employment opportunities. We are committed to a people-oriented approach, creating safe and efficient working environments, focusing on employee growth and sustainable supply chain management. Additionally, we support community development through green energy solutions, providing reliable energy support to society and assisting regional economic development and environmental protection.

**In corporate governance**——we adhere to principles of high transparency and responsible governance, strengthening information disclosure and risk management, promoting board diversification and specialization, ensuring the robustness of strategy execution, and enhancing long-term value creation through improved communication with stakeholders.

The Group is committed to taking concrete actions to fulfill its green development pledge and corporate citizenship responsibilities, contributing to the transformation of "lucid waters and lush mountains" into invaluable assets, and injecting new momentum into global sustainable development. We will continue to enhance green technology innovation, focusing on the transformation and upgrading of the new energy industry, revitalizing the long-term potential of lead-acid batteries, and establishing a closed-loop green industrial system covering the entire product lifecycle. At the same time, we will further improve our corporate social responsibility framework, enhance governance standards, and strive to become a global leader in green energy, contributing to the harmonious development of the global economy, society, and environment.

### ■ ESG管治體系 ESG Governance System

本集團自2014年起持續披露ESG報告，除履行法律法規要求外，還注重展示公司在環境可持續性、社會責任和有效治理方面的實踐與承諾。我們不僅關注經濟績效，還重視與利益相關方（如環境、員工、社會和股東）的關係，並將持續努力，為可持續發展目標作出貢獻。

自2023年成立ESG管治工作小組以來，集團的ESG管治體系在2024年高效運作，取得顯著成效。工作小組在董事會領導下，通過風險識別、目標制定和執行監督，推動環境、社會和治理理念深度融入公司經營管理。

Since 2014, the Group has continuously disclosed ESG reports. In addition to fulfilling legal and regulatory requirements, we also focus on showcasing the Company's practices and commitments to environmental sustainability, social responsibility, and effective governance. We not only emphasize economic performance but also value our relationships with stakeholders, such as the environment, employees, society, and shareholders, and will continue to strive to contribute to sustainable development goals.

Since the establishment of the ESG Governance Task Force in 2023, the Group's ESG governance system has operated efficiently in 2024, achieving significant results. Under the leadership of the Board of Directors, the Task Force has integrated ESG principles deeply into the Company's management by identifying risks, setting objectives, and overseeing implementation.



2024 年，工作小組推動各部門協同落實 ESG 目標，在技術創新、智能製造和循環經濟等方面取得關鍵進展，提高了運營效率和資源利用率。同時，組織跨部門培訓和利益相關方溝通，強化內部 ESG 意識，鞏固與股東、員工、客戶和供應商的信任。工作小組定期向董事會報告，提供決策支援，並根據行業趨勢及時調整 ESG 行動計畫，確保與全球可持續發展目標一致，提升公司 ESG 合規與績效。

In 2024, the task force drove collaboration across departments to implement ESG goals, achieving key progress in areas such as technological innovation, smart manufacturing, and circular economy, which enhanced operational efficiency and resource utilization. Additionally, the task force organized cross-departmental training and stakeholder communication to strengthen internal ESG awareness and solidify trust with shareholders, employees, customers, and suppliers. The task force regularly reports to the Board of Directors, providing decision-making support, and timely adjusts the ESG action plan based on industry trends to ensure alignment with global sustainable development goals, thereby enhancing the company's ESG compliance and performance.



管治體系架構  
ESG Governance System Structure

## ■ 董事會聲明 Board Statement

本集團董事會深知可持續發展對公司長期成功的重要性，並堅信良好的環境、社會和管治實踐能夠為公司創造價值。我們承諾遵守相關法律法規，積極推動環保、社會責任和透明治理，確保在日常運營中貫徹可持續發展的原則。

The Board of Directors recognizes the importance of sustainable development to the Group's long-term success and firmly believes that sound ESG practices create value for the Company. We are committed to complying with relevant laws and regulations, actively promoting environmental protection, social responsibility, and transparent governance, and ensuring the integration of sustainability principles into daily operations.

我們已建立健全的公司治理結構，並通過定期評估和改進，確保董事會在決策過程中充分考慮 ESG 因素。集團在環境保護、社會責任及風險管理方面的各項舉措，旨在提升公司整體可持續性和競爭力。董事會將繼續致力於推動 ESG 目標的實現，通過透明的治理和有效的戰略執行，提升股東及利益相關方的長期價值。

We have established a robust corporate governance framework, with regular assessments and enhancements to ensure that ESG factors are duly considered in decision-making. The Group's initiatives in environmental protection, social responsibility, and risk management aim to strengthen overall sustainability and competitiveness. The Board remains dedicated to advancing ESG objectives, enhancing long-term value for shareholders and stakeholders through transparent governance and effective strategic execution.

## 持份者溝通 Stakeholder Engagement

利益相關者的參與對本集團的可持續發展至關重要。為全面瞭解並應對各方在 ESG 方面的關注，本集團積極維護與利益相關者的長期合作關係，通過會議、問卷、座談會等多種方式保持密切聯繫，促進雙向交流，瞭解各方期望和需求。

Stakeholder engagement is critical to the Group's sustainable development. To comprehensively understand and address concerns related to ESG matters, the Group actively maintains long-term partnerships with stakeholders. Through various channels such as meetings, surveys, and forums, we foster open communication, facilitate two-way dialogue, and gain insights into stakeholder expectations and needs.

2024 年，本集團強化了常態化溝通機制，確保利益相關者的聲音能及時反映到管理層決策中。通過與員工、股東、客戶、供應商等的深入對話，我們收集到運營、社會責任和環境保護方面的重要反饋，並據此優化內部流程和可持續發展措施。

In 2024, the Group strengthened its regular communication mechanisms to ensure that stakeholder feedback is promptly reflected in management decisions. Through in-depth discussions with employees, shareholders, customers, and suppliers, we gathered valuable input on operations, social responsibility, and environmental protection, using these insights to optimize internal processes and enhance sustainability initiatives.

此外，本集團積極回應利益相關者的期望，展示了對透明度和責任感的承諾，通過定期發布 ESG 報告和設立反饋機制，確保改進措施得以持續落實。我們相信，靈活高效的溝通不僅能提升競爭力，還能增強利益相關者的信任與支持，推動集團長期可持續發展。

Furthermore, the Group remains committed to transparency and accountability by actively responding to stakeholder expectations. We reinforce this commitment through regular ESG disclosures and feedback mechanisms to ensure continuous improvement. We believe that efficient and responsive engagement not only enhances competitiveness but also strengthens stakeholder trust and support, driving the Group's long-term sustainable development.

利益相關方 Stakeholder	溝通形式 Forms of Communication	期望 Expectation
投資者 Investor	股東大會、公司公告、郵件、電話、線上路演、線下座談、公司網站 General meetings of shareholders, Company announcements, emails, phone calls, on-line presentations, off-line seminars, Company website	公司治理 Corporate Governance 合規合法運營公司 Compliance and Legal Operation 經營表現及財務狀況 Operating Performance and Financial Condition
員工 Employees	勞動合同、內部刊物、培訓 Labor contracts, internal publications, training	職業健康與安全 Occupational Health and Safety 員工平等僱傭 Equal Employment 員工培訓與發展 Employee Training and Development
客戶 Customers	客服熱線、公司網站、經銷商大會 Customer service hotline, Company website, Distributor conference	產品品質與安全 Product Quality and Safety 客戶及消費者權益保障 Customer and Consumer Protection 技術研發與創新 Technology Development and Innovation
政府與監管機構 Government and Regulators	政策指引、信息披露、實地考察與監督 Policy guidelines, Information disclosure, Field visits and monitoring	商業道德與反貪腐 Business Ethics and Anti-Corruption 風控與內控 Risk Management and Internal Control 合規合法運營 Compliance and Legal Operation
供應商 Suppliers	合同協議、業務合作、供應鏈體系審查 Contractual agreements, Business partnerships, Supply chain system reviews	供應鏈可持續管理 Sustainable Supply Chain Management 商業道德與反貪腐 Business Ethics and Anti-Corruption
公眾與社區 The public and the community	公益活動 Public welfare activities	社區公益參與 Public Welfare Participation 鄉村振興 Rural Revitalization 環保理念宣貫 Environmental Protection Philosophy

## 重大議題分析 Materiality Assessment

2024 年，本集團進一步提升重大議題評估的深度與廣度，採用更科學化的方法，識別並評估與業務相關的潛在 ESG 議題。結合內外部研究，基於行業趨勢和交易所要求，通過與僱員、股東、供應商等的多層次對話，了解市場和政策環境對本集團業務的影響。

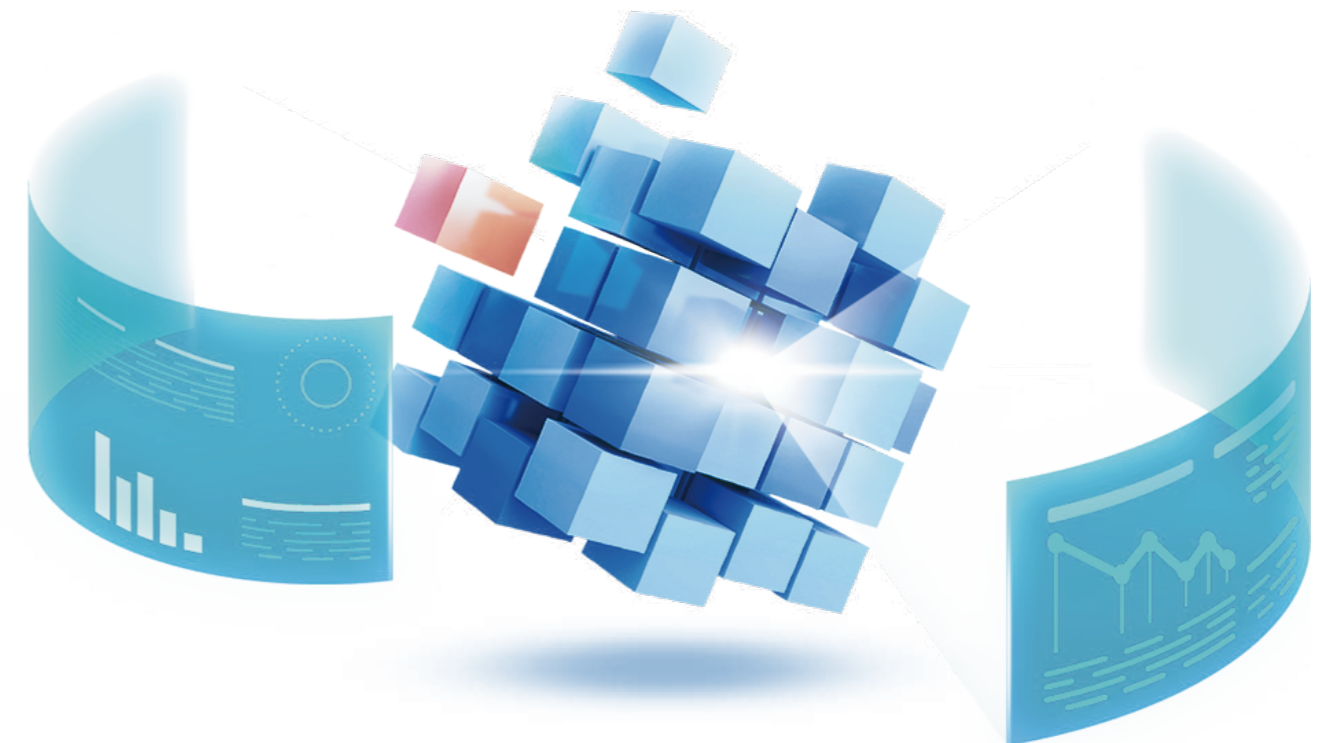
評估過程中，我們設計了涵蓋定性與定量問題的精細化調查問卷，分發至內部員工、供應商、客戶、社區組織及監管機構，內容涉及環境、社會與治理，如「雙碳」策略、勞工權益、多元化與創新治理結構。通過數據分析，我們解析議題的關聯性與重要性，並將結果納入 ESG 報告，確保信息透明且具參考價值。

本次評估識別出 16 項「非常重要」議題，較去年增加 1 項，包括 5 項經營類、6 項社會類及 5 項環境類議題，並成為 2025 年可持續發展戰略的依據，體現了我們對利益相關者需求的深入理解與管理創新。

In 2024, the Group further enhanced the depth and scope of its materiality assessment by adopting a more scientific approach to identify and evaluate potential ESG issues relevant to its business. Integrating internal and external research, and considering industry trends and stock exchange requirements, we engaged in multi-tiered discussions with employees, shareholders, suppliers, and other stakeholders to assess the impact of market and regulatory environments on our operations.

During the evaluation process, we developed a refined survey incorporating both qualitative and quantitative questions, which was distributed to internal employees, suppliers, customers, community organizations, and regulatory bodies. The survey covered key environmental, social, and governance topics, such as the "dual-carbon" strategy, labor rights, diversity, and innovative governance structures. Through data analysis, we assessed the relevance and significance of each topic, integrating the findings into the ESG report to ensure transparency and provide valuable insights.

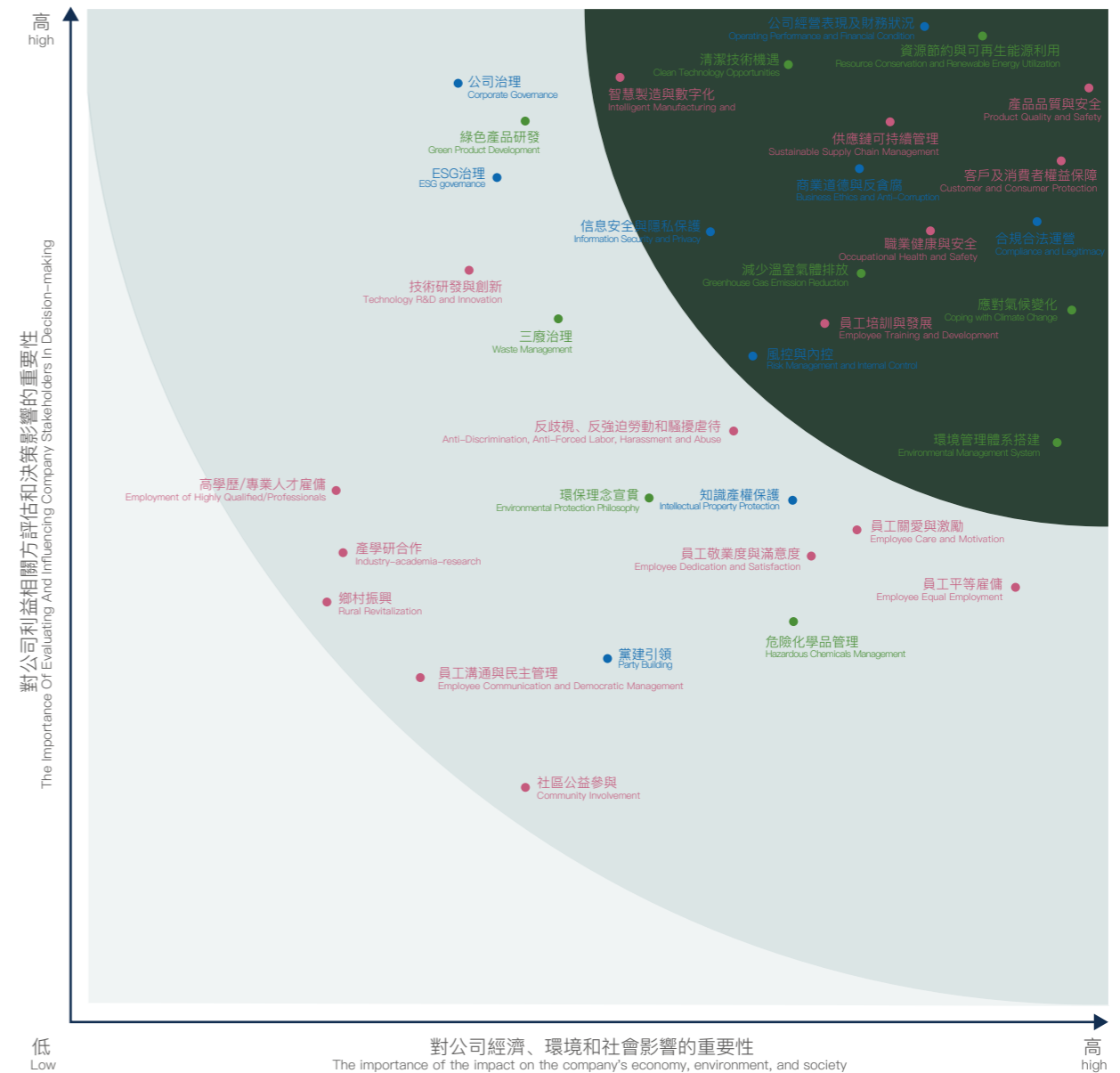
This assessment identified 16 "highly material" topics, an increase of 1 compared to the previous year, including 5 business-related, 6 social, and 5 environmental topics. These findings will serve as the foundation for the Group's 2025 sustainability strategy, reflecting our commitment to a deeper understanding of stakeholder expectations and continuous innovation in ESG management.



重要性 Importance	議題 Issues	範疇 Scope			
非常重要 Very Important	<ul style="list-style-type: none"> <li>合規合法運營</li> <li>商業道德與反貪腐</li> <li>風控與內控</li> <li>信息安全與隱私保護</li> <li>公司經營表現及財務狀況</li> </ul>	<ul style="list-style-type: none"> <li>Compliance and Legal Operation</li> <li>Business Ethics and Anti-Corruption</li> <li>Risk Control and Internal Control</li> <li>Information Security and Privacy Protection</li> <li>Operating Performance and Financial Condition</li> </ul>	經營類 Governance topics		
	<ul style="list-style-type: none"> <li>員工培訓與發展</li> <li>職業健康與安全</li> <li>產品品質與安全</li> <li>智能製造與數字化</li> <li>客戶及消費者權益保障</li> <li>供應鏈可持續管理</li> </ul>	<ul style="list-style-type: none"> <li>Employee Training and Development</li> <li>Occupational Health and Safety</li> <li>Product Quality and Safety</li> <li>Intelligent Manufacturing and Digitization</li> <li>Customer and Consumer Protection</li> <li>Sustainable Supply Chain Management</li> </ul>	社會類 Social topics		
	<ul style="list-style-type: none"> <li>環境管理體系搭建</li> <li>應對氣候變化</li> <li>清潔技術機遇</li> <li>減少溫室氣體排放</li> <li>資源節約與可再生能源利用</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Management System</li> <li>Coping with Climate Change</li> <li>Clean Technology Opportunities</li> <li>Greenhouse Gas Emission Reduction</li> <li>Resource Conservation and Renewable Energy Utilization</li> </ul>	環境類 Environment topics		
	相對重要 Relatively Important	<ul style="list-style-type: none"> <li>公司治理</li> <li>知識產權保護</li> <li>ESG 治理</li> </ul>	<ul style="list-style-type: none"> <li>Corporate Governance</li> <li>Intellectual Property Protection</li> <li>ESG Governance</li> </ul>	經營類 Governance topics	
		<ul style="list-style-type: none"> <li>員工平等僱傭</li> <li>員工敬業度與滿意度</li> <li>員工關愛與激勵</li> <li>反歧視、反強迫勞動和騷擾虐待</li> <li>技術研發與創新</li> </ul>	<ul style="list-style-type: none"> <li>Equal Employment of Employees</li> <li>Employee Respect and Satisfaction</li> <li>Employee Care and Motivation</li> <li>Anti-Discrimination, Anti-Forced Labor, Harassment and Abuse</li> <li>Technology R&amp;D and Innovation</li> </ul>	社會類 Social topics	
		<ul style="list-style-type: none"> <li>綠色產品研發</li> <li>三廢治理</li> <li>危險化學品管理</li> <li>環保理念宣貫</li> </ul>	<ul style="list-style-type: none"> <li>Green Product Development</li> <li>Waste Management</li> <li>Hazardous Chemicals Management</li> <li>Environmental Protection Philosophy</li> </ul>	環境類 Environment topics	
		相對不重要 Relatively Unimportant	<ul style="list-style-type: none"> <li>黨建引領</li> </ul>	<ul style="list-style-type: none"> <li>Party Building Leadership</li> </ul>	經營類 Governance topics
			<ul style="list-style-type: none"> <li>高學歷 / 專業人才僱傭</li> <li>員工溝通與民主管理</li> <li>產學研合作</li> <li>社區公益參與</li> <li>鄉村振興</li> </ul>	<ul style="list-style-type: none"> <li>Employment of highly educated/professionals</li> <li>Employee communication and democratic management</li> <li>Industry-academia-research cooperation</li> <li>Community participation</li> <li>Rural revitalization</li> </ul>	社會類 Social topics

各類 ESG 議題的重要性矩陣圖分別如下所示：

The importance matrix charts for each of the various ESG topics are shown below:



ESG 報告中的重大議題評估過程是一個持續改進和學習的過程，通過這一過程，我們期望能夠更好地滿足利益相關方的期望，確保公司可持續發展。

The process of assessing the material topics in the ESG report is a process of continuous improvement and learning, through which we expect to be able to better meet the expectations of our stakeholders and ensure the sustainable development of the Company.

# 03



## Governance 公司治理



- 企業治理與合規** Corporate Governance and Compliance
  - 治理架構 Governance Structure
  - 合規管理 Compliance Management
- 風險管理與控制** Risk Management and Control
- 信息安全與隱私保障** Information Security and Privacy Protection
- 反腐敗與商業道德** Anti-Corruption and Business Ethics
  - 廉潔反貪污 Integrity and Anti-Corruption
  - 反壟斷 Anti-Monopoly
- 知識產權** Intellectual Property
- 文化建設** Cultural Development

# 公司治理 Governance

## 企業治理與合規 Corporate Governance and Compliance

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



### ■ 治理架構 Governance Structure

本集團堅持「遵守法律治理企業、堅守誠信經營」的原則，規範經營行為，將誠信作為核心價值觀。我們嚴格遵守香港《上市規則》和相關法律法規，確保公司治理符合最高標準，保障股東和利益相關方的合法權益。同時，集團注重將合規與創新相結合，持續優化管理機制，推動透明、公正和高效的治理。

The Group adheres to the principles of "complying with laws to govern the enterprise and upholding integrity in business operations," with integrity as its core value. We strictly comply with the Listing Rules and relevant laws and regulations, ensuring that our corporate governance meets the highest standards and protects the legitimate rights and interests of shareholders and stakeholders. At the same time, the Group focuses on integrating compliance with innovation, continuously optimizing management mechanisms, and promoting transparent, fair, and efficient governance.

集團的重大決策由董事會負責，董事會由九名成員組成，其中包括四名獨立非執行董事。董事會的主要職能是審議和批准公司戰略，審查內部控制制度和運營合規性。我們定期召開董事會會議，確保透明決策，保障董事充分表達意見，並對管理層實施有效監督。2024年，董事會新增一位女性獨立董事，提升性別多樣性和決策維度，獨立董事比例從八分之三提升至九分之四，進一步強化了對管理層的監督，有助於平衡管理層與股東的利益，推動公司可持續發展。

The Board of Directors is responsible for making major decisions for the Group. It consists of nine members, including four independent non-executive directors. The main functions of the Board include reviewing and approving the company's strategy, assessing the internal control systems, and ensuring operational compliance. We hold regular Board meetings to ensure transparent decision-making, allowing directors to express their opinions fully and effectively supervise the management team. In 2024, the Board appointed a female independent director to enhance gender diversity and decision-making dimensions, raising the proportion of independent directors from 3 out of 8 to 4 out of 9, further strengthening the oversight of management and balancing the interests of management and shareholders, thus promoting the Company's sustainable development.

董事會下設審核委員會、提名委員會和薪酬委員會。審核委員會負責審閱財務數據，監督風險管理措施和內部控制系統，並提供關於獨立外聘核數師的建議。提名委員會負責評估董事會結構，制定董事選任標準、分析培訓需求，確保領導力持續發展。

The Board has established an Audit Committee, a Nomination Committee, and a Remuneration Committee. The Audit Committee is responsible for reviewing financial information, overseeing risk management measures, and providing advice on the appointment of independent external auditors. The Nomination Committee evaluates the Board's structure, formulates director appointment standards, and assesses training needs to ensure the continued development of leadership.

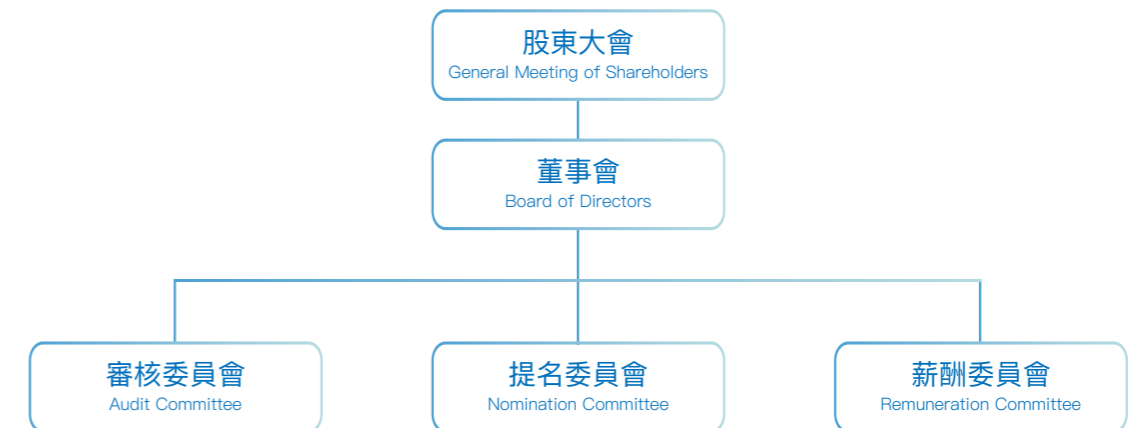
薪酬委員會負責制定和審查董事及高級管理人員的薪酬政策，確保薪酬安排公平合理，並對非執行董事薪酬及股票計畫相關事務提供建議。

The Remuneration Committee is responsible for formulating and reviewing the remuneration policies for directors and senior management, ensuring that compensation arrangements are fair and reasonable, and advising on matters related to the remuneration of non-executive directors and stock option plans.

為確保法律合規，集團聘請專業法律顧問，並設立內控法務中心和審計監察中心，即時監督經營決策和內控制度。集團還制定了嚴格的信息披露制度，通過合規披露定期報告和不定期公告，保障股東的合法權益。

To ensure legal compliance, the Group employs professional legal advisors and has established an Internal Control and Legal Affairs Center and an Audit and Supervision Center to monitor operational decisions and internal control systems in real time. The Group also has a strict information disclosure system in place, ensuring the regular disclosure of reports and ad-hoc announcements to protect shareholders' legitimate rights.

### 組織架構 Organizational Structure



### 董事會構成 Board Composition



- 執行董事 Executive Director
- 獨立非執行董事 Independent Non-Executive Director



- 男性 Male
- 女性 Female

■ 合規管理 Compliance Management

全年會議召開情況  
Meetings held throughout the year

會議名稱 Name of the Meeting	召開次數 Number of Meetings
董事會 Board Meeting	4 次 times
股東大會 General Shareholders' Meeting	1 次 times

全年信息披露情況  
Annual Information Disclosure Status

2023 年年度報告 1 份 2023 Annual Report	內幕消息公告 4 份 4 Inside Information Announcements
2023 年 ESG 報告 1 份 2023 ESG Report	海外監管公告 7 份 7 Overseas Regulatory Announcements
2024 年中期報告 1 份 2024 Interim Report	

風險管理與控制 Risk Management and Control

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團高度重視內部控制及風險管理。根據《中華人民共和國公司法》，國家審計署、省、市發佈的《關於內部審計工作的規定》，中國內部審計協會發佈的《內部審計基本準則》和《內部審計具體準則》等法律和規範性檔，結合本集團實際情況，我們制定了《全面風險管理制度》，確保公司經營管理活動健康進行，增強企業競爭力，提高投資回報，促進企業持續、健康、穩定發展，規避和減少風險可能造成的損失。集團各地的子公司、業務部門均嚴格遵循相關規定，將風險管理納入日常運營，制定全面的風險清單，並實施相應的應對措施，以保護公司和利益相關方的利益。

The Group places great importance on internal control and risk management. In accordance with the Company Law of the People's Republic of China, the Regulations on Internal Audit Work issued by the National Audit Office, provincial and municipal authorities, as well as the Basic Standards for Internal Auditing and Specific Standards for Internal Auditing issued by the China Institute of Internal Audit, we have developed a Comprehensive Risk Management System tailored to the Group's actual operations. This system ensures the healthy conduct of business activities, enhances corporate competitiveness, improves investment returns, and promotes sustainable, healthy, and stable development while mitigating and minimizing potential losses caused by risks. All subsidiaries and business units across the Group strictly adhere to the relevant regulations, integrating risk management into daily operations. They establish comprehensive risk inventories and implement corresponding response measures to safeguard the interests of the Company and its stakeholders.

