



**光大環境**  
EVERBRIGHT ENVIRONMENT

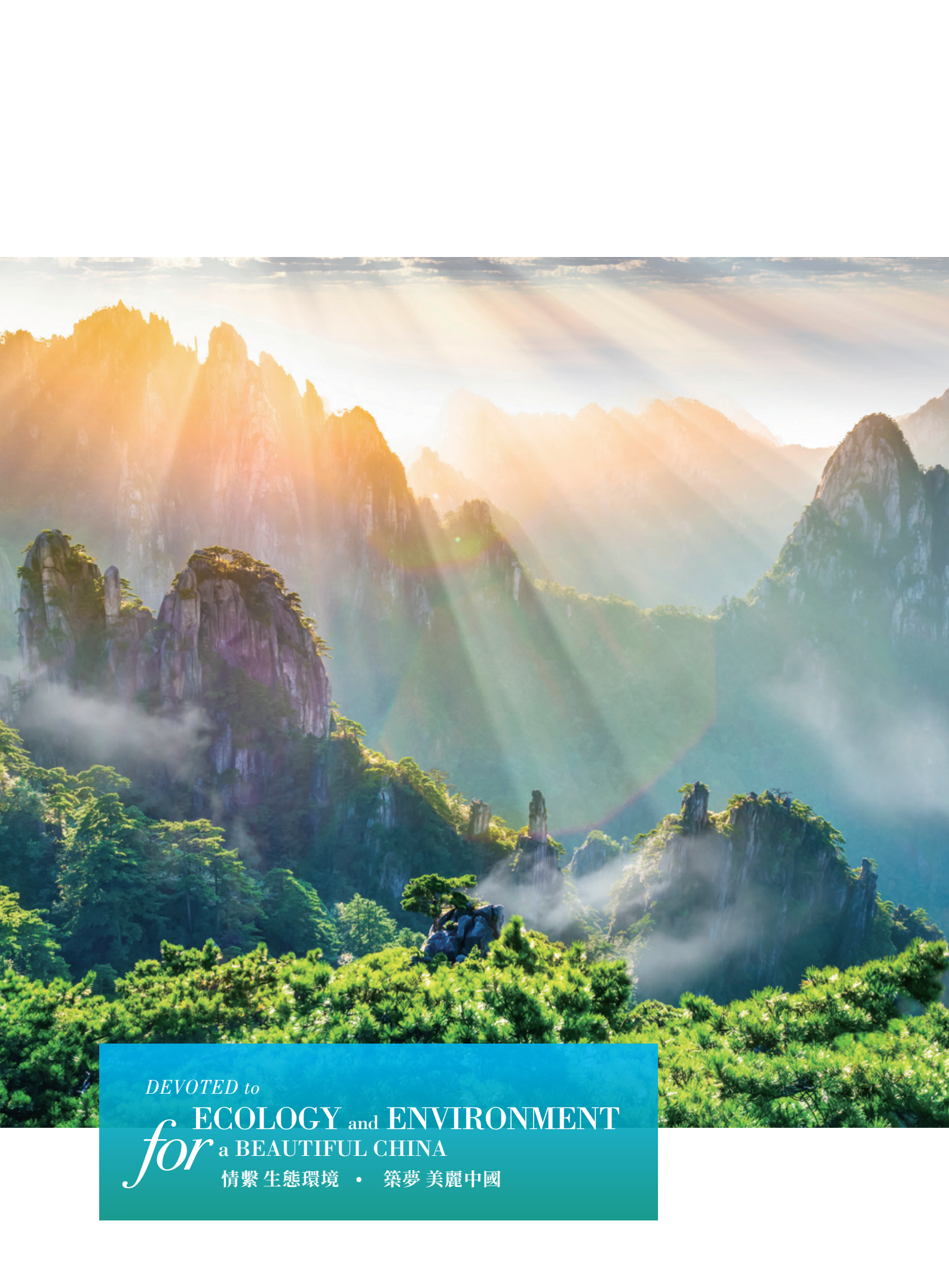
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**2022**  
SUSTAINABILITY  
REPORT  
可持續發展報告



*DUAL CARBONS*  
**BLUEPRINT**  
*for* a NEW GREEN CHAPTER  
擘畫雙碳藍圖 譜寫綠色新篇

CHINA EVERBRIGHT ENVIRONMENT GROUP LIMITED  
中國光大環境(集團)有限公司



*DEVOTED to*  
**ECOLOGY and ENVIRONMENT**  
*for* a BEAUTIFUL CHINA  
情繫生態環境 · 築夢美麗中國

## CONTENTS 目錄

<b>2</b>	About This Report 關於本報告	
<b>8</b>	Message from the Chairman of the Board 董事會主席致辭	<b>170</b> Community Care 社區關懷
<b>12</b>	2022 Sustainability Highlights 二零二二年 可持續發展摘要	<b>188</b> Together for the Sustainable Development Goals 攜手邁向可持續發展目標
<b>16</b>	About Everbright Environment 關於光大環境	<b>203</b> Key Statistics 主要數據
<b>32</b>	Sustainable Operations Management 可持續的運營管理	<b>215</b> Verification Statements 審核聲明
<b>50</b>	Stakeholder Engagement 持份者參與	<b>222</b> Appendix I – Reporting Boundary 附錄I – 報告邊界
<b>62</b>	Responding to Climate Change 應對氣候變化	<b>230</b> Appendix II – Main Corporate Memberships 附錄II – 主要企業會籍
<b>96</b>	Environmental Protection 環境保護	<b>232</b> Appendix III – GRI Content Index 附錄III – GRI內容索引
<b>138</b>	Talent Development 人才發展	<b>244</b> Appendix IV – SEHK ESG Reporting Guide Content Index 附錄IV – 聯交所《環境、社會及 管治報告指引》內容索引
<b>156</b>	Safety Culture 安全文化	<b>249</b> Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 附錄V – 對光大環境有重大影響的 相關法律及規例的遵守情況

## About This Report

### 關於本報告

### Group Profile

China Everbright Environment Group Limited (“Everbright Environment” or the “Company”, together with its subsidiaries, the “Group”) is a flagship enterprise of China Everbright Group Ltd. (“Everbright Group”), the controlling shareholder of the Company, in the Industrial Section. Everbright Environment is listed on the Main Board of The Stock Exchange of Hong Kong Limited (the “Stock Exchange”) (257.HK), and has two listed subsidiaries: China Everbright Greentech Limited (“Everbright Greentech”), which is listed on the Main Board of the Stock Exchange (1257.HK); and China Everbright Water Limited (“Everbright Water”), which is listed on both the Mainboard of the Singapore Exchange Securities Trading Limited (“SGX”) and the Stock Exchange (U9E.SG & 1857.HK)<sup>(1)</sup>. Since shifting its business focus to the environmental sector in 2003, the Company has grown into the largest environmental enterprise in China, a leading player in Asia’s environmental protection industry, the world’s largest waste-to-energy investor and operator, and a world-renowned environmental group.

### Reporting Scope and Principles

The Sustainability Report 2022 (the “Report”) is the Group’s eleventh standalone sustainability report, which covers the Group’s main sustainability initiatives and performance during 1 January 2022 to 31 December 2022 (the “Reporting Period”).

The data and information disclosed in the Report are consolidated from the materiality assessment, stakeholder engagement and other relevant sustainability reporting guidelines, covering the sustainability performance of the Group’s headquarters in Hong Kong, management centres and a representative office<sup>(2)</sup>, Singapore office, projects under the Group’s operational control from construction<sup>(3)</sup> through operation phases, and other business activities of the Group during the Reporting Period<sup>(4),(5)</sup>. The Group has conducted internal restructuring in November 2022. The 8 business sectors were restructured to 3 core sectors and 2 empowering sectors. The details can be found in the “About Everbright Environment” section. The delineation of reporting boundary is provided in Appendix I while the relevant entities of the Group can be found in the Company’s Annual Report 2022 (the “Annual Report 2022”): Notes to Financial Statements.

### 集團概覽

中國光大環境(集團)有限公司(「光大環境」或「本公司」, 連同其附屬公司, 統稱「本集團」) 為其控股股東中國光大集團股份公司(「光大集團」) 在實業領域的旗艦企業。光大環境於香港聯合交易所有限公司(「聯交所」) 主板上市(257.HK)。下轄兩家上市企業: 聯交所主板上市之中國光大綠色環保有限公司(「光大綠色環保」, 1257.HK)以及新加坡證券交易所有限公司(「新交所」) 及聯交所主板上市之中國光大水務有限公司(「光大水務」, U9E.SG及1857.HK)<sup>(1)</sup>。自二零零三年轉型環境領域以來, 本公司已逐步成長為中國最大環境企業、亞洲領先環保企業、全球最大垃圾發電投資運營商及世界知名環境集團。

### 報告範圍及原則

二零二二年可持續發展報告(「本報告」) 為本集團第十一份獨立的可持續發展報告, 涵蓋了本集團於二零二二年一月一日至二零二二年十二月三十一日(「報告期」) 期間本集團的主要可持續發展策略和表現。

本報告所披露的數據及信息是基於實質性評估、持份者參與和其他相關的可持續發展報告指引釐訂, 涵蓋了本集團在報告期內於香港總部、管理中心及代表處<sup>(2)</sup>、新加坡辦事處以及本集團擁有運營控制權從建設<sup>(3)</sup>到運營階段的項目以及本集團其他業務活動的可持續發展表現<sup>(4),(5)</sup>。本集團於二零二二年十一月進行了內部重組, 將八大業務板塊變更為三個核心板塊和兩個賦能板塊。有關重組後的板塊詳情, 請參閱「關於光大環境」章節。有關報告邊界的描述, 請參閱附錄I。本集團的相關實體資料可參閱本公司二零二二年年報(「二零二二年年報」) 中的財務報表附註。

We believe that quality reporting is an effective and fundamental step for us to manage the Group sustainably. As such, the Group adheres to the following principles in disclosing its environmental, social and governance (“ESG”) performance:

我們相信以高質量的報告作信息披露是本集團高效可持續管理的關鍵步驟。因此，本集團恪守以下各項原則以披露其環境、社會及管治（「ESG」）表現：

1

**MATERIALITY**  
重要性

We conduct annual materiality assessments to ensure that the identified and prioritised ESG issues reliably reflect the most material concerns to us and our stakeholders.

我們每年進行重要性評估，以確保已識別的和優先考慮的ESG議題能夠可靠地反映我們和持份者最深切的關注。

2

**QUANTITATIVENESS**  
量化

We strive to quantify data with the most accurate and precise standards, methodologies and assumptions possible for ease of comparing and verifying ESG performances.

我們務求以最準確和精確的標準、計算方法和假設法來量化數據，以便於比較和驗證ESG表現。

3

**CONSISTENCY AND COMPARABILITY**  
一致性及可比性

We consistently compile our latest sustainability report in a familiar format as our past reports and publish it in a timely manner for our stakeholders to make meaningful assessments and comparisons of our ESG performance to make an informed decision.

我們一如既往地採用熟悉的報告格式編製新年度的可持續發展報告，以便持份者根據我們的ESG表現進行有意義的評估及比較，從而作出明智的決策。

4

**ACCURACY**  
準確性

The information we report, whether qualitative or quantitative in nature, is ensured to be supported by sufficient detail with correct evidence.

我們報告的資訊，不論是定性或定量，均確保有足夠及正確的證據支持。

5

**BALANCE**  
平衡性

We disclose relevant information in a fair and impartial manner. Regardless of whether the information may cause a positive or negative impact on the Group, we take a rational approach in disclosing and drawing a lesson from it.

我們採取公平公正的方式披露相關資訊，不論其對本集團影響正面或負面，均以實事求是角度披露，並將負面資訊引以為戒。

6

**CLARITY**  
清晰性

We clearly present all information in the Report with precise language and a rich variety of pictures. Where necessary, annotations are added in appropriate spaces to provide supplementary information to the document.

我們通過精簡語言、圖文并茂，在本報告中清晰地表達各類資訊，甚至在必要時以批注方式在適當位置提供輔助資訊。

7

COMPLETENESS  
完整性

We disclose both the positive and negative impacts of our business in a transparent manner to present a more balanced and complete overview of our ESG performance.

我們以高度透明的方式披露我們業務所帶來的正面及負面影響，讓我們能更平衡和全面地概述我們的ESG表現。

8

SUSTAINABILITY CONTEXT  
可持續發展資訊

We aim to expand our coverage on sustainable development goals, climate risks and opportunities, and other ESG topics in our sustainability reports to provide clarity on our ESG efforts in a greater context.

我們致力在可持續發展報告中擴闊對可持續發展目標、氣候風險和機遇，以及其他ESG議題的覆蓋面，以便更清晰地推進我們的ESG工作。

9

TIMELINESS  
時效性

We prepare our sustainability reports with an annual reporting period covering 1 January to 31 December of the same year. Starting from this year, we will publish them at the same time as our annual reports, which is in April of each year.

我們撰寫的可持續發展報告均以每年的一月一日至同年的十二月三十一日為報告期。從今年開始，更將與年報同期發佈，亦即是每年的四月份。

10

VERIFIABILITY  
可驗證性

We report in accordance with multiple international and local guidelines, standards, and frameworks, and appoint an independent certification body to audit and verify the report content and data.

