



恒安國際集團有限公司
HENGAN INTERNATIONAL GROUP CO., LTD

(Incorporated in the Cayman Islands with limited liability)

(於開曼群島註冊成立的有限公司)

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CLIMATE-RELATED DISCLOSURES REPORT

氣候相關披露報告

2024



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Climate-related Disclosures Report

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FOREWORD

In recent years, climate change has become one of the most pressing challenges facing the globe. The World Economic Forum's (WEF) *Global Risks Report 2024* (《2024年全球風險報告》) lists extreme weather and the failure of climate change mitigation as one of the most severe global risks over the next decade. Meanwhile, the World Meteorological Organization (WMO) has recently confirmed that 2024 was the warmest year on record. The continuous rise in global temperatures has increased the frequency of extreme weather events, bringing far-reaching impacts on ecosystems, economic development, and social stability. In the face of this trend, governments, businesses, and all sectors of society around the world must accelerate action and jointly advance the green and low-carbon transition.

In 2020, China officially announced the goals of “dual carbon”, and established the “1+N” policy system to promote the transition of the economy and society to green and low-carbon. As a socially responsible company, Hengan International Group Co., Ltd. (Hengan or the Group) actively responds to the national strategy, promotes green transition and value chain emission reduction efforts, and contributes to the achievement of the “dual carbon” goals and the temperature control targets set by the *Paris Agreement* (《巴黎協定》).

Hengan has always adhered to transparent and professional sustainable development information disclosure. Since 2016, we have released the *Environmental, Social, and Governance (ESG) Report* (《環境、社會及管治(ESG)報告》) annually, and since 2022, we have continuously released the *Climate-related Disclosures Report* for three consecutive years, showcasing our climate strategy, actions, and performance to the public and accepting supervision from all stakeholders, while continuously improving our ESG and climate management levels. With the joint efforts of all stakeholders, Hengan's sustained efforts in climate management were widely recognized externally. In 2024, we achieved a B (management level) rating in the CDP (Global Environmental Information Disclosure Platform) climate change questionnaire assessment, reflecting Hengan's progress in the field of climate change management.

前言

近年來，氣候變化已成為全球面臨的最緊迫挑戰之一。世界經濟論壇(WEF)《2024年全球風險報告》指出，極端天氣和氣候變化緩解失敗被列為未來十年最嚴峻的全球風險之一。與此同時，世界氣象組織(WMO)確認2024年為有記錄以來最熱的一年，全球氣溫的持續上升加劇了極端天氣事件的發生頻率，對生態系統、經濟發展和社會穩定帶來深遠影響。面對這一趨勢，各國政府、企業和社會各界必須加快行動，共同推進綠色低碳轉型。

中國政府在2020年正式提出「雙碳」目標，並建立了「1+N」政策體系，推動經濟社會向綠色低碳轉型。作為具有社會責任感的企業，恒安國際集團有限公司(簡稱「恒安」、「本集團」)積極響應國家戰略，推進綠色轉型與價值鏈減排工作，為助力實現「雙碳」目標和《巴黎協定》控溫目標貢獻力量。

恒安始終堅持透明、專業的可持續發展信息披露。自2016年起，我們每年發佈《環境、社會及管治(ESG)報告》，並自2022年起連續3年發布《氣候相關披露報告》，向社會各界展示我們的氣候戰略、行動以及績效，並接受各利益相關方的監督，持續提升ESG及氣候管理水平。在各利益相關方的共同努力下，恒安在氣候管理方面的持續努力獲得了外部的廣泛認可。2024年，我們在CDP(全球環境信息披露平台)氣候變化問卷評分中取得B級(管理等級)評級，體現了恒安在氣候變化管理領域的進步。

In 2024, Hengan continued to promote the green and low-carbon transition, carried out emission reduction work around the entire lifecycle of products including green raw material procurement, low-carbon operations, and efficient storage and logistics. In addition, we have also strengthened cooperation with supply chain and industry partners to jointly explore green and low-carbon solutions.

Looking forward, Hengan will continue to deepen its climate strategy, further promote the low-carbon across the value chain, and strengthen communication and cooperation with stakeholders, joining hands with the public to jointly embark on the road of green and sustainable development.

1. GOVERNANCE

Hengan always believes that a sound climate governance mechanism is a driving force for corporate sustainability. Hengan integrates ESG and climate-related issues into the daily decision-making and management, and further refines the top-level design of ESG and climate-related governance. At the level of organizational guarantee, Hengan has established a four-level climate governance framework with clear responsibilities: the Board is responsible for strategic decision-making, the ESG Committee is responsible for coordinating and supervising, the ESG working group specializes in coordination, and functional departments are responsible for implementation. This vertically integrated, horizontally collaborative governance network ensures that climate risk management requirements permeate every business node. By internalizing ESG standards into the operation genes, Hengan is forging sustainability competitiveness for the future, so as to lay a solid foundation for high-quality development.

2024年，恒安持續推進低碳轉型，圍繞產品全生命週期流程，從綠色原材料採購、低碳運營、高效倉儲物流等多個維度開展減排工作。此外，我們也加強了與供應鏈及行業夥伴的合作，共同探索綠色低碳的解決方案。

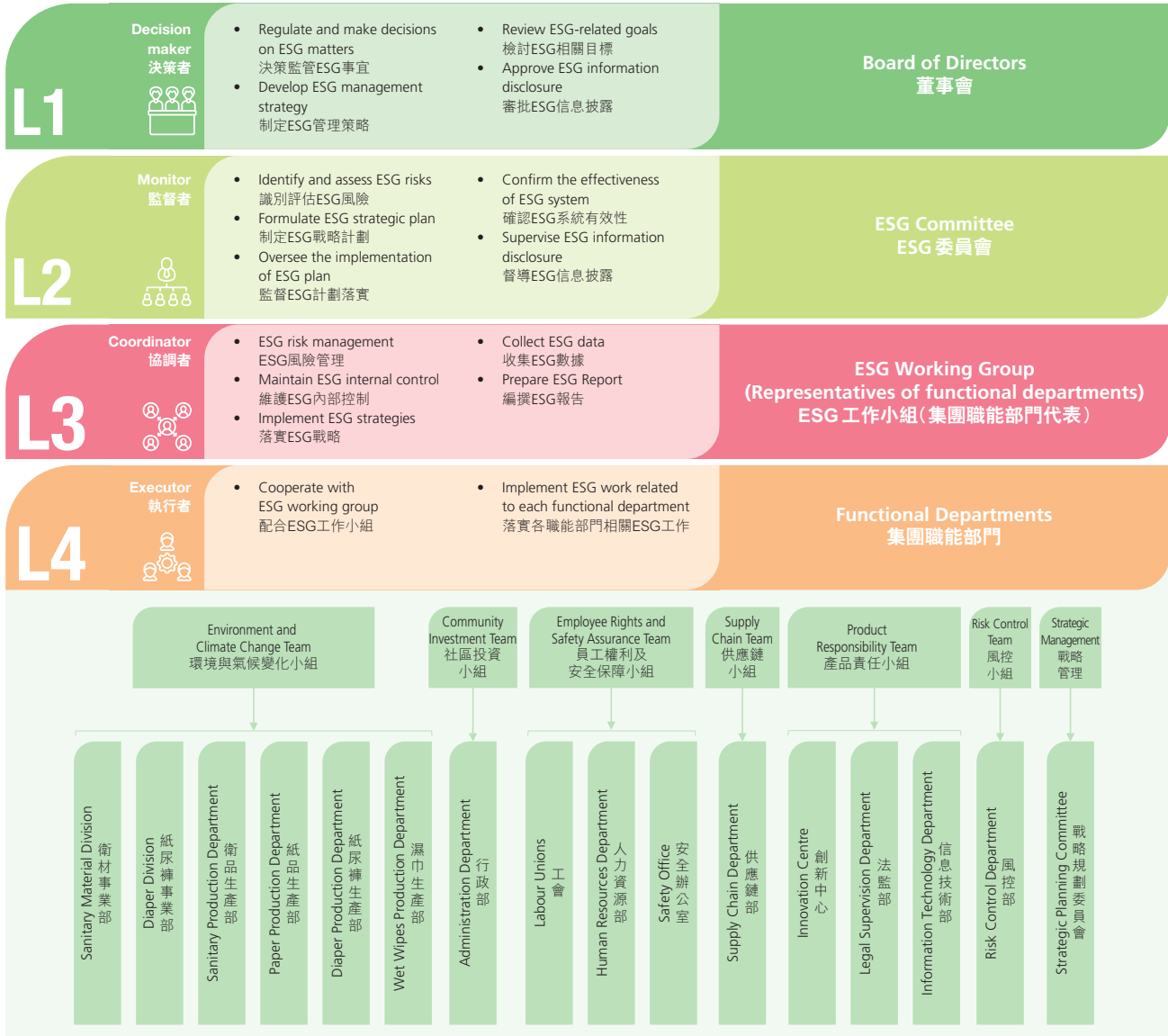
展望未來，恒安將繼續深化氣候戰略，進一步推動價值鏈的低碳化，並加強利益相關方溝通與合作，與社會各界攜手，共同邁向綠色可持續發展之路。

一、治理

恒安始終認為，健全的氣候治理機制是驅動企業可持續發展的動力。為此，集團將ESG理念與氣候風險管理深度融入戰略決策與日常運營，持續優化ESG治理體系的頂層設計。在組織保障層面，恒安構建了職責分明的四級氣候治理架構：董事會負責戰略決策，ESG委員會統籌監督，ESG工作小組專項協調，各職能部門具體執行。這一縱向貫通、橫向協同的治理網絡，確保氣候風險管理要求精準傳導至每個業務環節，通過將ESG標準內化為運營基因，恒安正在鍛造面向未來的可持續發展競爭力，為高質量發展築牢根基。

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Hengan ESG Governance Framework
恒安 ESG 治理架構

1.1. Board of Directors

The Board of Directors is the highest decision-making body for ESG and climate-related issues and has the primary responsibility for ESG and climate-related issues of the Group. Based on the business operations and stakeholder demands, the Board of Directors monitors the climate-related risks and opportunities, and continuously strengthens the responsibilities of ESG and climate-related issues as follows:

- make decisions and oversight on the ESG and climate-related issues
- develop ESG and climate-related issues management mission, policy and strategy
- review ESG and climate-related goals
- approve the release of ESG Report and Climate-related Disclosures Report and disclosure of information
- identify the goals and priorities of ESG and climate-related issues for the next phase

The Board of Directors dynamically optimizes the ESG and climate governance mechanism according to the strategic development needs to ensure that related goals are always in sync with the business strategy. In 2024, the Board of Directors received and reviewed a report from the ESG committee, covering key information such as global climate governance dynamics, compliance regulation requirements, the effectiveness of the Group's carbon management implementation, stakeholder demands, and climate management recommendations, and gave full recognition to the scientific nature of the Group's climate strategy pathway and the effectiveness of carbon management practices.

1.1. 董事會

董事會是本集團ESG及氣候相關事宜的最高決策機構，對集團ESG及氣候相關事宜工作承擔主要責任。董事會基於企業自身運營和利益相關方要求，監督企業氣候相關的風險和機遇，並不斷強化以下ESG及氣候相關事宜職責：

- 決策和監管集團ESG及氣候相關事宜
- 制定ESG及氣候相關事宜的管理願景、方針及策略
- 檢討ESG及氣候變化相關目標與計劃落實
- 審批ESG報告及氣候相關披露報告的發佈和信息的披露
- 確認下階段的ESG及氣候相關事宜目標及工作重點

董事會依據戰略發展需求動態優化ESG與氣候治理機制，確保相關目標始終與業務戰略同頻共振。2024年董事會聽取了一次ESG委員會工作報告，重點涵蓋全球氣候治理動態、合規監管要點、集團碳管理實施成效、利益相關方訴求及氣候管理建議等關鍵信息，對集團氣候戰略路徑的科學性和碳管理實踐的有效性給予充分肯定。

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1.2. ESG Committee Responsibilities

The Group has established the ESG Committee under the Board, which is a specialized working body for ESG and climate-related issues. ESG Committee reports ESG and climate-related issues annually to and be monitored and reviewed regularly by the Board of Directors for its responsibilities under the Board of Directors' strategy:

- identify, assess and manage significant ESG & climate-related issues and risks to the Group's business
- determine ESG & climate-related management goals and formulate ESG & climate change strategic plan
- oversee the implementation of ESG & climate change plan and work
- confirm with the Board of Directors in respect of the effectiveness of ESG & climate change risk management and internal control system
- supervise the release of ESG Report and Climate-related Disclosures Report and disclosure of information

In 2024, the ESG Committee has completed the review of the progress and performance of the Group's goals for ESG and climate-related issues during the reporting period, which is in compliance with the Group's ESG and climate-related management strategy.