本集團設立了獨立審計部門——審計監察中心，制定了《審計制度》和《監察管理制度》，明確了審計程式和作業流程。審計監察中心獨立開展集團內部的經營管理審計、專項審計等工作，不受任何其他部門的幹預和限制。

The Group has established an independent audit department—the Audit and Supervision Center—and formulated the Audit System and Supervision Management System, which define the audit procedures and operational workflows. The Audit and Supervision Center conducts internal operational and management audits, as well as special audits, independently within the Group, without interference or restrictions from any other department.

本集團建立健全風險管理組織體系，建立風險管理三道防線，以實現許可權分明、有效制衡、分級管理的全面風險管理組織體系：

Furthermore, the Group has established a comprehensive risk management organizational system, creating three lines of defense to achieve clear authority, effective checks and balances, and hierarchical management in its risk management framework:

## 01 第一道防線 First Line of Defense

集團事業部 / 各部門及下屬單位作為風險責任部門。負責具體風險的管理，接受公司風險管理職能部門的組織、協調，報集團風險管理職能部門備案。

The business units, departments, and subsidiaries of the Group act as the risk responsibility departments. They are responsible for the management of specific risks and are subject to the organization and coordination of the Group's risk management functional department, with reports submitted for record to the Group's risk management department.

## 02 第二道防線 Second Line of Defense

集團風險管理職能部門和風險管理委員會。風控管理中心為風險管理的主要職能部門，風險管理委員會由事業部 / 各部門及下屬單位負責人組成。

The Group's risk management functional department and the Risk Management Committee. The Risk Management Center is the primary functional department for risk management, and the Risk Management Committee is composed of the heads of business units, departments, and subsidiaries.

## 03 第三道防線 Third Line of Defense

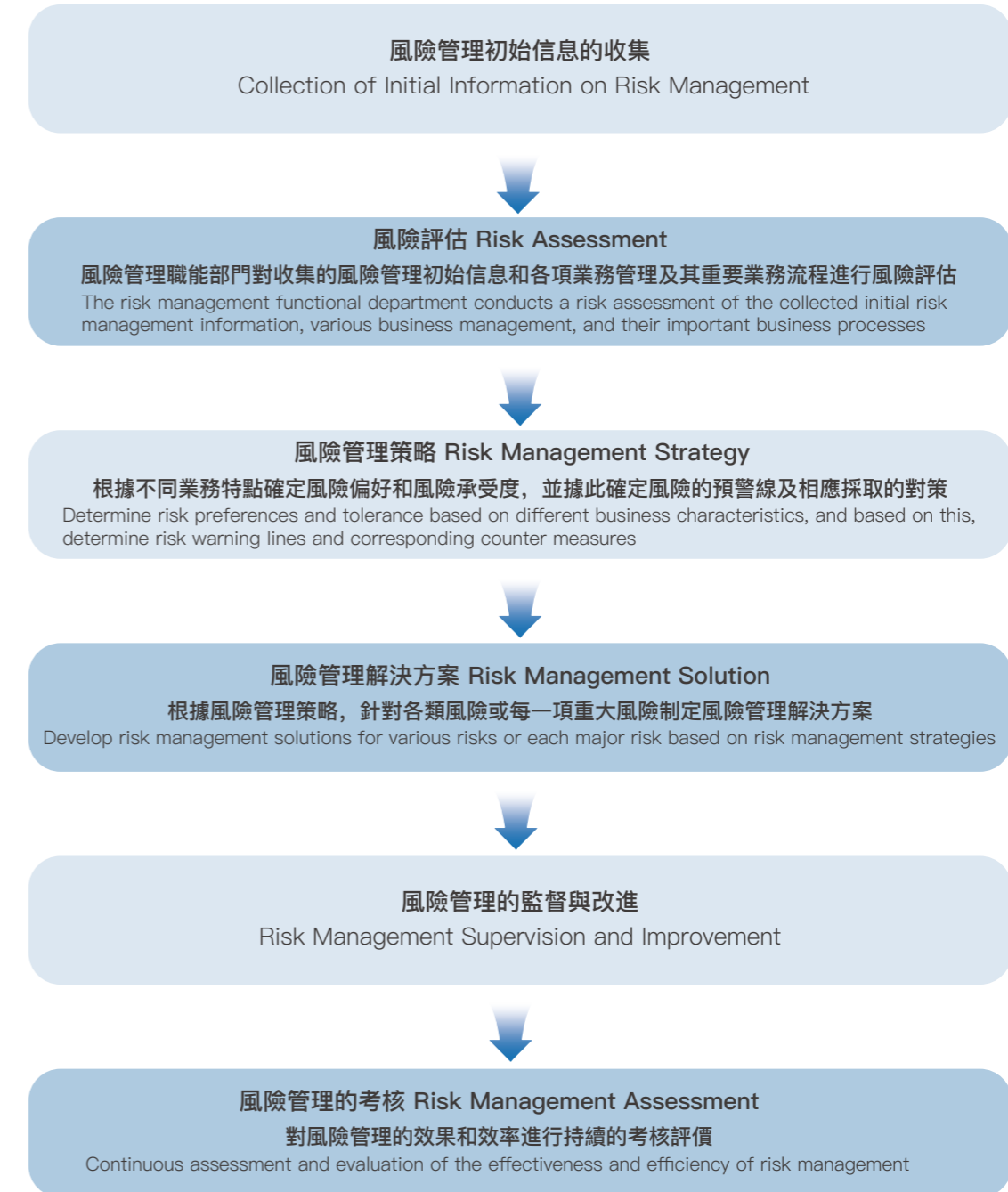
集團內部審計部門和審計監察委員會。審計部門負責研究提出全面風險管理監督評價體系，並至少每年一次按照有關規定開展風險管理工作及工作效果進行監督評價，出具監督評價審計報告。審計監察委員會負責對全面風險管理監督評價體系的審核並對監督評價報告提出改進建議。

The Group's internal audit department and the Audit and Supervision Committee. The audit department is responsible for researching and proposing the comprehensive risk management supervision and evaluation system. At least once a year, it conducts supervision and evaluation of the effectiveness of risk management and the corresponding work, providing an audit report on the supervision and evaluation. The Audit and Supervision Committee is responsible for reviewing the comprehensive risk management supervision and evaluation system and offering suggestions for improvement based on the evaluation report.



本集團風險識別及評估管理流程如下：

The Group's risk identification and assessment management process is described below.



報告期內，本集團持續推進風險管理工作，每年出具全面風險管理報告，並設立內控管理部門，制定《內部控制管理制度》和《內部控制評價管理制度》。我們定期開展風險識別、分析與評估，制定風險管控策略，並於 2023 年發佈《內控管理手冊》，進一步加強內控體系建設，識別主要風險及其關鍵控制措施。

內控管理部門負責組織風險管理相關培訓，通過培訓班、研討會等形式普及風險管理知識，提升風險意識。這些培訓覆蓋集團及下屬單位的業務和決策過程，有助於促進風險文化建設，提升公司風險管理水平及員工素質，保障管理目標的實現。

此外，本集團聘請德勤•關黃陳方會計師行提供審計服務，外部審計結果直接向董事會報告，有效加強內部風險管控，避免違法違規現象發生。

During the reporting period, the Group continued to advance its risk management efforts by issuing an annual comprehensive risk management report. The Group has established an internal control management department and developed the "Internal Control Management System" and the "Internal Control Evaluation Management System." We regularly conduct risk identification, analysis, and assessment, and formulate risk control strategies. In 2023, we released the "Internal Control Management Manual" to further strengthen the internal control system, identify key risks, and establish critical control measures.

The internal control management department is responsible for organizing risk management-related training, which includes training sessions and seminars to promote risk management knowledge and enhance risk awareness. These training programs cover the business and decision-making processes across the Group and its subsidiaries, helping to foster a risk culture, improve the company's risk management capabilities, and enhance employee quality, thereby ensuring the achievement of management objectives.

In addition, the Group has engaged Deloitte Touche Tohmatsu to provide audit services. The external audit results are directly reported to the Board of Directors, effectively strengthening internal risk control and preventing legal and regulatory violations.

## 信息安全與隱私保障 Information Security and Privacy Protection

本集團致力於建立一個全面的數字化安全框架，構建完善的信息安全管理體系，以保障核心業務的穩健發展和信息資產的安全性。通過董事會的戰略領導、信息安全小組的組織協調以及管理者代表的具體實施，現已形成了職責明確、層次清晰的管理架構：

The Group is committed to establishing a comprehensive digital security framework and developing a robust information security management system to ensure the stable development of core business operations and the security of information assets. Through strategic leadership from the Board of Directors, organizational coordination by the Information Security Team, and specific implementation by management representatives, a clearly defined and hierarchical management structure has been established.

管理層級 Management Level	定位 Positioning	主要職責 Key Responsibilities
董事會 Board of Directors	信息安全戰略決策者 Information Security Strategic Decision-Maker	<ul style="list-style-type: none"> <li><b>制定方針與目標：</b>制定並批准信息安全管理方針、目標及計畫，確保與公司發展方向一致。</li> <li><b>資源保障：</b>提供信息安全管理體系 (ISMS) 所需資源，支援員工培訓與賦權。</li> <li><b>任命負責人：</b>指定管理者代表，推動信息安全體系的實施與優化。</li> <li><b>風險管理：</b>確定信息安全風險可接受水準，平衡安全保障與業務發展。</li> <li><b>審批與監督：</b>批准信息安全手冊與評審計畫，監督體系有效運行。</li> </ul> <ul style="list-style-type: none"> <li><b>Formulating Policies and Objectives:</b> Establish and approve information security management policies, objectives, and plans to ensure alignment with the company's development direction.</li> <li><b>Resource Assurance:</b> Provide necessary resources for the Information Security Management System (ISMS) and support employee training and empowerment.</li> <li><b>Appointment of Responsible Personnel:</b> Designate a management representative to drive the implementation and optimization of the information security system.</li> <li><b>Risk Management:</b> Determine acceptable levels of information security risk, balancing security assurance with business development.</li> <li><b>Approval and Supervision:</b> Approve the information security manual and review plans while overseeing the effective operation of the system.</li> </ul>
信息安全小組 Information Security Committee	信息安全最高組織機構 Highest Information Security Organization	<ul style="list-style-type: none"> <li><b>戰略決策：</b>決策網絡與信息安全重大事項，明確管理方向。</li> <li><b>統籌協調：</b>協調跨部門信息安全管理，優化資源配置，提高效率。</li> <li><b>全面負責：</b>規劃、監督信息安全體系運行與改進，全面負責公司信息安全工作。</li> </ul> <ul style="list-style-type: none"> <li><b>Strategic Decision-Making:</b> Make decisions on major network and information security matters, defining the overall management direction.</li> <li><b>Overall Coordination:</b> Coordinate cross-departmental information security management, optimize resource allocation, and improve efficiency.</li> <li><b>Comprehensive Responsibility:</b> Plan and supervise the operation and improvement of the information security system, taking full responsibility for the company's information security.</li> </ul>
管理者代表 Management Representative	信息安全實施責任人 Information Security Implementation Responsible Person	<ul style="list-style-type: none"> <li><b>體系建設：</b>建立、實施、檢查和改進信息安全管理體系，確保合規高效。</li> <li><b>資源支援：</b>提供資源支援，確保員工培訓和職責範圍內的自主權。</li> </ul> <ul style="list-style-type: none"> <li><b>System Development:</b> Establish, implement, monitor, and enhance the information security management system to ensure compliance and efficiency.</li> <li><b>Resource Support:</b> Provide necessary resources to ensure employee training and autonomy within their responsibilities.</li> </ul>

通過董事會、信息安全小組及管理者代表的協作，本集團建立了高效的信息安全管理體系。該體系確保信息安全工作的全面覆蓋，同時具備靈活性與適應性，為客戶、合作夥伴及利益相關方提供可信賴的安全保障。集團各職能部門在體系建設、網絡與系統安全維護、數據保護、風險監控和合規管理等方面承擔了關鍵責任，並通過強化員工安全意識、優化流程、保障供應鏈及辦公區域安全，形成覆蓋全流程的管理體系，有效保護信息資產和業務安全。這一體系明確分工協作，為信息安全的持續改進奠定基礎。

Through collaboration between the Board of Directors, the Information Security Committee, and management representatives, the Group has established an efficient information security management system. This system ensures comprehensive coverage of information security efforts while maintaining flexibility and adaptability, providing reliable security protection for customers, partners, and stakeholders. Various functional departments within the Group are responsible for key areas including system construction, network and system security maintenance, data protection, risk monitoring, and compliance management. By enhancing employee security awareness, optimizing processes, and ensuring the safety of the supply chain and office environments, a full-process management system has been created to effectively protect information assets and business security. This system ensures clear division of labor and cooperation, laying the foundation for continuous improvement in information security.



集團在信息安全方面做出的努力不僅保障業務穩定發展，還為利益相關方提供透明的數字化環境，推動信息安全與隱私保護符合國際標準，增強社會信任。集團已全面導入 ISO27001 信息安全體系認證，建立解密管理、系統運行和網絡安全管理等全面制度，覆蓋網絡安全、數據保護和隱私保護領域，並強化網絡防護與邊界安全措施，有效抵禦網絡威脅。

為提升員工的信息安全意識，各職能部門定期組織信息安全培訓，由專業團隊向全體員工宣貫最新制度和最佳實踐。在數據安全方面，採取分類分級管控、數據加密及流程審批等措施，並建立後臺監控系統，及時發現和應對數據解密異常，形成堅實的信息安全防線，有效維護商業秘密。

針對信息安全事故，本集團採用閉環處理模式，制定相關制度提供指導。我們積極回應國家信息安全要求，監控大型會議，確保保密要求落實。在商業秘密管理方面，引入內部軟體監控，定期開展協力廠商攻防演練，進一步提升機密保護水準。在信息系統上線前，集團進行嚴格的信息安全測試，確保系統穩定性與安全性。這些舉措共同構築了全面可靠的信息安全體系，保障公司信息資源的安全穩定運行。

The Group's efforts in information security not only safeguard stable business development but also provide stakeholders with a transparent digital environment. The Group is committed to aligning its information security and privacy protection efforts with international standards, thereby strengthening social trust. The Group has fully implemented ISO 27001 information security system certification and established comprehensive policies covering decryption management, system operations, and network security management. These policies cover network security, data protection, and privacy protection, while reinforcing network defense and boundary security measures to effectively counter network threats.

To enhance employees' awareness of information security, each functional department regularly organizes information security training sessions, where a professional team communicates the latest policies and best practices to all employees. In terms of data security, measures such as classification and tiered management, data encryption, and process approval are implemented. Additionally, a backend monitoring system has been established to promptly detect and address any data decryption anomalies, forming a solid information security defense line to effectively protect trade secrets.

In response to information security incidents, the Group adopts a closed-loop handling model and has established relevant policies to provide guidance. We actively comply with national information security requirements, monitoring major meetings to ensure confidentiality requirements are met. For commercial secret management, internal software monitoring has been introduced, and third-party attack and defense exercises are regularly conducted to further enhance the protection of confidential information. Before the launch of any information system, the Group conducts rigorous information security tests to ensure the system's stability and security. These measures collectively build a comprehensive and reliable information security system, ensuring the secure and stable operation of the company's information resources.

## 反腐敗與商業道德 Anti-Corruption and Business Ethics

### ■ 廉潔反貪污 Integrity and Anti-Corruption

本集團致力於打造透明、公正的商業環境，嚴防腐敗行為，始終高度重視反商業賄賂和反貪污工作，建立完善的治理架構、合規體系和教育培訓機制，確保廉潔運營，提升利益相關方信任。

為實現廉潔目標，集團制定並實施了《員工紅線管理制度》《敏感崗位輪崗管理辦法》《舉報獎勵制度》《採購廉潔管理辦法》等關鍵政策，明確要求員工和合作夥伴遵守行為準則，禁止賄賂、回扣和利益衝突。集團還制定了利益衝突管理制度，覆蓋採購、供應商及市場銷售等環節，完善約束機制，對商業夥伴實施全方位監督，並簽署超過三萬份《廉潔協議》。通過供應鏈廉潔協議，保障價值鏈的廉潔性和合規性。

同時，本集團在總部、駐外辦事機構及各生產基地設立舉報信箱，並廣泛張貼舉報渠道信息，方便員工和合作夥伴反映問題。同時，開通 24 小時舉報熱線和線上舉報平臺，確保問題得到及時處理。舉報人可選擇匿名或實名方式，公司對舉報人提供保護和鼓勵，並堅決打擊腐敗行為。

本集團深知文化對於廉潔建設的重要性，將清廉文化融入企業文化體系和核心價值觀體系，融入企業發展、家庭家教家風建設和員工個人發展，同時加強清廉文化宣傳陣地建設，營造清廉文化氛圍。在集團內部積極評選天能文化大使、天能奮鬥者、清廉履職者等先進典型，傳播和踐行天能廉潔文化；落實利益衝突申報管理，組織中高管簽訂《廉潔從業承諾書》，供應商簽訂《廉潔合作承諾書》；天能大學常設廉潔課程，2024 年已組織開展 80 余場廉潔教育培訓，包括黨日活動、警示片觀看及專題培訓，邀請公安機關

The Group is committed to building a transparent and fair business environment and strictly preventing corruption. The Group has always attached great importance to anti-bribery and anti-corruption work, and has established a comprehensive governance structure, compliance system and education and training mechanism to ensure clean operations and enhance the trust of our stakeholders.

In order to achieve its integrity objectives, the Group has formulated and implemented key policies such as the "Employee Red Line Management System", "Sensitive Position Rotation Management Rules", "Whistle-blowing Reward System" and "Procurement Integrity Management Rules", which clearly require employees and partners to abide by the Code of Conduct, and prohibit bribery, kickbacks and conflicts of interest. The Group has also formulated a conflict-of-interest management system covering procurement, suppliers and marketing and sales, perfected the restraining mechanism, exercised all-round supervision over its business partners, and signed more than 30,000 Integrity Agreements. More than 30,000 Integrity Agreements have been signed. Through the Supply Chain Integrity Agreements, the integrity and compliance of the value chain are safeguarded.

At the same time, the Group has set up reporting mailboxes at its headquarters, overseas offices and production bases, and widely posted information on reporting channels to facilitate the reflection of problems by employees and partners. Meanwhile, a 24-hour reporting hotline and an online reporting platform have been opened to ensure that problems are handled in a timely manner. Whistleblowers can choose to report anonymously or in real names. The Company provides protection and encouragement to whistleblowers and is determined to combat corruption.

The Group is fully aware of the importance of culture in the construction of integrity, and has integrated the culture of integrity into its corporate culture system and core values, as well as into the development of the enterprise, family tutelage and ethos, and the personal development of its employees, and has also strengthened the construction of publicity venues for the culture of integrity, so as to create an atmosphere of the culture of integrity. Within the Group, the Group actively selects Tianneng Culture Ambassadors, Tianneng Endeavourers, Clean Performers and other advanced models to spread and practice Tianneng's culture of cleanliness; implements the management of declaration of conflict of interest, and organizes middle and senior executives to sign the "Commitment to Clean Practices", and suppliers to sign the "Commitment to Clean Cooperation"; the Tianneng Learning Center always provides clean courses, and in 2024, it has already organized and carried out more than 80 training sessions for

進行現場執法展示，並製作警示專題片，營造了濃厚的廉潔文化氛圍；連續開展家屬聯誼、表彰和員工走訪、慰問等關愛暖心舉措，充分發揮天能文化的引領作用，強化員工的廉潔從業意識和行動自覺，為集團的高質量可持續發展提供了堅強的思想保證和強大的精神動力。

2024 年，審計監察中心開展經營管理、離任、項目等審計 36 次，輸出審計報告 30 多份，提出 200 餘條改進建議，整改完成率達 98%。同時開展綜合管理巡視 16 場次，工程巡查 7 場，發出 17 份監察建議和整改通知書，查辦違規案件 101 起，其中刑事案件 10 起，處罰供應商 62 家次。集團積極推動廉潔文化建設，通過組織警示教育活動、加強制度建設和優化內控流程，營造「不敢腐、不能腐、不想腐」的文化氛圍。舉報平臺和審計監察機制的持續優化，不僅增強了監督實效，也推動全體員工與合作夥伴共同維護企業清廉風氣，為集團高質量可持續發展提供堅實保障。

cleanliness education, including party activities, watching of warning films and thematic training, and inviting public security officers to participate in the training programs. Tianneng University has organized 85 training sessions on integrity education in 2024, including party day activities, warning film viewings and thematic training, inviting public security authorities to conduct on-site law enforcement demonstrations, and producing thematic warning films, thus creating a strong atmosphere of a clean culture. Tianneng has also continuously carried out caring and warning measures, such as family reunions, commendations, and visits to and sympathy for its employees, which have given full play to the leading role of Tianneng's culture, reinforced its employees' awareness of clean practices and their self-consciousness of their actions, and provided a firm ideological guarantee and strong spiritual impetus for the Group's sustainable development in terms of both quality and quantity. The Group's high quality and sustainable development has been provided with a strong ideological guarantee and strong spiritual impetus.

In 2024, the Audit and Supervision Center conducted 36 audits on operation and management, termination of office, and projects, outputting more than 30 audit reports and putting forward more than 200 recommendations for improvement, with the completion rate of rectification reaching 98%. At the same time, the Group conducted 16 comprehensive management inspections and 7 project inspections, issued 17 monitoring recommendations and rectification notices, investigated 101 cases of non-compliance, including 10 criminal cases, and penalized 62 suppliers. The Group actively promoted the development of a clean culture by organizing educational activities, strengthening system construction and optimizing internal control processes to create a cultural atmosphere in which the Group does not dare to corrupt, cannot corrupt and does not want to corrupt. The continuous optimization of the reporting platform and the audit and monitoring mechanism not only enhanced the effectiveness of supervision, but also promoted the joint efforts of all employees and partners in maintaining a clean corporate culture, providing solid protection for the Group's high-quality and sustainable development.

## ■ 反壟斷 Anti-Monopoly

依法合規經營是本集團發展壯大、行穩致遠的保障，為切實加強反壟斷合規管理，防範反壟斷合規風險，本集團根據《中華人民共和國反壟斷法》、《經營者反壟斷合規指南》、《浙江省企業競爭合規指引》等法律、合規指導檔，制定《反壟斷合規管理制度》。以預防和降低反壟斷合規風險為目的，開展包括制度制定、風險識別、風險應對、考核評價、合規培訓等管理活動。

Compliance with laws and regulations is the cornerstone of the Group's sustainable growth and long-term stability. In order to strengthen anti-monopoly compliance management and prevent related risks, the Group has formulated the Anti-Monopoly Compliance Management System based on the Anti-Monopoly Law of the People's Republic of China, the Anti-Monopoly Compliance Guidelines for Business Operators, and the Zhejiang Province Enterprise Competition Compliance Guidelines, among other relevant legal and regulatory documents. The system aims to prevent and reduce anti-monopoly compliance risks and includes management activities such as the formulation of policies, risk identification, risk response, performance evaluation, and compliance training. These efforts help ensure that the Group operates in accordance with anti-monopoly laws and promotes fair competition in the market.

## 知識產權 Intellectual Property

在創新和知識產權方面，本集團設有項目與知識產權管理部，專門負責政策研究、項目申報及知識產權管理工作，堅持不斷提高知識產權資產的數量和品質，通過合理的標準制定和專利佈局，建立起強大的競爭壁壘，從而提升企業的核心競爭力。

In the areas of innovation and intellectual property, the Group has established a dedicated Project and Intellectual Property Management Department, responsible for policy research, project declaration, and intellectual property management. The Group is committed to continuously enhancing the quantity and quality of its intellectual property assets, establishing strong competitive barriers through the formulation of reasonable standards and patent layout, thereby strengthening the Group's core competitiveness.

本集團致力於建設全面的資源庫。我們維護國家、省、市、縣各級的科技、發展改革、工業、質監、商務等各條線資源，並與高校、研究所、檢測機構、行業協會等保持良好的關係。著眼於未來，通過根據政策支援方向和公司發展戰略，謀劃新型儲能、動力電池、工業互聯網、現代服務業等項目，以推動企業的創新和發展。

The Group is focused on building a comprehensive resource library. We maintain relationships with national, provincial, municipal, and county-level resources in areas such as science and technology, development and reform, industry, quality supervision, and commerce. Additionally, we foster strong partnerships with universities, research institutions, testing agencies, and industry associations. Looking ahead, we align our strategies with policy support and corporate development plans to focus on projects such as new energy storage, power batteries, industrial internet, and modern services, with the aim of driving the Group's innovation and development.

報告期內，我們的努力取得了顯著成果，也充分展現了我們在創新方面的卓越表現。通過這些努力，我們將不斷鞏固和提升在創新和知識產權領域的領先地位，為公司的可持續發展和產業升級作出更大的貢獻。

During the reporting period, our efforts achieved significant results, fully demonstrating our excellence in innovation. Through these efforts, we will continue to consolidate and enhance our leading position in the fields of innovation and intellectual property, making greater contributions to the Group's sustainable development and industrial upgrading.

### 案例 Case

#### 案件查處 Case Investigation

2024 年 4 月，審計監察中心工作發現集團下屬某事業部人力資源部經理涉嫌存有違紀行為的線索，經調查，2021 年 2 月至 2023 年 3 月，其在擔任人力資源中心培訓專員期間，利用職務便利，在管理員工學歷提升和線上學習過程中，收取多家培訓機構、學校好處費。2024 年 4 月 7 日，當地公安局對其非國家工作人員受賄案予以立案調查，4 月 8 日，當地公安局對其採取刑事拘留，現被判緩刑 10 個月。

In April 2024, the Audit and Supervision Center discovered that the manager of the Human Resources Department of the Group's subordinate business division was suspected of committing disciplinary offences, and after investigation, from February 2021 to March 2023, while serving as the training commissioner of the Human Resources Center, he took advantage of the convenience of his position to receive fees from a number of training organizations and schools in the course of upgrading the qualifications of the management staff and online learning, and was granted a criminal detention by the local public security bureau on April 8, 2024 for accepting bribes by non-state employees. On April 7, 2024, the local Public Security Bureau opened an investigation into the case of accepting bribes by a non-state employee, and on April 8, the local Public Security Bureau placed him in criminal detention, and he was sentenced to 10 months' probation.

通過國家認定企業技術中心評價 Passed the evaluation of Nationally Recognized Enterprise Technology Center	3 家子公司 subsidiaries
國家級科技型中小企業認證 National Science and Technology-based Small and Medium-sized Enterprises (SMEs) Certification	1 家子公司 subsidiary
浙江省科技領軍企業認證 Zhejiang Province Science and Technology Leading Enterprise Certification	2 家子公司 subsidiaries
浙江先進未來技術創新成果 Zhejiang Advanced Future Technology Innovation Achievements	1 項 item
獲評浙江省高新技術企業研究開發中心 Recognized as the Zhejiang Province High-tech Enterprise Research and Development Center	1 家子公司 subsidiary
獲評浙江省科技型中小企業 Recognized as the Science and Technology-Based Small and Medium-Sized Enterprise in Zhejiang Province	3 家子公司 subsidiaries
獲評省級創新型中小企業 Recognized as the provincial Innovative Small and Medium-Sized Enterprise	3 家子公司 subsidiaries

截至 2024 年 12 月 31 日，集團共參與制定標準 265 項，4 項國際標準、104 項國家標準、51 項行業標準和 106 項團體標準。

As of December 31, 2024, the Group has participated in the formulation of 265 standards, including 4 international standards, 104 national standards, 51 industry standards, and 106 group standards.

## 文化建設 Cultural Development

### ► 中秋晚會 Mid-Autumn Festival Gala



今年 9 月，集團舉辦「奔赴熱愛·同夢同行」中秋聯誼活動，邀請部分幹部員工、家屬代表及共建單位新川村委班子成員參加，共賞中秋月，共敘團圓情。此次活動充分展現了天能家文化，將「小家庭」融入「大家庭」。未來，天能人將繼續攜手同行，共創美好生活，實現共同目標。

In September this year, the Group hosted the "Pursuing Passion · Dreaming Together" Mid-Autumn Festival Gathering, inviting selected employees, their family representatives, and members of the Xinchuan Village Committee to join in the celebration. Together, they appreciated the full moon and shared in the joy of reunion. This event fully showcased Tianneng's family culture, integrating the "small family" into the "big family." Moving forward, Tianneng people will continue to work hand in hand, striving for a better life and achieving common goals.