我們按照多個國際及本地指引、準則、框架進行報告，並且委託獨立認證機構就報告內容與數據進行審計和核實。

11

STAKEHOLDER INCLUSIVENESS  
持份者包容性

We engage a broad range of stakeholders to pinpoint the most material issues. Stakeholder groups include investors, shareholders, governments, villagers, local communities, investment analysts, business partners, suppliers, customers, employees, media and non-governmental organisations.

我們與廣泛的持份者互動，以探討最重要的議題。持份者組別包括投資者、股東、政府、村民、當地社區、投資分析員、業務夥伴、供應商、客戶、員工、媒體和非政府組織。

## Reporting Standard and Assurance

This Report has been prepared in accordance with the GRI Standards<sup>(6)</sup> as well as Rule 13.91 and Appendix 27 *Environmental, Social and Governance Reporting Guide* of the *Rules Governing the Listing of Securities on the Stock Exchange*. By these means, the material issues are covered in a more comprehensive manner. Besides, the Sustainable Development Goals of the United Nations (“SDGs”) have been fully integrated into the Group’s environmental and social management strategies to reflect its commitment to tackling the world’s most pressing issues.

Relevant guidelines or standards in international or local context are used as the basis for data collection and analysis of the Report, including the Clean Development Mechanism (“CDM”) approved methodologies, *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* from the Intergovernmental Panel on Climate Change (“IPCC”), and specification of ISO 14064-1:2018 *Greenhouse Gases – Part 1: Specification with Guidance at the Organisational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*, for the estimation of the projects’ greenhouse gas (“GHG”) emissions and offset. All data included in the Report are rounded except for the data which has been disclosed in the Annual Report 2022<sup>(7)</sup>.

The Group has commissioned the Hong Kong Quality Assurance Agency as the independent certification body to conduct an audit and verification on the content and data of the Report, with the continuation of auditing in accordance with the ISO 14064-1 Standard this year, which is targeted for the quantification and reporting of GHG emissions and removals at the organisational level. The corresponding verification statements have been appended to the Report. The board (the “Board”) of directors (the “Directors”) of Everbright Environment reviewed and approved the content and scope of the Report to demonstrate that the Board had considered sustainability issues as part of its strategic formulation, determined the material ESG issues and overseen the management and monitoring of those issues.

## 報告準則及審核

本報告是依循GRI準則<sup>(6)</sup>及《聯交所證券上市規則》第13.91條及附錄二十七所載的《環境、社會及管治報告指引》所編寫，務求報告更全面涵蓋實質性議題。此外，本集團將聯合國可持續發展目標（「SDGs」）全面融入環境及社會管理戰略中，以展示應對全球最迫切議題的決心。

本報告的資料收集及分析乃根據相關國際或本地指引及準則進行，包括使用清潔發展機制（「CDM」）、政府間氣候變化專門委員會（「IPCC」）《2006年IPCC國家溫室氣體清單指南2019修訂版》核准的計算方法，及ISO 14064-1:2018《溫室氣體—第一部分：組織層級溫室氣體排放和清除的量化和報告指南》的規範，估算項目的溫室氣體排放及抵銷。除了二零二二年年報已公佈的數據外，本報告所載的所有數據均已作捨入調整<sup>(7)</sup>。

本集團已委託香港品質保證局作為獨立認證機構，為本報告的內容及數據進行審計和核實，並於今年繼續依循針對組織層面溫室氣體排放和移除的量化及報告的ISO 14064-1標準進行審計驗證。其相關審核聲明已附載於本報告中。本報告的內容及範圍亦經過光大環境董事（「董事」）會（「董事會」）審閱及批准，以證明董事會已將可持續發展議題視為戰略制定的其中一部份，確定了主要的ESG議題，並對該等議題的管理和監察進行了監管。

## The Statement of the Board

According to the relevant provisions set out in Appendix 27 to the *Listing Rules*, The Board has issued a statement on the following matters. A disclosure of the Board's oversight of ESG issues is provided in the "Board Oversight of ESG and Climate Matters" section of this Chapter; the Board's ESG management approach and strategy, including the process used to evaluate, prioritise and manage material ESG-related issues (including risks to the Group's businesses), as well as the details regarding how the Board reviews progress made against ESG-related goals and targets with an explanation of how they relate to the Group's businesses are provided in the "Sustainable Operations Management" chapter on pages 32-49 of this Report.

## Board Oversight of ESG and Climate Matters

The Board has the overall authority over the Group's policies, strategies and performance in relation to sustainability and is responsible for overseeing the work of sustainability development such as reviewing and approving this Report.

Under the leadership of the Chairman of the Board, the Safety and Environmental Management Committee is responsible for formulating, monitoring and reviewing the Group's objectives, strategies and policies on sustainable development; as well as supervising the Group's performance and effectiveness in implementing the Environmental, Safety, Health and Social Responsibility ("ESHS") Management System and related measures; identifying, evaluating and prioritising the most material ESG and climate change-related topics that are relevant to our operations and concerned by our stakeholders; and reporting and providing continuous improvement suggestions to the Board on relevant matters whenever possible.

During the Reporting Period, the Board had been briefed on the economic, environmental and social issues, which included the economic, environmental and social related risks and opportunities, aiming to ensure the effective implementation of the Group's sustainable development strategy.

The Board shall continue to manage, monitor and take ESG issues into consideration when determining the Group's future business direction and strategy.

## 董事會聲明

根據《上市規則》附錄二十七所載的有關條文，董事會就以下事宜發出聲明。有關董事會對ESG事宜的監管披露之討論載於本章之「董事會對ESG及氣候變化事宜的監管」一節；有關董事會的ESG管理方針及策略，包括評估、優次排列及管理重要的ESG相關事宜（包括對本集團業務的風險）的過程之討論，以及董事會如何按ESG相關目標檢討進度，並解釋它們如何與本集團業務有關連之討論，均載於本報告第32至49頁之「可持續的運營管理」章節。

## 董事會對ESG及氣候變化事宜的監管

董事會擁有本集團有關可持續發展的政策、策略及績效的全面權力，並負責監督可持續發展方面的工作，例如審閱及批准本報告。

在董事會主席的領導下，安全與環境管理委員會負責制訂、監察及檢討本集團有關可持續發展的目標、策略及政策；監督本集團在實施環境、安全、健康及社會責任（「ESHS」）管理體系及相關措施方面的表現和成效；識別、評估和優先應對與我們的運營及持份者最深切關注的ESG和氣候變化相關議題；並且將會就相關事宜向董事會報告及提出持續改善建議。

於報告期內，董事會已聽取有關經濟、環境和社會議題向董事會之匯報，匯報內容亦包括經濟、環境和社會相關風險和機遇，以確保本集團的可持續發展策略得以有效實行。

董事會將繼續管理和監察ESG事宜，並將之納入本集團制定未來業務方向及策略時的考慮之列。



## Accessibility and Feedback

The Report is available in both Chinese and English versions and has been uploaded onto the websites of Everbright Environment ([www.cebenvironment.com](http://www.cebenvironment.com)) and Hong Kong Exchanges and Clearing Limited ([www.hkexnews.hk](http://www.hkexnews.hk)). If there is any inconsistency or discrepancy between the Chinese version and the English version, the English version shall prevail; in the event of any inconsistency or discrepancy between the Report and the Annual Report 2022, the Annual Report 2022 shall prevail unless otherwise stated.

The Group welcomes all stakeholders and the public to provide valuable comments and suggestions to [info1@cebenvironment.com](mailto:info1@cebenvironment.com) on the content of the Report, the reporting approach as well as the Group's sustainability performance.

### Notes:

- (1) For detailed sustainability performance of the two listed subsidiary companies of the Group (namely Everbright Greentech and Everbright Water), please refer to their standalone 2022 sustainability reports.
- (2) Includes management centres and a representative office located in Shenzhen, Beijing and Vietnam respectively.
- (3) For environmental data of projects under construction, only electricity and water consumption and the associated GHG emissions are disclosed in this Report. Other data such as fuel and materials consumption are possessed by contractors and/or subcontractors and the Group does not have access to them.
- (4) Unless otherwise specified, data of contractors and/or subcontractors is not disclosed in this Report.
- (5) Since the assets related to the 36 projects undertaken by Everbright Environment under engineering, procurement and construction ("EPC") approach are owned by its clients, Everbright Environment has no access to the environmental data of such projects, including electricity consumption and water consumption, etc. As such, the environmental performance of these projects is not disclosed in the Report.
- (6) GRI refers to the Global Reporting Initiative.
- (7) The numbers stated in various tables of the Report may not add up to totals or 100% due to rounding.

## 報告獲取及反饋

本報告備有中英文版本，並已上載至光大環境網站(<https://www.cebenvironment.com>)及香港交易及結算所有限公司網站([www.hkexnews.hk](http://www.hkexnews.hk))供下載及閱覽。如中、英文版本有任何抵觸或不相符之處，應以英文版本為準；除非另有說明，若本報告和二零二二年年報有任何抵觸或不相符之處，應以二零二二年年報為準。

歡迎各持份者及公眾就本報告內容、報告方式和本集團在可持續發展方面的表現提供寶貴意見及建議，並電郵至 [info1@cebenvironment.com](mailto:info1@cebenvironment.com)。

### 附註：

- (1) 關於本集團旗下兩間附屬上市公司（分別為光大綠色環保及光大水務）的詳細可持續發展表現，請參閱其獨立的二零二二年可持續發展報告。
- (2) 包括分別位於深圳、北京及越南的管理中心和代表處。
- (3) 有關在建項目的環境數據，僅被披露其電力及水消耗量以及相關的溫室氣體排放。其他數據如燃料消耗量和物料使用量由承包商和／或分包商處理，本集團無權存取有關數據。
- (4) 除非另有註明，承包商及分包商的數據不會於本報告中反映。
- (5) 由於光大環境以工程總包（「EPC」）的模式（總共36個項目）承接的資產由其客戶擁有，光大環境無權存取其環境數據包括電力消耗量及水消耗量等。因此，這些項目的環境數據不於本報告中披露。
- (6) GRI是指全球報告倡議組織。
- (7) 於本報告的各個表格與數字中，由於捨入關係，個別數字加起來可能與總數不符或不等於100%。

## Message from the Chairman of the Board 董事會主席致辭

In 2022, China continued to promote green and low-carbon transition, putting forward a series of major plans for green development that spawned thriving market opportunities in the environmental protection industry. In the face of new challenges and opportunities, Everbright Environment has always adhered to prioritising the provision of premium environmental services, joining hands with all sectors to advance the implementation of the national “Dual Carbons” strategy and contributing every effort to the establishment of a beautiful China while striving to promote high-quality and sustainable development.

This year, we persisted in the overall working principle of “seeking progress while maintaining stability” as we continued to solidify our leading position in the industry surrounding the three core fields of solid waste, water-related business and clean energy. We actively planned to promote the “Dual Carbons” development goals and action plans. Adhering to the principles of “Focusing on Core Businesses”, “Solidifying Core Businesses and Explores New Opportunities”, “Reducing Costs and Increasing Efficiency” and “Undertake Both Asset-light and Asset-heavy Businesses”, a total revenue of HK\$37,321,229,000 was recorded during the Reporting Period. We will continue to solidify the foundation of sustainable development by focusing on four major aspects, namely “Promoting Green Development”, “Excelling in Talent Management”, “Driving Technological Innovation”, and “Engaging Communities”.

In 2022, Everbright Environment’s performance in sustainable development was affirmed by various sectors: ranking first in the “Top 10 Influential Solid Waste Treatment Enterprises in China” for twelve consecutive years, first in the “Top 50 Environmental Enterprises in China” for four consecutive years; being included in the MSCI China Index for the tenth consecutive year, included in the Dow Jones Sustainability Indices for seven years straight, the Hang Seng Corporate Sustainability Benchmark Index for twelve consecutive years, the FTSE4Good Index for the sixth year running; shortlisted five times in the S&P Global Sustainability Yearbook; and was even awarded “Achievement of Net-zero” certificate and “Pioneering Organisation in Net-zero Contribution” by the Hong Kong Quality Assurance Agency for the first time.

二零二二年，中國持續推動綠色低碳轉型，對綠色發展提出一系列重大部署，催生環保產業蓬勃市場商機。面對新的挑戰與機遇，光大環境始終堅持以提供優質環境服務為首要任務，與各界攜手深入服務國家「雙碳」戰略任務，在奮力推動企業高品質可持續發展的同時，全力以赴為美麗中國建設貢獻力量。

本年度，我們堅持「穩中求進」工作總基調，圍繞「固廢、泛水、清潔能源」三大核心領域，持續鞏固行業龍頭地位。積極謀劃推動「雙碳」發展目標和行動計劃。堅持「聚焦主業」、「固本拓新」、「降本增效」、「輕重並舉」，於報告期內錄得綜合收益為港幣37,321,229,000元。圍繞「推動綠色發展」、「精於人才管理」、「引領科技創新」及「積極聯繫社區」四大重點，夯實可持續發展的基礎。

二零二二年，光大環境在可持續發展的表現得到各界的肯定：連續十二年榮居「中國固廢十大影響力企業」首位、連續四年蟬聯「中國環境企業50強」榜首、連續十年獲納入「MSCI中國指數」、連續七年獲納入「道瓊斯可持續發展指數系列」、連續十二年獲納入「恒生可持續發展企業基準指數」、連續六年獲納入「富時社會責任指數」、五次入選標普全球「可持續發展年鑒」、更首次獲頒香港品質保證局「實現碳中和」證書及「碳中和貢獻先鋒機構」嘉許。

## Excelling in Talent Management

Everbright Environment considers human resource management as one of the key components of successful corporate development, so the Group continuously expands its coverage of diverse training opportunities to enhance employees' industry-related skills and knowledge. We have continuously optimised the recruitment process to fully utilise the talents of our employees by placing them in the appropriate positions and departments. During the Reporting Period, the Group maintained a pool of 739 backup management personnel, who are the main drivers of our future corporate development and the active participants in supporting the nationwide establishment of an "Ecological Civilisation".