1.2. ESG委員會職責

本集團已在董事會下設立ESG委員會，作為ESG及氣候相關事宜的專門工作機構，負責根據董事會的策略方針承擔以下職責，並每年直接向董事會報告ESG及氣候相關工作執行成果，接受董事會的監督和進行定期檢討：

- 識別、評估和管理重要的ESG及氣候相關事宜及其對集團業務的風險
- 確定ESG及氣候變化管理相關目標，制定ESG及氣候變化戰略計劃
- 監督ESG及氣候變化計劃的落實和工作的開展
- 向董事會提供有關ESG及氣候變化風險管理和內部控制系統是否有效的確認
- 督導ESG報告及氣候相關披露報告的發佈和信息的披露

2024年，ESG委員會已完成報告期內的本集團ESG及氣候相關事宜各項目標進度和工作開展情況的檢視，整體符合本集團ESG及氣候相關事宜管理策略。

1.3. ESG Working Group Responsibilities

ESG Working Group is the coordinating body that composes of ESG department and representatives of functional departments, responsible for the following ESG & climate-related issues:

- maintain risk management and internal control system for ESG reporting and Climate-related Disclosures reporting
- carry out ESG reporting and Climate-related Disclosures reporting, and implement ESG & climate change strategies and goals
- collect ESG & climate change data and information regularly
- prepare ESG Report and Climate-related Disclosures Report

1.4. Group Functional Department Responsibilities

Functional departments, as a base, steadily support the coordination of ESG & climate-related issues, and cooperate with ESG working group in implementing ESG & climate-related issues to each functional department.

1.5. Capability Building

Hengan believes that strengthening climate-related capability building will help us better respond to climate change and improve the performance of corporate sustainability. Therefore, we continuously carry out the climate information popularization and climate change response capability building work across both decision-making and implementation level, constantly improving the climate capability building system.

At the governance framework level, the Board of Directors, tracks the evolution of domestic and international climate policies in real-time through the ESG Committee to ensure that strategic decisions are dynamically aligned with the global sustainability agenda. In 2024, we conducted ESG and climate disclosure training for all Directors. The training covered the introduction of climate risks and opportunities, global climate disclosure requirements, and best practices in the industry, to ensure that the governance level has necessary capabilities and skills to supervise the Group's coping strategies against climate change.

1.3. ESG工作小組職責

本集團ESG工作小組作為ESG及氣候相關事宜的協調機構，由集團ESG部及各相關職能部門代表組成，承擔以下ESG及氣候相關事宜職責：

- 維護ESG報告及氣候相關披露報告的風險管理和內部控制制度
- 推進ESG報告及氣候相關披露報告工作，落實ESG及氣候變化戰略與目標
- 定期收集ESG及氣候變化數據和信息
- 編撰ESG報告及氣候相關披露報告

1.4. 集團職能部門職責

本集團各職能部門為ESG及氣候相關事宜的協調提供穩固的基層支撐，配合ESG工作小組落實各職能部門ESG及氣候相關事宜工作。

1.5. 能力建設

恒安認為，加強氣候相關能力建設將有助於我們更好地應對氣候變化，提升企業可持續發展表現。因此，我們持續開展氣候信息普及和氣候變化應對能力建設工作，覆蓋決策層與執行層，持續完善氣候能力建設體系。

在治理架構層面，董事會通過ESG委員會實時追蹤國內外氣候政策演進脈絡，確保戰略決策與全球可持續發展議程保持動態校準。2024年，我們面向全體董事開展了ESG及氣候信息披露培訓，內容包括氣候風險及機遇介紹、全球範圍內的氣候信息披露要求、優秀同業實踐等，確保從治理層面有充足的能力和技能監督本集團氣候變化應對策略。

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ESG and climate disclosure training
ESG及氣候信息披露培訓

At the business execution and operation level, we encourage management and employees to actively participate in the popularization and learning of climate-related knowledge to learn about the latest industry trends, and to promote employees to complete the cognitive upgrading from climate risk awareness to coping skills, thereby establishing a value connection between climate change and corporate resilience building. In 2024, we also conducted training on ESG and climate change coping across the management of relevant departments responsible for climate change management. The training covered the latest domestic and international trends and regulatory requirements in ESG and climate change, the status-quo and achievements of Hengan's climate management, carbon inventory theory and practice, and suggestions for improving ESG and climate management. It aims to effectively enhance Hengan's climate resilience through improving the management level's climate awareness and management capabilities.

業務執行和運作層面，我們鼓勵管理層和員工積極參與氣候相關的知識普及和學習工作，了解行業最新動態，推動員工完成從氣候風險認知到應對技能的認知升級，建立氣候變化與企業韌性建設的價值連接。2024年，我們亦針對氣候變化應對相關部門管理層開展了ESG及氣候變化應對培訓，內容涵蓋了ESG及氣候變化國內外最新趨勢與監管要求、恒安管理現狀與成果、碳盤查理論與實踐、以及ESG及氣候管理提升建議等，致力於通過提升管理層的氣候意識與管理能力，有效提升恒安的氣候韌性。

2. STRATEGY

With the increasingly severe climate risks in recent years, extreme climate disasters occurred frequently, Hengan has recognized that climate-related risks and opportunities will affect the Group's business and finance. Since the first climate-related disclosures in 2022, Hengan has regularly reviewed the identified climate-related risks and opportunities.

二、策略

隨著近年來氣候風險日益嚴峻，極端氣候災害頻發，恒安認識到氣候相關風險及機遇會對本集團的業務與財務產生影響。恒安自2022年首次啟動氣候信息披露以來，定期就識別到的氣候相關風險及機遇進行回顧與檢討。

2.1. Risk and Opportunity Identification

In 2024, based on our previous work, we conducted a new round of identification and assessment of climate-related risks and opportunities. We identified six major climate-related risks, comprising two physical risks and four transition risks, as well as four major climate-related opportunities. These were then prioritized in order of significance.

2.1. 風險及機遇識別

2024年，我們在往年的基礎上開展了新一輪氣候相關風險及機遇的識別與評估，我們識別到了6項重大氣候相關風險（包括2項物理風險和4項轉型風險）以及4項重大氣候相關機遇，並進行了優次排序。

Risk/opportunity categories 風險/機遇類別	Risk/opportunity name 風險/機遇名稱	Finance/business impact 財務/業務影響	Scope of impact ¹ 風險/機遇影響程度 ¹			Value chain impact ² 價值鏈影響 ²	
			Short-term 短期	Medium-term 中期	Long-term 長期		
Transition risks 轉型風險	Policy and legal risk 政策和法律	Increased pricing of GHG 碳排放成本上升	Paying extra cost of carbon emissions, causing operational cost increase 支付額外的碳排放成本，運營成本上升	●	●	●	Upstream and internal operations 上游、自身運營
	Market risk 市場	Consumer's green preference 消費者偏好轉變	May lose a significant number of environmentally conscious consumers, causing decrease in product sales and revenue decrease 失去環保意識消費者青睞，產品銷量下降，營收降低	●	●	●	Internal operations and downstream 自身運營、下游
	Policy and legal risk 政策和法律	Tightened policies 監管政策收緊	Increase in the probability of non-compliance events and the cost of compliance, and corporate image damaged; Increased investment in transformation in response to regulatory requirements and causing increasing operating cost 違規事件的發生概率上升，增加合規成本，品牌形象受損； 應對監管要求的轉型投入增加，運營成本上升	●	●	●	Upstream and internal operations 上游、自身運營
	Market risk 市場	Lack of raw materials 原材料短缺	Raw material shortages causing business interruptions and reduced product output; Increase in raw materials prices and causing increase in production cost and decrease in profit 原材料短缺造成業務中斷，產品產量下降； 原材料價格上漲，生產成本上升，利潤下降	●	●	●	All 全部

¹ Taking into account the Group's business strategy, climate-related goals and strategies, as well as climate regulatory requirements, we define the short-term, medium-term, and long-term time horizons as 1-3 years, 3-5 years, and 5-10 years, respectively. The scope of impact of risks and opportunities is quantified based on the significance of the risk or opportunity multiplied by its likelihood of occurrence, and is then categorized into low impact, medium impact, and high impact according to the risk and opportunity thresholds.

² Upstream value chain activities include raw material procurement, supplier management, and inbound logistics; internal operational activities include production management, product quality management, warehousing and outbound logistics, product research and development, and risk management; downstream value chain activities include marketing and brand management, customer service and support, and distributor management.

¹ 綜合考慮本集團的業務規劃、氣候相關目標與策略以及受到的氣候監管要求，我們將短期、中期、長期的時間跨度分別定義為1-3年、3-5年以及5-10年。風險及機遇的影響程度根據該風險及機遇的重要程度×發生概率進行量化，並根據風險及機遇閾值將影響程度分為低影響、中影響以及高影響。

² 價值鏈上游活動包括：原材料採購、供應商管理、內向物流；自身運營活動包括：生產管理、產品質量管理、倉儲及外向物流、產品研發、風險管理；價值鏈下游活動包括：營銷和品牌管理、客戶服務與支持、經銷商管理。

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Risk/opportunity categories 風險/機遇類別	Risk/opportunity name 風險/機遇名稱	Finance/business impact 財務/業務影響	Scope of impact ¹ 風險/機遇影響程度 ¹			Value chain impact ² 價值鏈影響 ²	
			Short-term 短期	Medium-term 中期	Long-term 長期		
Physical risks 物理風險	Acute risk 急性	Frequent extreme weather 極端天氣事件	Disruption in production, storage, transportation and other process will disrupt operational workflows; Factory and equipment are damaged, maintenance costs and insurance premiums increase; Threatening employees' health and safety 生產、儲存、運輸等環節中斷，擾亂正常運營； 廠房、設備等受損，維修成本增加，保費上漲； 員工健康安全面臨風險	●	●	●	Upstream and internal operations 上游、自身運營
	Chronic risk 慢性	Water shortage and drought 水資源短缺及乾旱	Decrease or interruption in production capacity will increase operating cost; Shortage of upstream raw materials or rising prices will increase production costs 產量下降或生產中斷，運營成本上升； 上游原材料短缺或價格上漲，生產成本上升	●	●	●	Upstream and internal operations 上游、自身運營
	Market 市場	Enhance corporate brand image 提升企業品牌形象	Attract more consumer groups will increase sales and revenue; Attracting investors or financial institutions will decrease difficulty and cost of obtaining funds 產品吸引更多消費群體，銷量上漲，營收增加； 獲得投資者或金融機構青睞，資金獲得的難度與成本下降	●	●	●	Internal operations and downstream 自身運營、下游
	Technology 技術	Improve resource and energy efficiency 提升資源及能源使用效率	Decrease in resource and energy consumption will reduce operational cost, and enhance competitive advantage 資源與能源消耗下降，運營成本降低，同時提升產品競爭優勢	●	●	●	Internal operations 自身運營
Opportunities 機遇	Resources 資源	Use low-carbon energy 使用低碳能源	Decrease in carbon emissions will reduce cost of carbon emission and compliance; Decrease in demand for purchased energy will decrease operational cost 碳排放下降，減少碳排放成本和合規成本； 減少外購能源需求，運營成本下降	●	●	●	Internal operations 自身運營
	Products and services 產品和服務	Develop and/or increase low-carbon products 開發和/或增加低碳商品	Meeting consumers' low-carbon demands will increase product sales and revenue 滿足消費者低碳需求，產品銷量上升，營收上漲	●	●	●	Internal operations and downstream 自身運營、下游



Low risk
低風險



Medium risk
中風險



High risk
高風險



Low opportunity
低機遇



Medium opportunity
中機遇



High opportunity
高機遇

2.2. Climate Strategy

Hengan has formulated a series of measures to address the identified climate-related risks and opportunities. To mitigate climate risks, we're promoting carbon reduction across the value chain, actively responding to extreme weather events, enhancing supply chain resilience, and building sustainable brands so as to create a green product image. Hengan will continuously drive green transition, increase the use of renewable energy, promote circular economy, and contribute to achieving carbon neutrality goals for a sustainable future.

2.2.1 Climate Risk Mitigation

To actively respond to the national "dual carbon" strategy and relevant regulations of the *Energy Conservation Law of the People's Republic of China* (《中華人民共和國節約能源法》), Hengan International deeply integrates the concept of green and low-carbon into corporate operations, and is committed to mitigating climate risks and achieving the Group's value chain carbon reduction goals through selecting low-carbon suppliers, innovating production processes, optimizing logistics, improving storage efficiency, conducting effective carbon emission management, and actively promoting green concepts.