### ► 「五一」迎「五四」活動 Labor Day & Youth Day Commendation Conference



4 月，集團舉行禮贊奮鬥者·勇當主力軍——慶「五一」迎「五四」表彰大會，為廣大天能奮鬥者搭建了一個改革創新、人才賦能、實幹築夢的舞臺，為推動集團高品質可持續發展提供了堅實的文化支撐、人才支撐。

In April, the Group held the "Tribute to Strivers, Leading the Way"—Labor Day & Youth Day Commendation Conference, providing a platform for Tianneng's dedicated workforce to drive reform and innovation, talent empowerment, and practical achievements. This event served as a strong cultural and talent foundation to support the Group's high-quality and sustainable development.

截至 2024 年，本集團的專利情況如下所示：  
The Group's patents as of 2024 are shown below:



件  
items

本年已經授權專利 550 件  
Patents granted this year



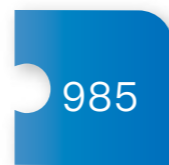
件  
items

其中：發明專利 162 件  
Where 104 patents for inventions



項  
items

累計擁有授權專利 5,825 項  
Accumulated 5,825 licensed patents



項  
items

其中：發明專利 985 項  
Where 985 patents for inventions

### 巾幗力量·綻放成長——慶祝三八婦女節 Empowering Women: Celebrating



3月，集團舉行「春暖三月·綻放她力量」婦女節主題活動，致敬每一位女性員工，展現天能巾幗風采，弘揚平等、尊重、關愛的價值觀。

In March, the Group hosted the "Blossoming in March · Celebrating Her Power" Women's Day themed event to honor every female employee, showcase the strength and spirit of Tianneng women, and promote the values of equality, respect, and care.

### 「羽你同行」羽毛球挑戰賽 Badminton Challenge: Playing Together, Soaring Higher



10月，集團「羽你同行」羽毛球社舉行了羽毛球挑戰賽活動，20余名參賽人員先後進行了挑戰賽及雙打對抗賽，享受了運動的樂趣，也增進了彼此的友誼。

In October, the Tianneng Badminton Club held the "Shuttle Together" Badminton Challenge. Over 20 participants competed in both challenge matches and doubles tournaments. The event not only provided an opportunity to enjoy the fun of sports but also fostered stronger friendships among the participants.

### 天跑團夜跑：奔跑點亮城市，激發健康活力 Tianneng Night Run: Energizing the City, Inspiring a Healthy Life



10月，集團天跑團舉行了夜跑活動，20多位天能跑步愛好者奔跑在城區的多個角落，用腳步丈量世界，傳遞健康生活的理念，激發無限活力。

In October, the Tianneng Running Team organized a night run, where over 20 Tianneng running enthusiasts ran through various corners of the city. This event embodied the philosophy of a healthy lifestyle, encouraging participants to measure the world with their steps and igniting boundless energy.

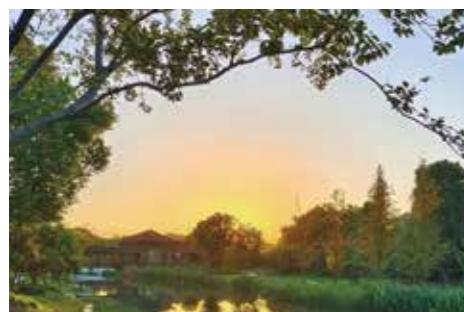
### 「秋光攝影·文學滾燙」學習交流 Autumn Photography & Literary Passion: Learning and Exchange Session



11月，集團春耕文學社舉行了「秋光攝影·文學滾燙」學習交流活動，社員們分享寫作心得、交流文學作品，不斷提升文化素養，豐富精神世界。

In November, the Tianneng Spring Plough Literature Club organized the "Autumn Light Photography & Literary Exchange" learning and exchange event. Club members shared writing insights and exchanged literary works, continuously enhancing their cultural literacy and enriching their spiritual world.

### 金秋十月·定格天能之美 Golden October: Capturing the Beauty of Tianneng



11月，集團春耕文學社舉行了「秋光攝影·文學滾燙」學習交流活動，社員們分享寫作心得、交流文學作品，不斷提升文化素養，豐富精神世界。

In November, the Tianneng Spring Plough Literature Club organized the "Autumn Light Photography & Literary Exchange" learning and exchange event. Club members shared writing insights and exchanged literary works, continuously enhancing their cultural literacy and enriching their spiritual world.

# 04



# Environment 環境



## 碳中和與能源轉型 Carbon Neutrality and Energy Transition

氣候風險管理 Climate Risk Management

能源管理 Energy Management

新型儲能 New Energy Storage

清潔能源推廣 Promotion of clean energy

## 資源節約與污染防控 Resource Conservation and Pollution Control

污染物管理 Pollutant Management

## 循環經濟與資源再生 Circular Economy and Resource Regeneration

# 環境 Environment

## 碳中和與能源轉型 Carbon Neutrality and Energy Transition

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



### ■ 氣候風險管理 Climate Risk Management

報告期內，中國商務部等五部門發佈了《推動電動自行車以舊換新實施方案》，提出對消費者交回老舊鋰離子蓄電池電動自行車並換購鉛酸蓄電池電動自行車可適當加大補貼力度。此外，中國工業和信息化部等五部門公佈了新修訂的《電動自行車安全技術規範》，將鉛蓄電池車型整車重量限值由 55kg 放寬至 63kg。政府出臺的一系列優惠補貼政策和行業規範標準，既體現了對鉛酸蓄電池電動自行車安全性和性價比的認可，也符合國家在電動自行車領域實施安全隱患整治的整體要求。

鉛酸蓄電池仍在電動自行車電池市場中佔據主導地位，其較高的安全性和較低的成本使其在廣大消費者中獲得了廣泛的青睞。鼓勵消費者換購鉛酸蓄電池電動自行車，符合電動自行車全鏈條安全整治的實際需求，體現了國家在推動綠色出行的同時，注重安全導向的原則。

作為動力鉛酸蓄電池領域的行業領軍者，天能始終堅持以技術創新、產品研發和服務反覆運算為驅動，推動產品的持續優化與創新。公司在鉛酸蓄電池技術上的積累與突破，穩步引領行業的發展，致力於為消費者提供更加安全、環保、可靠的綠色出行解決方案，同時在綠色產業發展中發揮積極作用。

During the reporting period, the Ministry of Commerce of China, along with five other departments, issued the "Implementation Plan for Promoting the Trade-In of Electric Bicycles." The plan proposes that consumers who return old lithium-ion battery electric bicycles in exchange for lead-acid battery electric bicycles may receive enhanced subsidies. In addition, the Ministry of Industry and Information Technology, along with five other departments, published the newly revised "Safety Technical Specifications for Electric Bicycles," which relaxes the weight limit for lead-acid battery electric bicycle models from 55kg to 63kg. The series of preferential subsidy policies and industry standards introduced by the government not only reflect recognition of the safety and cost-effectiveness of lead-acid battery electric bicycles but also align with the national goal of addressing safety hazards in the electric bicycle sector.

Lead-acid batteries continue to dominate the electric bicycle battery market due to their higher safety and lower cost, which have made them widely favored by consumers. Encouraging consumers to switch to lead-acid battery electric bicycles meets the practical needs of safety improvements across the entire electric bicycle value chain and reflects the country's principle of promoting green transportation while prioritizing safety.

As an industry leader in the field of lead-acid batteries, Tianneng has always driven the continuous optimization and innovation of its products through technological innovation, product development, and service iteration. The company's accumulation and breakthroughs in lead-acid battery technology steadily lead the development of the industry, striving to provide consumers with safer, more environmentally friendly, and reliable green transportation solutions, while also playing an active role in the development of the green industry.

本集團 2024 年售出約 4.15 億只動力電池。按每組電池（4 只電池為一組）蓄電後可騎行 60 公里，每組電池可充放電 400 次計算，天能全年售出的電池累計行駛里程可達到 24,900 億公里。假設以 80% 代替摩托車里程，20% 代替轎車里程，那麼天能一年售出的電池代替摩托車里程部分為 19,920 億公里，代替汽車里程部分為 4,980 億公里。

在摩托車和轎車的使用過程中，主要的溫室氣體排放來源於汽油的使用，除去電動輕型車自身在行駛過程中產生的溫室氣體，經換算本集團一年售出的動力電池相當於減少了 448.2 萬噸一氧化碳和 18,774.6 萬噸二氧化碳的排放。

假設每公頃土地栽種松樹 1,000 棵，可實現每天吸收二氧化碳 1 噸，一年可吸收二氧化碳 365 噸。那麼本集團一年售出的電池所減少的二氧化碳排放，相當於種植 514,372.603 公頃的松樹林一年吸收的二氧化碳量，由於每公頃土地栽種松樹 1,000 棵，那麼本集團一年售出的電池減少的二氧化碳量相當於種植了約 5.14 億棵松樹。

The Group sold approximately 415 million motive batteries in 2023. Based on the calculation that each battery (4 batteries as a set) can last for 60 kilometers after storing electricity, and each battery can be charged and discharged for 400 times. The cumulative driving mileage of the batteries sold by Tianneng for the whole year can reach 2,490 billion kilometers. Assuming that 80% of motorcycle mileage is replaced and 20% of car mileage is replaced, then for the batteries sold by Tianneng in a year, the portion of motorcycle mileage replaced is 1,992 billion kilometers, the portion of car mileage replaced is 498 billion kilometers.

In the use of motorcycles and traditional cars, the main source of greenhouse gas emissions is the use of gasoline, excluding the greenhouse gases produced by the light electric vehicles themselves in the process of driving, the conversion of the Group's annual sales of motive batteries is equivalent to a reduction of 4.482 million tons of carbon monoxide and 18.746 million tons of carbon dioxide emissions.

Assuming that 1,000 pine trees are planted on each hectare of land, which can absorb 1 ton of carbon dioxide per day and 365 tons of carbon dioxide per year. Then the reduction of carbon dioxide emissions from the motive batteries sold by the Group in a year is equivalent to the amount of carbon dioxide absorbed by planting 514,372.603 hectares of pine forests in a year. Since 1,000 pine trees are planted on each hectare of land, the reduction of carbon dioxide emissions from the motive batteries sold by the Group in a year is equivalent to the planting of approximately 514 million pine trees.



本公司持續加強溫室氣體排放管理，推動低碳運營，並於報告期內針對下屬重要子公司開展溫室氣體排放排查工作，全面識別並統計範圍一及範圍二排放情況。經梳理，重要子公司於報告期內範圍一溫室氣體排放總量為 344,636 噸二氧化碳當量，主要來源於燃料燃燒產生以及工業過程的直接排放；範圍二溫室氣體排放總量為 1,908,055 噸二氧化碳當量，主要來源於生產經營活動中外購電力的間接排放。未來，本公司將繼續深化碳排放數據管理，強化重點排放單位的監測分析，為推進節能降耗、降碳減排奠定基礎，助力公司可持續發展。

The Group continues to strengthen the management of greenhouse gas emissions and promote low-carbon operations. During the reporting period, the Group carried out a comprehensive greenhouse gas emission assessment for its major subsidiaries to identify and quantify Scope 1 and Scope 2 emissions. Based on the review, the total Scope 1 greenhouse gas emissions of major subsidiaries during the reporting period amounted to 344,636 tonnes of carbon dioxide equivalent, primarily derived from direct emissions generated by fuel combustion and industrial processes. The total Scope 2 greenhouse gas emissions amounted to 1,908,055 tonnes of carbon dioxide equivalent, mainly attributable to indirect emissions from purchased electricity consumed in production and operation activities. Looking ahead, the Company will further enhance carbon emission data management, strengthen monitoring and analysis of key emission units, and lay a solid foundation for promoting energy conservation, carbon reduction, and supporting the Company's sustainable development.

## ■ 能源管理 Energy Management

本集團發佈《關於加強集團總部節能降耗管理的通知》《關於加快推進流程線上化和辦公無紙化的倡議》《集團總部關於回收印表機調配的公告》等公告，加強用電管理，抓實節水管理，推行共用印表機，減少一次性物品使用，並強化監督檢查。為了更好地管理和控制能源的使用，我們制定了能源管理控制程序，以確保能源的高效利用和節約。

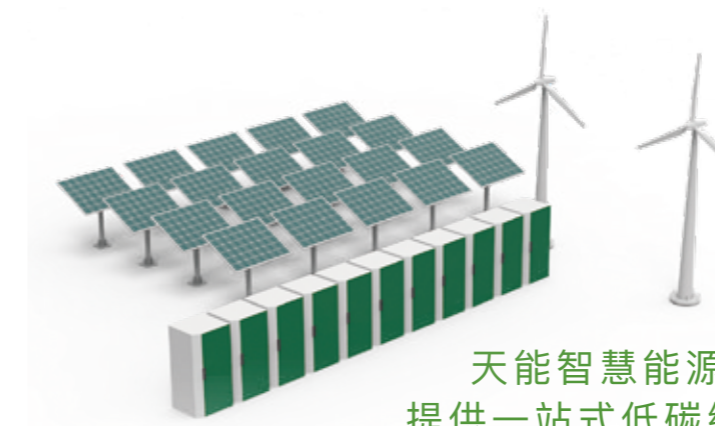
集團總部物業中心將組織牽頭聯合集團辦公室、審計監察中心、人力資源中心等部門定期開展能耗使用監督檢查，對不合規行為進行通報。旨在提高員工「節約就是效益」的意識，進一步降低經營成本和能耗消費，在公司經營範圍內最大限度的節能降耗，牢牢把握「雙碳」發展新機遇，全面構建綠色發展體系，驅動企業高品質發展，為能源轉型和綠色發展貢獻新的更大力量。

本集團全年能源消耗：  
Annual energy consumption of the Group:

	單位 Unit	2024 年 Year 2024
用電總量 Electricity Consumption	兆瓦時 MWh	3,507,302.28
外購用電總量 Total Purchased Electricity Consumption	兆瓦時 MWh	3,429,696.52
新能源發電總量 Total Photovoltaic Power Generation	兆瓦時 MWh	77,605.76
汽油消耗量 Gasoline Consumption	升 L	394,489.75
柴油消耗量 Diesel consumption	升 L	893,264.74
天然氣使用量 Natural Gas Consumption	立方米 m <sup>3</sup>	60,934,795.55
耗水總量 Total Water Consumption	萬立方米 10 thousand m <sup>3</sup>	906.31
製成品包裝材料的使用總量 Total Consumption of Packaging Materials for Finished Goods	噸 ton	26,400

The Group has issued announcements such as the "Notice on Strengthening Energy Conservation and Consumption Reduction Management at the Group Headquarters," the "Initiative to Accelerate the Online Transformation of Processes and Office Paperless Operations," and the "Announcement on Printer Allocation and Recycling at the Group Headquarters," aimed at strengthening electricity management, water conservation, promoting the use of shared printers, reducing disposable item usage, and enhancing supervision and inspection. To better manage and control energy usage, we have established an energy management control program to ensure the efficient use and conservation of energy.

The Property Center at the Group Headquarters will lead and collaborate with the Group Office, Audit and Supervision Center, Human Resources Center, and other departments to conduct regular energy consumption supervision inspections, and report any non-compliance. The aim is to raise employees' awareness that "saving is efficiency," further reducing operational costs and energy consumption, maximizing energy-saving and consumption-reduction efforts within the company's operational scope. This will firmly grasp new opportunities for the "dual carbon" development, comprehensively build a green development system, drive the high-quality development of the enterprise, and contribute new and greater power to energy transition and green development.



天能智慧能源以客戶為中心  
提供一站式低碳綠色電力解決方案

Tianneng Intelligent Energy provides customer-centered one-stop low-carbon green power solutions

我們已建成屋頂光伏項目約**99.23MW**  
We have successfully developed rooftop photovoltaic projects with a total capacity of approximately 99.23 MW

每年可產生**77,605.76MWh**綠電  
which can generate 77,605.76 MWh of green electricity annually

### 案例 Case

## 節約水資源，推動可持續發展 Conserve Water Resources and Promote Sustainable Development

為回應國家節水政策，踐行可持續發展理念，本集團持續優化生產過程中的水資源管理。通過改進污水處理工藝，下屬子公司大幅提升了廢水處理後的水質，使其達到工業回用水標準。處理後的中水通過水泵和管道系統循環輸送至充電車間的循環水池及車間衛生間，充分實現了水資源的再利用。2024年，該基地實現中水回用量超過180萬噸，不僅有效減少了非正常取水和排水現象，還顯著降低了生產運營成本，為資源節約型社會建設貢獻了力量。

In response to the national water conservation policy and in line with the principles of sustainable development, the Group has continuously optimized water resource management in the production process. By improving wastewater treatment processes, the subsidiary companies have significantly enhanced the water quality after treatment, meeting industrial reuse water standards. The treated water is then circulated through water pumps and pipeline systems to the recycling water pool in the charging workshop and the restrooms, fully realizing the reuse of water resources. In 2024, the base achieved a recycled water usage of over 1.8 million tons, which not only effectively reduced improper water extraction and discharge but also significantly lowered production and operational costs, contributing to the construction of a resource-conserving society.



改進污水處理工藝  
improving wastewater treatment processes

## ■ 新型儲能 New Energy Storage

本集團通過儲能業務，積極推動節能減排的目標。儲能系統能有效地平衡能源需求與供應，尤其是在可再生能源波動較大的情況下，儲能技術能確保能源的高效使用，減少能源浪費。這不僅有助於提高能源使用效率，還能大幅降低依賴傳統化石燃料發電的需求，從而減少碳排放。天能積極推進多條技術路線的深耕與創新，致力於提升產品的技術含量與市場競爭力。報告期內，成功達成了多項戰略合作，多個儲能項目相繼開工，部分已順利交付，為本集團在該領域的長期發展奠定了堅實的基礎。

The Group actively promotes energy conservation and emission reduction goals through its energy storage business. Energy storage systems effectively balance energy demand and supply, especially in situations where renewable energy sources are subject to fluctuations. Energy storage technology ensures efficient energy use and reduces energy waste. This not only helps improve energy efficiency but also significantly reduces the reliance on traditional fossil fuel-based power generation, thereby cutting carbon emissions. Tianneng actively advances multiple technical pathways with a focus on deepening and innovating, aiming to enhance product technology content and market competitiveness. During the reporting period, the Group successfully achieved multiple strategic partnerships, and several energy storage projects commenced, with some already successfully delivered, laying a solid foundation for the Group's long-term

### 案例 Case

#### 鉛炭梯次儲能系統

##### Lead-Carbon Ladder Energy Storage System

基於能源結構轉型的背景和可再生能源對儲能技術的需求，天能主導了鉛炭梯次儲能系統的建設。該項目使用了目前市場利用率低、消耗小的鉛炭梯次電池，推進鉛炭電池的全生命週期循環，減少了廢棄材料帶來的環境破壞、污染與二次污染，為梯次電池再利用提供完善的系統化方案。項目通過充電工藝調整、區域改造等方式，安全有效地延長二次換電後的電池循環壽命 30% 以上，釋放了車間產能，提高了生產效率，節省了人力成本，提高綜合效益。

Based on the background of energy structure transformation and the demand of renewable energy for energy storage technology, Tianneng led the construction of the lead carbon ladder energy storage system. The project uses lead-carbon gradient batteries, which are currently underutilized in the market and consume little energy, to promote the full life cycle of lead-carbon batteries, reduce the environmental damage, pollution and secondary pollution caused by waste materials, and provide a complete systematic solution for the reuse of gradient batteries. Through the charging process adjustment and area modification, the project can safely and effectively extend the battery cycle life by more than 30% after the secondary battery replacement, release the production capacity of the workshop, improve the production efficiency, save the labor cost, and improve the comprehensive benefits.

#### 馬鞍山儲能項目

##### Energy Storage Project in Maanshan City

2024 年 12 月，天能長興新能源鋰電製造基地順利完成馬鞍山 37.5MW/100.5MWh 用戶側儲能電站項目產品交付。此次交付涵蓋電芯、模組、插箱等核心產品，展現了天能在鋰電研發製造領域的自主創新實力與卓越品質。通過嚴格品質管控和流程優化，天能團隊以突破創新精神為客戶提供了高品質、可持續的儲能解決方案。

In December 2024, Tianneng's Changxing New Energy Lithium Battery Manufacturing Base successfully completed the product delivery for the Ma'anshan 37.5MW/100.5MWh customer-side energy storage station project. This delivery includes core products such as battery cells, modules, and box inserts, showcasing Tianneng's independent innovation capabilities and outstanding quality in the field of lithium battery R&D and manufacturing. Through stringent quality control and process optimization, the Tianneng team provided high-quality, sustainable energy storage solutions to customers with a spirit of breakthrough innovation.

#### 天能攜明星產品亮相上海儲能展 Star Products at Shanghai Energy Storage Expo

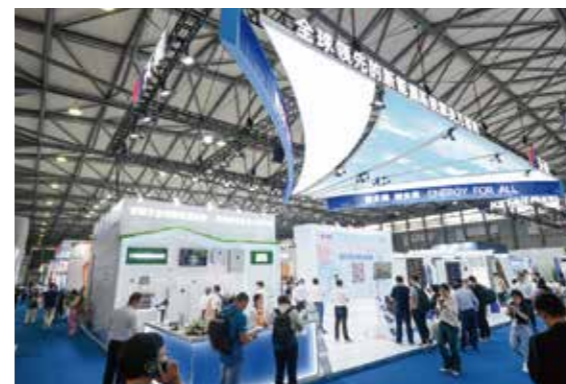
本集團於第九屆國際儲能和電池技術及裝備（上海）大會暨展覽會上展示了 314Ah 電芯、5MWh 電池櫃、372kWh 液冷工商業儲能系統、戶用儲能櫃在內的多款產品及天樞智慧能源雲平臺，吸引了參觀者頻頻駐足。天能通過技術融合、場景覆蓋、生態構建等手段，提供全面的技術、產品和解決方案，以科技創新引領儲能行業新發展。

At the 9th International Energy Storage and Battery Technology & Equipment (Shanghai) Conference and Exhibition, the Group showcased a variety of products, including the 314Ah battery cell, 5MWh battery cabinet, 372kWh liquid-cooled commercial and industrial energy storage system, and residential energy storage cabinet, as well as the Tianneng Smart Energy Cloud Platform. These attracted frequent attention from visitors. Through technological integration, scenario coverage, and ecosystem building, Tianneng offers comprehensive technologies, products, and solutions, leading the development of the energy storage industry through innovation.

#### 天能上榜「年度儲能電池十大品牌」 The "Top 10 Energy Storage Battery Brands of the Year"

近日，由國際能源網並國能能源研究院聯合主辦的新能源產業年會舉行，天能獲得「年度儲能電池十大品牌」。今年，天能打造「多技術、全場景、全生態」安全儲能解決方案，發佈升級版 314Ah 電芯、「鈉儲一號」NFPP 聚陰離子系鈉電池、OPzV-1000 閥控膠體固態鉛炭電池等多路線產品，推出 5MWh 電池櫃、372kWh 液冷工商業儲能系統，獲得社會各界高度認可。

At the annual meeting of the new energy industry jointly organized by the International Energy Network and the National Energy Research Institute. This year, Tianneng has created a "multi-technology, all-scene, all-ecology" safe energy storage solution, released the upgraded 314Ah battery cell, "Sodium Storage No. 1" NFPP polyanion sodium battery, OPzV-1000 valve-regulated colloidal solid lead-carbon battery and other products, and launched the 5MWh solid lead-carbon battery. The Company also launched 5MWh battery compartment and 372kWh liquid-cooled industrial and commercial energy storage system, which were highly recognized by all walks of life.



本集團參加儲能展會  
The Group participates in energy storage exhibitions



天能上榜「年度儲能電池十大品牌」  
Lead-Carbon Ladder Energy Storage System



案例 Case

## 首個農光互補光伏配儲項目 The First Agrivoltaic Energy Storage Project

本集團作為 EPC 總承包商，啟動位於浙江省的 28 兆瓦農光互補光伏發電配儲項目。項目採用“板上發電、板下種植”模式，結合光伏發電與農業生產，提升土地利用效率。項目總裝機容量 28MW，配套儲能 3MW/5.6MWh，占地約 620 畝，預計下半年並網發電。建成後，年均上網電量達 2844.72 萬千瓦時，年節約標準煤約 3422.19 噸，實現經濟、社會與環境效益共贏。

As the EPC contractor, the Group has launched a 28 MW agrivoltaic energy storage project in Zhejiang Province. The project adopts a “power generation above, farming below” model, integrating photovoltaic power generation with agricultural production to enhance land utilization. With a total installed capacity of 28 MW and a supporting energy storage system of 3 MW/5.6 MWh, the project covers approximately 620 acres and is expected to be connected to the grid in the second half of the year. Upon completion, it will generate an average annual grid-connected electricity of 28.4472 million kWh, save about 3,422.19 tons of standard coal annually, and achieve economic, social, and environmental benefits.



首個農光互補光伏配儲項目  
The First Agrivoltaic Energy Storage Project

## 嘉興平湖儲能項目 Energy Storage Project in Pinghu, Jiaxing City

2024 年 9 月，天能平湖智慧零碳綜合能源項目正式開工。項目整合當地新能源資源，打造集“綠儲、綠廠、綠源、綠穀、綠網”於一體的綠色能源系統，為全國智慧零碳能源建設提供示範。一期將投資建設 120MW/240MWh 電網側獨立儲能電站，通過參與調峰輔助服務，緩解電網壓力，助力區域可持續發展。

In September 2024, Tianneng's Pinghu Smart Zero-Carbon Integrated Energy Project officially commenced construction. The project integrates local new energy resources to create a green energy system encompassing “green storage, green manufacturing, green energy sources, green valleys, and green networks,” serving as a demonstration for nationwide smart zero-carbon energy development. The first phase will invest in the construction of a 120MW/240MWh grid-side independent energy storage station, which will participate in peak-shaving auxiliary services to alleviate grid pressure and support regional sustainable development.



嘉興平湖儲能項目  
Energy Storage Project in Pinghu, Jiaxing City

## 清潔能源推廣 Promotion of clean energy

氫能源的使用將在全球範圍內產生積極的環境影響，為可持續發展和地球環境的改善提供有效的解決方案。通過推動氫能源的發展，我們有望迎來更清潔、更綠色的未來。

The use of hydrogen energy will have a significant positive environmental impact on a global scale, providing an effective solution for sustainable development and environmental improvement. By advancing hydrogen energy development, we are paving the way for a cleaner and greener future.

本集團積極響應國家號召，致力於構建氫能產業閉環應用場景，加速推動「雙碳」目標的實現。本集團的氫能燃料電池產品廣泛應用於交通、工程機械、能源等領域現已掌握系統、電堆、雙極板、膜電極以及關鍵材料等關鍵技術，技術研發推陳出新，全年申報專利 50 件，其中發明專利 30 件，參與行業標準制定 7 件，技術成果顯著。

The Group actively responds to national initiatives by committing to the establishment of a closed-loop hydrogen energy application ecosystem, accelerating the achievement of the “dual carbon” goals. Our hydrogen fuel cell products are widely applied in transportation, engineering machinery, and energy sectors. The Group has mastered key technologies in fuel cell systems, stacks, bipolar plates, membrane electrodes, and critical materials, driving continuous technological innovation. Over the year, we filed 50 patent applications, including 30 invention patents, and participated in the formulation of seven industry standards, achieving remarkable technological advancements.

膜電極產品成功應用於工程機械、電站等產品，標誌著繼系統產品後，核心零部件向產業化邁入了重要一步。自研的兩款氫燃料電池系統和一款石墨板電堆已具備裝車條件。其中，搭載 80kW 氫燃料電池系統年內成功在浙江省長興縣、江蘇省沭陽市等地交付城市公車和裝載機客戶，為當地的零碳交通建設、城市降碳減排做出了積極貢獻。

Our membrane electrode products have been successfully applied in engineering machinery and power station projects, marking a significant step towards the industrialization of core components beyond system products. The Group has independently developed two hydrogen fuel cell systems and a graphite plate fuel cell stack, all of which are now ready for vehicle integration. Notably, hydrogen fuel cell systems with 80kW capacity were successfully delivered within the year for city buses and loaders in Changxing County, Zhejiang Province, and Shuyang County, Jiangsu Province, contributing actively to local zero-carbon transportation development and urban carbon reduction efforts.