## Driving Technological Innovation

Based on the concept of "technology leads the future and innovation drives development", Everbright Environment has built a new low-carbon service model through technology and has vigorously invested in research and development ("R&D"), which in turn strengthened the Group's core competitiveness. As of 31 December 2022, the Group was granted a total of 1,675 patents, including 1,194 utility model patents, 267 software patents, 167 invention patents and 47 appearance patents, and published 87 major technical essays.

## Promoting Green Development

During the Reporting Period, the Group processed approximately 48,968,000 tonnes of household waste, 431,000 tonnes of hazardous waste and solid waste, 8,186,000 tonnes of agricultural and forestry waste; and treated around 1,770,260,000 m<sup>3</sup> of waste water; processed around 11,357,000 m<sup>3</sup> of leachate from waste-to-energy plants. During the Reporting Period, the Group generated around 24,762,121,000 kWh of green electricity, which could support the annual electricity consumption needs of around 20,635,000 households, equivalent to saving 9,905,000 tonnes of standard coal, offsetting about 20,463,000 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) emissions.

## 精於人才管理

光大環境視人力資源管理為企業發展成功的核心元素之一，持續開展各類培訓，提高各種培訓的覆蓋面以提升員工的職業相關技能及知識。不斷優化招聘程式，以確保員工的才能得到充分發揮，為員工提供適當的職級並安排他們於合適部門就職。報告期內，本集團已有739名後備管理人員，作為未來企業發展的主力隊，積極參與支持國家生態文明建設。

## 推動科技創新

憑著「科技引領未來，創新驅動發展」的理念，光大環境透過科技構建低碳服務新模式，大力投放資源推動科研發展，加強本集團的核心競爭力。截至二零二二年十二月三十一日，本集團共獲授權專利1,675項，包括實用新型專利1,194項、軟件專利267項、發明專利167項、外觀設計專利47項，發表重要技術論文87篇。

## 推動綠色發展

報告期內，本集團處理生活垃圾約48,968,000噸、危廢及固廢約431,000噸、農林廢棄物約8,186,000噸；處理污水約1,770,260,000立方米；垃圾發電廠滲濾液處理量達約11,357,000立方米。報告期內，本集團產生綠色電力約24,762,121,000千瓦時，可供約20,635,000個家庭一年使用，相當於節約標煤9,905,000噸，抵銷溫室氣體排放約20,463,000噸二氧化碳當量。

While promoting its operations such as waste-to-energy, the Group also actively expanded its presence in trending business areas such as waste sorting, resource recycling and environmental remediation. During the Reporting Period, the Group secured 39 new environmental protection projects and signed 1 supplementary agreement for an existing project, commanding a total investment of approximately RMB5.546 billion.

## Engaging Communities

During the Reporting Period, the Group worked closely with the local authorities, partners and the public to gather daily supplies and anti-pandemic resources, and donated funds and resources totalling RMB3.15 million to the relevant local health and anti-pandemic authorities, charitable foundations, hospitals, organisations, designated individuals and institutions, etc.

Under the government's guidance and leadership, Everbright Environment remains a benchmark and a leader in the Chinese environmental protection industry for opening up facilities for public visits. During the Pandemic, we launched the online "Cloud Opening" activities, with aims of reaching more members of the public and raising their awareness on environmental protection while enhancing our corporate transparency subject to public scrutiny. During the Reporting Period, the Group's projects received more than 40,000 domestic and foreign visitors from various sectors.

在推動垃圾發電等業務的同時，本集團亦積極擴展垃圾分類、資源再生利用、環境修復等新興業務，於報告期內共投資落實了39個新環保項目及簽署了1份現有項目的補充協議，涉及總投資額約人民幣55.46億元。

## 積極聯繫社區

於報告期內，本集團與地方政府、合作夥伴和民眾上下齊心，積極籌措生活及抗疫物資，向有關地區衛生防疫部門、慈善基金會、醫院、機構、指定個別人士及單位等捐款捐物總計人民幣315萬餘元。

在國家的部署及號召下，光大環境持續成為中國環保行業公眾開放的標竿及引領。新冠疫情期間，我們開展線上「雲開放」活動，旨在接觸更多公眾及提升其環保知識意識，同時提高企業透明度，以接受公眾監督。報告期內，本集團旗下項目共接待國內外各界人士參觀考察超過4萬人次。

## Our Way Forward

In 2023, the Group shall celebrate the 30th anniversary of the Company's establishment and the 20th anniversary of the transformation of environmental protection. In the past few decades, Everbright Environment has not only witnessed the remarkable achievements of China's establishment of an ecological civilization and the rapid development of the domestic environmental protection industry, but also integrated into the industry's development as both a pioneer and a participant. Benefiting from both nationwide and industrywide development, the Group has steadily grown into an industry leader.

Against the new backdrop of and new expectations from Chinese modernisation, Everbright Environment will ensure the balance between righteousness and benefit, further improve development quality and efficiency, anchor the strategic goal of being "the world's leading ecological and environmental group", actively plan around the "Dual Carbons" strategy, steadily build up core business advantages, continue to stimulate corporate management efficiency, and create positive value for all stakeholders and build a better future along the new journey of striving for high-quality and sustainable development.

**HUANG HAIQING**  
*Chairman of the Board*  
30 March 2023

## 展望將來

二零二三年，本集團將迎來公司成立三十周年、轉型環保二十周年。幾十年發展歷程中，光大環境不僅見證了中國生態文明建設取得的顯著成就與國內環保行業的高速發展，更作為環保行業發展領先者和參與者融入其中，受益於國家和行業發展，穩步成長為行業龍頭。

面向中國式現代化建設的新形勢、新要求，光大環境將堅持義利相容，深入提升發展質與效，堅定不移錨定「全球領先生態環境集團」的戰略目標，積極謀劃「雙碳」戰略佈局，穩步構建業務核心優勢，持續激發企業管理效能，在全力推動高品質可持續發展的奮鬥新征程上，為全體持份者創造良好價值，構建更加美好的未來。

**黃海清**  
*董事會主席*  
二零二三年三月三十日

ECONOMY 經濟

As at 31 December 2022  
截至二零二二年十二月三十一日

**564** environmental protection projects  
環保項目數目達**564**個

*In 2022*  
二零二二年

Revenue amounted to  
HK\$ **37,321,229,000**

收益為港幣**37,321,229,000**元

Integrated biomass utilisation projects  
directly and/or indirectly created  
**60,186** jobs and increased farmers'  
income by approximately  
RMB**2.632** billion, benefiting over  
**5.45** million farmers

生物質綜合利用項目直接及／或間接  
提供工作崗位逾**60,186**個，帶動農民  
增收約人民幣**26.32**億元，令逾**545**萬  
名農民受益

ENVIRONMENT 環境

*In 2022*  
二零二二年

Environmental protection  
projects generated approximately  
**24,762,121,000** kWh of green  
electricity, offsetting approximately  
**20,463,000** tonnes of CO<sub>2</sub> equivalent  
emissions

環保項目合共產生綠色電量約  
**24,762,121,000**千瓦時，抵銷了二氧  
化碳當量排放約**20,463,000**噸

These projects treated approximately  
**1,770,260,000** m<sup>3</sup> of waste water  
and approximately **11,357,000** m<sup>3</sup> of  
leachate, reducing COD discharge by  
approximately **824,000** tonnes in total  
該等項目處理污水約**1,770,260,000**  
立方米及滲濾液約**11,357,000**立方  
米，合共減少了約**824,000**噸COD排放

## EMPLOYEE 員工

As at 31 December 2022  
截至二零二二年十二月三十一日

**12,396** employees in total  
員工總數為 **12,396** 人

*In 2022*  
二零二二年

Rate of work-related injuries: **0.08**  
(employees) and **0.05** (third-party  
contractors and subcontractors  
working on-site)  
工傷率：**0.08** (員工) 及 **0.05** (第三方  
承包商及分包商駐場工人)

(Rate of work-related injuries = (Total  
number of work-related injuries/Total  
working hours) x 200,000)  
(工傷率 = (工傷個案總計 / 工作總時  
數) x 200,000)

## COMMUNITY 社區

*In 2022*  
二零二二年

Environmental protection projects  
received over **40,000** domestic and  
foreign visitors from all social circles  
環保項目共接待國內外各界人士參觀  
考察超過**40,000**人次

Donations amounted to HK**\$3,514,828**  
捐款總金額為港幣**3,514,828**元

As at 31 December 2022  
截至二零二二年十二月三十一日

**151** environmental protection facilities  
had been opened up to the public  
已向公眾開放**151**個環保設施

Anhui Dangshan No.5 High School  
(formerly known as “Everbright  
Environment True Love School”) had  
accumulatively provided educational  
opportunities for **7,291** students  
安徽碭山縣第五中學 (前稱「光大環境  
愛心學校») 已累計為**7,291**名學生提  
供教育機會

“Everbright Environmental Protection  
Charitable Fund” had accumulatively  
supported a total of **2,253** beneficiaries,  
with a total of over RMB**12.9** million  
delivered as ex-gratia funds and financial  
aids  
「光大環保愛心基金」已累計產生**2,253**  
名受益者，共計已發放超過人民幣  
**1,290**萬元慰問金及救助金

In 2022, the Group received many honors in recognition of its effort in many aspects, including business operation and ESG performance. The major awards and recognition are summarised as below:

二零二二年，本集團在業務經營及ESG表現方面成績卓越，滿載而歸。主要獎項及榮譽摘要如下：

### Business Performance 業務經營

**First place in the “Top 50 Environmental Enterprises in China” (the fourth consecutive year)**  
「中國環境企業50強」榜單榜首 (連續第四年)

China Environment Chamber of Commerce  
中華全國工商業聯合會

**First place in the “Top 10 Influential Solid Waste Treatment Enterprises in China” (the twelfth consecutive year)**  
「中國固廢十大影響力企業」榜單榜首 (連續第十二年)

E20 Environmental Platform  
E20環境平台



**Shortlisted in the Fortune China 500 list (the second consecutive year)**  
《財富》中國500強 (連續第二年)

Fortune China  
《財富》(中文版)

**Top Brand Value Ranking for China’s Listed Environmental Protection Companies with a brand value of RMB14.622 billion**  
以人民幣146.22億元的品牌價值高居中國上市環保公司榜首

The “Blue Book on Brand Value of Chinese Listed Companies 2021” was published by the “National Business Daily” in collaboration with the China Business Research Centre, School of Economics and Management, Tsinghua University  
《每日經濟新聞》與清華大學經濟管理學院中國企業研究中心聯合出品的《2021中國上市公司品牌價值藍皮書》

### ESG Performance ESG表現

**Included in the Dow Jones Sustainability Indices (the seventh consecutive year)**  
獲納入道瓊斯可持續發展指數系列 (連續第七年)

S&P Dow Jones Indices  
標普道瓊斯指數

Member of  
**Dow Jones Sustainability Indices**  
Powered by the S&P Global CSA

**Included in the Sustainability Yearbook 2022 (the fifth time)**  
獲納入《二零二二年年可持續發展年鑒》(第五次)

S&P Global  
標普全球

**Sustainability Yearbook**  
Member 2022  
**S&P Global**



**Everbright Environment received “Best in Reporting Awards” (Main Board – Middle Market Capitalisation), Everbright Greentech received “ESG Report of the Year”, “Best in ESG Awards”, “Best in Reporting Awards” (Main Board – Small Market Capitalisation)**  
光大環境獲得「最佳ESG報告大獎」(主機板中市值組別)、光大綠色環保獲得「ESG 年度大獎」、「ESG 最佳表現大獎」及「最佳 ESG 報告大獎」(主機板小市值組別)

“BDO ESG Awards 2022” by BDO Limited  
香港立信德豪會計師事務所有限公司主辦的「二零二二年BDO 環境、社會及管治大獎」





**Included in the Hang Seng Corporate Sustainability Benchmark Index (the twelfth consecutive year)**  
獲納入恒生可持續發展企業基準指數 (連續第十二年)