▶ Value Chain Carbon Reduction

- Green Raw Materials

The Group conducts scope 3 greenhouse gas emissions calculations to assess the carbon footprint of the product life cycle and promote more precise carbon management strategies. We collect carbon emission data from suppliers through means such as obtaining sustainability reports, ESG reports, carbon inventory reports, product carbon footprint reports, or distributing questionnaires, and incorporate carbon emission management indicators into the selection mechanism to create a low-carbon supply chain.

2.2. 氣候策略

恒安針對識別出的氣候相關風險和機遇，制定了一系列應對措施。為緩解氣候風險，我們推進價值鏈減碳，積極應對極端天氣事件，增強供應鏈韌性，並建設可持續品牌，打造綠色產品形象。恒安將不斷推進綠色轉型，加大可再生能源使用，促進循環經濟，為實現碳中和目標貢獻力量，共築可持續未來。

2.2.1 氣候風險緩解

恒安國際積極響應國家「雙碳」戰略和《中華人民共和國節約能源法》等相關規定，將綠色低碳理念深植於企業運營之中，通過優選低碳供應商、生產環節革新、物流環節優化以及倉儲環節提效等多方面的降碳舉措，結合碳排放權的有效管理，並積極推廣綠色理念，致力於緩解氣候風險，實現集團的價值鏈減碳目標。

▶ 價值鏈減碳

- 綠色原材料

本集團通過開展範圍3的溫室氣體排放的測算，評估產品生命週期碳排放情況，推動更精準的碳管理策略。我們通過獲取原材料供應商可持續發展報告、ESG報告、碳盤查報告、產品碳足跡報告或發放問卷等方式向供應商收集碳排放，並在篩選機制中納入碳排放管理指標，打造低碳供應鏈。

Climate-related Disclosures Report 氣候相關披露報告

- **Carbon Reduction in Production and Operation**

Hengan has implemented a series of measures, including but not limited to improving the energy management system and intelligent management, undertaking energy-saving technology transformation and upgrading equipment, and optimizing the energy structure, to improve energy utilization efficiency so as to continuously explore opportunities to improve energy utilization efficiency from the perspectives of management enhancement and technical improvement. These efforts aimed to enhance sustainable operations and help reduce energy consumption and greenhouse gas emissions.

- **Green Storage**

We also fully consider energy use efficiency in the construction of warehouses, implemented practices such as building three-dimensional warehouse in large-scale production bases to balance seasonal storage demand, promoting the use of clean energy in warehouses, installing photovoltaic power generation equipment on the roof of the warehouse, and reducing environmental pollution from the source by using electrical forklifts and short-haul vehicles within the warehouse, thus promoting green storage.

- **生產運營減碳**

恒安在生產環節採取包括但不限於完善能源管理體系、提升智能化管理、節能技術改造和設備升級、優化能源結構等多項措施，從管理提升和技術改進的角度不斷挖掘提高能源利用效率的機會，提高可持續運營水平，助力減少能源消耗與溫室氣體排放。

- **綠色倉儲**

我們還在倉庫建設中充分考慮能源使用效率，在大型生產基地搭建自動立體倉庫以平衡淡旺季倉儲需求，在倉庫中推廣清潔能源的使用，在倉庫樓頂安裝光伏發電設備，倉庫內使用的電叉車和短駁車等從源頭上減少環境污染，助推實現綠色倉儲。

- **Green Logistics**

By utilizing digital technology to collect and integrate logistics data, the Group enhances shipment monitoring and logistics efficiency. We combine route optimization with volume optimization to reduce route duplication. Furthermore, we encourage logistics suppliers to use lightweight and new energy vehicles for transportation, and promote the development of green logistics. By adopting recyclable B2C turnover boxes to replace traditional disposable packaging materials, we effectively reduce resource waste.

For more information, please refer to the *Hengan International Group 2024 Environmental, Social and Governance Report* (《恒安國際集團有限公司2024年環境、社會及管治報告》) section 2.3.2. “Green Operations”.

- ▶ **Water Resources Management**

The production department of each segment of the Group is responsible for the assessment of water demand, the management of water consumption, and the promotion of the assessment and application of water conservation technologies to reduce water consumption. The Group also raises awareness of water conservation among all employees by posting water conservation signs in each workshop and living area.

- **綠色物流**

本集團運用數字化技術採集和整合物流數據，以提升運單監控和物流效率。我們將運輸線路優化與運量優化相結合，減少運輸路線的重複。此外，我們鼓勵物流供應商採用輕型車輛和新能源車輛進行運輸，推動綠色物流的發展。通過採用可回收的B2C週轉箱替代傳統的一次性包裝以減少材料浪費。

更多內容參見《恒安國際集團有限公司2024年環境、社會及管治報告》2.3.2綠色運營章節。

- ▶ **水資源管理**

本集團各板塊生產部負責用水需求的評估及用水管理，並推進節水技術的評估及應用，以降低用水量。本集團還通過在各個車間及生活區設置節約用水標識，提高全體員工的節約用水意識。

Climate-related Disclosures Report 氣候相關披露報告

We have upgraded our technology to introduce water-saving technologies and equipment, and established a sound water management system to reduce water capital in areas where water pressure risk is high. At the same time, Hengan protected the water resources of the place of operation in various ways, including filtering and reusing of paper wastewater through film to reduce the use of fresh water. All wastewater from Hengan factories was discharged into municipal sewage treatment plants after being treated at the wastewater treatment stations in the factories to ensure that the production wastewater is well-treated to protect the water quality of local water sources. Hengan also carried out special treatment and renovation of old fire and fire water networks and municipal water networks to reduce running and dripping during water use. In addition, the Group established water cisterns in factories to reduce the negative impact of drought or water stoppage on production and ensure the continued operation of the plants.

For river and coastal flood risks, the first step is to carry out waterproofing and flood-proofing designs and renovations on enterprise buildings to enhance their flood resistance and reduce damage to facilities and equipment caused by floods. Secondly, Hengan invests in constructing water conservancy facilities such as reservoirs, canals, and drainage systems to strengthen flood control capabilities, minimizing the impact of floods on enterprise facilities and production. Furthermore, Hengan develops emergency plans specifically for coastal floods, outlining emergency response procedures and assigning responsibilities clearly and ensuring timely and effective responses to floods when they occur.

針對識別出位於水壓力風險較高地區的工廠，我們通過技術升級，引進節水型工藝和設備，並建立完善的用水管理制度降低水資源消耗。同時，恒安採用多種方式保護運營所在地水資源，包括將造紙廢水經膜過濾後回用，以減少新鮮水使用，所有恒安工廠廢水均經過工廠內廢水處理站處理達標後排入市政污水處理廠，確保生產廢水完善處理保護當地水源水質。恒安還對老舊消防水管網及市政水管網進行專項治理改造，減少用水過程中的跑冒滴漏。最後，本集團在工廠建立蓄水池，降低因乾旱或停水對生產造成的負面影響，確保工廠的持續運營。

對於河流及沿海洪水風險，首先在企業建築上進行防水、防浸水設計和改造，提高建築抗洪水能力，減少洪水對企業設施和設備的損害。其次，恒安通過投資建設水利設施，包括水庫、水渠、排水系統等，增強防洪能力，減少洪水對企業設施和生產的影響。並通過制定沿海洪水的應急預案，明確應急響應流程和責任分工，確保在發生洪水時能夠及時有效地應對。

▶ *Carbon Credits Management*

The Group actively responds to the national call for energy consumption and emission reduction, deeply participates in the carbon emission trading market, and takes it as an important strategic measure to promote the Group's low-carbon development and green transition. We are committed to building a sound carbon emission trading management system, accurately grasp the market dynamics, and flexibly respond to fluctuations in the price of carbon emission trading rights, ensuring stable progress in a complex and changing market environment.

By the end of 2024, five production companies, including Hengan (China) Paper Co., Ltd., Hengan (Chongqing) Live Paper Co., Ltd., Weifang Hengan Thermal Electric Co., Ltd., have been listed as key emitting entities to participate in the carbon emission information reporting and quota clearing fulfillment work. With the continuous expansion and deepening of the carbon emission trading market in China, it is expected that more entities will join this cause in the future, contributing together to the response to climate change.

We are fully aware that, in the face of increasingly strict carbon emission regulatory requirements, only by continuously strengthening carbon emission monitoring and management, actively adopting green and low-carbon technologies, can we ensure the corporate sustainability. Through in-depth participation in the carbon emission trading market, Hengan not only enhances its understanding of carbon emission costs but also actively promotes and applies low-carbon emission reduction technologies in practice, thereby injecting strong momentum into the Group's green transition.

▶ *碳排放權管理*

本集團積極響應國家節能減排號召，深度參與碳排放權交易市場，以此作為推動集團低碳發展與綠色轉型的重要戰略舉措。我們致力於構建完善的碳排放權交易管理體系，精準把握市場動態，靈活應對碳排放權交易價格的波動，確保在複雜多變的市場環境中保持穩健前行。

截止2024年末，恒安已有恒安(中國)紙業有限公司、恒安(重慶)生活用紙有限公司、濰坊恒安熱電有限公司等5家公司被納入重點排放單位，參與碳排放信息報告和配額清繳履約工作。隨著中國碳排放權交易市場的不斷擴展與深化，未來預計將有更多主體加入這一行列，共同為應對氣候變化貢獻力量。

我們深知，面對日益嚴格的碳排放監管要求，唯有不斷加強碳排放監測與管理，積極採用綠色低碳技術，方能確保企業可持續發展。通過深度參與碳排放權交易市場，恒安不僅增強了對碳排放成本的認識，更在實踐中大力推廣與應用低碳減排技術，為集團的綠色轉型注入了強勁動力。

Climate-related Disclosures Report 氣候相關披露報告

2.2.2 Climate Risk Response

▶ Flexible Production Supply System

Climate change will lead to an increase in the frequency of extreme weather events such as heavy rain and typhoons, causing disruptions in production, storage, transportation, etc. (e.g. warehouse flooding), and disrupting operational processes. The costs of post-disaster reconstruction and insurance will also rise. Seasonal droughts may hinder waterway transportation, forcing some water transport to switch to land transport, leading to increased logistics costs. Additionally, extreme weather events may affect employee travel, posing a threat to employee health and safety.

Hengan is addressing the impacts of extreme weather events by developing a business continuity plan and utilizing intelligent means to create a flexible production and supply system. It monitors real-time extreme weather disaster warnings in the locations of suppliers and responds promptly and remedies when extreme weather such as wildfires and floods occur in procurement areas. In the event of extreme weather, emergency response and post-disaster management will be carried out according to the *Emergency Preparedness and Response Plan* (《應急準備與響應程》), and orders from areas affected by extreme weather-induced capacity disruptions will be transferred to unaffected areas. Safety warehouses will be established to handle order turnover during extreme situations like typhoons and heavy rain.

2.2.2 氣候風險應對

▶ 柔性生產供應系統

氣候變化會導致暴雨、颱風等極端天氣的發生頻率增加，由此會導致生產、存儲、運輸等環節的中斷（比如倉庫滲水），擾亂運營流程。受災後重建及保險成本也將上升；季節性乾旱會對水路運輸產生阻礙，導致部分水運被迫改為陸運，使得物流運輸成本上升。另外，極端天氣有可能影響員工出行，威脅員工健康與生產安全。

恒安通過制定業務連續性計劃，並借助智能化手段，打造柔性生產供應系統，以適應極端天氣帶來的影響。實時關注各供應商所在地極端天氣災害預警，在採購區域遭受山火、洪水等極端天氣時做到及時響應與補救。當極端性天氣發生時，將參照《應急準備與響應程》開展應急響應和善後處理，並將受極端天氣影響導致產能斷裂區域的訂單生產轉移至正常地區；建立安全倉庫，以應對颱風和暴雨等極端情況下的訂單週轉。

In the future, Hengan will continue to monitor short, medium, and long-term data related to climate change, deepen analysis to obtain more specific results, and provide guiding recommendations for subsequent strategic adjustments. For more information on climate change adaptation strategies, please refer to the *Hengan International Group 2024 Environmental, Social, and Governance Report* (《恒安國際集團有限公司2024年環境、社會及管治報告》).