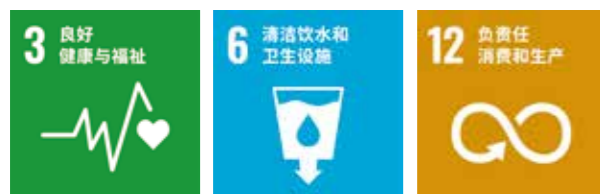


氫燃料電池系統  
hydrogen fuel cell systems

## 資源節約與污染防控 Resource Conservation and Pollution Control

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



### ■ 污染物管理 Pollutant Management

本集團已通過了 ISO14001 環境管理體系認證。為加強環保管理，減少污染物排放，我們頒佈並實施了《天能控股集團環安管理體系制度彙編(B/O版)》，具體制度包括《環安設備設施管理制度》《污染物管理制度》《環安監測預警管理制度》《環安三同時管理制度》《投資項目環安審批管理制度》《清潔生產管理制度》《碳資源管理制度》等。

The Group has passed the ISO14001 Environmental Management System Certification. In order to strengthen environmental protection management and reduce pollutant emissions, we have promulgated and implemented the Compilation of Environmental Safety Management System of Tianneng Holding Group (Version B/O), which includes the following systems: Environmental Safety Equipment and Facility Management System, Pollutant Management System, Environmental Safety Monitoring and Early Warning Management System, Three Simultaneity Management System for Environmental Safety, Environmental Safety Approval and Management System for Investment Projects, Clean Production Management System and Carbon Resource Management System, among others.

本集團執行各類國家和地方要求的污染物排放限值標準，全面構建污染物自行監測、協力廠商委託檢測、固定污染源線上監測及政府部門監督相結合的全方位污染防控體系，採用行業內最領先的技術和裝備，保障治理設施長期穩定運行，實現廢氣、廢水等各類污染物達標排放。

The Group follows the pollutants emission limit standards of various countries and local governments, constructs a comprehensive pollutant prevention and control system that combines pollutants self monitoring, third-party commissioned testing, online monitoring of fixed pollution sources, and government supervision. With the most advanced technology and equipment in the industry, the Company is able to ensure the long-term stable operation of treatment facilities and standard discharge of various pollutants, including waste gas and wastewater.

**廢氣：**本集團採用合適的工藝手段、引入先進設備，多措並舉妥善處理生產過程中的廢氣，滿足監管要求。

**Exhaust Gas:** The Group adopts appropriate process means, introduces advanced equipment, and takes multiple measures to properly treat the exhaust gas in the production process to meet the regulatory requirements.

**廢水：**本集團嚴格遵守《水污染防治法》等法律法規，對廠區產生的廢水進行統一管理並對處理後的污水進行抽查，確保排放的廢水水質符合《污水綜合排放標準》和地方排放要求，公司各產業廢水污染治理水準處於國際領先水準。

**Wastewater:** The Group strictly abides by the Water Pollution Prevention and Control Law and other laws and regulations, carries out unified management of wastewater generated in the plant and conducts spot checks on treated wastewater to ensure that the quality of discharged wastewater complies with the Comprehensive Wastewater Emission Standards and local discharge requirements. The Group is at the international leading level in terms of wastewater pollution control in the various industries.

**有害固體廢棄物：**本集團編制了《固體廢物管理制度》，對生產過程中產生的含鉛廢物、廢勞保等危險廢物按照《固體廢物防治法》規定建設了危險廢物貯存間，並規範收集、貯存、轉移、處置流程，定期委託有資質的處置單位進行處置，完善台賬，實現產生、貯存、處置全生命週期的管理。

**Hazardous Solid Waste:** The Group has prepared the Solid Waste Management System, constructed a hazardous waste storage room in accordance with the provisions of the Solid Waste Prevention and Control Law for the lead-containing wastes, waste labor insurance and other hazardous wastes generated in the production process, standardized the process of collection, storage, transfer and disposal, and regularly entrusted qualified disposal units to dispose of them, and perfected the ledger to realize the management of the whole life cycle of generation, storage and disposal.

**無害固體廢棄物：**對於經營產生的無害固體廢棄物，包括廢棄包裝材料、廢鐵等一般固廢，公司建立一般固廢貯存間並委託有資質的處置單位進行循環利用，實現一般固廢的分類收集、轉移及合規處置。生活垃圾定期交由當地環衛部門妥善處理。

**Harmless Solid Waste:** For harmless solid waste generated from operation, including waste packaging materials, scrap iron and other general solid waste, the Company establishes a general solid waste storage room and entrusts qualified disposal units to carry out recycling, realizing classified collection, transfer and compliant disposal of general solid waste. Domestic garbage is regularly handed over to the local sanitation department for proper disposal.

### 案例 Case

#### 創新利用污泥資源，實現經濟與環境雙贏 Innovative Utilization of Sludge Resources to Achieve a Win-Win for Economy and Environment

本集團創新性地將廢水處理過程中產生的污泥應用於鉛冶煉、鉛合金生產及蓄電池板柵鑄造工藝的減渣劑生產。相比傳統以複合無機鹽為原料的除渣劑，該技術實現了污泥的綜合利用，減少排放的同時創造經濟效益。不僅降低了固廢處理壓力，還減少了對傳統資源的依賴，為環境保護與經濟效益的協調發展提供了實踐範例。

The Group has innovatively applied sludge generated from wastewater treatment to the production of slag-reducing agents used in lead smelting, lead alloy production, and battery grid casting processes. Compared to traditional slag removers made from composite inorganic salts, this technology enables the comprehensive utilization of sludge, reducing emissions while creating economic benefits. This initiative not only alleviates the pressure of solid waste disposal but also reduces dependence on conventional resources, providing a practical example of harmonizing environmental protection with economic efficiency.

2024年本集團部分子公司排放物情況如下：

The emissions of some of the Group's subsidiaries in 2024 were as follows:

公司或子公司名稱 Name of company or subsidiary	主要污染物及特徵污染物的名稱 Name of main pollutants and characteristic pollutants	排放方式 Emission method	執行的污染物排放標準 (mg/m <sup>3</sup> ) Pollutant emission standards implemented	核定的排放總量指標 (噸 / 年) Total approved emission (tonnes/year)	超標排放情況 Excessive emission
天能電池集團股份有限公司 Tianneng Battery Group Co.,Ltd.	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	0.25	0.1459	無 No
	氮氧化物 Nitrogen oxide	處理後納管排放 Post-treatment discharge	30	0.24	
	化學需氧量 Chemical oxygen demand		150	1.98	
	氨氮 Ammoniacal Nitrogen		30	0.1	
浙江天能動力能源有限公司 Zhejiang Tianneng Power Energy Co.,Ltd.	總鉛 Total lead	處理後有組織排放 Organised emissions after treatment	0.5	0.00998	無 No
	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	0.25	0.6677	
	氮氧化物 Nitrogen oxide		300	10.73	
	總鉛 Total lead		0.5	0.0053	
浙江天能電池(江蘇)有限公司 Zhejiang Tianneng Battery (Jiangsu) Co.,Ltd.	化學需氧量 Chemical oxygen demand	處理後排入園區污水處理廠 Discharged to the park's wastewater treatment plant after treatment	150	5.625	無 No
	氨氮 Ammoniacal Nitrogen	處理後有組織排放 Organised emissions after treatment	30	0.281	
	鉛及其化合物 Lead and its compounds		0.35	0.2286	
	總鉛 Total lead		0.5	0.0067	
浙江天能電池(江蘇)新能源有限公司 Zhejiang Tianneng Battery Jiangsu New Energy Co.,Ltd.	化學需氧量 Chemical oxygen demand	處理後接入市政管網 Connect to municipal pipe network after treatment	150	41.683	無 No
	氨氮 Ammonia	處理後有組織排放 Organised emissions after treatment	30	3.764	
	二氧化硫 Sulfur dioxide		80	0.0527	
	氮氧化物 Nitrogen oxides		180	2.092	
天能電池集團(安徽)有限公司 Tianneng Battery Group (Anhui) Co.,Ltd.	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	0.35	0.1819	無 No
	總鉛 Total lead	處理後有組織排放 Organised emissions after treatment	0.5	0.6586	
	化學需氧量 Chemical oxygen demand		0.5	0.06782	
天能電池集團(安徽)有限公司 Tianneng Battery Group (Anhui) Co.,Ltd.	氮氧化物 Nitrogen oxides	處理後排入園區污水處理廠 Discharge to park sewage plant after treatment	150	/	無 No
	氨氮 Ammonia	處理後排入園區污水處理廠 Discharge to park sewage plant after treatment	30	/	
	鉛及其化合物 Lead and its compounds		0.5	0.6586	
	總鉛 Total lead		0.5	0.06782	

公司或子公司名稱 Name of company or subsidiary	主要污染物及特徵污染物的名稱 Name of main pollutants and characteristic pollutants	排放方式 Emission method	執行的污染物排放標準 (mg/m <sup>3</sup> ) Pollutant emission standards implemented	核定的排放總量指標 (噸 / 年) Total approved emission (tonnes/year)	超標排放情況 Excessive emission
天能集團(河南)能源科技 有限公司 Tianneng Group (Henan) Energy Technology Co.,Ltd.	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	0.5	0.93975	無 No
	總鉛 Total lead	處理後納管排放 Piped discharge after treatment	0.5	0.0061	
	化學需氧量 Chemical oxygen demand		150	62.028	
濟源市萬洋 綠色能源有限公司 Jiyuan Wanyang Green Energy Co.,Ltd.	氨氮 Ammoniacal nitrogen	處理後有組織排放 Organised emissions after treatment	30	5.501	無 No
	鉛及其化合物 Lead and its compounds		0.5	0.2981	
	二氧化硫 Sulfur dioxide		10	/	
	氮氧化物 Nitrogen oxide	50	3.845		
浙江天能電池(江蘇)有限公司 Zhejiang Tianneng Battery (Jiangsu) Co.,Ltd.	總鉛 Total lead	廠區污水站處理後進 入城鎮污水管網 The treated wastewater from the factory area is discharged into the municipal sewage network	0.5	0.002	無 No
	化學需氧量 Chemical oxygen demand	處理後有組織排放 Organised emissions after treatment	150	12.38	
	氨氮 Ammoniacal nitrogen		30	1.06	
	鉛及其化合物 Lead and its compounds		0.5	0.6178	
天能電池集團(馬鞍山) 新能源科技有限公司 Tianneng Battery Group (Ma'anshan) New Energy Technology Co., Ltd.	二氧化硫 Sulfuric acid mist	處理後有組織排放 Organised emissions after treatment	50	0.535	無 No
	氮氧化物 Nitrogen oxides		50	1.0432	
	二氧化硫 Sulfuric acid mist		200	0.236	
	氮氧化物 Nitrogen oxides	處理後納管排放 Piped discharge after treatment	300	1.481	
	化學需氧量 Chemical oxygen demand		150	10.0417	
	氨氮 Ammoniacal nitrogen		30	0.726	
	總鉛 Total lead		0.5	0.0349	
安徽天暢金屬材料有限公司 Anhui Tianchang Metal Materials Co.,Ltd.	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	2	0.3432	無 No
	鎘及其化合物 Cadmium and its compounds		0.05	/	
	二氧化硫 Sulfur dioxide		100	16.418882	
	鉻及其化合物 Chromium and its compounds		1	/	
	氮氧化物 Nitrogen oxide		100	31.42	
	顆粒物 Particulate matter		10	5.298	
	錫及其化合物 Tin and its compounds		1	0.352	
	銻及其化合物 Antimony and its compounds		1	0.772	
砷及其化合物 Arsenic and its compounds	0.4	/			



公司或子公司名稱 Name of company or subsidiary	主要污染物及特征污染物的名稱 Name of main pollutants and characteristic pollutants	排放方式 Emission method	執行的污染物排放標準 (mg/m <sup>3</sup> ) Pollutant emission standards implemented	核定的排放總量指標 (噸/年) Total approved emission (tonnes/year)	超標排放情況 Excessive emission	
浙江天能電源材料有限公司 Zhejiang Tianneng Power Supply Material Co.,Ltd.	顆粒物 Particulates	處理後有組織排放 Organised emissions after treatment	10	16.14	無 No	
	鎘及其化合物 Lead and its compounds		2 (承諾更加嚴格排放限額 0.4/DA006 為 0.6) 2(Commitment to stricter emission limits 0.4/DA006 is 0.6)	00.83512		
	砷及其化合物 Arsenic and its compounds		0.4	1.05008		
	錫及其化合物 Tin and its compounds		1	2.6262		
	銻及其化合物 Antimony and its compounds		1	2.6262		
	氮氧化物 Nitrogen oxide		100	36.82		
	二氧化硫 Sulfur dioxide		100	19.65		
	化學需氧量 Chemical oxygen demand		處理後納管排放 Post-treatment discharge	500		34.5
	氨氮 Ammoniacal nitrogen			25		0.255
	總鉛 Total lead			0.2		0.00567
	總砷 Total arsenic	0.1		0.0071		
	總鎘 Total cadmium	0.01	0.0007			
	總銻 Total antimony	0.3	0.02125			
	天能集團(濮陽) 再生資源有限公司 Tianneng Group (Puyang) Renewable Resources Co.,Ltd.	鉛及其化合物 Lead and its compounds	處理後有組織排放 Organised emissions after treatment	2		0.345
砷及其化合物 Arsenic and its compounds		0.4		0.328		
錫及其化合物 Tin and its compounds		1		0.82		
銻及其化合物 Antimony and its compounds		1		0.82		
顆粒物 Particulates		處理後納管排放 Post-treatment discharge	10	8.2		
20						
二氧化硫 Sulfur dioxide			100	53.574		
氮氧化物 Nitrogen oxides			100	42.84		
化學需氧量 Chemical oxygen demand			不外排 No external discharge	/	/	
氨氮 Ammoniacal nitrogen				/	/	
總鉛 Total lead	/	/				

公司或子公司名稱 Name of company or subsidiary	主要污染物及特征污染物的名稱 Name of main pollutants and characteristic pollutants	排放方式 Emission method	執行的污染物排放標準 (mg/m <sup>3</sup> ) Pollutant emission standards implemented	核定的排放總量指標 (噸/年) Total approved emission (tonnes/year)	超標排放情況 Excessive emission
江蘇天能資源循環 科技有限公司 Jiangsu Tianneng Resource Recycling Technology Co.,Ltd.	鎘及其化合物 Cadmium and its compounds	處理後有組織排放 Organised emissions after treatment	0.05	/	無 No
	顆粒物 Particulates		10	3.461	
	鉛及其化合物 Lead and its compounds		2	0.2565	
	鎘及其化合物 Chromium and its compounds		1	/	
	揮發性有機物 Volatile organic compounds		60	/	
	砷及其化合物 Arsenic and its compounds		0.4	0.0005	
	二氧化硫 Sulfur dioxide		100	33.338	
	氮氧化物 Nitrogen oxide		100	31.301	
	動植物油 Animal and vegetable oils		100	/	
	懸浮物 Suspended solids		400	2.16	
	總氮 Total nitrogen	45	0.302		
	化學需氧量 Chemical oxygen demand	500	3.024		
	總磷 Total phosphorus	處理後納管排放 Post-treatment discharge	8	0.035	
	氨氮 Ammoniacal nitrogen		35	0.259	
	總鉛 Total lead		0.2	/	
	pH 值 pH Value		6-9	/	
	五日生化需氧量 Biochemical oxygen demand over five days (BOD5)		300	/	



## ■ 循環經濟與資源再生 Circular Economy and Resource Regeneration

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



循環經濟是本集團可持續發展的核心戰略之一。通過深入發展鋰電回收與鉛蓄電池回收兩大業務，本集團積極推動資源的高效利用與再生，在循環經濟領域取得了顯著的進展。作為鉛蓄電池的主要生產商之一，我們通過不斷完善鉛蓄電池的回收體系，進一步擴大回收處置能力，確保鉛蓄電池的原材料回收率穩步提升，進一步降低了對外部原材料的依賴。同時，我們在鋰電回收領域堅持技術創新與管理優化，加大在渠道建設、產能擴展方面的投入，進一步完善產業鏈的整合，推動綠色供應鏈建設，實現資源的高效循環利用。

未來，本集團將在鋰電池和鉛蓄電池的回收與再利用領域持續發力，推動綠色供應鏈的建設，推動循環經濟模式向更高效、更環保的方向發展。通過技術創新、產業合作和市場拓展，本集團將努力實現碳中和目標，推動全球能源轉型，為打造更清潔、更可持續的未來貢獻力量。

Circular economy is one of the core strategies for the Group's sustainable development. By deeply advancing both lithium battery recycling and lead-acid battery recycling businesses, the Group actively promotes the efficient use and regeneration of resources, achieving significant progress in the field of circular economy. As one of the leading manufacturers of lead-acid batteries, we continuously improve the recycling system for lead-acid batteries, further expand recycling and disposal capacity, and ensure a steady increase in the recovery rate of raw materials from lead-acid batteries, thereby reducing dependence on external raw materials. At the same time, we adhere to technological innovation and management optimization in the lithium battery recycling sector, increasing investment in channel development and production capacity expansion, further improving the integration of the industry chain, promoting the construction of a green supply chain, and achieving efficient recycling of resources.

In the future, the Group will continue to strengthen efforts in the recycling and reuse of lithium and lead-acid batteries, promote the construction of green supply chains, and drive the development of circular economy models towards more efficient and environmentally friendly directions. Through technological innovation, industrial cooperation, and market expansion, the Group will strive to achieve its carbon neutrality goals, promote global energy transition, and contribute to building a cleaner and more sustainable future.

本集團嚴格遵守國家及行業的環保法規，確保回收過程中的污染物排放遠低於《新能源汽車廢舊動力蓄電池綜合利用行業規範條件（2019年本）》規定的排放標準。通過持續的技術創新和管理優化，本集團在電池回收的過程中實現了資源高效利用的同時，最大程度減少了環境污染，推動了綠色低碳經濟的發展。

The Group strictly adheres to national and industry environmental regulations, ensuring that pollutant emissions during the recycling process are well below the emission standards set by the Comprehensive Utilization Industry Standards for End-of-Life Power Batteries of New Energy Vehicles (2019 Edition). Through continuous technological innovation and management optimization, the Group has achieved efficient resource utilization in the battery recycling process while minimizing environmental pollution, thereby promoting the development of a green, low-carbon economy.



集團鋰電回收生產基地  
The Group's Li-ion battery recycling production base

# 05

## 社會



<b>產品責任與客戶保障</b>	<b>Product Responsibility and Customer Protection</b>
產品責任	Product Responsibility
客戶服務	Customer Service
<b>科技創新與產業發展</b>	<b>Technological Innovation and Industry Development</b>
<b>員工關懷與職業發展</b>	<b>Employee Care and Career Development</b>
僱傭及勞工	Employment and Labor
人才儲備	Talent Reserve
員工發展	Employee Development
員工培訓	Employee Training
員工滿意度	Employee Satisfaction
<b>職業安全</b>	<b>Occupational Safety</b>
<b>供應鏈管理</b>	<b>Supply Chain Management</b>
<b>投資者權益</b>	<b>Investors' Equity</b>
<b>社區參與與公益</b>	<b>Community Engagement and Public Welfare</b>
<b>就業與納稅</b>	<b>Employment and Taxes</b>
<b>鄉村振興</b>	<b>Rural Revitalization</b>
<b>建言獻策</b>	<b>Proposals and Suggestions</b>



# 社會 Social

## 產品責任與客戶保障 Product Responsibility and Customer Protection

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



### ■ 產品責任 Product Responsibility

為在追求產效的同時保持高效運營，公司著力實施精細化管理策略，通過科學規劃年度目標、挖掘潛能、整合多維度計劃，以滿足市場對產品切換時效性的要求。為更好地適應市場需求的變化，我們靈活調整產能規劃，以確保在季節性差異中滿足市場需求，充分釋放產能。通過全閉環管理跟蹤，我們成功控制了偏離度，產品交期的計劃達成率達到了 100%。

In order to maintain efficient operations while pursuing production efficiency, the Company strives to implement a refined management strategy by scientifically planning annual targets, tapping potential capacity, and integrating multi-dimensional plans to meet market requirements for timely product switching. In order to better adapt to changes in market demand, we flexibly adjust our capacity planning to ensure that market demand is met and capacity is fully released during seasonal variations. Through full closed-loop management tracking, we have successfully controlled the deviation and achieved 100% schedule achievement rate for product delivery.

為提升產品品牌形象、減少市場客訴，公司積極建立並完善了《品質管制制度》。我們明確了品質管制培訓、解析、過程、客訴、商檢、不良品管控與紅線指標等方面，規範了品質管制流程，強化了品質執法。定期進行市場走訪，並將問題清單及時回饋給生產車間進行整改，並通過跟蹤閉環確保問題的有效解決。同時，我們開展了品質「夯基礎、保過程、造精品、黏用戶」活動，以提升天能電池產品的競爭力 and 品牌形象，打造了「天能精優產品」。

In order to enhance the brand image of our products and reduce market complaints, we have actively established and improved the Quality Control System. We have defined quality control training, analysis, process, customer complaints, commercial inspection, defective product control and red line indicators, standardized the quality control process and strengthened quality enforcement. Regular market visits are conducted, and a list of problems is promptly fed back to the production plant for rectification, and closed-loop tracking is used to ensure that the problems are effectively solved. At the same time, we launched the quality "Compact Foundation, Guarantee Process, Create Excellence, Stick to Customers" campaign to enhance the competitiveness and brand image of Tennant's battery products and create "Tennant's Excellence Products".

這一系列的管理舉措和活動的實施，不僅使公司在生產效益上取得了顯著成效，也為公司品牌形象的提升和市場口碑的穩步提升奠定了堅實基礎。

The implementation of this series of management initiatives and activities has not only enabled the Company to achieve significant results in production efficiency, but also laid a solid foundation for the enhancement of the company's brand image and the steady improvement of its market reputation.

### ■ 客戶服務 Customer Service

本集團在全國各地擁有 3,000 餘家經銷商，已形成了以浙江為基點，輻射全國的龐大服務網絡。本著互惠共贏的原則，天能建立了完善的經銷商服務管理標準和流程，同時配備各類專職售後人員為遍佈全國的服務網絡，提供每週至少一次的技術支援及產品培訓服務。憑藉成熟的銷售網絡，本集團電池產品已在全國範圍實現覆蓋超過四十萬個終端服務網點，消費者可以在這些網點享受到換購正品電池、電池及整車檢修、以及無憂售後等全方位服務。

The Group has over 3,000 distributors across the country, forming a vast service network with Zhejiang as the base, radiating nationwide. Based on the principle of mutual benefit and win-win cooperation, Tianneng has established a comprehensive distributor service management standard and process, equipped with various professional after-sales personnel to provide weekly technical support and product training services to the service network across the country. With its mature sales network, the Group's battery products are now available at over 400,000 terminal service points nationwide, where consumers can enjoy a full range of services, including battery exchanges for genuine products, battery and vehicle maintenance, and worry-free after-sales support.

此外，本集團積極佈局線上渠道，在京東、天貓等主要電商平臺開設了官方旗艦店和專賣店。為了更好地滿足消費者需求，我們還在全國 50 多個城市的中心區域運營「泰博出行」服務店，提供線上線下一體化的高效便捷服務。通過這些渠道，本集團不斷優化客戶體驗，確保消費者能夠享受到便捷、稱心的服務。

Additionally, the Group is actively expanding online channels, having set up official flagship and specialty stores on major e-commerce platforms like JD.com and Tmall. To better meet consumer demands, we also operate "Taibo Mobility" service stores in over 50 central urban areas across the country, providing integrated online and offline services for efficient and convenient customer experiences. Through these channels, the Group continuously optimizes the customer experience, ensuring that consumers can enjoy convenient and satisfying services.



電池運輸  
Battery Transportation

建立強大的客戶服務體系對於企業來說至關重要。本集團高度重視客戶服務，構建的客戶服務體系使我們在不斷提升客戶體驗的道路上不斷前進。遵循本集團制發的《400 平臺市場客訴管理辦法》，在保護消費者隱私的基礎上，提高客戶滿意度、提升品牌價值和增加市場競爭力，在競爭激烈的市場中脫穎而出，取得長期發展的優勢。

Establishing a strong customer service system is crucial for any business. The Group places great importance on customer service, and the customer service system we have built enables us to continuously improve the customer experience. Following the Group's "400 Platform Market Customer Complaint Management Measures," we focus on protecting consumer privacy while enhancing customer satisfaction, increasing brand value, and improving market competitiveness. This allows us to stand out in the highly competitive market and gain a long-term development

## 本集團的客戶服務體系如下：

The Group's customer service system is as follows:

- 組建一支專業、熱情的客戶服務團隊，具備良好的溝通技巧和業務能力。
- 明確客戶服務流程，從諮詢、解決問題到後續跟蹤，確保服務的高效性和一致性。
- 定期對客戶服務團隊進行培訓，提升團隊的專業素質和服務水準。同時設立激勵制度，表彰優秀員工，激發團隊積極性和創造力。
- 建立完善的客戶關係管理系統，記錄客戶信息、需求和回饋，以便更好地滿足客戶需求和維護客戶關係。
- 設立服務品質監控機制，定期評估服務水準，及時發現並改進服務中的不足之處。通過清晰的客戶服務理念，並構建起完善的客戶服務體系。

Forming a Professional and Enthusiastic Customer Service Team: The team is equipped with excellent communication skills and business capabilities.

Clear Customer Service Processes: From consultation and problem-solving to follow-up, ensuring the efficiency and consistency of services.

Regular Training for the Customer Service Team: Enhancing the professional quality and service standards of the team, while also setting up an incentive system to recognize outstanding employees, stimulating team enthusiasm and creativity.

Establishing a Comprehensive Customer Relationship Management System: Recording customer information, needs, and feedback to better meet customer demands and maintain relationships.

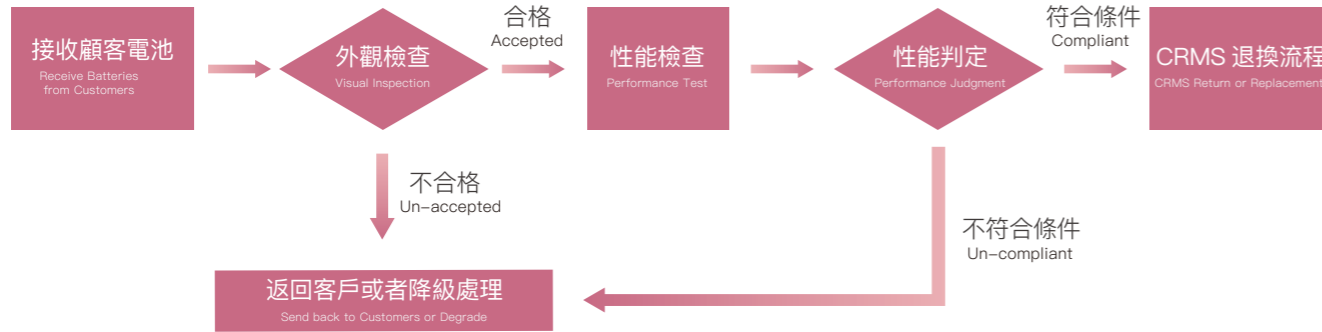
Implementing Service Quality Monitoring Mechanisms: Regularly evaluating service quality to promptly identify and improve any service shortcomings. Establish a comprehensive customer service system through a clear customer service philosophy.

持續關注市場變化和客戶需求，不斷優化和完善服務體系，從而提升公司的市場競爭力和品牌形象，以確保在競爭激烈的市場中保持領先地位。

The Group continuously focuses on market changes and customer needs, optimizing and improving the service system. This enhances the company's market competitiveness and brand image, ensuring a leading position in the competitive market.



產品售後處理流程:  
Product After-Sales Handling Process:



服務宗旨：精誠服務，追求卓越。

Service Mission: Dedicated service, pursuit of excellence.

服務方針：讓客戶滿意，讓客戶認同。

Service Policy: Satisfy customers, gain customer recognition.

服務理念：以客戶為中心，快速回應；處理問題有始有終，注重細節；提高服務速度，日清日畢；規範服務標準，統一服務流程。

Service Philosophy: Customer-centric, fast response; handle issues from start to finish, with attention to detail; improve service speed, complete daily tasks; standardize service standards, unify service processes.

核心策略：為品牌增值、創用戶感動，打造價值共贏的全域服務生態圈。

Core Strategy: Add value to the brand, create user satisfaction, and build a value-driven win-win service ecosystem.

兩大職能定位：統一的客戶服務視窗、統一的資訊驅動平臺。

Two Key Functional Positions: Unified customer service window, unified information-driven platform.

五大角色賦能：客戶需求收集及服務者、服務平臺構建及管理者、資料驅動閉環監督者、服務品牌增值打造者、服務標準化推進協同者。

Five Empowering Roles: Collecting customer needs and providing services, building and managing service platforms, data-driven closed-loop supervision, creating service brand value, promoting and collaborating in service standardization.