Hang Seng Indexes  
恒生指數

**Included in the Hang Seng ESG 50 Index for the first time**  
首次獲納入恒生ESG 50指數

Hang Seng Indexes  
恒生指數

**Social Responsibility Brand of the Year (the eighth consecutive year)**  
年度責任品牌獎 (連續第八年)

China Charity Festival  
中國公益節

**Everbright Environment received the first ever "Blue Ocean Award"**  
榮獲首屆「藍色海洋獎」

The Inaugural Green Carpet Awards for the Private Sector by Asian Development Bank  
首屆亞洲開發銀行私營領域綠毯獎



**Received for the first time the "Achievement of Net-Zero" Certificate and "Pioneering Organisation in Net-Zero Contribution"**  
首次獲得「實現碳中和」證書及「碳中和貢獻先鋒機構」嘉許

Hong Kong Quality Assurance Agency ("HKQAA")  
香港品質保證局

**Everbright Water received the "ListCo Excellence Award 2022" (the third consecutive year)**  
光大水務獲頒「傑出上市公司大獎」(連續第三年)

The Annual "ListCo Excellence Awards" Co-organised by organisations including Hong Kong stocks channel of ifeng.com and Hong Kong media "am730" 《鳳凰網港股》、香港媒體《am730》等機構聯合舉辦的「傑出上市公司大獎」年度評選

**Everbright Water was recognised as one of the "ASEAN Asset Class Publicly Listed Companies"**  
光大水務獲頒「東盟優質資產上市公司獎」

2021 Association of Southeast Asian Nations ("ASEAN") Corporate Governance Scorecard  
二零二一年東南亞國家聯盟(「東盟」)公司治理評估

**Everbright Greentech received the "Corporate Governance Award 2022" (H-share Companies and Other Mainland Enterprises Category)**  
光大綠色環保獲頒「企業管治獎」(H股公司與其他中國內地企業組別)

"Best Corporate Governance and ESG Awards in 2022" Hong Kong Institute of Certified Public Accountants  
香港會計師公會「二零二二年度最佳企業管治和ESG獎項」



*ABOUT*  
EVERBRIGHT  
ENVIRONMENT  
關於光大環境

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*PROMOTING*  
CLEAN ENERGY & IMPLEMENTING  
LOW-CARBON DEVELOPMENT

推動潔淨能源 · 落實低碳發展

As the first one-stop integrated environmental solution provider in China, Everbright Environment focuses on three core areas, namely solid waste, water-related business and clean energy. Its main businesses cover waste-to-energy and synergistic waste treatment, integrated biomass utilisation, hazardous and solid waste treatment, new energy, environmental remediation, water environment management, equipment manufacturing, waste sorting, environmental sanitation integration, resource recycling, development of zero-waste cities, energy-saving lighting, analysis and testing, research and development relating to green technologies, ecological and environmental planning and designing, as well as environmental protection industrial parks, among others.

Everbright Environment is a key partner of the International Coalition for Green Development on the Belt and Road as well as the Ecological Protection and Green Development of the Yangtze River Economic Belt. The Company upholds its corporate mission of being “Devoted to Ecology and Environment for a Beautiful China”, with awards for ranking first among the “Top Ten Influential Solid Waste Treatment Enterprises in China” for twelve consecutive years, the top on the list of China’s Top 50 Environmental Enterprises for four consecutive years, and being included in the MSCI China Index for ten consecutive years. With the goal of “Create Better Investment Value and Undertake More Social Responsibility”, the Group was shortlisted among the Fortune China 500 list for the second time in 2022. It has also been a constituent member of Dow Jones Sustainability Indices for seven consecutive years, Hang Seng Corporate Sustainability Benchmark Index for twelve consecutive years, FTSE4Good Index for six consecutive years, and a member of S&P Global’s Sustainability Yearbook for multiple times.

作為中國首個一站式、全方位的環境綜合治理服務商，光大環境聚焦固廢、泛水、清潔能源三大核心領域，主營業務涵蓋垃圾發電及協同處理、生物質綜合利用、危廢及固廢處置、新能源、環境修復、水環境綜合治理、裝備製造、垃圾分類、環衛一體化、資源循環利用、無廢城市建設、節能照明、分析檢測、綠色技術研發、生態環境規劃設計、環保產業園等。

作為「一帶一路」綠色發展國際聯盟和長江經濟帶生態大保護的戰略合作夥伴，本公司秉承「情繫生態環境，築夢美麗中國」的使命，連續十二年穩居「中國固廢十大影響力企業」首位、連續四年蟬聯中國環境企業50強榜首及十年獲納入MSCI中國指數。另外，本集團致力追求「創造更好投資價值，承擔更多社會責任」的企業目標，於二零二二年再次躋身《財富》中國500強榜單、連續七年獲納入道瓊斯可持續發展指數系列、連續十二年獲納入恒生可持續發展企業基準指數、連續六年獲納入富時社會責任指數、並且曾多次入選標普全球《可持續發展年鑒》。

 <p><b>THE GROUP'S VISION</b> 企業願景</p> <p>To Become a World-leading Ecological and Environmental Group</p> <p>致力發展成為全球領先的生態環境集團</p>	 <p><b>THE GROUP'S MISSION</b> 企業使命</p> <p>Devoted to Ecology and Environment for a Beautiful China</p> <p>情繫生態環境 築夢美麗中國</p>	 <p><b>THE GROUP'S PURSUIT</b> 企業追求</p> <p>To Create Better Investment Value and Undertake More Social Responsibility</p> <p>創造更好投資價值 承擔更多社會責任</p>	 <p><b>DEVELOPMENT PHILOSOPHY</b> 發展理念</p> <p>Taking Quality as the Top Mission, Keeping Efficiency as the Priority, and Pursuing Growth in Business Scale</p> <p>質量第一 效益優先 規模發展</p>	 <p><b>OPERATION PHILOSOPHY</b> 經營理念</p> <p>Pursuing Excellence and Close to Zero Discharge</p> <p>精益求精 追求完美 近零排放 追求卓越</p>
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## Business Footprint

As at 31 December 2022, the Group's 564 projects were located in over 220 locations across 26 provinces, municipalities, autonomous regions and a special administrative region in China, as well as Germany, Vietnam, Poland and Mauritius.

## 業務分佈

截至二零二二年十二月三十一日，本集團的564個項目分佈全國26個省(市)、自治區及特別行政區，遍及220個區縣市，與此同時海外業務已涉足德國、越南、波蘭及毛里求斯。

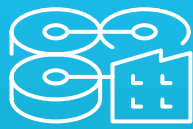


Proportion of Investment by Sector  
按板塊劃分的投資額百分比



59.87%

Environmental Energy  
環保能源



18.77%

Environmental Water  
環保水務



20.96%

Greentech  
綠色環保



0.4%

Others  
其他

Total investment of approximately  
總投資約

RMB 人民幣 **157.675** billion 十億元





## Environmental Energy 環保能源



### Environmental Energy

#### The largest waste-to-energy investor and operator in the world

Environmental energy is a core sector of Everbright Environment, with the largest scale and biggest business portion, covering waste-to-energy, food and kitchen waste treatment, leachate treatment, fly ash treatment, methane-to-energy, sludge treatment and disposal, construction and decoration waste treatment, and the development of environmental protection industrial parks. On this basis, in order to better play a synergistic role and expand the scope of its solid waste industrial chain, Everbright environment merged the eco-recycling and environmental planning sectors into environmental energy in 2022, which further improved the deployment of the Company's waste-to-energy industrial chain, strengthened integrated development of the resources and energy integrated utilisation businesses, and consolidated the company's leading position in the waste-to-energy industry.

### 環保能源

#### 全球最大垃圾發電投資運營商

環保能源為光大環境旗下最具規模且業務佔比最高的核心板塊，業務涵蓋垃圾發電、餐廚及廚餘垃圾處理、滲濾液處理、飛灰處理、沼氣發電、污泥處理處置、建築裝潢垃圾處理、環保產業園開發等。在此基礎上，為更好發揮協同作用、完善固廢產業鏈佈局，光大環境於二零二二年優化業務板塊管理架構，將生態資源與環境規劃板塊併入環保能源，進一步完善垃圾發電產業鏈佈局，強化資源能源綜合利用產業一體化發展，鞏固公司於垃圾發電行業的領先地位。

As at 31 December 2022  
截至二零二二年十二月三十一日

160	Waste-to-energy projects 垃圾發電項目
50	Food and kitchen waste treatment projects 餐廚垃圾處理項目
11	Sludge treatment and disposal projects 污泥處理處置項目
3	Leachate treatment projects 滲濾液處理項目
2	Methane-to-energy-projects 沼氣發電項目
11	Fecal treatment/fly ash treatment/animal carcass treatment incineration residue treatment projects 糞便處理／飛灰填埋／病死動物處理／ 爐渣處理項目
4	Medical waste treatment projects 醫療廢物處理項目
9	Waste sorting and integration projects 垃圾分類及一體化項目
1	Construction and decoration waste treatment project 建築及裝潢垃圾項目
1	Solid waste treatment project 固廢處理項目
6	Heat supply projects 供熱項目

### Total Designed Capacities 設計總規模

approximately 約  
**52,432,250** tonnes  
噸  
Annual household waste processing capacity  
年處理生活垃圾量

approximately 約  
**17,736,434,700** kWh  
千瓦時  
Annual on-grid electricity  
年上網電量

approximately 約  
**2,886,420** tonnes  
噸  
Annual food waste processing capacity  
年處理餐廚垃圾量

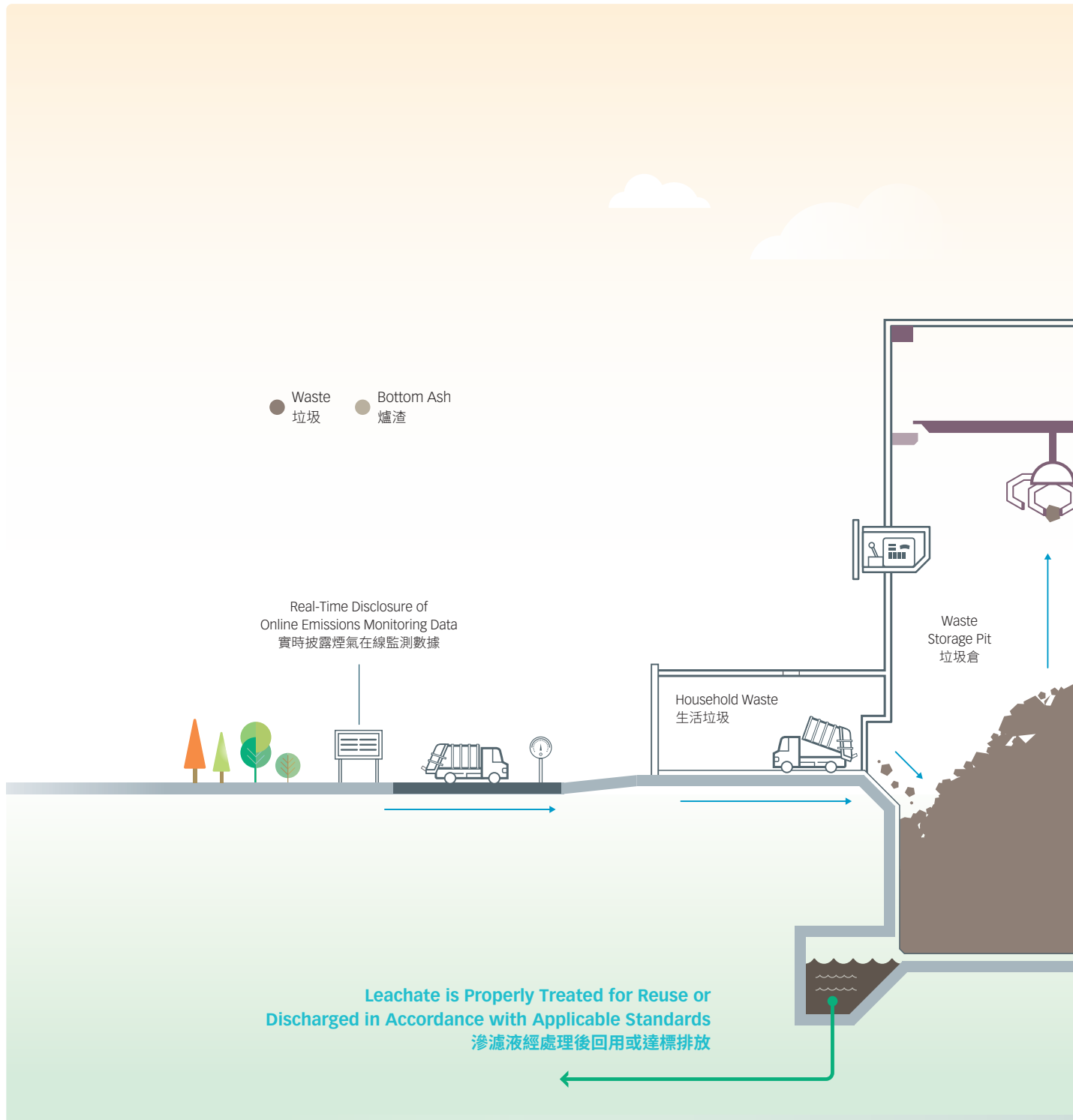
approximately 約  
**503,700** tonnes  
噸  
Annual sludge treatment capacity  
年處理污泥量

approximately 約  
**12,775** tonnes  
噸  
Annual medical waste processing capacity  
年處理醫療廢物量