2.2.3 Sustainable Brand Building

Hengan integrates sustainable development into its innovation strategy, guiding its innovation efforts with eco-friendliness and environmental sustainability as one of its innovation concepts, and is committed to creating safe, healthy and environmentally friendly products. During the R&D process, we explore the use of green raw materials and biodegradable materials, and actively adopt lean manufacturing practices to minimize the negative impact on the environment.

We actively explore the use of green raw materials, such as using lower-carbon bamboo pulp to reduce the environmental impact. Meanwhile, we have constructed a biodegradation evaluation system for degradable materials to accelerate the evaluation of biodegradation performance of new materials. Through in-depth research on the degradation mechanism of biodegradable materials, we have clarified the relationship between the shelf life and degradation of various materials and products to ensure the safety, environmental protection and reliability of products.

未來恒安將繼續監測與氣候變化相關的短中長期數據，同時加深分析以獲得更加具體的結果，為後續戰略調整提供指導性建議。更多氣候變化應對策略內容，請見《恒安國際集團有限公司2024年環境、社會及管治報告》。

2.2.3 可持續品牌建設

恒安將可持續發展融入創新戰略，以生態友好與環境可持續性為創新理念之一指引創新工作，致力於打造安全、健康且環保的產品。在研發過程中，我們深入探索綠色原材料和可降解材料的應用，並積極採納精益生產實踐，以期最大程度降低對環境的負面影響。

我們積極探索綠色原材料的使用，如使用更低碳的竹漿，以減少對環境的影響。同時，我們構建了可降解材料的生物降解評價系統，加快新型材料的生物降解性能評估。通過深入研究生物降解材料的降解機理，明確各種材料及產品的保質期與降解之間的關係，確保產品的安全性、環保性和可靠性。

Climate-related Disclosures Report 氣候相關披露報告

In the field of lean projects, we continuously promote lean research and development projects in all product businesses, carrying out R&D and application practices such as material optimization and material consolidation under the premise of ensuring stable quality and efficient operation of equipment.

Additionally, Hengan attaches great importance to consumer education and guidance, aiming to extend the concept of environmental protection to the daily lives of every consumer to jointly build a more environmentally friendly and harmonious future. We use environmental protection symbols on our product packaging to convey the concept of environmental protection and sustainable development to consumers and encourage them to practice environmental protection in their daily lives.

在精益化項目方面，我們持續推動各項產品業務中的精益研發項目，在確保質量穩定和設備高效運行的前提下，開展材料優化和物料合併等研發與應用實踐。

此外，恒安尤為重視消費者的教育引導，旨在將環保理念延伸至每一位消費者的日常生活中，共同構建一個更加環保和諧的未來。我們在產品包裝上融入愛護環境衛生的標識，向消費者傳遞環保與可持續發展的理念，鼓勵他們在日常生活中踐行環保行為。



Environmental and hygiene care packaging symbol
愛護環境衛生包裝標識

For more relevant information, please refer to the *Hengan International Group 2024 Environmental, Social and Governance Report* (《恒安國際集團有限公司2024年環境、社會及管治報告》) Section 2.3.6 “Eco-friendly brands”.

更多相關內容參見《恒安國際集團有限公司2024年環境、社會及管治報告》2.3.6環保品牌章節。

2.2.4 Sustainable Procurement

Hengan continuously enhances the sustainability of supply chain cooperation through strict standardization of raw material procurement standards, upgrading intelligent supply chain management, and strengthening communication and cooperation with suppliers. Meanwhile, the Group focuses on ensuring the continuous and stable supply of key raw materials, striving to establish diversified supply channels and breaking away from exclusive suppliers. It gradually expands the sources of raw materials by collaborating with multiple wood pulp suppliers from various countries and regions such as China, the United States, and India. This approach reduces the impact of risks related to water and climate factors on Hengan caused by the origin of wood pulp materials and the production sites. By doing so, Hengan lowers cooperation risks in the supply chain, ensures the stability of raw material supply, enhances the sustainability of supply chain cooperation, and establishes secure warehouses to handle extreme situations like typhoons and heavy rain for order turnover.

▶ *Certified/Traceable Raw Materials*

Hengan firmly conveys the concept of ecological environment protection in the value chain, continuously promote responsible wood pulp procurement, and protect the forest resources that mankind relies on for survival. In 2024, the Group issued the *Zero Deforestation Commitment* (《零毀林承諾》) and conveyed the expectation of “zero net deforestation” to suppliers and partners, so as to advance together towards this commitment.

2.2.4 可持續採購

恒安通過嚴格規範原材料採購標準、升級供應鏈智能化管理、加強供應商交流合作，持續提升供應鏈合作可持續性，並注重保障重要原材料持續穩定供應，建立多元化供應渠道，打破獨家供應，逐步擴大原材料來源區域，與中國、美國、印度等多個國家與地區的多家木漿供應商進行合作，減少因木漿原材料產地與木漿生產地水風險、氣候風險等因素對恒安造成影響，從而降低供應鏈合作風險，保障原材料供應穩定性，並建立安全倉庫，以應對颱風和暴雨等極端情況下的訂單週轉。

▶ *認證/可追溯原材料*

恒安在價值鏈中堅定傳遞守護生態環境的理念，持續推進負責任的木漿採購，保護人類賴以生存的森林資源。2024年，本集團發佈《零毀林承諾》，向供應商與合作夥伴傳達「無淨森林砍伐」期望，並共同努力向此承諾邁進。

Climate-related Disclosures Report 氣候相關披露報告

Hengan establishes and implements strict supplier selection criteria, choosing legal, clearly sourced, traceable, and renewable wood for pulp production. The Group rigorously selects raw material suppliers and requires them to adhere to the Group's pulp raw material procurement standards, thereby reducing supply chain compliance risks. Hengan assists suppliers in advancing forest certification, encourages them to meet the standards set by the Forest Stewardship Council (FSC).

► *Intelligent Supply Chain Management*

Hengan has established the “Hengyigou” supplier management platform to track and evaluate the environmental impact of the supply chain, identify opportunities for improvement, and identify potential significant risks of key suppliers. Climate-related risk assessments are conducted for the locations of suppliers. Through real-time monitoring of the “Hengyigou” supplier management platform, we can obtain real-time weather data and supply chain information. Once shortages of raw materials or extreme weather conditions that may affect the stability of the supply chain are detected, we can take immediate measures, such as adjusting transportation routes, increasing inventory, and adjusting production plans, to reduce the impact on the supply chain. As of now, the system has been fully implemented in various types of suppliers nationwide, including production procurement, non-production procurement, spare parts procurement, logistics procurement, and outsourced finished product procurement.

恒安建立和實施嚴格的供應商選擇標準，選用合法、產地清晰、可追溯、可再生木材用於紙漿生產，嚴格挑選原材料供貨商，並要求供應商遵守本集團的紙漿原材料採購標準，從而降低供應鏈合規風險。恒安幫助供應商推進森林認證，鼓勵供應商符合森林管理委員會（Forest Stewardship Council，簡稱「FSC」）認證的標準要求。

► *供應鏈智能化管理*

恒安建立「恒宜購」供應商管理平台，跟蹤和評估供應鏈的環境影響，從而識別改進的機會，並對關鍵供應商潛在重大風險進行識別，對供應商所在地開展氣候相關風險評估。通過「恒宜購」供應商管理平台的實時監控可以實時獲取天氣數據和供應鏈信息，一旦發現原材料短缺或極端天氣等情況可能影響到供應鏈的穩定性，我們可以立即採取措施，如調整運輸路線、增加庫存、調整生產計劃等，以降低對供應鏈的影響。截止目前該系統已全面應用於全國生產採購，非生產採購，備品備件採購，物流採購和委外成品採購等多種供應商類型。

▶ *Supplier Communication*

The Group strengthens communication and cooperation with suppliers to jointly promote sustainable development of the industry. Hengan occasionally communicates with suppliers to discuss improving the environmental performance of products and to understand the environmental performance of new products launched by suppliers, giving priority to environmentally friendly and low-carbon products or services.

For more related information, please refer to the *Hengan International Group 2024 Environmental, Social and Governance Report* (《恒安國際集團有限公司2024年環境、社會及管治報告》) Sections 2.6.2 “Forest Protection” and 5.2 “Sustainable Supply Chain”.

▶ *供應商交流*

本集團加強與供應商交流合作，共同推進行業可持續發展。恒安不定期與供應商進行交流探討產品環保性能提升等內容。並了解供應商推出新品的環保相關表現，優先選擇環保低碳產品或服務。

更多相關內容參見《恒安國際集團有限公司2024年環境、社會及管治報告》2.6.2 森林保護和5.2可持續供應鏈章節。

2.3. Climate Resilience

2.3.1 Scenario Analysis

We recognize that climate-related risks and opportunities may have varied impacts on our Group's business, both now and in the future. Despite the increasingly severe climate-related disasters in recent years, we acknowledge that climate change is a long-term process, influenced by a variety of factors including government policies, international trends, societal awareness, and geographical locations, and thus is subject to significant uncertainties. Therefore, we have redefined the two scenarios of low emission and high emission based on previous work. Taking into account the publicly available data from international mainstream climate models, we have comprehensively assessed the impact of climate change on our Group in the short, medium, and long term through climate scenario analysis.

2.3. 氣候韌性

2.3.1 情景分析

我們認識到，氣候相關風險及機遇在當前及未來均可能對本集團的業務產生不同程度的影響。儘管近年來氣候相關災害日益嚴峻，考慮到氣候變化是一個漫長的過程，受到政府政策、國際趨勢、社會意識、地理位置等多種因素的影響，具有重大的不確定性。因此，我們在往年的基礎上重新定義了低排放和高排放兩個情景，並結合國際主流氣候模型的公開數據，通過氣候情景分析的方式全面地評估氣候變化在短、中、長期對本集團的影響。

Climate-related Disclosures Report

氣候相關披露報告

Scenario name 情景名稱	Low emission scenario 低排放情景	High emission scenario 高排放情景
Scenario definition 情景定義	Take ambitious climate action to limit global warming to 1.5°C or far below 2°C by the end of this century 採取具有雄心的氣候行動將本世紀末全球變暖限制在1.5°C或遠低於2°C	Climate action fails, global average temperature rise exceeds 4°C by the end of this century 氣候行動失敗，到本世紀末全球平均氣溫上升超過4°C
Scenario description 情景描述	<p>With the global consensus on addressing climate change, countries around the world have successively adopted ambitious climate actions, such as setting emission reduction targets, implementing strict climate policies, and imposing carbon taxes. Enterprises actively respond to climate policies, reducing carbon emissions. Consumers actively choose green and low-carbon products, further promoting the green transition of enterprises. Against this backdrop, multiple countries and regions aim to achieve net-zero emissions by 2050. We have chosen this scenario to assess the impact on us of strict climate strategies and actions developed to achieve temperature control target of 1.5°C or far below 2°C as set out in the <i>Paris Agreement</i> (《巴黎協定》).</p> <p>隨著全球就應對氣候變化達成共識，世界各國相繼採取具有雄心的氣候行動，如制定減排目標、推行嚴格的氣候政策、徵收碳稅等；企業積極響應氣候政策，降低碳排放；消費者主動選擇綠色低碳的商品，進一步推動了企業的綠色轉型。在此背景下，多個國家及地區在2050年前實現淨零排放。我們選擇此情景以評估實現《巴黎協定》1.5°C或遠低於2°C控溫目標而推出的嚴格氣候策略與行動對我們的影響。</p>	<p>There is still no global consensus on the severity of climate change, leading to stagnation or poor implementation of many existing climate policies and actions. Fossil fuels still dominate, and greenhouse gas emissions are rising sharply, accelerating the deterioration of climate change. As climate change intensifies, physical risks are also significantly increasing. The global average temperature is rising substantially, and extreme weather events are becoming more frequent and severe. We have chosen this scenario to assess the impact on us of a significant increase in climate-related physical risks due to the lack of effective climate actions.</p> <p>全球範圍內對於氣候變化嚴峻程度的認知尚未達成一致，導致現行的諸多氣候政策與行動面臨停滯或執行不力的困境。化石能源依舊佔據主導地位，溫室氣體排放量呈現出急劇增長的態勢，加速了氣候變化的惡化進程。隨著氣候變化的加劇，物理風險也在顯著攀升。全球平均氣溫出現大幅度上升，極端天氣事件發生頻繁，且惡劣程度也在不斷加深。我們選擇此情景以評估缺乏有效的氣候行動導致氣候相關物理風險大幅上升對我們的影響。</p>

Scenario name 情景名稱	Low emission scenario 低排放情景	High emission scenario 高排放情景
Reference data source 參考數據來源	<ul style="list-style-type: none"> PCC SSP 1–2.6 Scenario: A sustainable society dominated by clean energy, with global warming limited to far below 2°C through effective climate action; IEA 2050 Net Zero Emissions Scenario (NZE Scenario): The global energy system and some developed economies achieve net zero emissions by 2050, with global warming limited to 1.5°C. IPCC SSP 1–2.6情景：以清潔能源為主的可持續發展型社會，通過有效的氣候行動將全球變暖控制在遠低於2°C； IEA 2050淨零排放情景(Net Zero Emissions by 2050, NZE)情景：到2050年全球能源系統和部分發達經濟體實現淨零排放，全球變暖被限制在1.5°C。 	<ul style="list-style-type: none"> IPCC SSP 5–8.5 Scenario: Economic development is highly dependent on fossil fuels, with a continuous increase in greenhouse gas emissions and increasingly severe climate change. IPCC SSP 5–8.5情景：經濟發展高度依賴化石能源，溫室氣體排放量持續增加，氣候變化日益加劇。

In addition, we have also used the publicly available data of the International Energy Agency's Announced Pledges Scenario (APS) and Stated Policies Scenario (STEP) to assess the impact of factors such as carbon prices, energy prices, and clean energy investment on our finance.