五個中心：客戶資訊受理與服務中心、客戶平臺構建與管理中心、資訊資料驅動與閉環中心、客戶服務價值與增值中心、服務標準化打造協同中心

Five Centers: Customer information reception and service center, customer platform construction and management center, information data-driven and closed-loop center, customer service value and value-added center, service standardization promotion and collaboration center.

本集團還通過以下三種方式進行客戶滿意度調研：  
The Group also conducts customer satisfaction surveys through the following three methods:

- 專題性電話調研回訪(一次/季度)，每次會根據實際情況設定不同的話術及調研問卷，以我司簽約的共贏商為主，調研回訪後輸出調研回訪報告。
- 掛機滿意度調研(每次服務掛機結束後)，每次話務服務結束後觸發的滿意度情況回訪，頻率是即時，2024年度全年掛機滿意度為98.7%。
- 實際現場走訪調研(不定期)，根據實際市場情況，安排走訪線路和人員、時間等，最終輸出走訪報告。

Thematic Phone Surveys (once per quarter): Different scripts and survey questionnaires are set according to actual conditions for our signed distributors. After the survey, a report is generated based on the findings.

Call Satisfaction Surveys (after each service call): Satisfaction surveys are triggered immediately after each service call ends, with a frequency of real-time follow-up. The call satisfaction rate for 2024 is 98.7%.

On-Site Visits (irregular): Based on actual market conditions, visits are arranged according to the routes, personnel, and timing, and a final report is generated after the visits.

2024年，本集團處理客戶訴求的全年表現如下所示：  
In 2024, the Group's performance in handling customer requests is as follows:

指標名稱 Indicator Name	單位 Unit	2024年 Year 2024
客戶回饋回應速度 Customer Feedback Response Speed	天 Day	响应时效 24h, 平均处理周期 7.35 天
客戶回饋回應率 Customer Feedback Response Rate	%	100%
客戶投訴 Complaints	次 Time	1,520
累計客戶服務 Cumulative Customer Service	次 Time	100,775

## 科技創新與產業發展 Technological Innovation and Industry Development

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團高度重視科技研發，組建了由美國、日本、韓國等國際頂尖專家組成的創新團隊，涵蓋新能源電池、新能源材料、智能製造、綠色循環等領域。已建成包括國家級技術中心、博士後科研工作站等多個科創平台。

2024 年，集團成立科技管理中心，統籌技術創新活動，將其納入集團戰略。加大投入，統籌規劃，並強化協調，實現技術創新高效推進。同時，完善並發布多項管理制度，包括《研發項目管理辦法》、《重大研發項目管理辦法》等，強化項目管理和制度保障。

此外，集團已確立「成為全球新能源產業的技術領航者和價值共創者」的研發戰略方向，各業務板塊解碼子戰略，打造技術性能領先和成本領先兩大核心技術能力。截至 2024 年，集團已建立 60 餘項相關制度，實現項目全生命周期管理，涵蓋立項、策劃、實施及成果轉化等階段。同時，設有科技創新委員會，定期召開會議，對研發戰略和年度計劃進行評審。2024 年，集團在產學研合作方面進行中的項目有 11 項，涉及高能量密度電池開發和電池回收技術等方向。

The Group places great emphasis on technological research and development, assembling an innovation team composed of top international experts from the United States, Japan, South Korea, and other countries. The team covers various fields such as new energy batteries, new energy materials, smart manufacturing, and green recycling. The Group has established several technology innovation platforms, including a national-level technology center and a postdoctoral research station.

In 2024, the Group established a Technology Management Center to coordinate technological innovation activities and integrate them into the Group's strategy. The Group has increased investment, coordinated planning, and strengthened coordination to efficiently advance technological innovation. At the same time, the Group has improved and issued various management systems, including the "R&D Project Management Measures" and the "Major R&D Project Management Measures," to strengthen project management and institutional support.

Additionally, the Group has established the R&D strategic direction of "becoming a global technological leader and value co-creator in the new energy industry." Each business segment has decoded sub-strategies and built two core technological capabilities: leading technology performance and cost leadership. By 2024, the Group has established over 60 related policies, achieving full lifecycle management of projects, covering stages such as project initiation, planning, implementation, and results conversion. The Group also has a Technology Innovation Committee, which regularly holds meetings to review the R&D strategy and annual plans. In 2024, the Group is involved in 11 ongoing industry-academia-research cooperation projects, focusing on high-energy-density battery development and battery recycling technologies.

### 2024年度科研創新舉例： Examples of Research Innovations in 2024:

- 鉛蓄電池Lead-acid Battery

本集團通過應用微納鉛碳關鍵技術，提升了鉛蓄電池產品的整體性能。在「超跑高能版」電池中，除了沿用石墨烯專利技術外，新增的微納鉛碳技術有效解決了傳統鉛碳材料親和力差和易團聚的問題。這項技術通過低溫分解反應製備鉛碳複合材料，負載納米級 PbO 顆粒，顯著提升了電池的充放電性能和負極循環壽命。

The Group has enhanced the overall performance of lead-acid battery products through the application of micro-nano lead-carbon key technology. In the "Super Car High Energy Edition" battery, in addition to using graphene patented technology, the newly added micro-nano lead-carbon technology effectively solves the issues of poor affinity and aggregation in traditional lead-carbon materials. This technology prepares lead-carbon composite materials through low-temperature decomposition reactions, loading nano-scale PbO particles, which significantly improves the battery's charge and discharge performance and the anode cycle life.

- 鋰離子電池Lithium-ion Battery

本集團協同清華大學針對鋰電池開發、壽命預測與失效機制等內容進行合作，研究高效、低成本、高靈敏的大型儲能電池電芯差異檢測技術，建立鋰離子電池壽命預測模型與免分容電池容量分佈預測模型。

The Group has collaborated with Tsinghua University on lithium battery development, lifespan prediction, and failure mechanisms, researching efficient, low-cost, and highly sensitive large-scale energy storage battery cell difference detection technologies. The collaboration aims to establish lithium-ion battery lifespan prediction models and non-discharge battery capacity distribution prediction models.

- 固態電池Solid-State Batteries

本集團自主研發出的 300Wh/kg、400Wh/kg 高安全固態電芯，通過了針刺、過充等安全性能測試，電芯測試循環次數處於行業領先水準。

The Group has independently developed 300Wh/kg and 400Wh/kg high-safety solid-state battery cells, which have passed safety performance tests such as puncture and overcharge. The battery cell is tested to have better life cycle, positioning it at the leading level in the industry.

## 員工關懷與職業發展 Employee Care and Career Development

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



### ■ 僱傭及勞工 Employment and Labor

本集團嚴格執行《勞動法》中各項規定，平等僱傭，確保 100% 合法合規用工。所有員工入職當天必須簽訂勞動合同，本集團按規定為其繳納五險一金。員工依法享有婚假、孕產假等假期。工作時數、加班報酬、法定假期、帶薪休假及相關待遇均遵循當地勞動法律法規及僱傭合同所訂。本集團每年組織召開職工代表大會，討論商議涉及職工權益的重大事項。

公司嚴格依據《員工入職和試用期管理辦法》、《勞動紀律與員工行為規範管理辦法》和《員工考勤管理制度》等制度進行薪酬及人力資源管理，並在職工代表大會上通過了相關管理制度，確保符合法律及規例的要求。在薪酬方面，公司確保員工依法享有公平、公正的報酬和福利待遇，薪酬分配透明且規範。所有員工簽署合法的勞動合同，並明確約定解除勞動關係的條件，保障員工合法權益；行政、管理及輔助崗位全員簽署廉潔協定，進一步強化管理合規性和職業道德。

The Group strictly adheres to the provisions of the Labor Law, ensuring equal employment opportunities and 100% legal and compliant employment practices. All employees must sign a labor contract on their first day of employment, and the Group contributes to the statutory five social insurances and one housing fund. Employees are entitled to various types of leave, including marriage leave and maternity leave. Work hours, overtime pay, statutory holidays, paid leave, and related benefits comply with local labor laws and employment contracts. The Group holds an annual employees' representative meeting to discuss major issues related to employee rights and interests.

The Company strictly manages compensation and human resources according to the "Employee Onboarding and Probation Management Measures," "Labor Discipline and Employee Behavior Standards," and "Employee Attendance Management System." Relevant management systems have been reviewed and approved at the employees' representative meeting to ensure compliance with legal and regulatory requirements. In terms of compensation, the Company ensures fair and just remuneration and benefits for employees, with transparent and regulated salary distribution. All employees sign a legal labor contract that specifies the conditions for termination of the labor relationship, safeguarding employees' legal rights. Administrative, managerial, and support positions are required to sign integrity agreements to further reinforce management compliance and professional ethics.

### ● 循環板塊 Recycling

本集團與電子科技大學長三角研究院成功聯合申報浙江省 2024 年度「尖兵」「領雁」研發攻關計畫「多類型退役鋰電池清潔高效安全回收核心技術裝備研發及應用示範」項目。

The Group, in collaboration with the Yangtze River Delta Research Institute of the University of Electronic Science and Technology of China, has successfully submitted a joint application for the "Vanguard" and "Leader" R&D breakthrough program under Zhejiang Province's 2024 R&D plan. The project focuses on the "Development and Application Demonstration of Core Technology and Equipment for Clean, Efficient, and Safe Recycling of Multi-Type Retired Lithium Batteries."

### ● 氫能板塊 Hydrogen Energy

本集團自製核心零部件膜電極已完成批量出貨；本年 7 月，自主開發設計生產的 10 台氫能燃料電池系統正式交付，將被裝載在安徽省廣德市的公車上。

The Group has completed batch shipments of its core component membrane electrodes. In July of this year, 10 hydrogen fuel cell systems independently designed and produced by the Group were officially delivered, and they will be installed in buses in Guangde City, Anhui Province.

### ● 鈉電板塊 Sodium-ion Battery

在電芯研發方面，採用層狀氧化物技術路線，在解決軟包電芯「產氣」問題上取得重要進展，有望在二輪車小動力市場得到應用。此外，開發出大方形聚陰離子電芯，綜合指標居行業先進水準，循環壽命預期超萬次，為集團儲能業務提供新的解決方案。

In the development of battery cells, the Group has adopted a layered oxide technology route, achieving significant progress in addressing the "gas generation" issue in pouch cells. This breakthrough is expected to find application in the small-power electric two-wheeler market. Additionally, the Group has developed a large-format polycathionic battery cell with comprehensive performance indicators at the forefront of the industry. The expected cycle life exceeds 10,000 cycles, offering a new solution for the Group's energy storage business.

在招聘、用工和晉升方面，公司始終秉承平等機會和多元化原則。所有員工不分民族、種族、性別、年齡、家庭出身、宗教信仰，均平等享有公司的各項福利待遇和職業發展機會。公司充分尊重員工的多樣性，致力於為每位員工提供公平的資源和機會。晉升機制以公開、透明為原則，通過公開報名、資格審核、360 度民主測試和多視角訪談調研等程式進行競聘，確保人才選拔的科學性和公平性。對於招聘流程，公司嚴格執行入職管控制度，未滿 18 歲的未成年工不得啟動招聘流程，以符合相關勞動法規。

Regarding recruitment, employment, and promotion, the Company upholds the principles of equal opportunity and diversity. All employees, regardless of ethnicity, race, gender, age, family background, or religious beliefs, enjoy equal access to the company's benefits and career development opportunities. The Company fully respects employee diversity and is committed to providing fair resources and opportunities for each employee. The promotion mechanism is based on transparency and openness, with public registration, qualification review, 360° democratic assessments, and multi-perspective interviews to ensure a scientific and fair selection process. For recruitment, the Company strictly implements onboarding control policies, ensuring that minors under 18 are not recruited, in compliance with relevant labor laws.

### 2024年本集團員工構成情況： Composition of the Group's Employees in 2024:

指標名稱 Indicator Name	劃分類別 Category	2024 年 Year 2024
員工總數 Total Number of Employees	/	20,676
按性別 By Gender	男性 Male	13,358
	女性 Female	7,318
按僱傭類型 By Type of Employment	全職 Full-Time Job	20,676
	兼職 Part-Time Job	0
按年齡 By Age	30 歲及以下 30 and under	3,013
	31-40 歲 31-40 years	8,252
	41-50 歲 41-50 years	6,666
	50 歲以上 Over 50 years old	2,745
按地區 By Region	中國內地 Mainland China	20,666
	港澳臺地區 Hong Kong, Macao and Taiwan areas	2
	其他地區 Other regions	8

### 2024年本集團員工流失情況： Employee Turnover in the Group in 2024:

指標名稱 Indicator Name	劃分類別 Category	2024 年離職率 Turnover Rate in 2024
按性別 By Gender	男性 Male	28.23%
	女性 Female	27.68%
按僱傭類型 By Type of Employment	全職 Full-Time Job	28.08%
	兼職 Part-Time Job	0
按年齡 By Age	30 歲及以下 30 and under	36.36%
	31-40 歲 31-40 years	22.81%
	41-50 歲 41-50 years	23.79%
按地區 By Region	50 歲以上 Over 50 years old	23.96%
	中國內地 Mainland China	28.09%
	港澳臺地區 Hong Kong, Macao and Taiwan areas	25%
	其他地區 Other regions	20%

### 人才儲備 Talent Reserve

本集團堅持「戰略引領，以人為本」的人才發展理念，將人才視為企業發展的核心動力，緊密圍繞產業轉型和組織升級，為集團長期戰略競爭力提供堅實支持。

The group adheres to the talent development philosophy of "strategy leading, people-oriented," viewing talent as the core driving force behind enterprise development. It focuses on industrial transformation and organizational upgrading, providing solid support for the group's long-term strategic competitiveness.

在人才選拔方面，天能實施「開放外引，內生並重」的策略。一方面，持續引入行業領軍人才、研發技術專家及職能領域高端人才，優化組織結構，提升整體戰鬥力；另一方面，積極吸納優秀校招人才，不斷為企業人才庫注入新鮮血液。天能建立了覆蓋「管培生—經理級幹部—總監級幹部—總經理級幹部—領軍人才」的五級人才池，專注高潛人才的選拔與培養，通過定期幹部盤點完善關鍵崗位繼任計畫，確保人才梯隊的健康發展。

公司高度重視高新技術人才，通過制度保障、資金投入、晉升激勵、定制培養和精細化服務等多方面舉措，提供全方位支援。制定了《職業技能培訓學校管理辦法》《技能津貼實施辦法》等規章制度，確保培養與激勵工作規範透明；設立職業技能培訓學校並加大資金投入，為高技術人才提供完善的培訓場地和專業技能提升機會；通過技能津貼、晉升通道和榮譽表彰等激勵措施，增強人才的獲得感與成就感。公司還為高技術人才量身定制發展方案，包括國內外標杆學習和專項提升工程，持續培養國家及省級高技能領軍人才。此外，公司通過聯誼活動、文化分享會等多樣化活動，營造開放、包容的企業文化，提升人才歸屬感和幸福感，為企業創新發展注入強勁動力。

截至 2024 年底，先後引進國家級引才計劃 11 人，省級引才計劃 6 人，合作院士 9 人，自主培育國家級科技創業領軍人才 1 人、國務院特殊津貼 1 人、浙江省「高層次人才特殊支持計劃」2 人，「浙江工匠」6 人，「浙江大工匠」1 人，成功驗收浙江省領軍型創新團隊 2 個。擁有教授博士專家團隊 30 餘人，外籍專家 11 人，副高以上人才 120 餘人，技能人才 2,100 餘人。

In terms of talent selection, Tianneng implements a strategy of "open external recruitment and balanced internal development." On the one hand, the Company continuously introduces industry-leading talents, R&D experts, and high-end professionals in various functional fields to optimize organizational structure and enhance overall combat effectiveness. On the other hand, Tianneng actively attracts excellent talents through campus recruitment, continuously injecting fresh blood into its talent pool. The Company has established a five-level talent pool covering "management trainees—manager-level executives—director-level executives—general manager-level executives—leading talents," focusing on the selection and cultivation of high-potential talents. Through regular executive reviews, the Company improves its succession planning for key positions, ensuring the healthy development of its talent pipeline.

The Company places great importance on high-tech talents, providing comprehensive support through institutional guarantees, financial investments, promotion incentives, tailored training, and detailed services. It has established regulations such as the "Vocational Skills Training School Management Regulations" and the "Skills Allowance Implementation Measures" to ensure standardized and transparent training and incentive programs. The Company has set up vocational skills training schools and increased financial investment to provide high-tech talents with excellent training facilities and professional skills improvement opportunities. Incentive measures such as skill allowances, promotion channels, and honor awards are used to enhance the sense of acquisition and accomplishment among talents. Additionally, the Company tailors development plans for high-tech talents, including domestic and international benchmarking studies and specialized improvement programs, and continuously cultivates national and provincial-level high-skill leaders. Furthermore, through various activities such as social gatherings and cultural sharing sessions, the Company fosters an open and inclusive corporate culture, enhancing the sense of belonging and happiness among talents, and injecting strong momentum into the company's innovative development.

As of the end of 2024, the Company has introduced 11 people under the national talent introduction program, 6 people under the provincial talent introduction program, 9 academicians, 1 national-level scientific and technological entrepreneurial leaders, 1 State Council special allowance recipients, 2 people under Zhejiang Province's "High-Level Talent Special Support Program," 6 "Zhejiang Craftsmen," 1 "Zhejiang Great Craftsmen," and successfully completed the acceptance of 2 leading innovative teams in Zhejiang Province. The Company has a team of more than 30 professors and doctoral experts, 11 foreign experts, more than 120 senior-level talents, and over 2,100 skilled talents.

## ■ 員工發展 Employee Development

天能不斷優化薪酬福利與激勵體系，通過差異化政策提升員工獲得感與凝聚力，推動企業與員工共同成長，致力於構建系統化的人才激勵與保障機制，通過《員工福利管理制度》、《薪酬管理制度》和《員工考勤管理制度》的實施，規範各項薪酬福利工作，提升員工滿意度與企業凝聚力。

在福利方面，集團以員工需求為導向，實施多元化福利政策，涵蓋社會保障、企業特色福利及職業發展支持，並定期優化措施，確保公平性與激勵性。在薪酬管理上，集團建立以價值鏈為主線的薪酬體系，注重公平性、競爭力與可持續性，通過市場調研和績效考核吸引、保留優秀人才，並將薪酬與企業戰略目標掛鉤。

為激發員工積極性，本年度集團制定並實施《增量激勵管理制度》、《員工績效管理制度》和《事業合夥激勵管理制度》，以績效為導向增強員工責任感與使命感。通過平衡短期與長期激勵，結合績效考核，集團推動員工與企業在經濟、社會及環境領域的共同可持續發展。

Tianneng continuously optimizes its compensation, benefits, and incentive systems, enhancing employee satisfaction and cohesion through differentiated policies, fostering mutual growth between the company and its employees. The Company is committed to establishing a systematic talent incentive and retention mechanism, standardizing all compensation and benefits processes through the implementation of the "Employee Welfare Management System," "Compensation Management System," and "Employee Attendance Management System," improving employee satisfaction and organizational cohesion.

In terms of benefits, the Group adopts a diversified policy based on employee needs, covering social security, company-specific benefits, and career development support. These measures are regularly optimized to ensure fairness and incentivization. In compensation management, the Group has established a value chain-based compensation system that focuses on fairness, competitiveness, and sustainability. Through market research and performance assessments, the Company attracts and retains outstanding talent, aligning compensation with corporate strategic goals.

To stimulate employee motivation, the Group has formulated and implemented the "Incremental Incentive Management System," "Employee Performance Management System," and "Career Partnership Incentive Management System" this year, focusing on performance to enhance employees' sense of responsibility and mission. By balancing short-term and long-term incentives and combining them with performance evaluations, the Group drives the sustainable development of both employees and the Company in the economic, social, and environmental domains.

### 案例 Case

## 優化教育機制，助力員工與企業共同成長 Optimizing the Education Mechanism to Support Mutual Growth of Employees and the Company

本集團高度重視員工職業教育與持續發展，依據企業發展需求，修訂並發佈了《天能控股集團員工在職學歷繼續教育管理制度（2024 年修訂版）》。該制度通過完善教育管理體系和規範化的支持措施，鼓勵員工提升學歷與綜合素質能力，為其職業發展提供系統化支援，同時推動企業人力資源優化，滿足高素質人才需求，實現員工與企業的共同成長與可持續發展目標。

The Group places great importance on employee career education and continuous development. In response to the company's growth needs, the "Tianneng Holdings Group Employee Continuing Education Management System (2024 Revised Edition)" has been revised and published. This system, through an improved education management framework and standardized support measures, encourages employees to enhance their educational qualifications and overall capabilities, providing systematic support for their career development. At the same time, it promotes the optimization of the company's human resources to meet the demand for high-quality talent, achieving mutual growth and sustainable development for both employees and the Company.



先後引進國家級引才計劃 11 人  
省級引才計劃 6 人

The company has introduced 11 people under the national talent introduction program, 6 people under the provincial talent introduction program



合作院士 9 人  
自主培育國家級科技創業領軍人才 1 人  
國務院特殊津貼 1 人

9 Academicians, 1 national-level scientific and technological entrepreneurial leaders, 1 State Council special allowance recipients



浙江省「高層次人才特殊支持計劃」2 人  
「浙江工匠」6 人  
「浙江大工匠」1 人  
成功驗收浙江省領軍型創新團隊 1 個

2 People under Zhejiang Province's "High-Level Talent Special Support Program," 6 "Zhejiang Craftsmen," 1 "Zhejiang Great Craftsmen," and successfully completed the acceptance of 2 leading innovative teams in Zhejiang Province



教授博士專家團隊 30 餘人  
外籍專家 11 人  
副高以上人才 210 餘人  
技能人才 2,100 餘人

Has a team of more than 30 professors and doctoral experts, 11 foreign experts, more than 120 senior-level talents, and over 2,100 skilled talents.

## ■ 員工培訓 Employee Training

在人才培養方面，天能採用「學以致用，以評促建」的策略，建立管理幹部與專業人才雙通道發展體系。通過輪崗歷練、領導力培訓、導師帶教和標杆學習等方式，系統提升員工管理素養和專業能力，並通過團隊建設評價優化全週期人才管理機制，拓展發展空間，增強內部成長動力。

為規範新員工入職流程及試用期管理，本集團實施《員工入職和試用期管理辦法》，明確管理規範，說明新員工快速融入企業文化，提升管理有效性，確保人崗匹配科學性。

在內部培訓方面，本集團通過《內部講師管理辦法》，建立完善的講師管理機制，支持內部培訓高效開展。內部講師作為知識與經驗的傳播者，促進員工技能提升與學習型組織建設，推動能力持續增長。

同時，為關鍵崗位構建管理梯隊和儲備後備力量，本集團推行《集團幹部人才池管理制度（試行）》。該制度聚焦高潛質管理人才的識別與培養，通過梯隊化管理模式，打造高素質、穩定的管理團隊，助力公司長期發展。

為進一步提升培訓資源管理效率，今年本集團修訂發佈《培訓經費管理制度》，規範經費使用與管理，提升培訓計畫的精確性與執行效率，確保培訓活動與公司戰略目標一致，推動員工技能提升與職業發展，實現員工與企業的共同進步。

通過以上制度的實施，本集團建立了以“新員工管理—內部培訓提升—後備梯隊建設”為核心的全鏈條人才培養機制。該機制體現了公司在人才發展上的系統性與規範性，同時彰顯了企業對員工成長與組織發展的重視。本年度集團組織培訓考核 11,892 人次，通過考核 10,987 人次，考核通過率達 92.39%，有效提升了員工素質與組織能力。

Tianneng adopts a "learning by doing, and building through evaluation" strategy to establish a dual-career development system for management and professional talent. Through job rotations, leadership training, mentoring, and benchmark learning, the Company systematically enhances employees' management skills and professional abilities. The full-cycle talent management system is optimized through team-building evaluations, expanding development opportunities and boosting internal growth.

To standardize the onboarding process and probation management for new employees, the Group implements the "Employee Onboarding and Probation Management Measures," which clarify management norms and help new employees quickly integrate into the Company culture, improving management effectiveness and ensuring the scientific matching of people to positions.

Regarding internal training, the Group has established a comprehensive lecturer management mechanism through the "Internal Lecturer Management Measures," supporting the efficient implementation of internal training. Internal lecturers, as transmitters of knowledge and experience, promote skill enhancement and the development of a learning organization, driving continuous growth in capabilities.

To build a management team and reserve talent for key positions, the Group has implemented the "Group Executive Talent Pool Management System (Trial)." This system focuses on identifying and cultivating high-potential managerial talents, using a tiered management model to create a high-quality, stable management team that supports the company's long-term development.

In addition, to further improve training resource management efficiency, the Group revised and published the "Training Fund Management System" this year, standardizing fund usage and management, improving the precision and execution of training plans, ensuring alignment with the company's strategic goals, and fostering employee skill development and career growth, thus achieving mutual progress for employees and the Company.

Through the implementation of these systems, the Group has established a comprehensive talent development mechanism focused on "new employee management—internal training improvement—reserve talent team building." This mechanism reflects the company's systematic and standardized approach to talent development, demonstrating its commitment to employee growth and organizational development. In this year, the Group organized training and assessment for 11,892 employees, with 10,987 passing the assessment, achieving a pass rate of 92.39%, effectively enhancing employee quality and organizational capacity.

## 本集團2024年重點培訓時長明細表： Summary of the Group's Key Training Hours in 2024:

定量指標名稱 Name of Quantitative Indicator	單位 Unit	2024 年 Year 2024
男性員工人均培訓時長 Hours of training per male employee	小時 Hour	32.59
女性員工人均培訓時長 Hours of training per female employee	小時 Hour	35.69
基層員工人均培訓時長 Average training hours for junior staff	小時 Hour	34.81
中級管理層人均培訓時長 Training hours per capita for middle management	小時 Hour	14.07
高級管理層人均培訓時長 Training hours per capita for senior management	小時 Hour	33.96

### 案例 Case

## 揚帆計畫·管培生人才發展項目 Sail Plan · Management Trainee Talent Development Program

為加速培養具備專業與管理能力的天能未來中堅力量，2024 年，本集團人力資源中心聯合各業務單位開展管培生選拔與培養項目，面向 2021 至 2023 屆校招生。

通過對近三屆校招生的表現、潛力、職業發展方向和穩定性進行綜合評估，最終選拔 84 人進入管培生人才池，並展開系統培養。培養方式包括集中培訓、行動學習及雙導師制等，保障了項目效果。

In 2024, to accelerate the development of Tianneng's future core workforce with professional and managerial capabilities, the Group's Human Resources Center, in collaboration with various business units, launched the Management Trainee Selection and Training Program for graduates from 2021 to 2023.

Through a comprehensive evaluation of the performance, potential, career development direction, and stability of the last three batches of campus recruits, 84 individuals were selected for the management trainee talent pool and began systematic training. The training approach includes intensive training, action learning, and a dual-mentor system, ensuring the effectiveness of the program.



人才發展項目啟動儀式  
Talent Development Program Launching Ceremony

## 人才培訓架構 Personnel Training Program

本集團構建了系統化的人才發展體系，以「人才發展」和「人才評價」為核心驅動力，通過多維度培訓模式和管理機制，全面支援企業戰略目標，助力員工成長。

### ● 幹部梯隊建設 Leadership Development

通過「五級人才池培養」模式，包括「領軍計畫」「領航計畫」「遠航計畫」「啟航計畫」和「揚帆計畫」，為不同層次幹部和高潛質人才提供清晰發展路徑。通過教練制、挑戰任務和橫向輪崗等方式，優化人才配置，逐步建立高效管理梯隊。

### ● 能力發展系統 Capability Development System

能力發展系統涵蓋「課程體系」「師資體系」「學習檔案」和「移動學習」，通過管理賦能和專業能力提升兩個模組，為員工提供多樣化發展資源。重點項目包括經驗萃取工作坊和師課共建計畫，旨在提升員工能力和組織知識沉澱。

### ● 專業能力打造 Professional Competency Development

在專業能力領域，本集團提供涵蓋營銷、技術研發、財務、人力資源、數字化等方向的專業培訓，並為新員工和新任幹部設計了「新員工訓練營」「新入職幹部訓練營」和「新任幹部90天轉身之旅」，幫助員工快速適應角色，提升職業素養。

### ● 產業人才培養 Industry Talent Development

本集團聚焦鉛產業、鋰產業、循環產業和新材料產業的人才發展需求，為企業未來產業升級儲備高素質專業人才。

### ● 通用力與文化傳播 General Skills and Cultural Transmission

通過「天能充電站」（公開課）和「文化大使」項目，提升員工通用能力，並在內部推動企業文化傳播，增強員工的文化認同感，為企業長遠發展奠定精神基礎。

The Group has established a systematic talent development system, with "talent development" and "talent evaluation" as the core drivers. Through a multidimensional training model and management mechanisms, it fully supports the corporate strategic goals and aids employee growth.