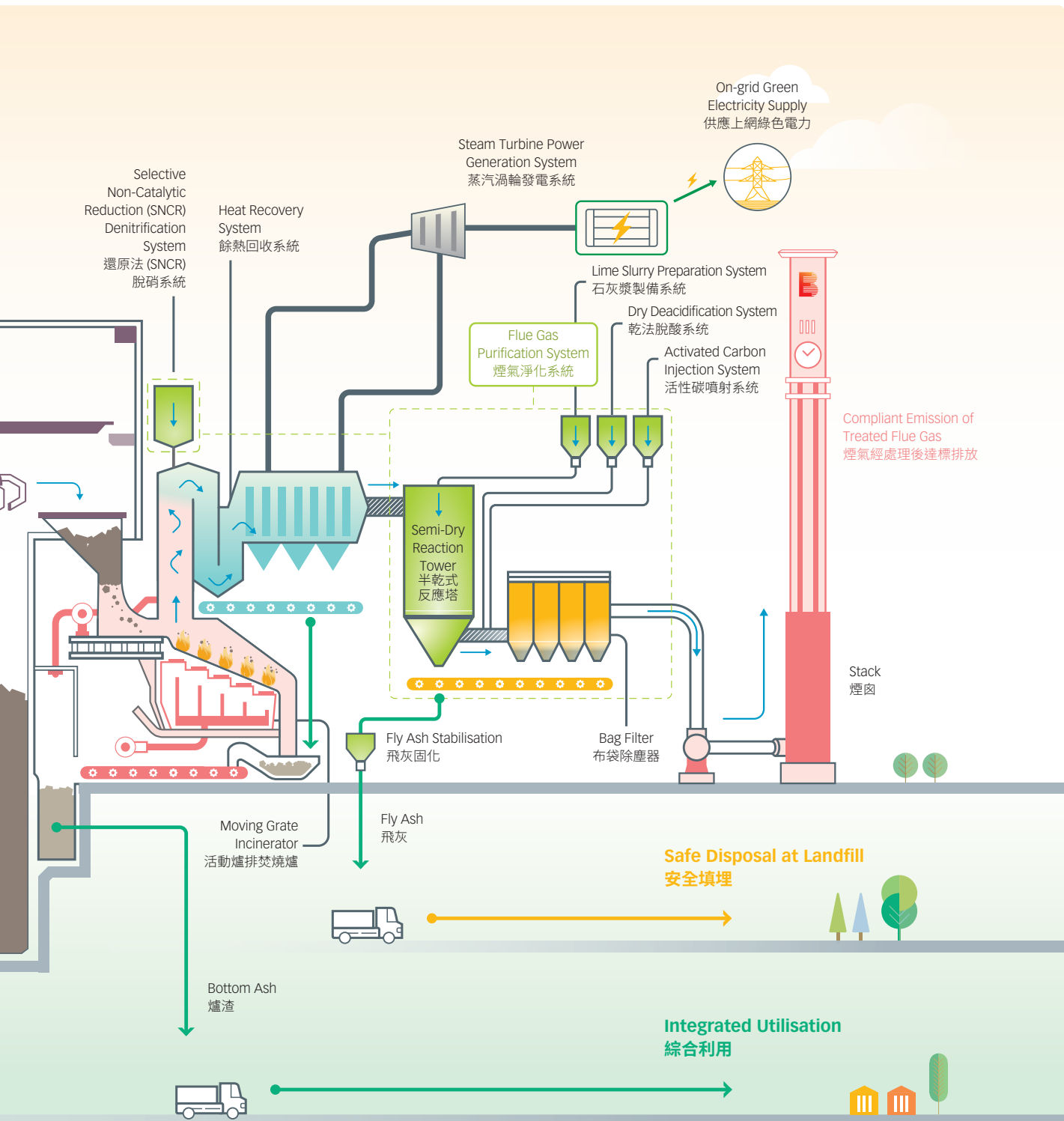
## 258 Total Contracted Projects 總投資項目

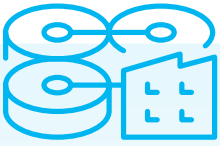
(In addition to undertake 2 operation and management ("O&M") projects and 11 EPC projects)  
(另承接2個委託運營項目11個EPC項目)

Waste-to-Energy Project – Typical Process Flow Diagram  
垃圾發電項目—工藝流程圖









## Environmental Water 環保水務



### Environmental Water

#### Water environment management integrated service provider

Everbright Water is listed on the Mainboard of both the SGX and the Stock Exchange. As a first-class water environment management service provider in China, Everbright Water has developed a comprehensive business coverage that includes raw water protection, water supply, municipal waste water treatment, industrial waste water treatment, reusable water, river-basin ecological restoration and sludge treatment and disposal. Everbright Water has also formed a full industrial chain in the water business, including project investment, planning and design, technology R&D and related services, engineering and construction, and operations management and integrated diagnosis, amongst others. As of 31 December 2022, the Group owned a 72.87% stake in Everbright Water.

### 環保水務

#### 水環境治理綜合服務供應商

光大水務為新交所及聯交所的主板上市公司及中國一流的水環境綜合治理服務供應商，光大水務業務覆蓋原水保護、供水、市政污水處理、工業廢水處理、中水回用、流域治理、污泥處理處置等，以及專於項目投資、規劃設計、科技研發及服務、工程建設、運營管理、綜合診斷等業務領域。截至二零二二年十二月三十一日，本集團持有光大水務72.87%的權益。

As at 31 December 2022  
截至二零二二年十二月三十一日

- 124** Municipal waste water treatment projects  
市政污水處理項目
- 16** Industrial waste water treatment projects  
工業廢水處理項目
- 8** Reusable water projects  
中水回用項目
- 6** River-basin ecological restoration projects  
流域治理項目
- 3** Water supply projects  
供水項目
- 1** Raw water protection project  
原水保護項目
- 1** Leachate treatment project  
滲濾液處理項目
- 2** Sludge treatment and disposal projects  
污泥處理處置項目

### Total Designed Capacities 設計總規模

approximately 約  
**2,225,806,500** m<sup>3</sup>  
立方米  
Annual waste water treatment capacity  
年污水處理量

approximately 約  
**109,719,000** m<sup>3</sup>  
立方米  
Annual reusable water supply capacity  
年供中水量

approximately 約  
**310,250,000** m<sup>3</sup>  
立方米  
Annual water supply capacity  
年供水量

## 161 Total Contracted Projects 總投資項目

(In addition to undertake 4 EPC projects and 5 O&M projects)  
(另承接4個EPC項目及5個委託運營項目)



## Greentech 綠色環保



### Greentech

**One of the China's top investors and operators with expertise in integrated biomass utilisation, harmless treatment of hazardous and solid waste.**

Everbright Greentech is a company listed on the Main Board of the Stock Exchange. Everbright Greentech concentrates on hazardous and solid waste treatment, integrated biomass utilisation, new energy, environmental remediation, among others. It positions itself as a leading intelligent energy supplier committed to reaching "Carbon Neutrality", as well as a prominent industrial hazardous waste treatment investor and operator in China. As at 31 December 2022, the Group owned a 69.7% stake in Everbright Greentech.

### 綠色環保

**全國領先生物質綜合利用、危廢及固廢無害化處置投資運營商之一**

光大綠色環保為聯交所主板上市公司，業務領域為危廢及固廢處置、生物質綜合利用、新能源、環境修復等，是中國領先的「碳中和」智慧能源供應商及工業危廢處置投資運營商。截至二零二二年十二月三十一日，本集團持有光大綠色環保69.7%的權益。

As at 31 December 2022  
截至二零二二年十二月三十一日

- 4** Biomass direct combustion projects  
生物質直燃發電項目
- 11** Biomass electricity and heat cogeneration/heat supply projects  
生物質熱電聯供／供熱項目
- 39** Urban-rural integration projects  
城鄉一體化項目
- 61** Hazardous and solid waste treatment projects  
危廢及固廢處置項目
- 51** Environmental remediation projects and services  
環境修復項目及服務
- 24** Solar energy and wind power projects  
光伏發電及風電項目