此外，我們也使用了IEA的已宣佈承諾(Announced Pledges Scenario, APS)情景和既定政策(Stated Policies, STEP)情景的公開數據，以評估碳價、能源價格、清潔能源投入等因素對我們財務的影響。

Climate-related Disclosures Report

氣候相關披露報告

Transition Risk

轉型風險

Risk Name

風險名稱

Tightened policies

監管政策收緊

Impact Analysis
影響分析

The regulatory requirements for corporate green transition are increasingly tightening globally. On the one hand, to achieve the “dual carbon” goal, China has formulated and promoted a series of energy-saving and emission-reduction plans, committing to reducing the energy consumption per unit of GDP by about 2.5% annually from 2021 to 2025. For example, the *Energy Consumption Per Unit Product of Pulp and Papermaking* (《製漿造紙單位產品能源消耗限額》) (GB 31825-2024) was released in April 2024. This standard sets higher requirements for the main products of the Group, such as tissue paper pulp and paper towel pulp, compared to the 2015 version. The energy consumption limit for level 1 reduced by about 10% from the old version. On the other hand, the Hong Kong Stock Exchange, where the Group is listed, has updated and released the *Environmental, Social and Governance Reporting Guidelines* (《環境、社會及管治報告守則》), which puts forward stricter requirements for climate disclosure for listed companies.

全球範圍內對企業綠色轉型的監管要求日益收緊。一方面，為實現「雙碳」目標，中國已制定並推動了一系列節能減排計劃，致力於在2021年到2025年期間，將單位GDP的能耗每年下降約2.5%。例如，《製漿造紙單位產品能源消耗限額》(GB 31825-2024)已於2024年4月發佈，對衛生紙原紙、紙巾原紙等本集團主要產品相較2015版提出了更高的要求，1級單位能耗限額較舊版下降約10%。另一方面，本集團上市所在地香港交易所更新並發佈了《環境、社會及管治報告守則》，對上市企業氣候披露提出了更加嚴格的要求。

The Group continuously monitors the latest developments in domestic and foreign laws and regulations, and keeps enhancing the performance of sustainable development. By the end of this reporting period, the Group has not been involved in major violations and penalties. However, with the increasingly strict supervision and review in areas such as energy conservation and emission reduction, plastic packaging, and ecological protection, we may need to spend more on compliance costs. In the event of violations and penalties, our brand image may be damaged, which will further affect our product sales and revenue. Moreover, our suppliers, in order to meet compliance requirements, may increase the price of raw materials, leading to an increase in our costs.

本集團持續關注國內外法律法規的最新動態，並持續提升可持續發展績效，截至本報告期末，本集團未涉及重大違規處罰。然而，隨著針對節能減排、塑料包裝、生態保護等領域的監管和審查日益嚴格，我們可能需要付出更多的合規成本。而如果發生違規處罰，我們的品牌形象可能受損，這將進一步影響我們的產品銷量與營收。此外，我們的供應商為應對合規要求可能將提高原材料售價，進而導致我們的成本上升。

Transition Risk 轉型風險	
Risk Name 風險名稱	Increased pricing of GHG 碳排放成本上升

Impact Analysis
影響分析

The global carbon emission regulation is becoming increasingly strict. China launched the national carbon trading pilot market in 2021. By the end of 2024, the highest price of carbon quota in the national carbon market reached RMB106.02 per tonne, increased by more than 100% from the opening price of RMB48 per tonne in 2021. By the end of 2024, two of the Group's production companies had been included in the national carbon trading market, and three had been included in the provincial carbon trading market, with the overall carbon quotas basically showing a surplus. However, as the country's emission reduction requirements for enterprises continue to rise, the price of carbon may continue to rise in the future. We have predicted the proportion of carbon emission costs to our total revenue under the three scenarios of the IEA in 2030, 2040, and 2025, and the results are as follows:

全球對碳排放的監管日益嚴格，中國於2021年啟動了全國碳交易試點市場，截至2024年底，全國碳市場配額最高價格達到人民幣106.02元/噸，較2021年開市價格人民幣48元/噸上漲超過100%。截至2024年底，本集團已有2家生產公司被納入全國碳交易市場，3家生產公司被納入省級碳交易市場，整體碳額度基本呈現盈餘狀態。然而，隨著國家對企業減排要求的不斷提高，未來碳價可能將呈現不斷上漲的趨勢。我們對IEA的3個情景下2030年、2040年以及2025年碳排放成本在我們總營收的佔比進行了預測，預測結果如下：

Climate scenarios 氣候情景	2030 2030年	2040 2040年	2050 2050年
STEP	<0.01%	1%	1%
APS	<0.01%	2%	4%
NZE	<0.01%	2%	5%

GHG Emission Costs as A Percentage of Total Revenue
溫室氣體排放成本佔總營收比例

The projection shows that by 2050, carbon pricing will account for about 5% of our total revenue under the NZE scenario, 4% under the APS scenario, and 1% under the STEP scenario. However, considering that in the future, with increasingly stringent policies, we may have more factories included in the carbon trading market, the proportion of carbon pricing to our total revenue may further increase. If we fail to take effective measures to reduce carbon emissions, carbon emission costs may become one of our main operational costs in the future.

預測結果顯示，到2050年，碳排放成本在NZE情景下將佔到我們總營收的約5%，在APS情境下將達到4%，在STEP情境下則為1%。然而，考慮到未來隨著政策趨嚴，我們可能有更多的工廠被納入碳交易市場，碳排放成本佔我們總營收的比例將可能進一步增加。如果我們無法採取有效的措施，降低碳排放，碳排放成本可能在未來成為我們的主要運營成本之一。

Climate-related Disclosures Report

氣候相關披露報告

Transition Risk

轉型風險

Risk Name

Consumer's green preference

風險名稱

消費者偏好轉變

Impact Analysis 影響分析

In recent years, the concept of sustainable development has further spread across the world, and green consumption has been recognized by an increasing number of consumers. PwC's *Voice of the Consumer Survey 2024 China Report* (《2024年消費者之聲調研中國報告》) points out that the proportion of consumers in China who purchase more sustainable or climate-friendly products has reached 50%. Meanwhile about 90% of Chinese consumers are willing to pay a premium for products with lower carbon footprints, with over 40% of them willing to pay a premium of more than 10%.

近年來，可持續發展的理念在世界範圍內進一步傳播，綠色消費受到了越來越多消費者的認可。普華永道《2024年消費者之聲調研中國報告》指出，購買更加可持續或氣候影響較小產品的消費者在中國的佔比已達到50%，同時有約90%的中國消費者願意為碳足跡較低的產品付出一定的溢價，其中超過40%的消費者願意支付超過10%的溢價。

To meet the consumers' green demands, we need to increase our investment in the research and development of green products, purchase green and low-carbon raw materials, and increase investment in clean production. These steps will likely lead to an increase in our operating costs. Meanwhile, as consumers increasingly prefer green products, our product sales and revenue will gradually rise. However, if we fail to complete the green transition in time to meet the consumers' green demands, they may choose competitors that can provide green products, leading to a decline in market share and pose risk to our revenue.

為滿足消費者的綠色需求，我們需要加大綠色產品的研發投入，並購買綠色低碳的原材料，加大清潔生產投入等，這將造成我們運營成本的上升，同時，得益於消費者對綠色產品的偏好轉變，我們的產品銷量與營收將逐步上升。然而，如果我們無法及時完成綠色轉型，滿足消費者的綠色需求，消費者可能將選擇能夠提供綠色產品的同業，我們將面臨市場份額下降，營收減少的風險。

Transition Risk

轉型風險

Risk Name

Lack of raw materials

風險名稱

原材料短缺

Impact Analysis
影響分析

Raw material procurement is one of the main operating costs of the Group. With the increasingly severe climate change, on the one hand, extreme weather events may affect the stability of the supply chain, leading to a shortage of raw materials needed for production, disrupting the normal production and operation. On the other hand, the production of the Group's main raw materials, wood pulp, is greatly affected by the environmental impact of climate change. Changes in climate patterns may lead to a reduction in wood pulp production and an increase in prices, thus causing our operating costs to rise.

原材料採購是本集團最主要的運營成本之一。隨著氣候變化日益嚴峻，一方面，極端天氣事件可能將影響供應鏈的穩定性，導致生產所需原材料短缺，影響正常的生產運營。另一方面，本集團主要原材料木漿的生產受氣候環境影響較大，氣候模式的變化可能將導致木漿減產，價格上漲，進而造成我們的運營成本上升。

By the end of the reporting period, raw material shortages or price fluctuations have not had a significant impact on the Group's business and finance. However, if the supply and prices of raw materials experience significant fluctuations due to the continuously changing climate environment in the future, our operations could be affected. If we raise our product prices to cope with the rising price of raw materials, it may lead to a decrease in the competitiveness of our products and a reduction in sales; while not raising the product prices may lead to a decline in our profits.

截至本報告期末，原材料短缺或價格波動尚未對本集團的業務和財務造成重大影響。然而，如果未來原材料的供應和價格由於不斷變化的氣候環境出現劇烈波動，我們的運營可能將受到較大的影響。如我們提高產品售價應對原材料價格上漲，可能導致我們產品的競爭力下降，銷量減少；而如果不提高產品售價，將可能導致我們的利潤下滑。

Climate-related Disclosures Report

氣候相關披露報告

Physical Risk

物理風險

Risk Name

Frequent extreme weather

風險名稱

極端天氣事件

Impact Analysis 影響分析

As climate change intensifies, the frequency and severity of extreme weather events such as typhoons and floods are also increasing. On the one hand, extreme weather may disrupt our production, storage, and transportation processes, affecting our normal operation and production, and increasing our operational costs. On the other hand, extreme weather may also damage our buildings, equipment, and facilities, threaten the health and safety of our employees, thereby reducing asset value, and simultaneously increasing disaster prevention investment and insurance costs.

隨著氣候變化日益嚴峻，颱風、洪水等極端天氣事件的發生頻率與嚴重程度也隨之上升。一方面，極端天氣可能會造成我們的生產、儲存、運輸等環節中斷，影響我們正常運營生產，並增加我們的運營成本。另一方面，極端天氣亦可能使我們的建築、設備、設施受損，威脅員工的健康與安全，造成資產價值減損，同時防災投入和保險費用增加。

Many of our factories are located in coastal areas and river banks that are prone to extreme weather, and in recent years, typhoons have already affected our operation and production. However, the financial and business impact of extreme weather is extremely minimal. Expenditures such as building and equipment repair costs, production halt losses, raw material damage losses, and property insurance premiums account for much less than 0.01% of our total revenue.