Through the "Five-Tier Talent Pool Cultivation" model, including the "Leadership Program," "Navigator Program," "Voyager Program," "Launch Program," and "Sail Program," the Group provides clear development paths for different levels of leaders and high-potential talents. Through coaching, challenging tasks, and horizontal rotation, talent allocation is optimized to gradually establish an efficient management team.

The capability development system covers the "Curriculum System," "Instructor System," "Learning Portfolio," and "Mobile Learning." Through the management empowerment and professional skill enhancement modules, it offers diverse development resources to employees. Key projects include the Experience Extraction Workshop and the Instructor-Co-Build Program, aimed at enhancing employee skills and organizational knowledge accumulation.

In the area of professional competency, the Group provides professional training covering marketing, technology R&D, finance, human resources, and digitalization. It has also designed programs such as "New Employee Training Camps," "New Manager Training Camps," and the "90-Day Transition Journey for New Managers" to help employees quickly adapt to their roles and enhance their professional qualities.

The Group focuses on talent development needs in the lead, lithium, recycling, and new materials industries, reserving high-quality professional talents for future industry upgrades.

Through the "Tianneng Charging Stations" (public courses) and the "Cultural Ambassador" program, employees' general skills are enhanced, while promoting the internal transmission of corporate culture, fostering cultural identity, and laying the spiritual foundation for the long-term development of the Company.

## 案例 Case

### ● 綜合管理機制 Comprehensive Management Mechanism

培訓體系通過「人才發展系統」和「能力發展系統」的整合，形成以領導力模型、任職資格和關鍵人才檔案為核心的全面管理閉環，確保培訓工作與企業戰略目標緊密結合。

The training system integrates the "Talent Development System" and the "Capability Development System," forming a comprehensive management loop centered on leadership models, job qualifications, and key talent profiles, ensuring that training efforts are closely aligned with the company's strategic objectives.

## 案例 Case

## 線上學習平臺 Online Learning Platform

自2021年1月啟用以來，集團線上學習平臺面向內部員工、上下游企業及合作方開放2萬個學習帳號，當前啟動16,266個。2024年，總學習時長達143,027.27小時，人均學習時長23.06小時。

Since its launch in January 2021, the Group's online learning platform has been open to internal employees, upstream and downstream enterprises, and partners, with a total of 20,000 learning accounts available. Currently, 16,266 accounts are active. In 2024, the total learning duration reached 143,027.27 hours, with an average learning time of 23.06 hours per person.

平臺已上線課程2,620門，其中1,867門為覆蓋管理、職業素養及各專業領域的通用課程，自建753門涵蓋文化、制度、產品、研發技術及業務等特色課程。

The platform offers 2,620 courses, of which 1,867 are general courses covering management, professional skills, and various specialized fields. Additionally, 753 self-developed courses are available, covering topics such as culture, systems, products, research and development technologies, and business operations.

## ■ 員工滿意度 Employee Satisfaction

在人才激發與保留方面，天能致力於打造充滿活力和幸福感的企業氛圍。通過開展員工幸福度調研，深入瞭解管理現狀，持續提升員工敬業度與滿意度。

In terms of talent development and retention, Tianneng is committed to creating a vibrant and fulfilling corporate atmosphere. By conducting employee happiness surveys, the Company gains deeper insights into the current management situation, continually improving employee engagement and satisfaction.

為不斷提升公司的工作環境和員工福祉，本集團每年進行員工滿意度調查，重視員工的回饋，以更好地瞭解員工的需求和期望，以便採取相應的改進措施。滿意度調查內容涵蓋了多個方面，包括但不限於集團行政後勤服務滿意度調查、總部園區管理滿意度調查、宿舍管理滿意度調查、食堂管理滿意度調查，通過上述調查，本集團識別公司在各個方面的優勢和改進空間，並致力於持續改進，提供一個積極、健康和具有發展機會的工作環境。

To further enhance the company's work environment and employee well-being, the Group conducts an annual employee satisfaction survey, valuing employee feedback to better understand their needs and expectations. This enables the Group to take appropriate corrective actions. The satisfaction survey covers various areas, including but not limited to, administrative and logistical services, headquarters campus management, dormitory management, and canteen management. Through these surveys, the Group identifies its strengths and areas for improvement across different facets and is dedicated to continuous enhancement, providing a positive, healthy, and development-oriented work environment.



公寓休閒區域  
Apartment leisure area

### 案例 Case

#### 員工關懷：生日賀卡 Employee Care: Birthday Cards

今年，集團以溫馨細緻的方式展現對員工的關懷與尊重，為每位員工精心準備生日賀卡。這不僅是對員工個人價值的認可，也是企業人文關懷精神的體現。賀卡承載了對員工辛勤付出的感謝與成長的祝願，增強了員工的歸屬感和幸福感，營造了和諧的團隊氛圍，讓每位員工感受到自己在天能這個大家庭中的重要性。

This year, the Group has shown its care and respect for employees in a warm and thoughtful manner by preparing personalized birthday cards for each employee. This gesture not only acknowledges the individual value of employees but also reflects the company's commitment to humanistic care. The birthday cards carry gratitude for employees' hard work and best wishes for their growth, enhancing their sense of belonging and happiness. It fosters a harmonious team atmosphere, making each employee feel valued and important within the Tianneng family.

#### 中秋節福利品發放 Mid-Autumn Festival Welfare Distribution

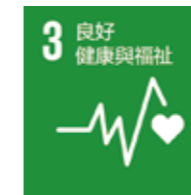
2024年9月，全集團開展中秋月餅發放活動，向員工傳遞企業重視傳統節日與員工福祉的價值觀。全集團共發放20,000多份中秋月餅，員工在收到月餅時感受到企業的關懷和重視，提升了滿意度和幸福感。這不僅是一項福利措施，更體現了企業關懷員工、傳遞文化、增強凝聚力和營造節日氛圍的用心，對企業長遠發展起到積極作用。

In September 2024, the entire Group launched a Mid-Autumn Festival mooncake distribution activity, conveying the company's values of honoring traditional festivals and prioritizing employee well-being. Over 20,000 mooncakes were distributed to employees, who felt the company's care and attention upon receiving them, enhancing their satisfaction and happiness. This initiative is not only a welfare measure but also reflects the company's commitment to employee care, cultural transmission, team cohesion, and the creation of a festive atmosphere, all of which contribute positively to the long-term development of the Company.

## 職業安全 Occupational Safety

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團在過去一年中安全管理水準持續改進，事故率有所下降，體現了對安全工作的高度重視和安全體系的逐步完善。通過強化監控、加強培訓及優化舉報機制，違規行為的識別與處置效率得到了提升，為運營提供了更穩健的支援。

In the past year, the Group has made continuous improvements in its safety management standards, resulting in a decrease in the accident rate, reflecting the strong emphasis placed on safety and the gradual improvement of the safety system. Through enhanced monitoring, strengthened training, and optimized reporting mechanisms, the efficiency of identifying and handling violations has been improved, providing more robust support for operations.

集團實行環保、安全和職業健康的三級管理模式。總部設立環保安防管理中心(EHS 管理中心)，統籌全集團相關工作；各事業部及子公司設立環保安防管理部(EHS 管理部)，構建覆蓋全集團的管理網絡，確保環保與安全標準有效落實。

The Group implements a three-tier management model for environmental protection, safety, and occupational health. The headquarters has established an Environmental Protection and Safety Management Center (EHS Management Center), which coordinates all related activities across the Group. Each business division and subsidiary has set up its own Environmental Protection and Safety Management Department (EHS Management Department), creating a management network that covers the entire Group to ensure the effective implementation of environmental protection and safety standards.

集團建立了環保與安防培訓體系，通過《環安教育培訓管理制度》明確培訓需求、計畫及效果評估要求，覆蓋新員工入職教育、在職員工再教育及專項培訓。培訓由人力資源中心與環保安防管理中心組織實施，各單位結合實際制定計畫，通過多樣化形式優化培訓效果，並將成效納入績效考核，以提升全員環保與安全意識，減少運營風險。

The Group has established a training system for environmental protection and safety, clearly defining training needs, plans, and performance evaluation requirements through the "Environmental Protection and Safety Education and Training Management System." The training covers new employee onboarding, ongoing employee re-education, and specialized training. Training is organized by the Human Resources Center and the Environmental Protection and Safety Management Center, with each unit developing plans tailored to actual needs. A variety of training methods are used to optimize training effectiveness, and results are incorporated into performance assessments to enhance overall environmental and safety awareness, reducing operational risks.



集團通過 ISO45001 職業健康安全管理体系認證，制定了《天能集團 EHS 管理體系制度》《應急管理制度》《工傷處理管理制度》等，以「分級管理、分線負責」為原則，持續完善應急管理工作，提升突發事件的應對能力。

The Group has passed the ISO45001 Occupational Health and Safety Management System certification and established the "Tianneng Group EHS Management System," "Emergency Management System," and "Work Injury Handling Management System." Adhering to the principles of "graded management and line responsibility," the Group continuously improves emergency management and enhances its ability to respond to unexpected incidents.

隨著智能化製造的推進，集團努力降低工傷風險，部分自動化系統在優化生產效率的同時減少了人工參與，降低了潛在工傷事故的可能性。報告期內未發生因工亡事件，近三年的統計資料顯示相關風險處於較低水準：

With the advancement of smart manufacturing, the Group strives to reduce work injury risks. Some automated systems have optimized production efficiency while reducing manual involvement, thereby lowering the potential for work-related accidents. During the reporting period, no fatalities occurred due to work-related incidents. Statistical data from the past three years shows that related risks remain at a low level:

	2024 年 Year 2024	2023 年 Year 2023	2022 年 Year 2022
因工亡故數量 Number of Work-Related Deaths	0	0	0
因工亡故員工比例 Ratio of Employees Who Died at Work	0	0	0

本集團進一步加強基地場地的規範管理，通過優化流程、提升設備維護水準和推進數字化監管，確保業務活動在法規框架內高效運行。我們採用先進技術和高品質工藝，不斷優化設備設計和製造，提升設備穩定性，降低故障率，確保生產過程的連續性與可靠性。同時，注重環境友好性，採用先進環保技術降低排放，確保符合嚴格法規要求，並持續探索新技術以減少碳排放。

The Group has further strengthened the standardized management of its facilities by optimizing processes, enhancing equipment maintenance standards, and promoting digital regulation to ensure business activities run efficiently within the regulatory framework. We use advanced technologies and high-quality craftsmanship to continuously optimize equipment design and manufacturing, improving equipment stability, reducing failure rates, and ensuring the continuity and reliability of the production process. At the same time, we focus on environmental friendliness, adopting advanced environmental protection technologies to reduce emissions, ensuring compliance with strict regulatory requirements, and continually exploring new technologies to reduce carbon emissions.

在安全防範方面，集團細化防範措施並常態化執行，加強安全標準遵守，通過定期培訓和演練提升員工風險應對能力。開發警示教育案例庫和視頻，通過真實案例強化安全意識，並組織電池著火和電解液洩漏等環境演練，驗證應急計畫的可行性並不斷改進。定期更新培訓材料，確保與最新安全標準和最佳實踐保持一致。

In terms of safety prevention, the Group has refined and normalized preventive measures, strengthened compliance with safety standards, and improved employees' risk response capabilities through regular training and drills. We have developed a library of warning education cases and videos to reinforce safety awareness through real-life examples, and organized environmental drills such as battery fires and electrolyte leaks to verify the feasibility of emergency plans and make continuous improvements. Training materials are regularly updated to ensure alignment with the latest safety standards and best practices.

此外，集團制定危險化學品管理規定，規範使用和儲存，降低操作風險，保障員工和環境安全。我們持續完善職業健康管理，提升職業健康防護設施和管理能力，逐步增強員工的健康保障水準，體現了對員工健康和平安的高度重視，同時履行企業社會責任，為公司可持續發展奠定基礎。

In addition, the Group has established regulations for the management of hazardous chemicals, standardizing their use and storage to reduce operational risks and safeguard employee and environmental safety. We continue to improve occupational health management, enhance occupational health protection facilities and management capabilities, and gradually increase employee health protection levels, demonstrating our high regard for employee health and safety. At the same time, we fulfill our corporate social responsibility, laying a solid foundation for the company's sustainable development.

## 供應鏈管理 Supply Chain Management

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



截至 2024 年 12 月 31 日，本集團供應商數量達到 3,200 余家，均位於中國內地，其中簽署供貨商行為準則以及簽訂包含環境和勞工要求條款的供應商數量占比均達到 100%。本集團堅持「公開公正、誠信經營、長期合作、共享共贏」的原則，聚焦全球優質供應商，致力維護供應鏈生態系統的良好發展，善待供應商、共贏商和利益相關方，實現客戶價值、投資者利益和企業發展的互動共贏。公司制定了《供應商檔案管理制度》《供應商審核管理標準》《供應商退出與淘汰制度》等 9 項相關管理制度，通過嚴格的供應商准入機制有效把控供應商品質，同時針對供應鏈反賄賂問題也有一系列管理辦法，有效提升了供應鏈的可持續性。

As of December 31, 2024, the Group had more than 3,200 suppliers, all located in Mainland China. The proportion of suppliers that have signed the Supplier Code of Conduct and agreements containing environmental and labor requirements reached 100%. The Group adheres to the principles of "openness and fairness, integrity in operation, long-term cooperation, and shared success," focusing on global high-quality suppliers. We are committed to maintaining the healthy development of the supply chain ecosystem, treating suppliers, business partners, and stakeholders with respect, and achieving mutual benefits for customer value, investor interests, and corporate development. The Company has established nine relevant management systems, including the "Supplier Profile Management System," "Supplier Audit Management Standards," and "Supplier Exit and Elimination System." Through a rigorous supplier admission mechanism, we effectively control supplier quality. Additionally, we have a series of management measures addressing anti-bribery in the supply chain, which has significantly enhanced the sustainability of the supply chain.

本集團為保證公司與供應商之間的公平性和可持續性，避免腐敗事件發生，本集團在與供應商合作前要求其簽署《廉潔協定》，有效地規避了在採購過程中存在的賄賂事件風險，進而實現公司供應鏈的穩固發展。

To ensure fairness and sustainability in our relationships with suppliers and to avoid corruption incidents, the Group requires suppliers to sign an "Integrity Agreement" before cooperating. This effectively mitigates the risk of bribery in the procurement process and ensures the stable development of the company's supply chain.

同時,本集團嚴格遵循供應商管理制度及流程,對供應商展開盡職調查,識別及評估供應商對環境及社會所產生的影響;通過供應商管理平臺(SRM)監測並識別供應商風險;每年對供應商展開打分匯總,績效評估。本集團鼓勵供應商獲得與環境保護、品質管制、職業健康與安全管理相關的認證,例如ISO 14001、ISO 9001和ISO 45001等。這些認證將被納入供應商的績效考核範疇之一,使得供應商在綠色採購中發揮更積極主動的作用。

對集團內部,我們優化供應鏈業務流程,創新供應鏈技術和模式,聚焦供應鏈物流環節搭建物流平臺,實現視覺化的全程物流監控,讓客戶更好地實施貨權的管控。對外部合作夥伴,我們建立供應鏈戰略聯盟,在充分借鑒吸收供應商優質經驗的同時,定期組織開展合格供應商評價工作,通過對產品品質、工藝裝備、程序控制、技術服務、安全生產等內容的考察、調研及審核,及時分享經驗,提出合理化建議,並通過技術、資金和人力支援,使部分供應商提升管理水準,實現價值鏈體系競爭力的共同提升。

為順應綠色可持續發展戰略,供應商的環境、社會和治理(ESG)治理水準也日益受到關注。本集團將新供應商的環保和合規性標準設定為准入的底線,以確保對新供應商的資質實施嚴格控制。新供應商必須遵守特定的ESG相關要求,同時我們會對現有供應商的ESG合規性進行審查。通過這一舉措,我們致力於建立一個更可持續、負責任的供應鏈體系,共同推動環境友好型的商業實踐。

At the same time, the Group strictly follows supplier management systems and processes, conducts due diligence on suppliers, identifies and assesses the environmental and social impacts of suppliers, and monitors and identifies supplier risks through the Supplier Relationship Management (SRM) platform. We conduct annual scoring and performance evaluations of suppliers. The Group encourages suppliers to obtain certifications related to environmental protection, quality control, occupational health, and safety management, such as ISO 14001, ISO 9001, and ISO 45001. These certifications will be included in supplier performance evaluations, encouraging suppliers to play a more active role in green procurement.

Internally, we optimize the supply chain business processes, innovate supply chain technologies and models, and focus on building a logistics platform for the supply chain logistics process. This allows for visualized full-process logistics monitoring, enabling customers to better manage their goods rights. For external partners, we have established strategic alliances in the supply chain. While fully drawing from the valuable experiences of suppliers, we regularly carry out qualified supplier evaluations. By examining, researching, and auditing aspects such as product quality, process equipment, program control, technical services, and safety production, we share experiences, offer rational suggestions, and provide technical, financial, and human resources support to help some suppliers improve their management levels and enhance the competitiveness of the value chain system.

In line with the green sustainable development strategy, the environmental, social, and governance (ESG) governance levels of suppliers are increasingly being emphasized. The Group sets environmental protection and compliance standards as the baseline for admitting new suppliers to ensure strict control over their qualifications. New suppliers must adhere to specific ESG-related requirements, and we will also review the ESG compliance of existing suppliers. Through this initiative, we aim to build a more sustainable and responsible supply chain system, jointly promoting environmentally friendly business practices.

## 投資者權益 Investors' Equity

本章內容所涉及的可持續發展目標:

The sustainable development goals covered in this chapter:



本集團高度重視投資者關係管理,致力於保障投資者的知情權,並推動投資者教育與保護工作。在嚴格遵守信息披露規定的基礎上,本集團通過多元化的溝通渠道,包括投資者熱線、定期投資者會議、郵件聯繫、來訪接待、公司網站投資者關係專欄及官方微信平台等,與投資者保持密切互動,積極強化投資者關係平臺建設,提升服務效率與品質。

在與投資者交流的過程中,本集團不僅主動分享公司業績和運營成果,更注重傾聽投資者的意見和建議,以確保其權益得到充分尊重。截至2024年底,天能動力已累計進行16次現金分紅,總金額達46.78億港元,體現了對股東回報的高度重視。透過股東大會這一集體決策和信息共享平臺,本集團努力確保所有股東充分了解公司的戰略方向、財務狀況和未來規劃。

本集團堅守對投資者權益的承諾,以透明、誠信的溝通促進投資者在企業決策中的關鍵作用。不僅追求經濟效益,我們更致力於在商業運營中實現共贏,積極踐行社會責任,與股東及其他利益相關方共同推動可持續發展。

The Group attaches great importance to investor relations management and is committed to safeguarding investors' right to information and promoting investor education and protection. On the basis of strict compliance with information disclosure requirements, the Group maintains close interaction with investors through diversified communication channels, including investor hotlines, regular investor meetings, email communication, reception of visitors, investor relations columns on the Company's website and the official WeChat platform, etc. The Group has actively strengthened the construction of its investor relations platform and enhanced the efficiency and quality of its services.

In the course of communication with investors, the Group not only takes the initiative to share the Company's results and operational achievements, but also pays attention to listening to investors' opinions and suggestions to ensure that their rights and interests are fully respected. As at the end of 2024, Tianneng Power has made a total of 16 cash dividends totalling HK\$ 4.678 billion, reflecting the high importance attached to shareholders' returns. Through the shareholders' meeting, which is a platform for collective decision-making and information sharing, the Group endeavours to ensure that all shareholders are fully informed of the Company's strategic direction, financial position and future plans.

The Group maintains its commitment to the interests of investors and promotes the key role of investors in corporate decision-making through transparent and honest communication. We not only pursue economic benefits, but also endeavour to achieve a win-win situation in our business operations, actively fulfil our social responsibilities and promote sustainable development with our shareholders and other stakeholders.

■ 奖项 Awards



本集團連續多年榮獲香港投資者協會投資者關係大獎  
The Group has been awarded the Investor Relations Award by the Hong Kong Investor Relations Association for consecutive years.

社區參與與公益 Community Engagement and Public Welfare

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團作為新能源電池行業領軍企業，一方面以科技創新驅動高品質發展，另一方面積極承擔「企業公民」的角色，以實際行動回報社會關心。多年來，天能累計向社會捐贈了人民幣數千萬元的物資和現金，用於各類搶險救災、公益慈善、養老助學等。

As a leading enterprise in the new energy battery industry, the Group drives high-quality development through technological innovation while actively fulfilling its role as a "corporate citizen," giving back to society through concrete actions. Over the years, Tianneng has donated millions of RMB in materials and cash to support various disaster relief efforts, public welfare, charity, elderly care, and education assistance.

案例 Case

天能濮陽公司助殘就業成效顯著

Tianneng Puyang Company Achieves Significant Results in Assisting Disabled Employment

天能濮陽公司成立以來，積極履行社會責任，通過開展技能培訓、困難補助、走訪慰問等幫扶活動，推動殘疾人高品質就業。目前，職工總數 3,180 人，安置殘疾人職工 50 余人，是濮陽市安置殘疾人就業崗位最多的民營企業。榮獲「全國殘疾人按比例就業基地」稱號。

Since its establishment, Tianneng Puyang Company has actively fulfilled its social responsibilities by providing skill training, hardship subsidies, and visitation support, promoting high-quality employment for disabled individuals. Currently, the company has a total of 3,180 employees, with over 50 disabled employees, making it the private enterprise with the most disabled employment positions in Puyang City. The company has been awarded the title of "National Disabled Employment Base According to Proportional Employment."



「全國殘疾人按比例就業基地」榮譽稱號  
Honorary title of "National Disabled Employment Base According to Proportional Employment"

退伍軍人僱傭  
Veteran Employment

本集團對退伍軍人採用優先招聘就業政策，2024 年本集團在冊員工中退伍軍人 400 余人，其中 10 人任職高級管理層，130 余人任職初、中級管理層。

The Group implements a priority recruitment policy for veterans. As of 2024, the Group employs over 400 veterans, among whom 10 serve in senior management positions and over 130 serve in junior and middle management roles.

煤山公司組織無償獻血活動

Tianneng Meishan Company Organizes Voluntary Blood Donation Campaign

近期，天能煤山公司組織開展「無償獻血，大愛天能」活動，職工們積極參與。煤山公司積極履行社會責任，組織無償獻血 10 餘年，累計獻血 112 人次，獻血量達 33,200 毫升，以實際行動踐行社會責任和企業擔當。

Recently, Tianneng Meishan Company organized a voluntary blood donation campaign titled "Voluntary Blood Donation, Great Love from Tianneng," with active participation from employees. The company has been fulfilling its social responsibility by organizing voluntary blood donation events for over 10 years. A total of 112 blood donations have been made, amounting to 33,200 milliliters of blood, demonstrating the company's commitment to social responsibility and corporate accountability through tangible actions.



組織獻血活動  
Organize Blood Donation

案例 Case

## 汶川優秀青年調研團走進天能 The Wenchuan Outstanding Youth Research Team Visits Tianneng

為深入開展汶川、長興兩地東西協作交流交往交融，9月5日，汶川縣30位優秀青年來到長興，走進天能和新川村進行調研交流。國網汶川縣供電公司員工表示，在天能文化展廳我學習到了很多，天能對新質生產力的認識十分深刻，從企業轉型升級，到智能工廠再到走「雙碳」可持續發展之路的經驗值得我們借鑒和學習，這一次學習之旅，我感覺收穫滿滿。

To deepen the East-West cooperation and exchanges between Wenchuan and Changxing, on September 5th, 30 outstanding youth from Wenchuan County visited Changxing and conducted research and exchanges at Tianneng and Xinchuan Village. Employees from the State Grid Wenchuan County Power Supply Company shared that they had learned a lot from Tianneng's cultural exhibition hall. They noted that Tianneng's profound understanding of new productive forces, from enterprise transformation and upgrading to the development of smart factories and the pursuit of the "dual-carbon" sustainable development path, is a valuable experience that they can learn from and emulate. This learning journey, they said, had been very rewarding.

活動前，汶川優秀青年調研團還參觀了新川案例館、誠信館，並進行交流座談，詳細瞭解了天能與新川村「村企共建」模式及發展情況。

Before the event, the Wenchuan Outstanding Youth Research Team also visited the Xinchuan Case Pavilion and the Integrity Pavilion, engaging in discussions and learning in detail about Tianneng's "village-enterprise co-construction" model and its development.

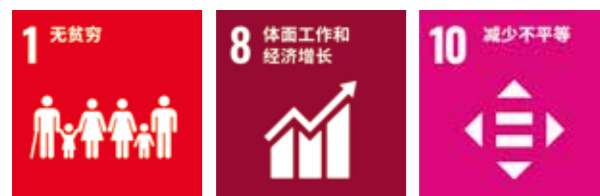


調研團進行展廳參觀  
The delegation visited the exhibition hall

## 就業與納稅 Employment and Taxes

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



## 奖项 Awards

本集團在稅收方面展現了強烈的社會責任感。2024年，本集團在全國各地共繳納稅收超人民幣36.9億元，第十次獲得浙江省湖州市「金象」企業、「納稅大戶」兩項榮譽。

The Group has demonstrated a strong sense of social responsibility in terms of taxation. In 2024, the Group paid a total of 3.69 billion RMB in taxes nationwide and was awarded the "Golden Elephant" enterprise and "Major Taxpayer" honors for the tenth time in Huzhou City, Zhejiang Province.



「金象」企業榮譽  
The "Golden Elephant" enterprise

本集團致力於提供多元化的就業機會，在新能源電池業務領域招聘專業人才，同時注重為不同層次、背景和技能的人才提供機會。促進社會的多元發展的同時，為更廣泛的人群提供可持續的就業機會。此外，本集團制定並實施了公平薪酬和福利政策，以確保員工在薪酬和福利方面能夠享有公正的待遇，為整個社會創造更加公平和健康的就業環境。

The Group endeavours to provide diversified employment opportunities by recruiting professionals in the new energy battery business field while focusing on providing opportunities for talents of different levels, backgrounds and skills. While promoting the diversified development of the society, the Group also provides sustainable employment opportunities for a wider range of people. In addition, the Group has formulated and implemented a fair remuneration and benefits policy to ensure that its employees are treated fairly in terms of remuneration and benefits, thereby creating a fairer and healthier employment environment for the whole society.

本集團以合規的方式履行納稅義務，準確申報和支付各項稅款。遵循國家稅收法規，同時積極主動配合稅務部門的審計和調查工作，確保稅收申報的透明度和真實性。本集團通過合理合法的稅收規劃，在保障自身發展的同時，為國家經濟發展創造了更多的就業機會和財富。

The Group fulfils its tax obligations in a compliant manner by accurately filing and paying all taxes. The Group complies with national tax laws and regulations and actively co-operates with the tax authorities in their audits and investigations to ensure the transparency and truthfulness of tax returns. Through reasonable and lawful tax planning, the Group has created more job opportunities and wealth for the country's economic development while safeguarding its own development.

## 鄉村振興 Rural Revitalization

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團通過與新川村的共建，積極探索共富的新路徑。一方面，通過產業帶動促進經濟發展，本集團充分發揮龍頭企業的引領作用，引導新川村民發展電池配套產業，並吸引毛竹深加工、塑殼加工等項目落地，形成以動力電池為核心的新能源、新材料和新服務產業生態圈，為村民創造了「就業不離土、安居不離鄉」的富民路。

另一方面，天能通過模式創新推動增收，支援新川成立 3 家強村公司，引入現代股權基金模式助力鄉村振興，發展綠色工業、休閒農業、旅遊經濟等產業，進一步延長富民產業鏈，讓村民共用鄉村發展紅利。

本集團與新川的「村企共建」已持續超過 20 年，逐步探索出了產業興旺、環境宜居、治理有效、鄉風文明的「新川模式」，並榮獲 2023 年浙江省「萬企興萬村」實驗項目。天能計劃將這一成功模式推廣到其他投資地，推動更多地區實現共同發展。

此外，本集團還致力於縮小地區差距，積極回應「東西協作」和「山海協作」的號召，深入開展「萬企興萬村」等行動。從 2005 年起，本集團在河南、江蘇、安徽、貴州等省陸續開設工廠，通過產業引領、結對共建和就業拉動等措施，解決了上萬群眾的就業和生活問題。2018 年，天能在貴州黔東南州台江縣投資建設了生產基地，至 2022 年，該基地產值超過 30 億元，帶動近 2,000 人就業，成為當地規模最大的企業之一。



鄉村建設  
Village Development

Through its co-construction efforts with Xinchuan Village, the Group is actively exploring new pathways for common prosperity. On one hand, the Group promotes economic development through industry-driven initiatives, fully leveraging its role as a leading enterprise. It has guided the residents of Xinchuan Village to develop supporting industries for batteries, while also attracting projects such as bamboo processing and plastic shell manufacturing, thus forming an industrial ecosystem centered on power batteries. This ecosystem includes new energy, new materials, and new service industries, creating a "wealth-building path" for villagers that allows them to "earn a living without leaving their land and settle down without leaving their hometown."