### Total Designed Capacities 設計總規模

approximately 約 **8,089,800** tonnes  
噸

Annual processing capacity of biomass raw materials  
年處理生物質原材料量

approximately 約 **4,215,750** tonnes  
噸

Annual household waste processing capacity  
年處理生活垃圾量

approximately 約 **2,873,376** tonnes  
噸

Annual hazardous and solid waste treatment capacity  
年處置危廢及固廢量

approximately 約 **6,992,190,013** kWh  
千瓦時

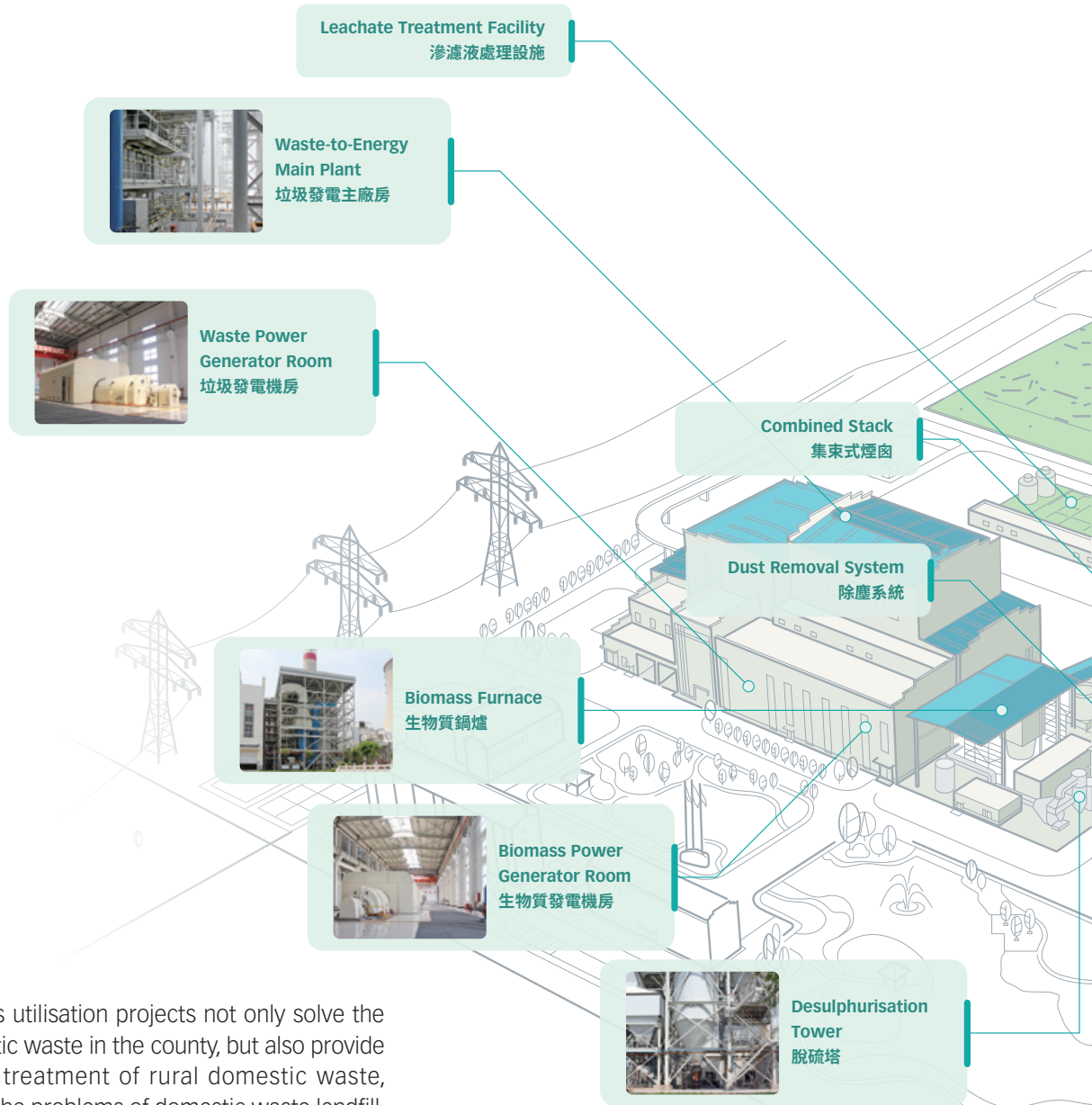
Annual electricity supplied  
年上網電量

approximately 約 **5,389,663** tonnes  
噸

Annual steam supply capacity  
年供蒸汽量

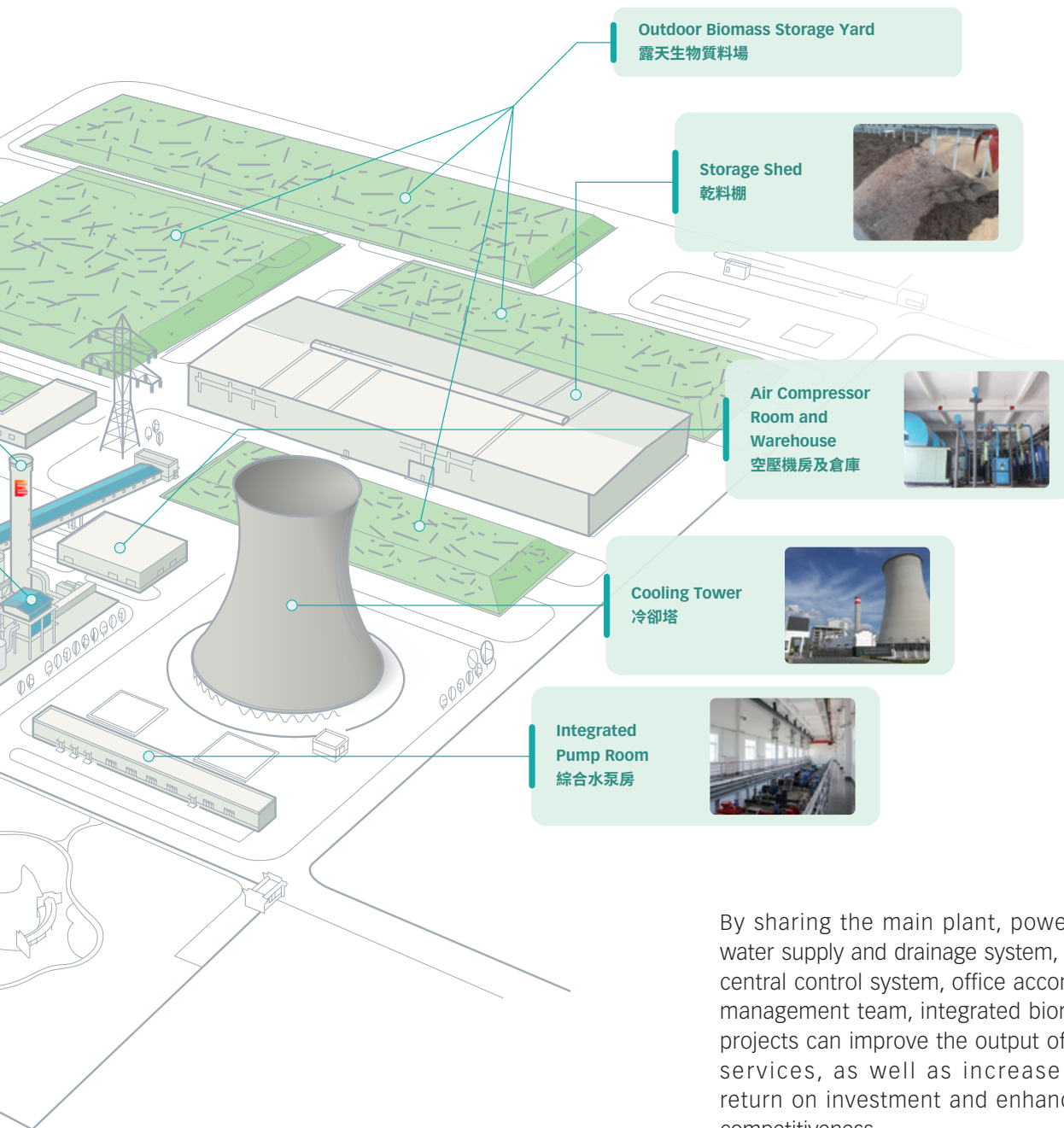
**190** Total Contracted Projects and Services  
總投資項目及服務

## Integrated Biomass Utilisation Project – Overview 生物質綜合利用項目—概覽



Integrated biomass utilisation projects not only solve the problem of domestic waste in the county, but also provide solutions for the treatment of rural domestic waste, effectively solving the problems of domestic waste landfill, leachate-polluted soil and groundwater, and conserving large plots of land otherwise taken up by waste landfills. At the same time, they will greatly change the current issue of rural open-air burning of straw by reducing smog formation.

生物質綜合利用項目不僅可以解決縣城內的生活垃圾問題，還可以為農村生活垃圾處理提供解決方案，有效解決生活垃圾填埋及滲濾液污染土壤及地下水問題，可節約因填埋垃圾佔用的大量土地，同時極大程度上改變農村露天焚燒秸稈的現狀，減少霧霾的形成。



By sharing the main plant, power grid system, water supply and drainage system, cooling system, central control system, office accommodation and management team, integrated biomass utilisation projects can improve the output of environmental services, as well as increase their overall return on investment and enhance the Group's competitiveness.

生物質綜合利用項目通過共用主廠房、電網系統、給排水系統、冷卻系統、中控系統、辦公住宿場所及管理團隊等，既能提高環境服務產出，也能增加項目整體投資回報並提升本集團的競爭力。



## Envirotech 研究院

Being Everbright Environment's engine for technology R&D and innovation, the envirotech sector has been leveraging its R&D layout with platforms in various locations, focusing on key research areas such as household waste treatment, treatment of various hazardous and solid waste, agricultural and forestry biomass utilisation, water environment management, big data and intelligent control. The sector is positioned to become a global platform dedicated to green technological innovation and conversion.

In 2022, envirotech strived to cater to the growth of traditional business, new business and the demands of future development, and to promote R&D activities. Envirotech provided several technical support services for system designs, covering grate furnace, flue gas purification, energy and carbon reduction, intelligent control systems and others to assist in business development in various sectors by responding to the needs of the Group's other sectors. Additionally, envirotech was actively doing theoretical and technical researches connected to "Dual Carbons", making advances in a number of areas, such as optimisation of carbon calculation model(s), pilot programmes on onsite monitoring of greenhouse gas emissions.

作為本集團科技研發創新的引擎，研究院（前稱「綠色科創」）基於其多地設立的研發平台，聚焦生活垃圾處理、各類危廢及固廢處理、農林生物質利用、水環境治理、大數據及智慧控制等重點科研攻關領域，全力打造面向全球的綠色技術創新平台及技術轉化平台。

於二零二二年，研究院聚焦「面向傳統業務、面向新業務、面向未來發展」三個方向進行研發工作，並且響應各板塊需求，完成焚燒爐、煙氣淨化、節能降碳、智能控制系統等多項系統設計的技術支持服務，協助各板塊業務發展。此外，研究院積極推進「雙碳」理論及技術研究，在碳核算模型優化、溫室氣體排放監測試點等多個方面獲取良好進展。

As at 31 December 2022  
截至二零二二年十二月三十一日

The Group had been granted a total of **1,675** patents, comprising **167** invention patents, **1,194** utility model patents, **267** software patents and **47** appearance patents  
本集團獲授權專利合共**1,675**項，其中發明專利**167**項、實用新型專利**1,194**項、軟件專利**267**項及外觀設計專利**47**項。







## Equipment Manufacturing 裝備製造

With Everbright Environmental Technical Equipment (Changzhou) Limited being the main platform, Everbright Environment's equipment manufacturing sector strives to upgrade its factories from the country's "Green Factories" to "Zero-carbon Factories", promoting the integration of advanced manufacturing and modern services. In 2022, with the incorporation of the business of Everbright Environment's greenery sector, equipment manufacturing further expanded its scope of business and enriched its product portfolio, fostering a new development paradigm for the "Intelligently Made by Everbright", continuing to solidify its industry-leading position.

Equipment Manufacturing sector adhered to its innovative development philosophy, follow market demands, and leverage its advantages to activate its innovation power. As a result, it successfully promoted a number of R&D projects. The domestic selective catalytic reduction (SCR) technology was successfully applied to a number of environmental protection projects of the Group; the new process of the primary air system for grate furnace was implemented in many projects; production lines of the ultrafiltration membrane technology were established and the relevant membrane products were used by projects; medical waste incineration technology completed trail operation, providing project operation experience for the development of countercurrent rotary kiln technology; higher heating value water-cooled grate furnace system was installed in individual projects of the Group and received orders from various internal and external projects; research results on the food and kitchen waste treatment to enhance automation were applied to the Group's food and kitchen waste treatment project in Jiangyin, Jiangsu Province, which can realise information visualisation, data analysis optimisation and reduced fault judgment during the kitchen waste treatment process; R&D work of a set of equipment for solid waste treatment (processing capacity below 200 tonnes/day) progressed well and was approved by NDRC.

作為中國骨幹環保裝備研發製造商，光大環境裝備製造板塊依託常州裝備公司為平台，以國家「綠色工廠」為基礎升級打造「零碳工廠」的同時，促進先進製造與現代服務深度融合。二零二二年，本集團優化業務板塊管理架構，隨著光照明板塊業務的併入，裝備製造的業務範疇進一步拓寬、產品類別進一步豐富，助力構建「光大智造」發展新格局，持續鞏固行業領先地位。

裝備製造板塊堅持創新發展思路，立足市場需求，結合自身優勢，著力激活創新動力，順利推進多項研發課題工作。國產SCR脫硝技術成功拓展並應用於本集團多個環保項目；焚燒爐一次風系統新工藝已於多個項目實施；超濾膜技術搭建生產線並實現成品膜的項目應用；醫療廢棄物焚燒技術於項目完成試運行，為逆流回轉窯技術的發展提供項目運行經驗；高熱值水冷爐排爐系統已於本集團個別項目進行安裝，並獲多個內外部項目訂單；餐廚垃圾處理系統提升自動化程度研究成果應用於本集團江蘇江陰餐廚垃圾處理項目，可實現餐廚垃圾處理過程的信息可視化、數據分析優化和故障判斷；200噸/日以下固廢處置成套設備研發工作進展順利，並獲國家發展改革委員會立項。



For details of the Group's corporate governance, risk management and internal controls, please refer to the Annual Report 2022.

有關本集團的企業管治、風險管理及內部監控的詳情，請參閱二零二二年年報。

*SUSTAINABLE*  
OPERATIONS  
MANAGEMENT

可持續的運營管理

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*UPHOLDING*

CORPORATE INTEGRITY & FULFILLING  
SOCIAL RESPONSIBILITY

秉持企業誠信 · 善盡社會責任

The Group adheres to the management principle of “People-Oriented, Pragmatism, Creativity and Systematic Management” while pursuing excellent, all-rounded and high-quality corporate governance as the cornerstone of the Group, contributing significantly to our sustainable development. As such, we have established a mature organisational management structure that details the responsibilities and obligations of employees at all levels. Through the Management Decision Committee, the Group monitors and reviews business operations and management comprehensively, so as to protect the interests of all stakeholders and creating long-term value for the Group.

The Group fully complies with all relevant national and regional laws, regulations and standards, actively upholds corporate social responsibilities, and strives to minimise the adverse business impacts on the environment and society.

### Business Principles

The Group persists in carrying out the management principle of integrity and pragmatism, upholds ethics, and strives to strengthen and promote the corporate culture of sincerity in all our business operations. The Group’s *Employee Code of Conduct* provides employees with clear guidelines and instructions on equal opportunity, anti-discrimination, anti-corruption, prevention of bribery and extortion, anti-fraud, anti-money laundering, prevention of anti-competition practices and conflict of interest, use of confidential and proprietary information, environment, health and safety, whistleblowing, safeguarding employees’ benefits and welfare and other relevant issues. We communicate our values, cultures and policies to our existing and new employees to strengthen their awareness of internal rules and ethics and create a healthy and orderly corporate atmosphere.

The bonuses of Executive Directors (including the Chairman of the Board and the Chief Executive Officer (“CEO”)) and the senior management of the Company are linked to metrics such as operating profit, investments in new projects, safety and environmental performance, etc., to ensure the alignment of long-term interests between the Executive Directors and the senior management and the Company together with its shareholders. Details of the Directors’ remuneration information can be found in the Company’s Annual Report 2022.

本集團奉行「以人為本、求真務實、開拓創新、規範管理」的管理理念，深信優質、全面及高水平企業管治是本集團的基石，對本集團之可持續發展至關重要。為此，我們建立了一套完善的組織管理架構，清楚列明各職級責任與義務，並透過管理決策委員會全面監督及檢討業務運營及管理情況，並致力維護各持份者的利益，為本集團締造長遠價值。

本集團全面遵從所有相關國家或地方的法例、規則和標準，同時積極承擔企業社會責任，努力緩解業務對環境和社會產生的不良影響。

### 營商原則

在各業務運作中，本集團堅守原則實踐誠信與務實的管理理念及道德操守，努力打造並建立以誠信為本的企業文化。本集團的《員工守則》概述了與平等機會、反歧視、反貪腐、防止賄賂、防止勒索、反欺詐、反洗黑錢、防止反競爭行為、避免利益衝突、機密和專有資料的使用、環境、健康及安全、舉報，以及員工待遇和福利保障等方面的指引及說明。我們向現有及新入職的員工傳達集團的價值觀、文化及政策，以提升員工對內部規則的意識和道德規範，從而營造健康有序的良好企業氛圍。

執行董事（包括董事會主席及總裁）及本公司高級管理人員的花紅以經營活動所得盈利、新項目投資及安全和環境績效等指標以釐定，確保執行董事和高級管理人員與本公司及其股東的長遠利益一致。有關各董事的薪酬資料，可參閱本公司的二零二二年年報。

## Prevention of Corruption and Anti-competitive Behaviour

To promote the anti-corruption practice and improve employees' awareness on conflict of interests and integrity issues, the Group continuously provides various anti-corruption trainings for the Directors and employees, such as "Training on Upholding and Implementing Probity", "Lecture on Probity", etc. Besides, trainings related to the Group's *Employee Code of Conduct*, corporate culture, policies, and management systems are also actively conducted to further enhance an atmosphere of integrity and discipline, and to build up the integrity culture within the Group.