本集團多處工廠位於易受極端天氣影響的沿海地區及河流沿岸，近年來，已有部分颱風對我們的運營生產造成影響。然而，極端天氣在當前對我們的財務與業務影響極小，包括廠房設備損耗維修費用、停產損失、原材料受損損失、財產保險費等在內的支出在我們總體營收佔比小於0.01%。

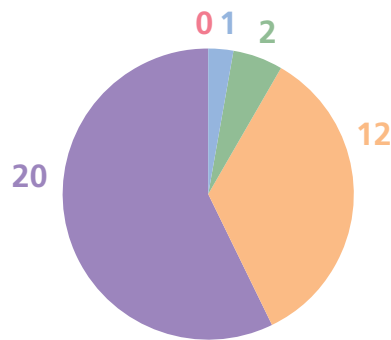
During this reporting period, Hengan used the Water Risk Atlas Aqueduct™ of the World Resources Institute (WRI) to assess the flood risks of rivers and coastal areas for our factories. The assessment results show that one of our factories has an extremely high river flood risk level, two factories have extremely high coastal flood risk level, and the vast majority of the remaining factories have low or low-to-medium risk levels:

本報告期內，我們使用世界資源研究所(WRI)開發的「水道」水風險工具(Water Risk Atlas Aqueduct™)對我們的工廠的河流和沿海洪水風險開展評估，評估結果顯示，我們有1家工廠的河流洪水風險級別為極高，2家工廠的沿海洪水風險為極高，其餘絕大部分工廠的風險等級均為低或低中：

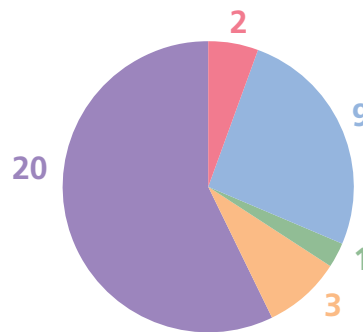
Physical Risk

物理風險

Results of River Flood Risk Assessment
河流洪水風險評估結果



Results of Coastal Flood Risk Assessment
沿海洪水風險評估結果



Climate-related Disclosures Report

氣候相關披露報告

Physical Risk

物理風險

We also use the climate impact assessment tool developed by Climate Analytics to conduct a quantitative analysis on the future impact of extreme weather. Under the IPCC SSP5-8.5 scenario, the average loss caused by typhoons and tropical cyclones at our operational sites in China will increase by approximately 6% by 2030 and 57% by 2050 compared to the current level. The average loss caused by river floods is expected to increase by 3% by 2030 and 12% by 2050. Although the direct average financial loss caused by extreme weather to us under this scenario will be still less than 0.001%. Given the impact figures are average results, the actual affected degree in some areas may be much greater than the average, therefore, we need to focus on some factories that are more susceptible to impacts and take corresponding disaster prevention measures.

我們亦使用Climate Analytics開發的氣候影響評估工具對極端天氣未來的影響開展定量分析，在IPCC SSP5-8.5情景下，位於中國的運營點因颱風及熱帶氣旋造成的平均損失相較目前而言，於2030年和2050年將分別提高約6%和57%，因河流洪災造成的平均損失於2030年和2050年將分別提高3%和12%。儘管在該情境下極端天氣對我們造成的直接平均財務損失將小於0.001%，然而考慮到該影響參數為平均值，實際部分地區的受影響程度可能遠大於平均值，我們需重點關注部分易受影響的工廠，並採取相應防災措施。

Risk Name

Water shortage and drought

風險名稱

水資源短缺及乾旱

Impact Analysis 影響分析

Water resources are an indispensable and important resource in Hengan's production and operation, but also crucial for the production of our main raw material pulp. Based on our experience, we have not yet encountered a situation where water scarcity has led to a reduction in production capacity or operation disruption, nor have we seen a reduction in supply or an increase in price of upstream raw materials due to water resource shortage. However, as water scarcity becomes increasingly severe due to global climate change, the Group has profoundly realized that the risk of water shortage and drought will exist for a long term.

水資源不僅是恒安生產和運營過程中不可缺少的重要資源，也對我們的主要原材料紙漿的生產至關重要。基於我們過往的經驗，我們尚未經歷因水資源短缺而面臨產能下降或運營中斷的情況，亦未出現上游原材料因水資源短缺而減少供應或價格上漲。然而，隨著水資源短缺因全球氣候變化加劇而日益嚴重，本集團深刻認識到水資源短缺及乾旱的風險將長期存在。

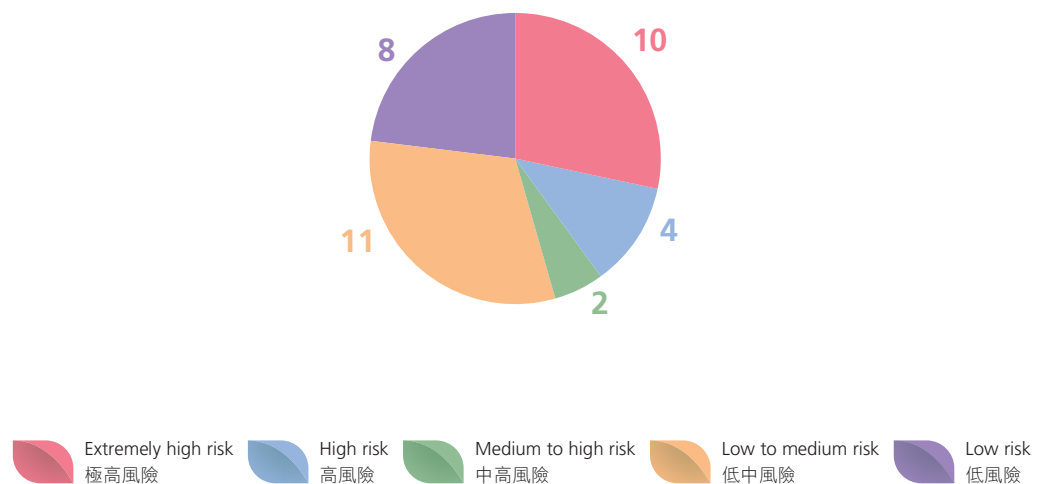
Physical Risk

物理風險

We used Aqueduct Water Risk Atlas, a water risk tool developed by the World Resources Institute (WRI) to conduct water pressure risk assessments for our factories. The assessment results show that the Group has ten factories located in areas defined by extremely high baseline water pressure values and four factories in areas defined by high baseline water pressure values:

我們使用世界資源研究所「水道」水風險工具對我們的工廠開展水壓力風險評估，評估結果顯示，本集團位於由極高和高基準水壓力值定義的水壓力區域的工廠數量分別為10家和4家：

Results of Water Pressure Risk Assessment
水壓力風險評估結果



Additionally, we also analyzed the future water pressure risks faced by the Group's factories. According to the results of IPCC SSP5-8.5 scenario analysis, the number of factories in the Group located in areas defined by extremely high baseline water pressure values will be nine in both 2030 and 2050, and the number of factories located in areas defined by high water pressure values will be six in 2030 and five in 2050, respectively, showing no significant change compared to the current situation. However, the rise in global temperatures and changes in rainfall patterns may further exacerbate the risk of water scarcity in the future, and our factories located in areas with extremely high and high water pressure may face the risk of water shortages, resulting in the negative impacts on our normal production and operation.

此外，我們亦對本集團工廠未來面臨的水壓力風險進行分析。根據IPCC SSP5-8.5情景分析結果，在2030年和2050年本集團位於由極高基準水壓力值定義的水壓力區域的工廠數量均為9家，位於由高基準水壓力值定義的水壓力區域的工廠數量分別為6家和5家，與目前相比未出現重大變化。全球氣溫升高和降雨模式的變化可能在未來進一步加劇水資源短缺風險，我們位於極高和高水壓力區域的工廠可能將面臨缺水的風險，進而對正常的生產和運營產生負面影響。

Climate-related Disclosures Report

氣候相關披露報告

Climate Opportunities

氣候機遇

Opportunity Name Enhance corporate brand image

機遇名稱 提升企業品牌形象

Impact Analysis 影響分析

As concerns on corporate sustainable development performance from all sectors of society gradually increases, companies with a good brand image, especially in terms of sustainable development, will be increasingly favored by consumers and investors. For example, consumers are willing to pay a premium for products produced by conscientious companies, and financial institutions will take into account a corporate's sustainable development actions and performance when making investment and financing decisions.

隨著社會各界對企業可持續發展表現的關注度逐步提高，具有良好品牌形象，尤其是可持續發展形象的企業將越來越受到消費者和投資者的青睞，比如消費者願意為由良心企業生產的產品支付溢價，金融機構在進行投融資時將企業的可持續發展行動與績效表現納入考慮。

Hengan has established a comprehensive ESG governance system, actively promotes green transition through the "GROWTH" approach to enhance sustainable performance. By the end of this reporting period, Hengan's MSCI ESG rating reached "BBB" level; the FTSE Russell ESG rating has improved for three consecutive years, and has been successfully selected as a constituent stock of the FTSE4Good Index Series; the S&P Global's Corporate Sustainability Assessment rating has improved year by year, and has been selected as a member of the S&P's *Global Sustainability Yearbook (China Edition)* (《可持續發展年鑑(中國版)》) for two consecutive years. In addition, our Hang Seng ESG rating has been promoted to A, and has been included in the "Hang Seng Corporate Sustainability Benchmark Index" for the first time.

恒安建立了完善的ESG治理體系，通過「GROWTH」積極推動綠色轉型，提升可持續發展表現。截至本報告期末，恒安的MSCI評級達到「BBB」等級；富時羅素評級已連續兩年提升，並成功入選富時羅素社會責任指數(FTSE4Good)系列；標普全球企業可持續發展評估成績逐年提升，連續兩年入選標普全球《可持續發展年鑑(中國版)》。此外，我們的恒生ESG評級晉升至A，並首次被納入「恒生可持續發展企業基準指數」。

The Group's excellent performance in the field of sustainable development has also been recognized by financial institutions. In 2023, Hengan successfully obtained a customized sustainable development trade finance solution from HSBC. This solution provided Hengan with professional advice on sustainable development and green project management, and supported the construction of our responsible supply chain. Moving forward, Hengan will continue to use sustainable practices as a driving force to propel the high-quality development and establish a green and sustainable corporate brand image.

本集團在可持續發展領域的優秀表現也得到了金融機構的認可，2023年，恒安成功獲得了滙豐銀行提供的定製化可持續發展貿易融資方案，為恒安提供了可持續發展和綠色項目管理方面的專業建議並支持我們的負責任供應鏈建設。未來，恒安將繼續以可持續實踐為引擎，驅動企業高質量前行，樹立綠色可持續的企業品牌形象。

Climate Opportunities

氣候機遇

Opportunity Name **Improve resource and energy efficiency**

機遇名稱 提升資源及能源使用效率

Impact Analysis
影響分析

Resource and energy consumption is one of the main production and operating costs of the Group. The Group is actively driving a green transition, improving the efficiency of resource and energy utilization through intelligent energy management, equipment upgrades, optimized warehousing and logistics, reducing the use of product and packaging materials, and enhancing the sustainable development awareness of employees and consumers. Although green transition may increase our operating costs in the short term, reducing energy and resource consumption can help lower production and operating costs in the long run. Additionally, efficient energy use also helps us reduce carbon emissions and lower carbon emission costs.

資源與能源消耗是本集團最主要的生產運營成本之一。本集團積極推動綠色轉型，通過智能化能源管理、設備升級、優化倉儲物流、減少產品材料與包材使用、開展員工與消費者可持續發展意識提升等方式，提升資源與能源的使用效率。綠色轉型雖然在短期內會增加我們的運營成本，但是從長期來看，減少能源與資源消耗能夠幫助我們降低生產運營成本。同時，高效的能源使用也有助於我們降低碳排放，減少碳排放成本。

Opportunity Name **Use low-carbon energy**

機遇名稱 使用低碳能源

Impact Analysis
影響分析

According to the IEA NZE climate scenario, to achieve net zero emissions by 2050, the global proportion of renewable energy use needs to reach 28% by 2030 and 71% by 2050. In addition, China's "14th Five-Year Plan" also aims to increase the proportion of non-fossil energy to 20% by 2025. The Group continuously increases investment in renewable energy projects, increasing the proportion of renewable energy use through the construction of distributed photovoltaic power generation projects and the procurement of green electricity. By the end of 2024, the Group had installed distributed photovoltaic panels in 11 production companies, with a total installed capacity of 28.75MW, generating over 31.0 million kWh of electricity throughout the year.

根據IEA NZE氣候情景，為實現2050淨零排放，全球可再生能源的使用比例在2030年需達到28%，在2050年需達到71%。此外，中國的「十四五規劃」亦致力於在2025年將非化石能源的比例提高至20%。本集團不斷加大可再生能源項目投資，通過建設分佈式光伏發電項目和採購綠色電力等方式，增加可再生能源使用比例。截至2024年底，本集團已在11家生產公司安裝了分佈式光伏面板，總裝機容量達28.75MW，全年發電量超過3,100萬度。

Climate-related Disclosures Report

氣候相關披露報告

Climate Opportunities

氣候機遇

The installation of distributed photovoltaic projects requires short-term capital investment, but the low-cost electricity in the future will reduce our energy costs and carbon emissions. According to the IEA NZE scenario data, China's comprehensive power generation cost will be USD 85/MWh in 2030 and USD 60/MWh in 2050, while the operating costs of photovoltaics will be only USD 10/MWh in 2030 and USD 5/MWh in 2050, showing a significant advantage over traditional power. Additionally, under the IEA NZE scenario, China's capital expenditure on photovoltaic panels will decrease by 40% in 2030 and 60% in 2050 respectively compared to 2023, so we expect to be able to build distributed photovoltaic power generation projects with lower capital investment in the future.