On the other hand, Tianneng drives income growth through innovative models. It has supported the establishment of three strong village companies in Xinchuan, introducing modern equity fund models to aid rural revitalization. This initiative focuses on developing green industries, leisure agriculture, tourism economies, and other sectors, further extending the wealth-creating industrial chain and allowing villagers to share in the benefits of rural development.

The Group's "village-enterprise co-construction" with Xinchuan has lasted for over 20 years, gradually developing the "Xinchuan Model" of prosperous industries, a livable environment, effective governance, and civilized rural customs. In recognition of these achievements, the initiative was awarded the 2023 Zhejiang Province "Ten Thousand Enterprises Revitalizing Ten Thousand Villages" experimental project. Tianneng plans to replicate this successful model in other investment locations, promoting mutual development in more regions.

In addition, the Group is committed to narrowing regional disparities by actively responding to the calls for "East-West Cooperation" and "Mountain-Sea Cooperation," and implementing actions such as the "Ten Thousand Enterprises Revitalizing Ten Thousand Villages" campaign. Since 2005, the Group has successively established factories in provinces including Henan, Jiangsu, Anhui, and Guizhou. Through industry-driven leadership, paired construction efforts, and job creation, the Group has solved employment and livelihood issues for tens of thousands of people. In 2018, Tianneng invested in the establishment of a production base in Taijiang County, Qiandongnan Prefecture, Guizhou Province. By 2022, the base's output value exceeded 3 billion RMB, creating nearly 2,000 jobs, and becoming one of the largest enterprises in the region.

通過與產業鏈的聯建合作，本集團不斷推進區域協調發展，特別是在西部和山區海島縣等欠發達地區，通過產業佈局和「鏈主」企業的引領，推動當地經濟高品質發展。天能將持續拓寬就業渠道，縮小地區差距，為推動共同富裕作出更大貢獻。

Through co-building with its industrial chain partners, the Group continues to advance regional coordinated development, especially in underdeveloped areas such as the western regions and mountain-island counties. By laying out industries and guiding "leading enterprises" in these areas, the Group is driving high-quality economic development locally. Tianneng will continue to broaden employment opportunities, reduce regional disparities, and make greater contributions to promoting common prosperity.

案例 Case

### 助力湖州市安吉縣余村零碳鄉村建設

Supporting the Construction of a Zero-Carbon Village in Yu Village, Anji County, Huzhou City

本集團持續在安吉縣余村進行零碳示範建設，參與《零碳鄉村評價標準》主編工作，並建立零碳村鎮治理體系方案，配套建設綠色智慧能源系統集成應用示範項目，著重開發了多項關鍵核心技術。2024 年 11 月，該項目獲零碳鄉村應用成果證明，項目實施每年生產 105 萬 kWh 綠色能源，節約標準煤約 315 噸，減排約 1,047 噸 CO<sub>2</sub>，相當於每年種植 4.6 萬棵樹，實現了鄉村振興和可持續發展的協同增效。

The Group has been continuously advancing the zero-carbon demonstration project in Yucun, Anji County, participating as the lead editor of the Zero-Carbon Village Evaluation Standard and formulating a zero-carbon township governance framework. In parallel, the Group has developed an integrated demonstration project for a green and intelligent energy system, focusing on the development of multiple core technologies. In November 2024, the project obtained certification for its zero-carbon village application achievements. Upon implementation, the project generates 1.05 million kWh of green energy annually, saving approximately 315 tonnes of standard coal and reducing around 1,047 tonnes of CO<sub>2</sub> emissions, which is equivalent to planting 46,000 trees each year. This project has successfully achieved synergistic benefits in promoting rural revitalization and sustainable development.

### 奖项 Awards

#### 《「中國式現代化·鄉村十記」大型融媒體蹲點報導》喜獲中國新聞獎三等獎 The large-scale multimedia report "China-style Modernization: Ten Stories from the Countryside" wins the third prize at the China Journalism Awards

在第 34 屆中國新聞獎評選中，湖州市新聞傳媒中心的《「中國式現代化·鄉村十記」大型融媒體蹲點報導》榮獲三等獎。該報導詳細介紹了本集團與新川村開展「村企共建」26 年來的成果。新川村通過產業帶動經濟增長、模式創新促進增收、鄉賢支持推動發展，致力打造全國和全省村級共富樣板。村莊在堅持生態優先、綠色發展的道路上實現蝶變，從一個落後小村莊轉型為「綠富美」典範。新川模式為我國推動鄉村振興、走中國式鄉村現代化道路和實現共同富裕提供了有力的理論和實踐示範。

In the 34th China Journalism Awards, the "China-style Modernization: Ten Stories from the Countryside" large-scale multimedia report by the Huzhou News Media Center won the third prize. This report provides a detailed account of the achievements of the Group's 26-year collaboration with Xinchuan Village through the "Village-Enterprise Co-construction" initiative. Xinchuan Village has driven economic growth through industrial development, promoted income increase through model innovation, and supported development through the efforts of local leaders. The village has aimed to create a national and provincial model for rural shared prosperity. The village has undergone a transformation from a backward rural area into a "green, prosperous, and beautiful" model while adhering to ecological prioritization and green development. The Xinchuan model offers strong theoretical and practical examples for China's rural revitalization efforts, the promotion of Chinese-style rural modernization, and the realization of common prosperity.

## 建言獻策 Proposals and Suggestions

本集團董事局主席張天任先生長期以來一直致力於關注綠色可持續發展，在他擔任全國人大代表的 12 年間，以高度的政治熱情和責任感，充分履行了作為全國人大代表的職責。2024 年兩會期間，張天任代表認真審議各項報告和決議，共向全國人大提交了 4 件議案和 20 余件高質量建議。內容包括可再生能源、應對氣候變化、養老服務、行業協會商會，以及助推新能產源產業發展，推動鄉村振興和共同富裕，支援實體經濟，宣導綠色發展，保障電動車安全和區域經濟等國家重大戰略和社會民生議題。

Mr. Zhang Tianren, Chairman of the Board of Tianneng Group, has long been committed to promoting green and sustainable development. During his 12 years as a National People's Congress (NPC) representative, he has diligently fulfilled his duties with great political enthusiasm and responsibility. During the 2024 Two Sessions, Representative Zhang reviewed various reports and resolutions carefully and submitted 4 legislative proposals and over 20 high-quality suggestions to the NPC. These proposals cover critical national strategies and social livelihood issues, including renewable energy, climate change response, elderly care services, industry associations and chambers of commerce, promoting the development of the new energy industry, advancing rural revitalization and common prosperity, supporting the real economy, advocating green development, ensuring electric vehicle safety, and fostering regional economic growth.

### 關於修改《可再生能源法》的議案 Proposal to Amend the Renewable Energy Law

《可再生能源法》2006 年實施，2009 年全國人大常委會予以修改，迄今已有 14 年。隨著產業發展，該法在取得積極成效的同時，也存在約束漏洞。建議：修改完善全額保障性收購制度；制訂科學合理的考核機制；優化調整電價補貼；細化相關法律責任條款。

The Renewable Energy Law, implemented in 2006 and amended by the Standing Committee of the National People's Congress in 2009, has been in effect for 14 years. With the development of the industry, the law has achieved positive results but also contains some constraints and gaps. It is proposed to amend and improve the full-guarantee purchase system, establish a scientific and reasonable assessment mechanism, optimize and adjust the electricity price subsidy, and refine the relevant legal responsibility provisions.

### 關於加快制訂《應對氣候變化法》形成碳減排立法體系的議案 Proposal to Accelerate the Formulation of the Climate Change Law and Establish a Carbon Emission Reduction Legislative System

「3060」雙碳目標，是我國在統籌國內國際兩個大局，經過深思熟慮作出的重大戰略決策，也體現了積極應對全球氣候危機、著力推動構建人類命運共同體的擔當。氣候變化是事關全人類的危機，需要多元參與，協同治理，建議：加快制訂《應對氣候變化法》，形成碳減排立法體系議案，是實現雙碳目標的迫切需要，為加快發展方式綠色低碳轉型提供法治保障，也為我國在深化氣候領域雙邊合作中爭取主動權。

The "3060" dual-carbon target is a major strategic decision made by China after careful consideration of both domestic and international dynamics. It reflects China's commitment to actively addressing the global climate crisis and contributing to the building of a community with a shared future for mankind. Climate change is a crisis that affects all of humanity, requiring multi-party participation and coordinated governance. It is recommended to accelerate the formulation of the Climate Change Law to establish a carbon emission reduction legislative framework, which is an urgent need for achieving the dual-carbon goals. This will provide legal support for accelerating the transition to a green, low-carbon development model and help China gain a proactive role in deepening bilateral and multilateral cooperation in climate-related fields.

### 關於制訂《養老服務法》的議案 Proposal to Formulate the Elderly Care Services Law

我國已經進入老齡化社會，但缺少一部綜合性的《養老服務法》。建議制訂《養老服務法》：構建多方參與的養老服務工作格局，鼓勵養老服務技術創新，完善家庭養老支持體系，強化監管和法治保障。

As China has entered an aging society, there is currently no comprehensive Elderly Care Services Law. It is proposed to establish such a law to build a multi-party participation framework for elderly care services, encourage innovation in elderly care technologies, improve the family-based elderly care support system, and strengthen regulatory and legal safeguards.

### 關於制訂《行業協會商會法》的議案 Proposal to Formulate the Industry Associations and Chambers of Commerce Law

行業協會商會是我國經濟建設和社會發展的重要力量，目前我國沒有一部專門性的行業協會綜合立法。制定《行業協會商會法》的議案，明確行業協會商會的性質職責和權利義務，建議：規範管理、服務賦能、建立綜合監管體制，保障會員合法權益，進一步激發市場活力，為市場主體營造一個公平、公正、透明的環境。

Industry associations and chambers of commerce play an important role in China's economic construction and social development. However, there is currently no specialized legislation for industry associations. It is proposed to draft the Industry Associations and Chambers of Commerce Law, which would define the nature, responsibilities, and rights of these organizations. This law would standardize management, empower services, establish a comprehensive regulatory system, protect the legal rights of members, and further stimulate market vitality, creating a fair, just, and transparent environment for market participants.



全國人大代表、本集團董事局主席張天任先生  
Mr. Zhang Tianren, Deputy to the National People's Congress and Chairman of the Board of Directors of the Group

# 06

Thematic Section

## 專題展示



專題一 智慧製造與數字化轉型

Topic I Smart Manufacturing and Digital Transformation

專題二 打造電池循環全生態產業鏈

Topic II Creating a Battery Cycle Ecological Industrial Chain



# 專題展示 Thematic Section

## 專題一 智慧製造與數字化轉型

### Topic 1 : Smart Manufacturing and Digital Transformation

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



本集團聚焦智慧儲能、氫能等領域的技術創新，持續提升循環經濟領域的自主創新能力，推動行業技術進步，積累了豐富的技術經驗與項目案例。綠色產業不僅考驗企業定力，更是技術變革的核心。天能不斷推動科技創新，推進“綠色智造”高品質發展，走出具有浙江特色的綠色低碳轉型路徑，積極為實現國家“雙碳”目標貢獻力量。

自 2011 年推出行業首條全自動電池組裝生產線並榮獲中國專利優秀獎以來，本集團不斷推動技術革新。2015 年，我們建立了國內首條全自動連續鑄連軋連沖連塗鍛造生產線，進一步提升了生產效率與精度；到 2022 年，天能成為鉛電行業首家投入運行全產業鏈智慧工廠的公司；而 2023 年，我們又發佈了行業首個全生命週期關鍵技術智慧製造平臺——「全擎技術智造平臺」。

Focusing on technological innovation in areas such as smart energy storage and hydrogen energy, the Group continues to enhance its independent innovation capability in the field of circular economy and promote technological advancement in the industry, accumulating rich technological experience and project cases. The green industry is not only a test of an enterprise's determination, but also the core of technological change. Tianneng continuously promotes scientific and technological innovation, advances the high-quality development of "Green Intelligence", and walks out of the green and low-carbon transformation path with Zhejiang characteristics, actively contributing to the realization of the country's "dual-carbon" goal.

Since the launch of the industry's first fully automated battery assembly production line in 2011, which won the China Patent Excellence Award, the Group has continuously promoted technological innovation. In 2015, we established the country's first fully automated continuous casting, rolling, punching, and coating forging production line, further improving production efficiency and precision. By 2022, Tianneng became the first company in the lead battery industry to operate a full-industry-chain smart factory. In 2023, we launched the industry's first full-lifecycle key technology smart manufacturing platform — the "Quanqing Technology Smart Manufacturing Platform."

在技術創新的背後，天能始終堅持將技術與產品緊密結合，打破傳統應用場景的限制。以 E5 金剛電池為例，其成功應用了四連鍛造技術和高密度極群技術；而真黑金電池憑藉石墨烯技術，不僅贏得了市場青睞，還榮獲了世界製造大會創新產品金獎。這些技術突破和產品創新標誌著天能在智慧製造領域的持續領先，彰顯了我們在推動行業變革和提升產品競爭力方面的不斷努力。

報告期內，本集團積極推動智慧製造轉型自主研發的「鉛產業智慧製造計畫管理系統」獲得國家版權局認可，標誌著天能在智慧製造領域的技術實力與創新能力得到了充分肯定。該系統的應用實現了從傳統「紙間」管理到數字化管理的跨越，大幅提升了生產效率，優化了資源配置，推動了產業鏈智能化升級。該系統無需安裝用戶端，使用者可直接通過瀏覽器運行，極大地提高了系統的便捷性與可操作性。系統支援全週期節點的追溯，有效提升了訂單交付效率，特別是在訂單派單方面的創新成果顯著。

Behind these technological innovations, Tianneng has always insisted on closely integrating technology with products, breaking the limitations of traditional application scenarios. For example, the successful application of the four-forging technology and high-density electrode group technology in the E5 Diamond battery has made significant breakthroughs. Meanwhile, the True Black Gold battery, leveraging graphene technology, has not only gained market favor but also won the Innovation Product Gold Award at the World Manufacturing Conference. These technological breakthroughs and product innovations represent Tianneng's continuous leadership in the field of smart manufacturing, demonstrating our ongoing efforts to drive industry transformation and enhance product competitiveness.

During the Reporting period, the "Lead Industry Intelligent Manufacturing Planning Management System" independently researched and developed by the Group to actively promote the transformation of intelligent manufacturing has been recognized by the National Copyright Administration of China, which signifies that TIANENG's technical strength and innovation ability in the field of intelligent manufacturing has been fully affirmed. The application of the system realizes the leap from traditional "paper room" management to digital management, significantly improves production efficiency, optimizes resource allocation, and promotes the intelligent upgrading of the industrial chain. The system does not require the installation of a client, and users can run it directly through the browser, greatly improving the convenience and operability of the system. The system supports full-cycle node tracing, which effectively improves order delivery efficiency, especially in the area of order dispatching with significant innovative results.



天鉛產業智慧製造計畫管理系統  
Lead Industry Intelligent Manufacturing Planning Management System



在集團馬鞍山基地的試點應用中，我們成功將傳統的人工派單轉變為智慧派單，派單率達到 99%，準確率提升了 80%。過去需要 2 天時間完成的「紙質」派單流程，現在僅需 10 分鐘即可完成，極大地提高了生產效率。該智慧系統每天能夠分配近 80 萬隻電池，推動了全鏈路的提質增效。在智慧排產方面，系統能夠即時更新月、周、日生產計畫，確保生產安排更加精準高效。隨著馬鞍山基地引入裝配段的成功應用，本集團計畫將這一智慧製造系統推廣至其他生產基地，進一步提升整體運營效率。

除了核心裝配段的智能化應用外，本集團還在精益求精的基礎上，積極拓展極板、充電、物料管控等新場景，加快智慧工廠與數字化車間建設。公司堅持實施「三化一變」智慧製造策略，致力於通過高度自動化、深度數字化、局部智能化及關鍵業務變革，推動整體生產效率和品質的提升。通過挖掘海量資料並精確分析每個生產環節，本集團已建成國內最大新能源動力電池生產基地，並成為行業首家實現全產業鏈智慧工廠系統場景應用的公司。

In the pilot application at the Group's Ma'anshan base, we successfully transformed the traditional manual order allocation process into an intelligent order allocation system. The order allocation rate reached 99%, and accuracy improved by 80%. The "paper-based" order allocation process, which used to take two days to complete, now takes only 10 minutes, greatly improving production efficiency. The intelligent system can allocate nearly 800,000 batteries daily, driving quality improvement and efficiency across the entire production chain. In terms of intelligent production scheduling, the system can instantly update the monthly, weekly, and daily production plans, ensuring more precise and efficient production arrangements. With the successful application of the assembly section at the Ma'anshan base, the Group plans to extend this intelligent manufacturing system to other production bases, further enhancing overall operational efficiency.

In addition to the intelligent application in the core assembly section, the Group is actively expanding into new areas such as plate manufacturing, charging, and material control, based on continuous improvement, to accelerate the construction of smart factories and digital workshops. The Company adheres to the "Three Transformations, One Change" intelligent manufacturing strategy, committed to enhancing overall production efficiency and quality through high automation, deep digitization, localized intelligence, and key business transformations. By mining vast amounts of data and accurately analyzing each production link, the Group has established the largest new energy power battery production base in China and has become the first company in the industry to implement intelligent factory system applications across the entire industrial chain.

## ■ 智慧工廠：ESG領域的領先實踐 Smart Factory: A Leading Practice in the ESG Field

本年，集團濮陽公司成功入選河南省 5G 全連接工廠名單，標誌著公司在智慧製造和 ESG 實踐方面取得了新的里程碑。這是天能首家 5G 工廠，專注於新型動力電池製造，展示了企業在智能化和可持續發展領域的創新實力。

This year, the Group's Puyang company was successfully selected as one of the 5G fully connected factories in Henan Province, marking a new milestone in the company's smart manufacturing and ESG practices. This is Tianneng's first 5G factory, focused on the production of new power batteries, showcasing the company's innovative strength in the fields of intelligence and sustainable development.

濮陽公司 5G 網絡覆蓋率超過 98%，通過「5G+ 物聯網」和 AI 模型的深度應用，實現了遠端監控人員與作業環境、即時聯動工廠資料的創新模式。這一體系覆蓋了企業 98 條產線和 64 條巡檢路線，執行了超過 5, 800 條巡檢任務，大幅提升了生產與管理的效率。

The Puyang factory's 5G network coverage exceeds 98%. Through the deep application of "5G + Internet of Things" and AI models, the factory has realized an innovative model of remote monitoring personnel interacting with the operating environment and real-time linkage with factory data. This system covers 98 production lines and 64 inspection routes, performing over 5,800 inspection tasks, greatly improving production and management efficiency.

濮陽公司以智能化、數字化為核心，深度融合 5G 技術，推動了產業的提質增效，作為行業內的標杆項目，充分體現了天能在智慧製造、綠色發展和社會責任領域的卓越表現，為實現 ESG 目標提供了重要支援。

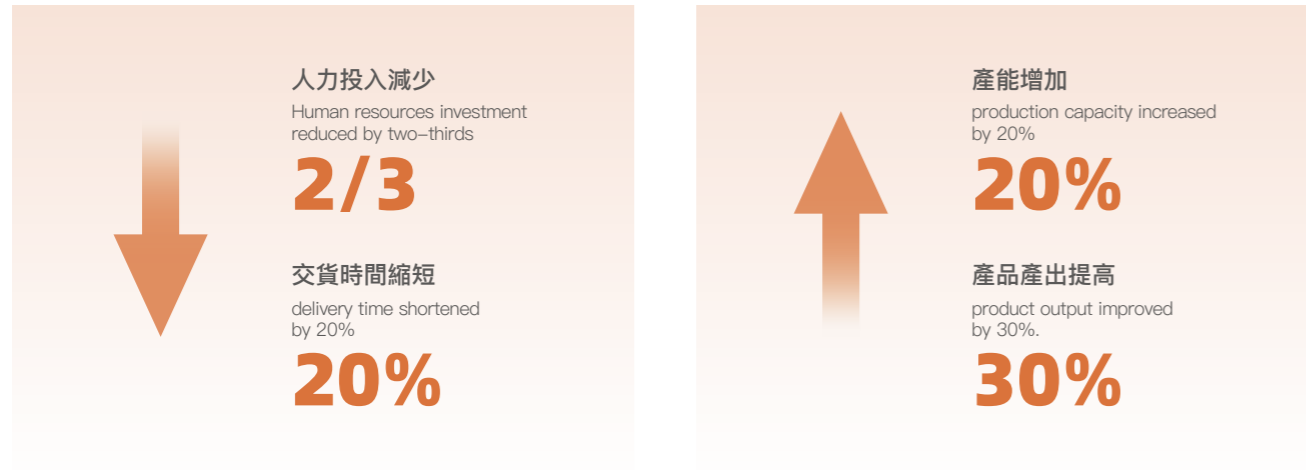
With intelligence and digitalization at its core, the Puyang factory deeply integrates 5G technology to drive quality improvement and efficiency in the industry. As a benchmark project in the sector, it fully demonstrates Tianneng's outstanding performance in smart manufacturing, green development, and social responsibility, providing crucial support for achieving ESG goals.



智能製造產綫  
Intelligent Manufacturing Line



智能製造產綫  
Intelligent Manufacturing Line



- 5 家「國家工業產品綠色設計示範企業」  
5 "National Green Design Demonstration Enterprises for Industrial Products"
- 10 家「國家綠色工廠」  
10 "National Green Factories"
- 10 家「國家綠色供應鏈管理示範企業」  
10 "National Green Supply Chain Management Demonstration Enterprises"
- 22 項國家綠色產品等國字型大小榮譽  
22 National Green Products and other national honors
- 參與制定國家、行業等各類標準 265 餘項  
Participated in the formulation of more than 265 national and industry standards

## 專題二:打造電池循環全生態產業鏈

### Topic II: Creating a Battery Cycle Ecological Industrial Chain

本章內容所涉及的可持續發展目標：

The sustainable development goals covered in this chapter:



作為新能源產業的新興業態，動力電池回收體系與處理技術不斷發展完善，為綠色低碳循環經濟的建設注入了強勁動力。本集團通過科學管理措施，充分利用可回收的污染物和廢棄物，實施資源再利用，既減少了環境污染，又提高了資源的利用效率。在動力電池回收領域，本集團通過在電池生產研發、退役電池回收利用等方面的持續創新，樹立了綠色發展的典範，保障了產業鏈的安全與穩定。

本集團通過發展循環產業，實現了環境、經濟、社會效益的有機統一，為綠色增值提供了重要支援。通過綠色智造與循環回收，本集團將綠色發展理念貫穿產品設計、製造、回收與處置的全過程，形成了閉環式綠色產業鏈。始終堅持綠色發展的核心戰略，本集團通過構建「回收—處置—利用」的全生態產業鏈，為行業樹立了可持續發展的標杆。

在業務規模方面，本集團已具備顯著的市場影響力，每年處理近百萬噸廢舊鉛蓄電池，並高效轉化為再生精鉛及其他材料，產品品質可與原生材料媲美，廣泛應用於生產製造，助力產業鏈的綠色循環。隨著新項目的落地，本集團資源處理能力將得到顯著提升，為行業提供更加堅實的支撐。

As an emerging sector within the new energy industry, the power battery recycling system and processing technologies are continuously developing and improving, injecting strong momentum into the construction of a green, low-carbon circular economy. Through scientific management measures, the Group fully utilizes recyclable pollutants and waste materials for resource recycling, reducing environmental pollution while enhancing resource efficiency. In the field of power battery recycling, the Group has set a benchmark for green development by continuously innovating in battery production R&D, retired battery recycling, and utilization, ensuring the safety and stability of the industrial chain.

Through the development of circular industries, the Group has achieved an organic integration of environmental, economic, and social benefits, providing crucial support for green value-added growth. Through green manufacturing and circular recycling, the Group integrates the concept of green development across the entire product lifecycle, from design and manufacturing to recycling and disposal, forming a closed-loop green industrial chain. By adhering to the core strategy of green development, the Group has established a sustainable development benchmark for the industry by building a full ecological industrial chain of "recycling—disposal—utilization."

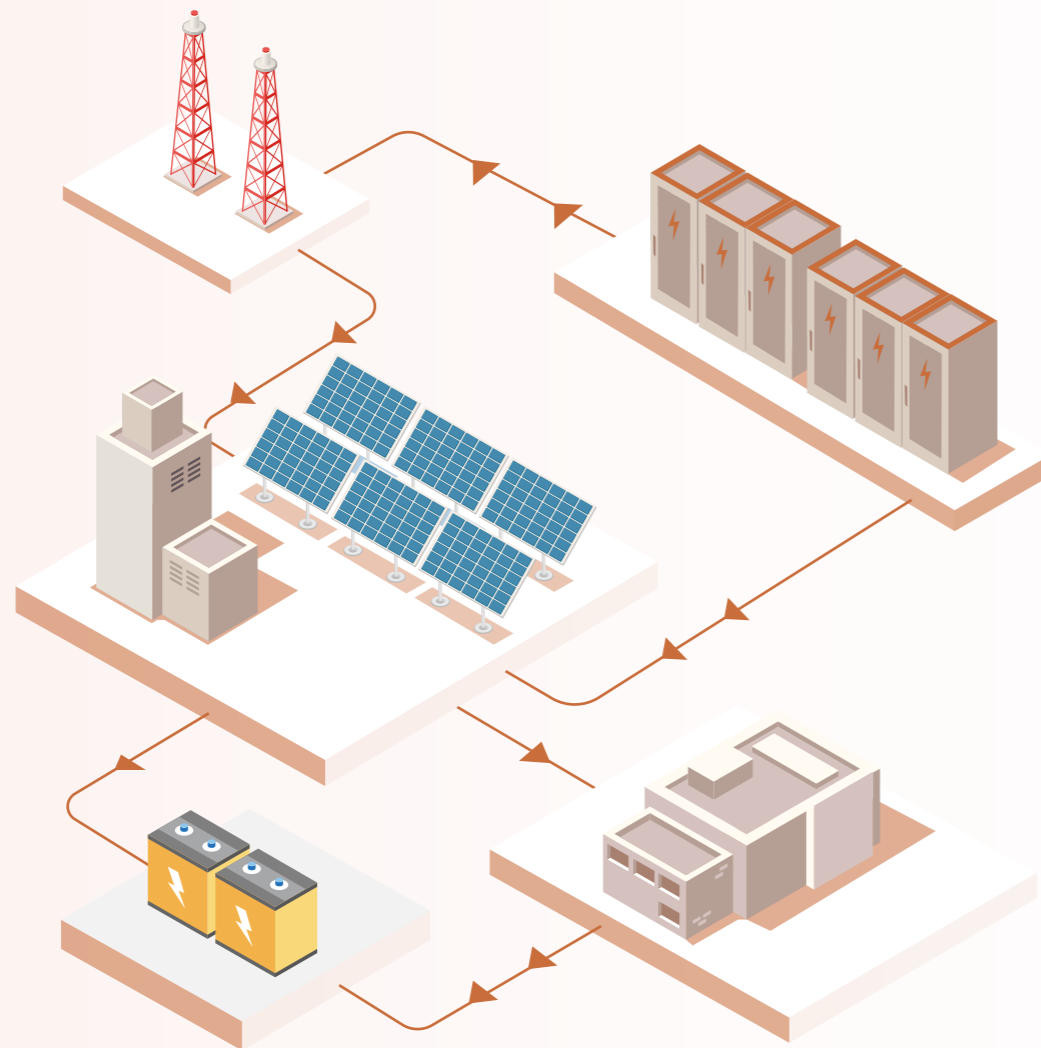
In terms of business scale, the Group has established significant market influence, processing nearly a million tons of waste lead-acid batteries annually and efficiently converting them into regenerated lead and other materials. The quality of these products rivals that of primary materials and is widely used in manufacturing, supporting the green recycling of the industrial chain. With the launch of new projects, the Group's resource processing capacity will be significantly enhanced, providing stronger support for the industry.