In addition, the Group holds various forms of educational activities and trainings for the management to strengthen integrity and self-discipline amongst the management at all levels and promote the spirit of sincerity. The Group also strives to strengthen the reform of relevant systems and regulations to avoid abuse of power, enhance disciplinary supervision, and stringently enforce disciplinary accountability, and thus implement the practice of preventing corruption and anti-competitive behaviour at all business levels.

## Protection of Third-Party Privacy and Intellectual Property

About protecting third-party personal data and privacy for the sake of legal and regulatory compliance, the Group has clearly set out the scope of privacy of relevant third parties and stipulated a series of standard procedures and operating guidelines for employees and suppliers to follow in the *Privacy Policy*. We strictly demand our employees to collect, manage, process, disclose and use personal data of third parties in accordance with the law. Furthermore, our *Privacy Policy* also includes provisions to prevent copyright infringement to protect intellectual property rights and ensure respect for knowledge and talent.

To further reduce the risk of leaking private and sensitive information, the Head of the Information Management Centre, who is an Executive Director, is entrusted with the responsibility to maintain information security and implement the Group's cybersecurity measures as stipulated under the *Everbright Environment Information Security Management Policy*. We provide regular trainings for employees to refresh their understanding of privacy and intellectual property protection as well as proper management practices.

## 防止貪腐及反競爭行為

為實踐反貪污、提高員工對利益衝突及誠信事宜的警覺性，本集團持續向董事和員工提供不同的反貪腐培訓，如舉辦「廉政建設及執行力培訓」和「廉潔工作講座」、與《員工守則》、企業文化、政策及管理體系相關的培訓，以進一步實踐誠信守紀的公司氛圍，建立本集團誠信文化。

本集團亦透過多種形式開展針對管理層的教育活動及培訓，促使各級管理層嚴格廉潔自律，弘揚清風正氣。與此同時，本集團強化制度改革與權力約束，增強紀律監督，嚴肅執紀問責，致力於在各業務層面全面實踐防貪腐及避免反競爭行為。

## 保護第三方私隱及知識產權

為求在遵守法律規定的基礎上，保護第三方的個人資料及私隱，本集團在《私隱政策》清楚列明瞭相關第三方的私隱範圍，以及規定員工與供應商的一系列標準程序及處理方法指引。我們嚴格要求員工依法收集、管有、處理、披露及使用第三方個人資料。為保護知識產權和確保各方尊重知識及人才，我們的《私隱政策》亦包含了防止侵犯版權的條款。

為了進一步降低私隱和敏感信息洩露的風險，維護信息安全的工作已交託本集團執行董事兼任信息管理中心負責人，並且根據《光大環境信息安全管理政策》執行本集團的網絡安全措施。我們定期提供培訓，為員工重溫對私隱及知識產權保護的認知及正確管理方法。

## Policy for Whistleblowing

The Group continues to adhere to transparent and honest operation in all businesses; actively and continuously perfecting the accountability and supervision framework; and strive to consistently maintain high standards of corporate governance. To this end, the Group has formulated the *Internal Whistleblowing and Investigation Policy* and *External Whistleblowing and Investigation Policy*, and provided safe, confidential, and legal channels for whistleblowing. Employees and related correspondents (including but not limited to investors, lenders, suppliers, customers, service providers, governments, etc.) may report, without fear of retaliation, on the Group's financial reporting, internal controls, or any other areas of actual or suspected misconducts and illegal activities. All reports or complaints are ensured to be handled fairly, justly, and effectively. Effective whistleblowing methods are posted on the Company's website.

The Company has set up dedicated email addresses (published on the Company's website) that operate 24/7 as formal reporting channels for employees and correspondents to report anonymously and directly to the chairman of the Audit Committee, and the CEO. We prohibit any form of retaliation or intimidation, and will not disclose the identity of the whistleblower without the whistleblower's consent or unless under any legal obligation to do so, in order to guarantee that the whistleblower can actively defend the Company's moral standards free of worries. All concerns or violations raised shall be treated as confidential information, and the Group shall ensure that an impartial and independent investigation will be carried out to facilitate follow-up actions.

During the Reporting Period, the Company received four reports through the below whistleblowing channels covering three cases concerning tender procedures and one case concerning conflict of interest of staff. All cases are being handled.

## 舉報政策

本集團繼續堅持各項業務的透明廉潔運作，積極和持續完善問責監督體系，致力保持企業管治一貫的高標準。為此，本集團制訂了《內部舉報及調查辦法》和《外部舉報及調查辦法》，提供安全保密且合法的渠道，讓員工及往來人士（包括但不限於投資者、貸款人、供應商、客戶、服務商、政府等）可以無懼報復地就本集團財務匯報、內部監控或其他方面實際或懷疑的不正當或不合法行為進行舉報，並確保所有的舉報或投訴均能夠得到公平、公正、及有效的處理。有效之舉報方法已載列於本公司網站。

本集團設立了24/7運作的特定電子郵箱（已在本公司網站上公佈）作為正式的舉報渠道，讓員工及往來人士可以直接聯繫審核委員會主席及總裁作出匿名舉報。我們明確禁止對舉報人進行任何形式的報復或威脅行為，在未經舉報者同意或是沒有法律要求下不會透露舉報者身份，確保舉報者能在沒有後顧之憂的前提下積極捍衛本公司的道德標準。被提出的所有關注事項或違規行為都將被視為保密信息，本集團保證會妥善安排公平獨立的調查以作出適當跟進。

於報告期內，本公司通過以下舉報渠道收到四宗個案報告，當中包括三宗關於招標程序及一宗關於員工利益衝突的舉報，全部個案均在處理中。



**Whistleblowing Channels 舉報方式**

**Chairman of the Audit Committee 審核委員會主席**  
ac@cebenvironment.com

**CEO 總裁**  
ceo@cebenvironment.com

## Sustainability Approach

The Group actively integrates the principles of sustainable development into the governance framework and daily operations, and strives to create long-term values and benefits for its stakeholders.

## Sustainable Development Policies and Systems

After years of development, the Group has established an all-rounded ESG system covers the entire project management cycle from the early planning stage to the final operation management stage. It contains requirements for aspects related to environmental and social impact screening and categorisation, resettlement, indigenous peoples, environmental impact assessment, information disclosure, public consultation and engagement, gender equality, grievance mechanism, due diligence and review, monitoring and reporting, etc. These requirements ensure the Group's operations can comply with international principles and standards related to safeguarding the environment and society. Furthermore, the Group's *Environmental Policy* and *Code of Practice* provide clear guidance on operations involving air and greenhouse gas emissions, effluent discharge into water and soil, generation and management of hazardous and non-hazardous wastes, and the use of energy, water resources and other raw materials, to strengthen and standardise the Group's environmental and social governance.

In 2022, the Group has conducted a comprehensive review of ESG-related management and division of work. Such review helped to improve the implementation effectiveness of the supervisory system in our operations. Within the system contains management standards for guidelines and procedures related to the identification of material ESHS topics, auditing, incident investigation and reporting, handling of occupational injuries, and contractors' ESHS management, etc. This management system can enhance the Group's sustainable development internally, and even extend the safety culture and relevant policies to the supply chain. In addition, the Group actively promotes the *Points-Based ESHS Management Rules* to encourage all employees and outsourced personnel to engage in safety management, supervise one another, and advance the standardisation of safety management together to further improve the proficiency of safety management.

The Board and the senior management review the Group's sustainability policies on an annual basis and revise them when appropriate.

## 可持續發展方針

本集團積極地將可持續發展原則融入管治框架及日常運營中，致力為持份者創造長遠價值及利益。

## 可持續發展政策和體系

經多年不斷發展，本集團已建立一套完善的ESG體系涵蓋由前期規劃到最終運營管理的項目全週期管理，包括涉及環境和社會影響篩選和分類、搬遷安置、原住民、環境影響評估、信息披露、公眾諮詢和參與、性別平等、申訴機制、盡職調查和審查，及監測和報告等範疇的要求，以確保本集團的運營能滿足國際上關於環境及社會保障的原則和規範。此外，本集團的《環境政策》和《運營守則》，對運營中所涉及的大氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生及處置方法，以及能源、水資源、其他原材料使用等方面提供了明確指引，加強並規範化本集團的環境與社會管治。

二零二二年，本集團全面檢討ESG相關管理制度及分工，有助完善監管體制在運營中的有效實踐。當中涉及到重要ESHS議題的識別、審核、事故調查及匯報、工傷處理及承包商ESHS管理方面等指導程序的管理標準。此管理體系可促進本集團內部的可持續發展，更將安全文化和相關政策延伸到供應鏈中。此外，本集團積極推行《ESHS積分管理制度》，努力推動員工及外協隊伍全員參與安全管理，互相監督，共同推進安全管理規範化，以提升安全管理水平。

董事會和高級管理人員每年檢視本集團可持續發展政策，並會在適當時作出修訂。

## Corporate Governance Structure for Sustainable Development

The Board is responsible for reviewing and supervising the Group's plans, activities, and performance in relation to sustainable development. Under the Management Decision Committee, the Safety and Environmental Management Committee, which is led by the CEO, provides leadership and material support for corporate sustainability matters and ensures that appropriate decisions and strategies are made regarding the Group's sustainability efforts.

The Independent Non-executive Directors provide the Group with diversified experience and professional knowledge. Apart from complying with the independence guidelines set out in Rule 3.13 of the *Listing Rules*, each of the Independent Non-executive Directors has confirmed that:

1. he/she has not been employed by the Company in an executive capacity within the last year;
2. he/she has not been a partner or employee of the Company's external auditor during the last year;
3. he/she is not a family member of an individual who is employed by the Company or by any parent or subsidiary of the Company as an executive officer;
4. he/she has no conflict of interest that the Board itself determines to mean they cannot be considered independent;
5. he/she has not been (and has not been affiliated with a company that is) an adviser or consultant to the Company or a member of the Company's senior management;
6. he/she has not been affiliated with a significant customer or supplier of the Company;
7. he/she has not entered into personal services contract(s) with the Company or a member of the Company's senior management;
8. he/she has not been affiliated with a not-for-profit entity that receives significant contributions from the Company;
9. he/she has not accepted or has any family member who has accepted any payments from the Company or any parent or subsidiary of the Company in excess of US\$60,000<sup>(1)</sup> during FY2022.

Note:

<sup>(1)</sup> Other than those permitted by US SEC Rule 4200 Definitions, including i) payments arising solely from investment in the Company's securities; or ii) payments under non-discretionary charitable contribution matching programmes; or iii) compensation for board or board committee service.

## 可持續發展企業管治架構

董事會負責審視及監督本集團可持續發展的計劃、活動及表現。於管理決策委員會下亦設有由總裁牽頭的安全與環境管理委員會，為企業可持續發展工作提供領導和實質的支持，以及確保本集團在可持續發展方面作出適當的決策和部署。

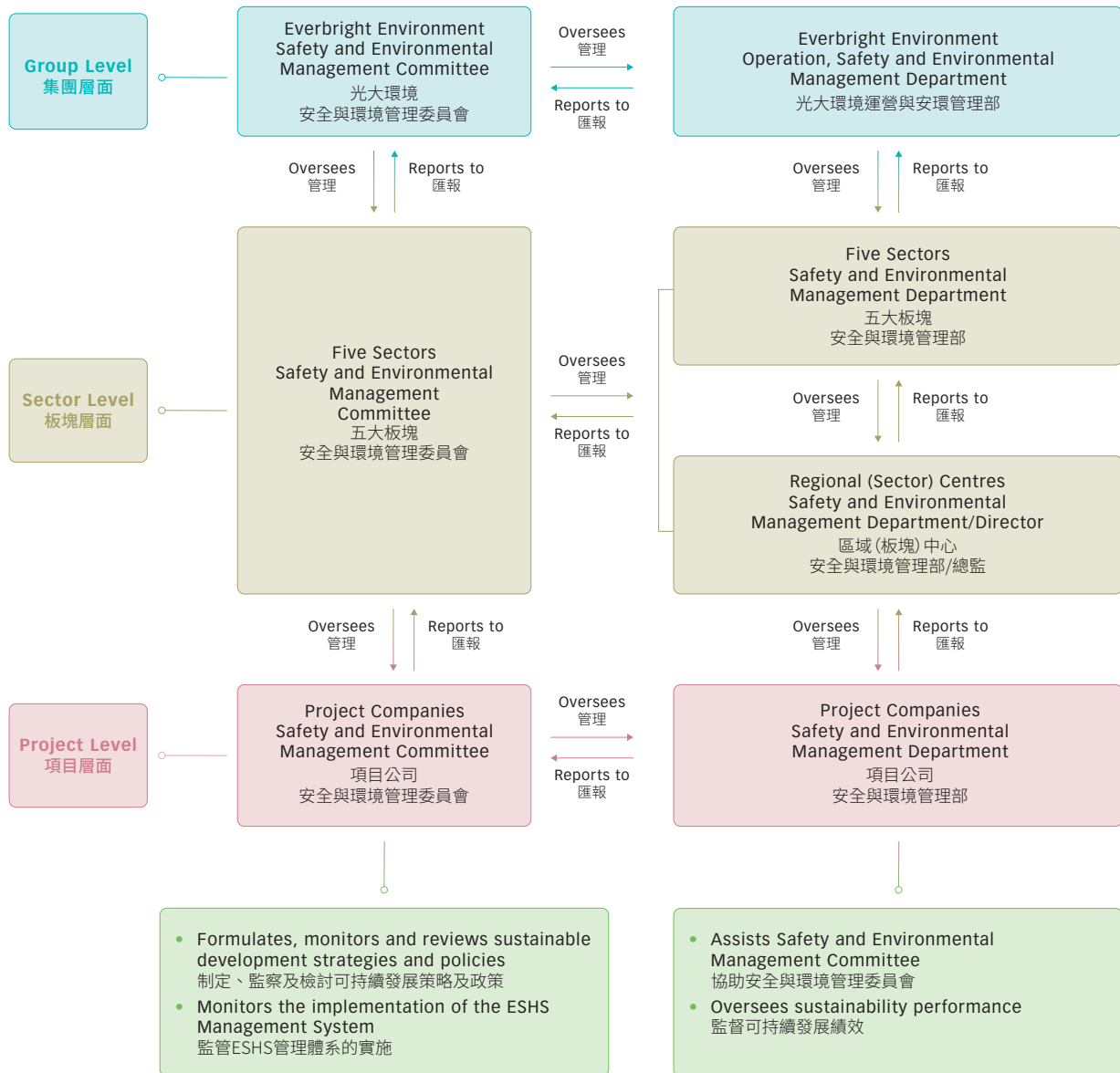
獨立非執行董事為本集團帶來多元化的經驗及專業知識。除符合《上市規則》第3.13條所載之獨立性指引外，各獨立非執行董事確認：