安裝分佈式光伏項目在短期需要資金投入，但低成本的電力在未來將降低我們的能源成本，並減少碳排放。根據IEA NZE情景數據，中國的綜合發電成本在2030年和2050年將分別為85美元/兆瓦時和60美元/兆瓦時，而光伏的運營成本僅分別為10美元/兆瓦時和5美元/兆瓦時，相較傳統電力優勢巨大。此外，在IEA NZE情景下，中國光伏面板的資本性開支在2030年和2050年相較2023年將分別下降40%和60%，因此我們預計未來我們能以更低的資金投入建設分佈式光伏發電項目。

Opportunity Name

Develop and/or increase low-carbon products

機遇名稱

開發和/或增加低碳商品

Impact Analysis 影響分析

With the government's increasingly stringent regulatory requirements for the green and low-carbon attributes of products, as well as consumers' growing preference for green and low-carbon goods, developing and increasing low-carbon products can not only meet compliance requirements but also attract green consumption.

隨著政府對產品綠色環保屬性的監管要求不斷提高，以及消費者越來越青睞綠色低碳商品，開發和增加低碳商品不僅能滿足合規要求，亦能吸引綠色消費。

The Group actively develops and increases the low-carbon environmental attributes of products through multiple initiatives, including improving production and storage logistics efficiency, increasing the use of renewable energy, selecting green and biodegradable raw materials in product design, and continuously reducing the weight of products. Looking ahead, we will further calculate the carbon footprint of core products and carry out targeted emission reduction actions based on the calculation results. And we will increase the proportion of low-carbon products to meet consumers' green consumption needs, thereby improving the market share of green products and achieving continuous revenue growth.

本集團通過提升產品生產及倉儲物流效率、加大可再生能源使用、以及在產品設計過程中選用綠色、可降解的原材料，並持續的從減少產品克重等方式積極開發和增加商品低碳環保屬性。未來，我們將進一步測算核心產品的碳足跡，並根據測算結果開展針對性的減排行動，不斷增加低碳商品的佔比，滿足消費者的綠色消費需求，從而提升綠色市場佔有率，並實現營收的不斷增長。

2.3.2 Resilience Assessment

Scenario analysis reveals transition and physical risks with various degrees under different climate conditions, while we have already been equipped with certain climate resilience to face the challenge.

In terms of physical risks, our manufacturing bases are distributed in different areas, and the impact of single climate events at specific locations on us is limited. Based on our previous experience, extreme weather events have never had a significant impact on the Group. According to the results of climate scenario analysis, the impact of future impact of the two major physical risks, extreme weather events and water shortage and drought, will also be relatively small. At the same time, we have formulated and continuously improved business continuity plans, built flexible production and supply systems, implemented emergency response plans, so as to strive to minimize the negative impact of extreme weather.

In terms of transition risks, although five of the Group's factories have been incorporated into the carbon trading market. By the end of 2024, the overall carbon quota was in a surplus state. The Group has never experienced major violations related to climate or the environment, and fluctuations in raw material prices have not had a significant impact on the Group. The results of climate scenario analysis indicate that as the carbon prices continue to rise and the number of factories of the Group included in the carbon trading market increases, carbon emission costs may become one of the Group's main operating costs. The Group has promoted a series of projects to improve energy efficiency and the use of green energy. Given the trend of continuously decreasing unit costs of green energy investment and operation, these projects will help us achieve cost reduction and efficiency improvement with relatively less investment, and greatly reduce the costs of carbon emission and compliance. At the same time, we can also establish a green and low-carbon brand image through green transition, meet consumers' demand for green products, and thereby seizing climate-related opportunities to achieve revenue growth.

2.3.2 韌性評估

情景分析的結果顯示，我們在未來將面臨不同氣候條件下程度各異的轉型和物理風險，但我們已經具備了一定的氣候韌性去迎接挑戰。

在物理風險方面，我們的生產基地分佈於不同地區，特定地點的單一氣候事件對我們產生的影響有限，極端天氣事件過去也從未對本集團產生重大影響。根據氣候情景分析結果，未來極端天氣事件和水資源短缺及乾旱兩大物理風險對我們的影響亦較小。同時，我們通過制定並不斷完善業務連續性計劃，打造柔性生產供應系統，落實應急響應方案，努力將極端天氣的負面影響降至最低。

在轉型風險方面，儘管本集團已有5家工廠被納入碳交易市場，但截至2024年底，總體碳配額呈盈餘狀態，本集團從未發生氣候或環境相關的重大違規事件，原材料價格波動亦未對本集團產生重大影響。氣候情景分析結果顯示，隨著未來碳價的不斷提高和本集團納入碳交易市場的工廠數量增加，碳排放成本可能成為本集團的主要運營成本之一。本集團推動了一系列能源效率提升、綠色能源使用等項目，結合未來綠色能源投入與運營單位成本不斷下降的趨勢，此類項目將有助於我們在投入較少資金的情況下實現降本增效，並極大地降低碳排放成本與合規成本。同時，我們亦能通過綠色轉型樹立綠色低碳的品牌形象，滿足消費者綠色產品需求，進而把握氣候相關機遇，實現營收的增長。

Climate-related Disclosures Report 氣候相關披露報告

However, considering that addressing climate change is a long-term process, the climate policies of various countries and regions may continue to evolve, and there is significant uncertainty regarding the ultimate climate scenarios and their impact on us. Therefore, we closely monitor the latest trends in climate, environmental, and other related regulatory developments in real-time. We continue to promote green transition strategies, and promote environmentally friendly production methods throughout the value chain. We also collaborate with governments, non-governmental organizations, and industry partners to jointly develop and implement innovative solutions. In addition, we continuously optimize our warehousing and logistics layout, implement emergency plans for extreme weather, enhance climate resilience, and ensure the long-term sustainable development of the Company.

3. RISK MANAGEMENT

We have realized that climate change has brought many uncertainties to business operations and market environment, which may lead to risks such as supply chain disruptions, resource shortages, rising production costs, etc. We incorporate climate risk management into the Company's comprehensive risk management system, the Board of Directors of the Group acknowledges the overall responsibility for the design and implementation of the risk management system. Under its supervision, the management has established procedures to identify, assess and manage significant risks faced by the Group.

然而，考慮到應對氣候變化是一個長期的過程，各個國家及地區的氣候政策可能不斷變化，最終的實際氣候情景以及對我們的影響存在重大的不確定性。因此，我們實時關注最新的氣候、環境及其他相關監管趨勢，繼續推動綠色轉型策略，在價值鏈推廣環境友好的生產方式。我們亦與政府、非政府組織及行業夥伴合作，共同開發和實施創新解決方案。此外，我們不斷優化倉儲和物流佈局，落實極端天氣應急預案，提升氣候韌性，確保公司的長期可持續發展。

三、風險管理

我們認識到，氣候變化對企業運營和市場環境帶來了諸多不確定性，將可能導致供應鏈中斷、資源短缺、生產成本上升等風險。因此，有效管理氣候風險將有助於降低企業潛在損失，對企業穩定發展將有強大幫助。我們將氣候風險管理納入企業全面風險管理體系，本集團董事會確認其對設計及執行風險管理系統的全面責任，在董事會監督下，管理層已確立既定程序，以識別、評估及管理本集團所面對之重大風險。

Hengan has established a risk management framework consisting of the “Three Levels of Defense” based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) internal control model. The Board of Directors and Chief Executive Officer (CEO) are jointly responsible for the Group’s risk management to identify, assess and manage significant risks faced by the Group:

恒安依據特雷德委員會贊助組織委員會 (COSO)內部控制模型，設立由「三層防線」組成的風險管理框架，由董事會及集團總裁共同負責本集團的風險管理，以識別、評估和釐定集團的重要風險：



Risk Management Framework and Segregation of Duties
風險管理框架和職責分工

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Each of the three levels of defense performs its own duties and cooperates with each other flexibly, which effectively guarantees the operational compliance of the enterprise. Business departments are responsible for identifying business-related risks. The functional departments such as the internal control department, the safety office and the finance department work together with business departments to integrate internal and external resources, and design and optimize the control processes for the various operational risks identified. Internal audit is the supervisory department for risk management of the Group, assessing the overall risk management effectiveness of the Group through annual audits and special audits, enhancing the awareness of risk management among employees and building a culture of risk management through training, publicity, routine inspections and other measures.

In terms of identifying and assessing climate-related risks and opportunities, we regularly conduct the identification of climate-related risks and opportunities based on the previous year's result and the latest climate regulatory trends and industry dynamics. We also carry out quantitative impact analysis based on the latest climate scenario data. This allows us to thoroughly assess the climate resilience of the Group, optimize management strategies, and further integrate climate into our overall risk management and business strategies.

三層防線各司其職、靈活配合，有力保障企業運營合規。業務部門負責識別業務相關風險，內控部、安全辦公室、財務部等職能部門協同業務部門整合內外部資源，為識別出的各類運營風險設計和優化控制流程。內部審計是集團風險管理的監督部門，通過年度審計和專項審計等方式，整體評估集團風險管理效果，並通過培訓宣導、常規檢查等措施提升各級員工的風險管理意識，構建風險管理文化。

在氣候相關風險及機遇識別與評估方面，我們定期在往年的基礎上，結合最新的氣候監管趨勢與行業動態開展氣候相關風險及機遇的識別，並根據最新的氣候情景數據開展量化影響分析，深入評估本集團的氣候韌性，優化管理策略，進一步將氣候納入我們的整體風險管理與業務策略中。

Risk and opportunity identification
風險及機遇識別

- Based on Hengan's previous identification results and international mainstream climate risk and opportunity libraries, we conducted extensive peer research and climate regulatory trend analysis. Taking into account Hengan's current operations and the latest business plans, we have preliminarily identified potential climate-related risks and opportunities.
在恒安往年識別結果和國際主流氣候風險及機遇庫的基礎上，開展廣泛的同業調研和氣候監管趨勢分析，並結合恒安的運營現狀和最新的業務規劃，初步識別潛在的氣候相關風險及機遇。

Risk and opportunity assessment and prioritization
風險及機遇評估與排序

- We conducted climate workshops, inviting representatives from various departments within Hengan to quantitatively assess the impact of climate-related risks and opportunities on Hengan in the short, medium, and long term from two dimensions: probability of occurrence and degree of impact. Further prioritization was carried out based on the opinions of Hengan's management and external experts to identify significant climate-related risks and opportunities for Hengan.
開展氣候工作坊，邀請恒安內部的部門代表從發生的概率和影響程度兩個維度對氣候相關風險及機遇對恒安在短期、中期以及長期的影響進行定量評估，並結合恒安管理層以及外部專家的意見進行進一步的優次排序，識別恒安重大氣候相關風險及機遇。

Scenario analysis
情景分析

- We conducted climate scenario analysis, using the latest climate models from organizations such as the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), as well as publicly available climate data, to quantitatively analyze the impact of climate-related risks and opportunities on Hengan's own operations and the upstream and downstream value chain.
開展氣候情景分析，基於IPCC、IEA等組織最新的氣候模型及公開的氣候數據對氣候相關風險及機遇對恒安自身運營及上下游價值鏈的影響進行量化分析。

Resilience assessment
韌性評估

- Based on the results of climate scenario analysis and Hengan's historical experience of being affected by climate risks, we analyzed the effectiveness of Hengan's climate response strategies and management measures, and assessed climate resilience of Hengan.
根據氣候情景分析結果，結合恒安受氣候風險影響的歷史經驗，分析恒安氣候應對策略與管理措施的有效性，評估恒安的氣候韌性。

Hengan continuously improves the consideration of climate risk factors among the Group's significant risks, combines with the analysis of climate risks and financial risks including market risks, credit risks, and liquidity risks, to form a more comprehensive and complete management strategy. The strategy is ultimately integrated into the overall business operations strategy, enhancing the climate resilience while strengthening the reputation and influence in climate change management. Hengan has established the ESG Committee under the Board, which is responsible for creating and reviewing ESG and climate-related risk management and internal control systems to identify and prioritize climate-related risk issues, and providing recommendations to the Board of Directors to manage and mitigate ESG and climate-related risks.