技術創新是本集團持續進步的核心動力。多年來，本集團專注於提升回收利用技術水準，已研發出一系列擁有自主知識產權的工藝，並積極將其轉化為行業標準。這些技術創新不僅提高了資源利用效率，還為推動行業整體技術水準的提升發揮了重要作用。本集團積極參與行業規則的制定，並通過實際行動帶動更多企業投身循環經濟的發展，贏得了行業的廣泛認可。

Technological innovation is the core driving force behind the Group's continuous progress. Over the years, the Group has focused on improving recycling and utilization technologies, developing a series of proprietary processes with intellectual property rights, and actively transforming these innovations into industry standards. These technological breakthroughs have not only improved resource utilization efficiency but also played a key role in raising the overall technical level of the industry. The Group has actively participated in the formulation of industry regulations and, through practical action, has inspired more companies to engage in the development of the circular economy, earning widespread recognition within the industry.

展望未來，本集團將繼續以技術創新為驅動，深化循環經濟產業鏈的佈局，推動資源循環利用的規模化與規範化發展。通過這一願景，本集團將為綠色可持續發展作出持續貢獻，並為行業樹立更強的示範作用，助力社會向更環保、更可持續的方向發展。

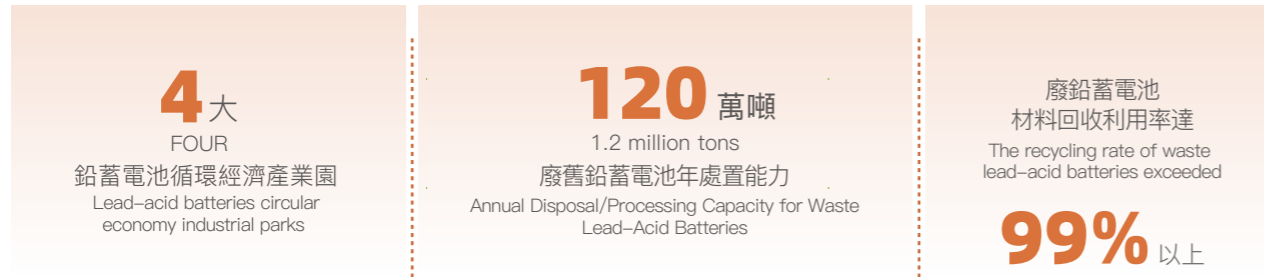
Looking ahead, the Group will continue to drive forward with technological innovation, deepening its layout in the circular economy industrial chain, and promoting the large-scale and standardized development of resource recycling. Through this vision, the Group will make continuous contributions to green and sustainable development, setting a stronger example for the industry and supporting society's transition to a more environmentally friendly and sustainable future.



鉛蓄電池循環基地  
Lead Battery Recycling Base

本集團在鉛蓄電池回收領域已擁有超過 15 年的經驗積累，已在全國 15 個省取得回收試點資質，在多個個省市建立蓄電池循環回收試點公司，利用覆蓋全國的銷售網絡基礎上，構建了廢電池的回收網絡，建設起規範有效的回收體系。天能在浙江、安徽、江蘇、河南建成了四大綠色循環經濟產業園，具備 120 萬噸的廢舊鉛蓄電池年處置能力，各材料回收率接近 99%。

The Group has accumulated over 15 years of experience in lead-acid battery recycling and has obtained pilot recycling qualifications in 15 provinces across China. It has established lead-acid battery recycling pilot companies in multiple provinces and cities, leveraging its nationwide sales network to build an extensive waste battery recycling network and establish a standardized and effective recycling system. Tianneng has built four major green circular economy industrial parks in Zhejiang, Anhui, Jiangsu, and Henan, with an annual disposal capacity of 1.2 million tons of waste lead-acid batteries, achieving a material recovery rate of nearly 99%.



依託技術創新與產業協同，本集團構建了完整的「回收—處置—利用」全生態產業鏈。憑藉技術領先、成本領先的核心競爭力，本集團在鉛資源循環利用領域取得了多項突破，並確立了行業領先地位。

Relying on technological innovation and industrial synergy, the Group has established a complete "recycling-processing-utilization" full-cycle industrial chain. With core competitive advantages in technological and cost leadership, the Group has achieved multiple breakthroughs in lead resource recycling and established a leading position in the industry.

在回收體系建設方面，我們續優化廢舊鉛蓄電池回收網絡，提高回收效率，確保回收體系的可追溯性與合規性，實現資源高效循環。在技術創新方面，我們圍繞精鉛提純、資源再生利用以及綠色冶煉等關鍵領域不斷突破，打造了高效、安全、環保的鉛回收閉環體系。在成本控制方面，我們通過優化生產工藝、提升自動化水準及精細化管理，實現了降本增效的目標，同時增強了市場競爭力。

In terms of recycling system development, we continue to optimize the waste lead-acid battery recycling network, improve recycling efficiency, and ensure traceability and compliance, achieving highly efficient resource circulation. In terms of technological innovation, we have made continuous breakthroughs in key areas such as refined lead purification, resource regeneration, and green smelting, creating a high-efficiency, safe, and environmentally friendly closed-loop lead recycling system. In terms of cost control, we optimize production processes, enhance automation levels, and implement refined management to achieve cost reduction and efficiency improvement while strengthening market competitiveness.

未來，本集團將進一步提高鉛蓄電池業務的資源自供比例，充分發揮循環回收體系在降低原材料成本、提升生產穩定性方面的優勢。通過內部資源的循環利用，減少對外部原材料採購的依賴，繼續深化產業鏈的協同效益，強化鉛蓄電池回收與生產之間的深度融合。依託技術升級、智能化管理和規模化運營，進一步提高資源循環利用的經濟性和環保效益，助力行業向更加高效、可持續的方向發展，打造行業領先的循環經濟示範企業。

Looking ahead, the Group will further increase the internal supply ratio of lead-acid battery raw materials, fully leveraging the advantages of the circular recycling system in reducing raw material costs and enhancing production stability. By maximizing internal resource utilization and reducing dependence on external raw material procurement, we will continue to deepen industrial chain synergies and strengthen the integration between lead-acid battery recycling and production. Through technological upgrades, intelligent management, and large-scale operations, we will further enhance the economic and environmental benefits of resource recycling, drive the industry toward a more efficient and sustainable direction, and establish the Group as a leading circular economy model enterprise.



案例 Case

循環經濟示範  
Circular Economy Demonstration

2024 年，天能電源材料公司啟動廢鉛酸蓄電池回收處理循環經濟標準化示範項目（全國循環經濟標準化示範項目）。基於前期試點，項目總結並推廣循環經濟標準化模式，編制《典型案例模式集》，在天能集團四大基地及同行四家企業間進行推廣。依託行業協會，開展媒體宣傳、展覽展示和公益活動，制定 3 項團體標準及行業標準，並轉化為 2 項國家標準。同時，持續更新並推動標準體系的實施，強化示範效應。項目實施後，取得較好經濟和社會效益，工藝技術達到國內領先水準，廢鉛蓄電池再生清潔化生產線成為全國鉛蓄電池循環產業項目的示範。

In 2024, Tianneng Power Materials Co., Ltd. launched the Waste Lead-Acid Battery Recycling and Treatment Circular Economy Standardization Demonstration Project (National Circular Economy Standardization Demonstration Project). Based on the previous pilot phase, the project summarizes and promotes the circular economy standardization model, compiling the "Typical Case Model Collection" for promotion across Tianneng Group's four major bases and among four peer enterprises. Leveraging industry association resources, the project conducts media campaigns, exhibitions, and public welfare activities, and formulates three group and industry standards, which have been converted into two national standards. At the same time, the project continues to update and implement the standard system, enhancing its demonstration effect. Following implementation, the project has achieved significant economic and social benefits, with process technologies reaching domestic leading levels. The waste lead-acid battery regeneration and clean production line has become a demonstration project for the national lead-acid battery recycling industry.



推動全生命週期管理，助力綠色生產轉型  
Promoting Full Life Cycle Management to Support the Green Production Transformation

集團子公司浙江天能動力能源有限公司積極參與「鉛蓄電池生產行業全生命週期管理示範活動」，並成功通過「全球環境基金中國再生鋁、鉛、鋅、鋰行業綠色生產與可持續發展項目」評審，獲得 80 萬美元基金支持，用於鉛酸蓄電池全生命週期管理模式的建設與推廣。通過該項目，公司將完善污染防治管理體系，優化鉛酸蓄電池的生產、使用和回收環保技術，推動行業技術升級，助力鉛蓄電池行業綠色轉型。

The Group's subsidiary, Zhejiang Tianneng Power Energy Co., Ltd., actively participated in the "Lead-Acid Battery Production Industry Full Life Cycle Management Demonstration Program" and successfully passed the evaluation of the "Global Environment Facility China's Green Production and Sustainable Development Projects for the Recycled Aluminum, Lead, Zinc, and Lithium Industries," securing an \$800,000 fund. This fund will be used to build and promote the lead-acid battery full life cycle management model. Through this project, the Company will improve its pollution prevention and control management system, optimize the environmental technologies for the production, use, and recycling of lead-acid batteries, and drive technological upgrades in the industry, helping to facilitate the green transformation of the lead-acid battery industry.

鋰電池中鋰回收率  
已穩定在  
The Group has stabilized the lithium recovery rate in its lithium batteries at

90% 以上

鎳、鈷、錳等關鍵  
原材料的回收率超過  
The recovery rates of key raw materials such as nickel, cobalt, and manganese exceeding

98.5%

通過自主研發的先進回收技術，本集團的鋰電池中鋰回收率已穩定在 90% 以上，鎳、鈷、錳等關鍵原材料的回收率也已超過 98.5%。

Through independently developed advanced recycling technologies, the Group has stabilized the lithium recovery rate in its lithium batteries at over 90%, with the recovery rates of key raw materials such as nickel, cobalt, and manganese exceeding 98.5%.

此外，本集團在回收過程中生產的電池級碳酸鋰、硫酸鎳、硫酸錳、硫酸鈷等產品的品質，已達到並超過了相關行業標準。這些高品質的產品不僅滿足了國內外市場的需求，也為本集團在資源循環利用領域樹立了良好的技術和市場信譽。

In addition, the quality of battery-grade lithium carbonate, nickel sulfate, manganese sulfate, and cobalt sulfate produced during the recycling process has met and even exceeded relevant industry standards. These high-quality products not only meet the demands of both domestic and international markets but also establish the Group's strong technical and market reputation in the field of resource recycling.

本集團在回收過程中生產的產品品質相關行業標準  
Industry standards related to the quality of products produced by the Group in the recycling process

產品 Product	相關行業標準 Related industry standards
電池級碳酸鋰 Battery-grade lithium carbonate	《電池級碳酸鋰》(YS/T 582-2013) 標準 Battery-Grade Lithium Carbonate (YS/T 582-2013) Standard
精製硫酸鎳 Refined nickel sulfate	《精製硫酸鎳》(GB/T 26524-2011) 標準 Refined Nickel Sulfate (GB/T 26524-2011) Standard
硫酸錳 Manganese sulfate	《電池用硫酸錳》(HG/T 4823-2015) 標準 Battery-Grade Manganese Sulfate (HG/T 4823-2015) Standard
硫酸鈷 Cobalt sulfate	《電池用硫酸鈷》(HG/T 5918-2021) 標準 Battery-Grade Cobalt Sulfate (HG/T 5918-2021) Standard

## 創新與標準化成果 Technological Innovation

### ■ 技術創新： Technological Innovation



- 累計發佈技術標準 15 項  
A total of 15 technical standards published
- 取得發明專利 26 項  
26 invention patents granted
- 完成科技成果 5 項  
5 technological achievements completed
- 省級新產品 16 項  
16 provincial-level new products developed



### ■ 行業認可： Industry Recognition

中國商業聯合會技術進步二等獎 Second Prize for Technological Advancement, China Chamber of Commerce
中國專利優秀獎 China Patent Excellence Award
工信部梯次利用、再生利用白名單 Ministry of Industry and Information Technology (MIIT) Tiered Utilization and Recycling "White List"
浙江省第一批固廢資源綜合利用骨幹企業 First Batch of Key Enterprises for Comprehensive Utilization of Solid Waste Resources in Zhejiang Province
有色金屬協會科技將一等獎兩項 Two First-Class Awards from the Nonferrous Metals Association for Scientific and Technological Achievements
循環經濟協會科技進步獎二等獎 Second-Class Award for Technological Progress from the Circular Economy Association
浙江省科技進步獎三等獎 Third-Class Award for Scientific and Technological Progress from Zhejiang Province
國家級綠色工廠 National-Level Green Factory
浙江省環境健康友好創新試點 Zhejiang Province Environmental Health and Friendly Innovation Pilot
2023 年中國再生資源行業綠色低碳十佳技術成果 2023 Top 10 Green and Low-Carbon Technological Achievements in the Chinese Recycling Industry
浙江省 2024 年度先進(未來)技術創新成果(公示中) Advanced (Future) Technological Innovation Achievements for 2024 in Zhejiang Province (currently under public review)

# 附錄：指標索引

## Appendix:Pointer Index

《環境、社會及管治報告守則》及《可持續發展報告準則（GRI）》指標索引

Index of pointers to the Environmental, Social and Governance Reporting Code and Sustainability Reporting Guidelines (GRI)

主要範疇、層面、一般披露及關鍵績效指標 Key Categories, Dimensions, General Disclosure and Key Performance Indicators		《GRI》標準 GRI Standard		披露位置 Disclosure Content
A. 環境 Environment				
A1 排放物 Emissions				
一般披露 General Disclosure	有關廢氣及溫室氣體排放、向水及土地的排汙、有害及無害廢棄物的產生等的政策 Policies on emissions and greenhouse gases, discharges to water and land, generation of hazardous and non-hazardous waste, etc.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	能源管理 Energy Management 污染管理 Pollutant Management
		GRI 305	排放 Emissions	
A1.1	排放物種類及相關排放數據 Types of emissions and related emission data	GRI 305	排放披露項 305-1、305-2、305-3、305-6 及 305-7 Emissions Disclosures 305-1, 305-2, 305-3, 305-6 and 305-7	污染管理 Pollutant Management
A1.3	所產生有害廢棄物總量(以噸計算) Total amount of hazardous waste generated (in tons)	GRI 306	廢棄物披露項 306-2 (a) Waste Disclosure 306-2 (a)	污染管理 Pollutant Management
A1.4	所產生無害廢棄物總量(以噸計算) Total amount of non-hazardous waste generated (in tons)	GRI 306	廢棄物披露項 306-2 (b) Waste Disclosure 306-2 (b)	污染管理 Pollutant Management
A1.5	描述所訂立的排放量目標及為達到這些目標所採取的步驟 Describe the emission targets set and the steps taken to achieve them.	GRI 305	排放報告要求 1.2 及披露項 305-5 Emissions Reporting Requirements 1.2 and Disclosure 305-5	能源管理 Energy Management 污染管理 Pollutant Management
A1.6	描述處理有害及無害廢棄物的方法，及描述所訂立的減廢目標及為達到這些目標所採取的步驟 Describe methods for dealing with hazardous and non-hazardous wastes and describe waste reduction targets and steps taken to achieve them.	GRI 306	廢棄物披露項 306-2 及 306-4 Waste Disclosures 306-2 and 306-4	污染管理 Pollutant Management
A2 資源使用 Use of Resources				
一般披露 General Disclosure	有效使用資源(包括能源、水及其他原材料)的政策 Policies for the efficient use of resources (including energy, water and other raw materials)	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	能源管理 Energy Management 新型儲能 New Energy Storage 清潔能源推廣 Promotion of Clean Energy

A2.1	按類型劃分的直接及/或間接能源(如電、氣或油)總耗量(以千個千瓦時計算)及密度總耗水量及密度 Total direct and/or indirect energy consumption (e.g., electricity, gas or oil) and intensity by type (in thousands of kilowatt-hours)	GRI 302	能源披露項 302-1 及 302-3 Energy Disclosures 302-1 and 302-3	能源管理 Energy Management
A2.2	總耗水量及密度 Total water consumption and density	GRI 303	水與放流水披露項 303-1 Water and Effluents Disclosure 303-1	能源管理 Energy Management
A2.3	描述所訂立的能源使用效益目標及為達到這些目標所採取的步驟 Describe the energy efficiency targets set and the steps taken to achieve them.	GRI 302	能源披露項 302-4 及 302-5 Energy Disclosures 302-4 and 302-5	循環經濟與資源再生 Circular Economy and Resource Regeneration
A2.4	描述求取適用水源上可有任何問題，以及所訂立的用水效益目標及為達到這些目標所採取的步驟 Describe any problems in accessing suitable water sources, as well as the water efficiency targets set and the steps taken to achieve them.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	能源管理 Energy Management
		GRI 303	水與放流水披露項 303-3 Water and Effluents Disclosure 303-3	
A2.5	製成品所用包裝材料的總量(以噸計算) Total amount of packaging materials used for manufactured goods (in tons)	GRI 301	物料披露項 301-1 Materials Disclosure 301-1	能源管理 Energy Management
A3 環境及天然資源 Environment and Natural Resources				
一般披露 General Disclosure	減低發行人對環境及天然資源造成重大影響的政策 Policies to minimize the issuer's significant impact on the environment and natural resources	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	氣候風險管理 Climate Risk Management 能源管理 Energy Management 新型儲能 New Energy Storage 清潔能源推廣 Promotion of Clean Energy
A3.1	描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動 Describe the significant impacts of the business activities on the environment and natural resources and the actions taken to manage those impacts.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	能源管理 Energy Management 新型儲能 New Energy Storage 清潔能源推廣 Promotion of Clean Energy 氣候風險管理 Climate Risk Management
		GRI 303	水與放流水披露項 303-2 Water and Effluents Disclosure 303-2	
		GRI 304	生物多樣性披露項 304-2 Biodiversity Disclosure 304-2	
		GRI 306	廢棄物披露項 306-3(c) 及 306-5 Waste Disclosures 306-3(c) and 306-5	

主要範疇、層面、一般披露及關鍵績效指標 Key Categories, Dimensions, General Disclosure and Key Performance Indicators		《GRI》標準 GRI Standard		披露位置 Disclosure Content
B. 社會 Society				
僱傭及勞工常規 Employment and Labor Practices				
B1 僱傭 Employment				
一般披露 General Disclosure	有關薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利的政策及遵守相關法律及規例 Policies on pay and termination, recruitment and promotion, working hours, vacation, equal opportunities, diversity, anti-discrimination and other treatment and benefits and compliance with relevant laws and regulations.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	僱傭及勞工 Employment and Labor 人才儲備 Talent Reserve 員工培訓 Employee Training 員工發展 Employee Development 員工滿意度 Employee Satisfaction
B1.1	按性別、僱傭類型 (如全職或兼職)、年齡組別及地區劃分的僱員總數 Total number of employees by gender, type of employment (e.g., full-time or part-time), age group and region	GRI 2	一般披露披露項 2-7 General Disclosures Disclosure 2-7	僱傭及勞工 Employment and Labor
		GRI 405	員工多元化與平等機會披露項 405-1 (b-ii) Diversity and Equal Opportunity Disclosures 405-1 (b-ii)	
B1.2	按性別、年齡組別及地區劃分的僱員流失比率 Employee turnover rate by sex, age group and region	GRI 401	勞僱關係披露項 401-1 (b) Employment Disclosure 401-1 (b)	僱傭及勞工 Employment and Labor
B2 健康與安全 Health and Safety				
一般披露 General Disclosure	有關提供安全工作環境及保障僱員避免職業性危害的政策及遵守相關法律及規例 Policies on the provision of a safe working environment and protection of employees against occupational hazards and compliance with relevant laws and regulations	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	職業安全 Occupational Safety
B2.1	過去三年 (包括匯報年度) 每年因工亡故的人數及比率 Number and rate of work-related deaths in each of the past three years (including the reporting year)	GRI 403	職業安全衛生披露項 403-2 Occupational Health and Safety Disclosure 403-2	職業安全 Occupational Safety
B2.2	因工傷損失工作日數 Number of working days lost due to work-related injuries	GRI 403	職業安全衛生披露項 403-2 Occupational Health and Safety Disclosure 403-2	職業安全 Occupational Safety
B2.3	描述所採納的職業健康與安全措施以及相關執行及監察方法 Describe the occupational health and safety measures adopted and the related implementation and monitoring methods.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	職業安全 Occupational Safety
B3 發展及培訓 Development and Training				
一般披露 General Disclosure	有關提升僱員履行工作職責的知識及技能的政策。描述培訓活動 Policies related to upgrading the knowledge and skills of employees to perform their job duties. Describe training activities.	GRI 3	重大主題揭露 3-3 Disclosures on Material Topics 3-3	員工培訓 Employee Training 員工發展 Employee Development
		GRI 404	訓練與教育披露項 404-2 (a) Training and Education Disclosure 404-2 (a)	

主要範疇、層面、一般披露及關鍵績效指標 Key Categories, Dimensions, General Disclosure and Key Performance Indicators		《GRI》標準 GRI Standard		披露位置 Disclosure Content
B3.1	按性別及僱員類別 (如高級管理層、中級管理層) 劃分的受訓僱員百分比 Percentage of employees trained by gender and employee category (e.g., senior management, middle management)	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		員工培訓 Employee Training
B3.2	按性別及僱員類別劃分, 每名僱員完成受訓的平均時數 Average number of hours of training completed per employee, by gender and employee category	GRI 404	訓練與教育披露項 404-1 Training and Education Disclosure 404-1	員工培訓 Employee Training
B4 勞工準則 Labor Guidelines				
一般披露 General Disclosure	有關防止童工或強制勞工的政策及遵守相關法律及規例 Policies on prevention of child or forced labor and compliance with relevant laws and regulations	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	僱傭及勞工 Employment and Labor
B4.1	描述檢討招聘慣例的措施以避免童工及強制勞工 Describe measures to review recruitment practices to avoid child and forced labor.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	僱傭及勞工 Employment and Labor
		GRI 408	童工披露項 408-1 (c) Child Labour Disclosure 408-1 (c)	
		GRI 409	強迫或強制勞工披露項 409-1 (b) Forced or Compulsory Labour Disclosure 409-1 (b)	
B4.2	描述在發現違規情況時消除有關情況所採取的步驟 Describe the steps taken to eliminate the situation when a violation is detected	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	僱傭及勞工 Employment and Labor
		GRI 408	童工披露項 408-1 (c) Child Labour Disclosure 408-1 (c)	
		GRI 409	強迫或強制勞工披露項 409-1 (b) Forced or Compulsory Labour Disclosure 409-1 (b)	
營運慣例 Operating Practice				
B5 供應鏈管理 Supply Chain Management				
一般披露 General Disclosure	管理供應鏈的環境及社會風險政策 Policies for managing environmental and social risks in the supply chain	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	供應鏈管理 Supply Chain Management
B5.1	按地區劃分的供應商數目 Number of suppliers by region	GRI 2	一般披露披露項 2-6 General Disclosures Disclosure 2-6	供應鏈管理 Supply Chain Management
B5.2	描述有關聘用供應商的慣例, 向其執行有關慣例的供應商數目, 以及相關執行及監察方法 Describe the practices relating to the engagement of suppliers, the number of suppliers to whom such practices have been implemented, and the relevant enforcement and monitoring methods	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	供應鏈管理 Supply Chain Management
		GRI 308	供應商環境評估披露項 308-1 及 308-2 Supplier Environmental Assessment Disclosures 308-1 and 308-2	
		GRI 414	供應商社會評估披露項 414-1 及 414-2 Supplier Social Assessment Disclosures 414-1 and 414-2	



主要範疇、層面、一般披露及關鍵績效指標 Key Categories, Dimensions, General Disclosure and Key Performance Indicators		《GRI》標準 GRI Standard		披露位置 Disclosure Content
B5.3	描述有關識別供應鏈每個環節的環境及社會風險的慣例，以及相關執行及監察方法 Describe practices for identifying environmental and social risks at each stage of the supply chain, and related implementation and monitoring methods.	GRI 414	供應商社會評估披露項 414-1 及 414-2 Supplier Social Assessment Disclosures 414-1 and 414-2	供應鏈管理 Supply Chain Management
B5.4	描述在揀選供應商時促使多用環保產品及服務的慣例，以及相關執行及監察方法 Describe the practice of promoting the use of environmentally friendly products and services in the selection of suppliers, as well as the related implementation and monitoring methods.	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		供應鏈管理 Supply Chain Management
B6 產品責任 Product Liability				
一般披露 General Disclosure	有關所提供產品和服務的健康與安全、廣告、標籤及私隱事宜以及補救方法的政策及遵守相關法律及規例 Policies on health and safety, advertising, labeling and privacy matters and remedies for the products and services provided and compliance with laws and regulations	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	產品責任 客戶服務 Product Responsibility Customer Service
		GRI 416	顧客健康與安全披露項 416-2 Customer Health and Safety Disclosure 416-2	
		GRI 417	營銷與標示披露項 417-2 及 417-3 Marketing and Labelling Disclosures 417-2 and 417-3	
		GRI 418	客戶隱私披露項 418-1 Customer Privacy Disclosure 418-1	
B6.1	已售或已運送產品總數中因安全與健康理由而須回收的百分比 Percentage of total products sold or shipped that are subject to recall for safety and health reasons	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		產品責任 Product Responsibility
B6.2	接獲關於產品及服務的投訴數目以及應對方法 Number of complaints received about products and services and how they were responded to	GRI 2	一般揭露披露項 2-29 General Disclosures Disclosure 2-29	客戶服務 Customer Service
		GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	
		GRI 418	客戶隱私披露項 418-1 Customer Privacy Disclosure 418-1	
B6.3	描述與維護及保障知識產權有關的慣例 Describe practices relating to the maintenance and protection of intellectual property rights	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		知識產權 Intellectual Property
B6.4	描述質量檢定過程及產品回收程序 Describe the quality check process and product recall procedures	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		客戶服務 Customer Service
B6.5	描述消費者資料保障及私隱政策，以及相關執行及監察方法 Describe the consumer data protection and privacy policy, and how it is enforced and monitored.	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	信息安全與隱私保障 Information Security and Privacy Protection

主要範疇、層面、一般披露及關鍵績效指標 Key Categories, Dimensions, General Disclosure and Key Performance Indicators		《GRI》標準 GRI Standard		披露位置 Disclosure Content
B7 反貪污 Anti-Corruption				
一般披露 General Disclosure	有關防止賄賂、勒索、欺詐及洗黑錢的政策及遵守相關法律及規例 Policies on prevention of bribery, extortion, fraud and money laundering and compliance with relevant laws and regulations	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	廉潔反貪污 Integrity and Anti-Corruption
		GRI 205	反貪腐披露項 205-3 Anti-corruption Disclosure 205-3	
B7.1	於匯報期內對發行人或其僱員提出並已審結的貪污訴訟案件的數目及訴訟結果 Number of corruption cases filed and concluded against the issuer or its employees during the reporting period and the outcome of such cases	GRI 205	反貪腐披露項 205-3 Anti-corruption Disclosure 205-3	廉潔反貪污 Integrity and Anti-Corruption
B7.2	描述防範措施及舉報程式，以及相關執行及監察方法 Describe precautionary measures and reporting procedures, and how it is enforced and monitored.	GRI 2	一般揭露披露項 2-26 General Disclosures Disclosure 2-26	廉潔反貪污 Integrity and Anti-Corruption
		GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	
B7.3	描述向董事及員工提供的反貪污培訓 Describe the anti-corruption training provided for directors and employees	《GRI 準則》尚未包含此項指標 This indicator is not yet included in the GRI Guidelines		廉潔反貪污 Integrity and Anti-Corruption
社區 Community				
B8 社區投資 Community Investments				
一般披露 General Disclosure	有關以社區參與來瞭解營運所在社區需要和確保其業務活動會考慮社區利益的政策 Policies on community involvement to understand the needs of the communities in which it operates and to ensure that its operations take into account the interests of the community	GRI 3	重大主題揭露 3-3 Material Topics Disclosure 3-3	社區參與與公益 鄉村振興 Community Engagement and Public Welfare Rural Revitalization
B8.1	有專注貢獻範疇(如教育、環境事宜、勞工需求、健康、文化、體育) Focus on areas of contribution (e.g., education, environmental issues, labor needs, health, culture, sports)	GRI 203	間接經濟衝擊披露項 203-1 (a) Indirect Economic Impacts Disclosure 203-1 (a)	社區參與與公益 鄉村振興 建言獻策 Community Engagement and Public Welfare Rural Revitalization Proposals and Suggestions
B8.2	在專注範疇所動用資源(如金錢或時間) Use of resources (e.g., money or time) in the area of specialization	GRI 201	經濟績效披露項 201-1 (a-ii) Economic Performance Disclosure 201-1 (a-ii)	社區參與與公益 Community Engagement and Public Welfare