恒安不斷提升氣候風險因素在集團重要風險中的考慮，結合分析氣候風險與市場風險、信用風險和流動性風險等財務風險，形成更加全面和完整的管理策略，最終納入企業整體商業運營戰略，在提升企業氣候韌性的同時加強企業在氣候變化管理方面的聲譽和影響力。恒安在董事會層面設置ESG委員會，負責建立及審閱ESG及氣候相關風險管理和內部控制制度，識別及釐定本公司氣候相關風險議題的優先次序，向董事會提供建議，從而實現管理和減輕本集團ESG及氣候變化相關風險。

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4. INDICATORS AND TARGETS

Hengan has set specific indicators and targets for climate actions, closely tracking greenhouse gas emissions and energy consumption data to ensure their accuracy and transparency. For the papermaking sector, we have set clear environmental goals to actively respond to the challenges of climate change. Through continuous technological innovation and green transition, we are committed to reducing environmental impact, promoting sustainable development, and contributing to the construction of a low-carbon future.

4.1. Greenhouse Gas Emission Data

To tackle the complex challenges of greenhouse gas emission data statistics, Hengan has launched a comprehensive greenhouse gas emission inventory, involving a thorough review of the Group's scope 1, scope 2, and scope 3 greenhouse gas emission sources, aiming to accurately grasp the current status of the Group's greenhouse gas emissions through systematic investigation, thereby solving the long-standing difficulties in data collection and analysis. This not only helps the Group better understand its impact on the environment but also provides a scientific basis for developing effective emission reduction strategies. In 2024, Hengan introduced digital methods into the greenhouse gas emission inventory. By utilizing the automatic greenhouse gas emission accounting system, Hengan is able to collect, analyze, and accurately calculate various emission data in real time, which not only improves the efficiency of data processing but also provides management with intuitive and comprehensive decision support through visualization methods.

Hengan attaches great importance to the role of employees in greenhouse gas emission management. Through this greenhouse gas inventory work, we have organized a series of professional training sessions aimed at enhancing employees' understanding and ability to recognize greenhouse gas emissions. Through the training, employees not only mastered the basic methods of the inventory work but also strengthened their environmental awareness, contributing together to the Company's sustainable development.

四、指標和目標

恒安在氣候行動上設定具體的指標與目標，密切追蹤溫室氣體排放和能耗數據，確保數據的準確性和透明度。針對造紙板塊，我們設定了明確的環境目標，以積極應對氣候變化挑戰。通過持續的技術創新和綠色轉型，致力於降低環境影響，推動可持續發展，為構建低碳未來貢獻力量。

4.1. 溫室氣體排放數據

恒安為應對溫室氣體排放數據統計的複雜挑戰，開展全面的溫室氣體排放盤查工作，全面摸排集團的範圍1、範圍2及範圍3溫室氣體排放源，旨在通過系統性的排查，精確掌握企業溫室氣體的排放現狀，從而解決長期以來數據收集與分析的難題，不僅有助於企業更好地理解自身對環境的影響，也為後續制定有效的減排策略提供了科學依據。2024年，我們在溫室氣體排放盤查工作中引入數字化手段，通過溫室氣體排放自動核算系統，實時收集、分析並準確核算各類排放數據，不僅提高了數據處理的效率，還通過可視化的方式，為管理層提供了直觀、全面的決策支持。

恒安高度重視員工在溫室氣體排放管理中的作用。借助本次溫室氣體盤查工作，我們組織了一系列專業培訓，旨在提升員工對溫室氣體排放的認知與理解能力。通過培訓，員工不僅掌握了盤查工作的基本方法，還增強了環保意識，共同為企業的可持續發展貢獻力量。

4.1.1 Accounting Standards

The GHG emissions are measured by carbon dioxide equivalent according to the *Greenhouse Gas Protocol Corporate Accounting and Reporting Standard* (《溫室氣體核算體系：企業核算與報告標準》) and the *Greenhouse Gas Accounting System: Accounting and Reporting Standards for Enterprise Value Chain (Scope 3)* (《溫室氣體核算體系：企業價值鏈(範圍3)核算與報告標準》) issued by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), and with reference to the *Guidelines for the Calculation and Reporting of Greenhouse Gas Emissions from Paper and Paper Products Manufacturers (Trial)* (《造紙和紙製品生產企業溫室氣體排放核算方法與報告指南(試行)》) and the *Guidelines for Accounting Methods and Reporting of Greenhouse Gas Emissions of Power Generation Enterprises in China (Trial)* (《中國發電企業溫室氣體排放核算方法與報告指南(試行)》).

4.1.2 Organizational Boundary

The calculation scope of greenhouse gas emissions of Hengan covers 30 production companies.

4.1.3 Operational Boundary

The Group identifies the greenhouse gas emissions associated with Hengan in accordance with the standard requirements, and categorizes the emissions by Scope 1 direct GHG emissions, Scope 2 indirect energy GHG emissions and Scope 3 other indirect GHG emissions.

4.1.1 核算標準

本公司依據世界資源研究所(WRI)與世界可持續發展工商理事會(WBCSD)發佈的《溫室氣體核算體系：企業核算與報告標準》《溫室氣體核算體系：企業價值鏈(範圍3)核算與報告標準》，同時參考《造紙和紙製品生產企業溫室氣體排放核算方法與報告指南(試行)》《中國發電企業溫室氣體排放核算方法與報告指南(試行)》等標準進行溫室氣體核算和報告。

4.1.2 組織邊界

恒安溫室氣體排放核算範圍為本集團旗下30家生產公司。

4.1.3 運營邊界

本公司按標準要求識別與本公司相關的溫室氣體排放，並按範圍1直接溫室氣體排放、範圍2能源間接溫室氣體排放和範圍3其他間接溫室氣體排放進行分類。

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4.1.4 GHG Emissions

The GHG emissions of Hengan in Scope 1 and Scope 2 in 2024 are as follows:

4.1.4 溫室氣體排放量

經核算，恒安2024年範圍1和範圍2的溫室氣體排放情況如下：

GHG emission in Scope 1&2 (tons carbon dioxide equivalent, tCO ₂ e) 溫室氣體排放範圍1&2(噸二氧化碳當量, tCO ₂ e)	2024	2023
Total GHG emissions: Scope 1 + Scope 2 總溫室氣體排放量：範圍1&範圍2	1,427,401	1,572,592
Scope 1: Direct GHG emissions 範圍1：直接溫室氣體排放	557,885	585,056
Scope 2: Indirect GHG emissions — Location-based 範圍2：間接溫室氣體排放(基於地域)	869,516	987,536
Scope 1&2 based on GHG emission categories (tons carbon dioxide equivalent, tCO₂e) 根據溫室氣體排放種類劃分的範圍1&2(噸二氧化碳當量, tCO ₂ e)		
Carbon dioxide CO ₂ 二氧化碳 CO ₂	1,423,673	1,569,092
Methane CH ₄ 甲烷 CH ₄	415	404
Nitrous oxide N ₂ O 氧化亞氮 N ₂ O	1,606	1,589
Hydrofluorocarbons HFC _s 氫氟碳化物 HFC _s	1,606	1,402
Sulfur hexafluoride SF ₆ 六氟化硫 SF ₆	101	105

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In 2024, the GHG emissions of Hengan in Scope 3 are as follows:

經核算，恒安2024年主要範圍3溫室氣體排放情況如下：

GHG emission in Scope 3 (Kilotonnes CO ₂ equivalent, ktCO ₂ e) 溫室氣體排放範圍3(千噸二氧化碳當量, ktCO ₂ e)	2024	2023
Total GHG emissions: Scope 3³ 範圍3溫室氣體排放總量³	1,853	1,577
Category 1 – Purchased goods and services ⁴ 類別1 – 購買的商品和服務 ⁴	1,298	1,109
Category 2 – Capital goods 類別2 – 資本商品	5	6
Category 3 – Fuel and energy-related activities 類別3 – 燃料和能源相關活動	188	127
Category 4 – Upstream transportation and distribution & Category 9 – Downstream transportation and distribution 類別4 – 上游運輸和配送&類別9 – 下游運輸和配送	282	259
Category 5 – Waste generated in operations 類別5 – 運營中產生的廢物	2	3
Category 6 – Business travel 類別6 – 商務旅行	1	1
Category 7 – Employee commuting 類別7 – 僱員通勤	10	8
Category 12 – End-of-life treatment of sold products 類別12 – 處理壽命終止的售出產品	67	64

³ Scope 3 GHG emission factors from US EPA, UK Government GHG Conversion Factors for Company Reporting, Ecoinvent, China Products Carbon Footprint Factors Database (CPCD), etc. In 2024, due to the update of the emission factors, Category 3, Category 7, and Category 9 GHG emissions increased.

⁴ Category 1 – Purchased goods and services covers the Group's procurement of nine major raw materials such as wood pulp, polymers, nonwovens, plastics and cartons. The increase in procurement of raw materials such as wood pulp, polymers, nonwovens, and plastics in 2024 has led to a rise in Category 1 GHG emissions.

³ 範圍3溫室氣體排放因子來自US EPA、UK Government GHG Conversion Factors for Company Reporting、Ecoinvent、中國產品全生命週期溫室氣體排放系數庫等。2024年由於排放因子更新，導致類別3、類別7和類別9溫室氣體排放量增加。

⁴ 類別1 – 購買的商品和服務的排放涵蓋本集團採購木漿、高分子、無紡布、塑料、紙箱等9種主要原材料。2024年木漿、高分子、無紡布、塑料等原材料採購量增加，導致類別1溫室氣體排放量增加。

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4.2. Energy Consumption Data

Hengan adheres to the concept of green development, actively strengthens its energy management system, and maintains a high level of attention for energy consumption. We have established a refined energy consumption monitoring mechanism to achieve comprehensive, real-time tracking and analysis of the Company's energy consumption. Through the introduction of cutting-edge energy-saving technologies and optimized energy allocation, Hengan has effectively reduced energy consumption levels, demonstrating a strong sense of environmental responsibility.

4.2. 能耗數據

恒安秉持綠色發展理念，積極強化能源管理體系，對能源消耗情況保持高度關注。我們構建精細化的能源消耗監控機制，實現對企業能耗的全面、實時追蹤與分析。通過引入前沿節能技術與優化能源配置，恒安有效降低了能耗水平，展現出卓越的環保責任擔當。

Energy consumption 能源消耗	2024	2023	Unit 單位
Direct energy consumption 直接能源消耗	2,058,305	2,205,561	MWh 兆瓦時
Natural gas 天然氣	90,868,860	109,032,108	m ³ 立方米
Anthracite 無煙煤	168,241	166,884	tonnes 噸
Liquefied natural gas 液化天然氣	7,023	3,651	tonnes 噸
Liquefied petroleum gas 液化石油氣	3.1	9.0	tonnes 噸
Diesel fuel 柴油	16.95	28.05	tonnes 噸
Indirect energy consumption 間接能源消耗	1,823,445	1,713,607	MWh 兆瓦時
Purchased electricity 外購電	122,916	115,571	10,000 kWh 萬度
Purchased steam and heat 外購蒸汽與熱	2,139,442	2,008,440	GJ 吉焦
Total energy consumption 能耗總量	3,881,749	3,919,168	MWh 兆瓦時
Energy consumption intensity 能耗密度	1.7	1.6	MWh/RMB10,000 of revenue 兆瓦時/萬元人民幣營收

4.3. Environmental Targets for the Papermaking Sector

Hengan has established the control targets for energy for the papermaking sector:

4.3. 造紙板塊環境目標

恒安已制定了造紙板塊能源管控目標要求：

Metrics 指標	2028 target 2028目標	Progress 進展	2024	2023	2022	Units 單位
Energy consumption intensity	By 2028, the energy consumption intensity of the papermaking sector will be controlled at 0.30-0.40 tce/tonne of paper	Achieved	0.34	0.35	0.31	tce/tonne of paper
能耗密度	2028年前，造紙板塊能耗密度控制在0.30-0.40噸標煤/噸紙	滿足				噸標煤/噸紙

In 2024, the energy consumption intensity per tonne of paper was 11% lower than the Level 1 requirement of the *Energy Consumption Per Unit Product of Pulp and Papermaking* (《製漿造紙單位產品能源消耗限額》) (GB 31825-2024).

2024年，本集團噸紙能耗密度比《製漿造紙單位產品能源消耗限額》(GB 31825-2024)中的1級要求低11%。



恒安國際集團有限公司
HENGAN INTERNATIONAL GROUP CO., LTD