- (一) 他／她在過去一年內未曾以行政人員身份受僱於本公司；
- (二) 他／她在過去一年內未曾受僱於本公司外部核數師或出任其合夥人；
- (三) 他／她現時沒有家屬以行政人員身份受僱於本公司或其任何母公司或附屬公司；
- (四) 他／她現時沒有任何董事會認為會影響其獨立性的利益衝突；
- (五) 他／她現時不是本公司或本公司的高級管理人員的顧問或諮詢人（也不與作為本公司顧問或諮詢人之公司有關聯）；
- (六) 他／她現時與本公司的重要客戶或供應商並無關聯；
- (七) 他／她現時與本公司或本公司高級管理人員沒有簽訂個人服務合同；
- (八) 他／她現時與獲本公司重大捐獻之非盈利性實體並無關聯；
- (九) 他／她於二零二二財年沒有接受或有任何家屬接受過本公司或其任何母公司或附屬公司的超過60,000美元<sup>(1)</sup>的款項。

附註：

<sup>(1)</sup> 但受美國SEC規則4200條款所允許的則不在此限，包括i)投資本公司的證券產生之款項；或ii)根據無裁量性慈善捐款配比方案所產生之款項；或iii)為董事會或董事會委員會服務的報酬。

**Sustainable Operations Management**  
 可持續的運營管理





## Risk Management

The Group is committed to developing a comprehensive risk management culture by implementing an “Integration of Policy, Procedure and System with Risk-oriented” risk management model to strengthen risk management and control. The Group’s documents including the *Risk Management Policy*, *Risk Management Operation Manual* and the *Inside Information Reporting Policy* clearly demonstrate the Group’s detailed workflows and specific implementation requirements on risk management and internal controls. In order to improve the overall risk management of investment projects, all new investment projects were reviewed by the Investment Project Advisory Committee which is formed by the colleagues representing relevant departments and teams namely Strategic Development Department, Financial Management Department, Risk Management and Legal Compliance Department, Construction Budgetary Management Department, Operation and Safety and Environmental Management Department, as well as the construction technology team and operation team. We have also regularly revised and issued the *Project Advisory Committee Organisation and Review Workflow* to further strengthen the risk management of investment projects.

During the Reporting Period, the Group continued to enhance the management of major risk prevention, and internal control and compliance. At the same time, the risk factor list has been revised, not only to constantly improve the risk management systemisation and normalisation levels, but also to enhance the quality and efficiency of project review.

In addition, the Group conducts an annual identification and assessment of its principal risks, analyses the effectiveness of its control measures, and continues to follow up on specific control outcomes.

## 風險管理

本集團致力建立健全的風險管理文化，並推行「以風險為導向、以制度為基礎、以流程為紐帶、以系統為抓手」的風險管理模式，全面強化管理和管控風險。本集團的文件，包括《風險管理制度》、《風險管理操作手冊》及《內幕消息報告政策》等清晰列明本集團在風險管理和內部監控方面的詳細工作流程和具體執行要求。為有效加強投資項目整體風險管控，本集團新投資項目均經由評審委員會審議，委員會由相關部門及工作小組人員組成，包括戰略發展部、財務管理部、風險管理與法律合規部、工程預算管理部、運營與安環管理部、以及工程技術小組與運營小組。定期修訂並下發的《項目評審委員會組織及評審流程》亦進一步強化投資項目的風險管理。

報告期內，本集團持續加強重大風險防範和內控合規管理工作，同時對風險要素清單進行了修訂，除了持續提升風險管理系統化及常態化水平外，更提高項目評審質量及效率。

此外，本集團每年對主要風險進行識別和評估，分析管控措施的有效性，並持續跟進具體的管控成效。



## Risk Management Framework 風險管治框架

Our risk management hierarchy, comprising three lines of defence, has helped to achieve risk management and internal controls at each level:

我們建立了由三道防線構成的風險管理組織體系，以實現風險及內部監控的逐級管理：



### 1 FIRST LINE OF DEFENCE 第一道防線

**(Sectors, Regional Centres and Project Companies)**  
(各板塊、區域中心和項目公司)

Responsible for continuous identification, assessment, monitoring and reporting of risks, implementation of risk management and internal control specific measures.

負責對運營過程中的風險持續識別、評估、監察及匯報，實施風險管理及內部監控系統的具體措施。

### 2 SECOND LINE OF DEFENCE 第二道防線

**(Everbright Environment's Risk Management and Legal Compliance Department, functional departments and sectors' functional departments)**  
(光大環境風險管理與法律合規部，各職能部門和各板塊職能部門)

Responsible for regular review of overall risk level and effectiveness of control measures in principal risks.

負責定期評估整體的風險等級、審閱主要風險管控措施的有效性。

### 3 THIRD LINE OF DEFENCE 第三道防線

**(Audit Department)**  
(審計部)

Responsible for regular review of the follow-up actions taken to enhance the risk management and internal control systems.

負責定期審核風險管理和內部監控系統改進的落實情況。

Everbright Environment strives to strengthen all employees' risk awareness and considers the establishment of a risk management culture as a significant part of the Group's development strategies. The Group has established effective control measures against all kinds of risks. Besides, through a learning bundle of various risk case studies, including case study analysis and trainings on the Group's systems and procedures, we can help employees build up a sound risk management mindset, which guides them towards upholding good conduct and ethical standards. In the process, they can transform their risk management awareness into conscious action, and further integrate such awareness into their daily work.

光大環境致力增強全體員工的風險意識，並將風險管理文化建設視為本集團發展戰略的重要組成部分。對各項風險本集團均制定了有效的管控措施，透過各類風險案例教育包括案例的分析和本集團制度流程培訓，協助員工樹立正確的風險管理觀念，引導員工遵守良好的行為準則和道德規範，將風險管理意識轉化為自覺行動，並進一步將這種意識融入到日常工作當中。



## Supply Chain Management

The Group has adopted a stringent supplier selection and management system and maintained close cooperation and communication with suppliers to reduce procurement risks and promote responsible procurement. We have made full use of Everbright Environment's electronic transaction platform for tendering and procurement, to strengthen the supervision and management of the tendering and bidding processes while striving to eliminate any regulatory and disciplinary violations.

## 供應鏈管理

本集團實施嚴格的供應商選擇和管理制度，與供應商緊密合作和溝通，減輕採購風險及推動負責任採購。我們更透過光大環境招標採購電子交易平台進行線上招標採購，加強招投標監督管理，致力杜絕違規違紀行為。

We actively strive to extend the Group's excellent ESHS management practice to cover the entire value chain, ensuring that ESG considerations are applied at various stages. The ESHS department of each regional centre conducts regular ESHS audits for its respectively responsible project companies, during which, the project companies' supplier screening records will be reviewed for any legal non-compliances such as child labour and forced labour, as well as to evaluate the suppliers' performance and their corresponding environmental and social risks in terms of service quality, safety measures, environmental performance, social responsibility, etc. In order to encourage suppliers to support sustainable development, the project companies will consider the audit results as the basis for supplier selection in the coming year. We try to select the most environmentally and socially responsible suppliers as far as practicable, such as prioritising the procurement of reusable or renewable products, hiring contractors who adopt low-emission construction processes, etc. Besides, the Group gives priority to suppliers in the same provinces as those of our operations throughout the country to create local employment opportunities and fulfil our corporate social responsibility.

The Group has continuously improved the development of its tendering and procurement system by establishing Guangcai Tendering (Shenzhen) Co., Ltd.\* to optimise the tendering and procurement governance system. Meanwhile, consistent efforts such as making full use of technical means to identify bid rigging and collusive bidding, have been made to improve supplier management. During the Reporting Period, there were 156 external experts and approximately 16,704 registered suppliers in the system database. Major procurement includes equipment fitting, construction and installation works, etc.

In 2022, the Group further revised or newly established the *Procurement Management Policies, the Working Guidelines for Bid Rigging and Collusive Bidding, the Notice on Reporting Businesses and Companies Run by Procurement Personnel and Relevant Personnel and Their Relatives, the Interim Administrative Measures for Briber Blacklist*, etc to enhance the compliance level. To further strengthen the supervision and management over processes, the Group has established a bidding supervision team to carry out on-site supervision over key projects. It has also enhanced the training and warning education on professional skills of procurement personnel, and established a procurement patrol inspection system to reinforce a strong firewall against non-compliance and non-disciplinary tendering and procurement practices. Meanwhile, the Group continued to optimise the electronic transaction platform and the platform has passed the annual evaluation for the second times, and was further improved based on the actual needs in aspects such as compliance management, prevention and control of bid rigging and collusive bidding, process optimisation, early warning of risks and sharing of information.

\* For identification purpose only

我們更積極和持續地將ESHS管理實踐延伸到整條價值鏈，確保ESG的考慮在不同的階段中能貫徹應用。各區域中心的ESHS主管部門會為轄屬項目公司定期進行ESHS審核，期間會檢視項目公司的供應商篩選記錄，查看有沒有任何違反法律的行為，如童工和強迫勞動，並從供應商服務質量、安全措施、環保表現、社會責任等各方面分析，評估各供應商的表現及其相應的環境和社會風險。為鼓勵供應商支持可持續發展，項目公司會根據審核結果選擇來年的供應商。我們盡可能選擇對環境及社會負責的供應商，例如優先選購可重用或再生產品、聘用採用低排放的建設過程的承建商等。為當地創造就業機會，履行企業社會責任，本集團於全國各地發展業務時，亦會優先選用位於同省份的供應商合作。

本集團不斷完善招標採購制度建設，成立光採招標（深圳）有限公司\*，優化招採治理機制，同時一如既往充分利用技術，甄別圍標、串標行為，以不斷完善供應商管理。報告期內，平台資料庫共錄記156名外部評審專家和約16,704家註冊供應商。主要採購包括裝備配置、建安工程等。

二零二二年，本集團進一步修訂或制定《採購管理制度》、《圍標串標工作指引》、《採購人員及相關人員報告本人及親屬經商辦企業情況的通知》、《「行賄人黑名單」管理暫行辦法》等一系列管理制度與操作手冊，提升合規水平。為加強過程監督管理，本集團成立監標小組，對重大項目實行現場監督，加強採購人員專業技能培訓和警示教育，建立採購巡檢制度，築高招採工作違規違紀防火牆。此外，本集團持續優化電子交易平台並連續兩次通過年審，並根據實際需求對合規管理、圍標串標防控、流程優化、風險預警、信息共享等方面持續優化。

\* 僅供識別用途

## Supplier Management Measures

The Group has set a fair and transparent code for the selection and management of suppliers and contractors, aiming for partnering with companies that possess standardised management, complete qualifications, and share similar corporate culture or value with Everbright Environment. We conduct strict screenings by thoroughly investigating the outsourced units' ability to fulfill contractual duties, their environmental and social performance, service quality, management philosophy, etc., during the initial stage, so as to establish sustainable partnerships with high-quality service providers.

Everbright Environment has especially formulated and implemented the following supplier management guidelines, covering all suppliers of the Group regarding environmental and social management in each process of the supply chain:

## 供應商管理準則

本集團訂立了公正和透明的守則選擇及管理供應商和承包商，致力於選擇管理規範、資質齊全且與光大環境有相近企業文化或價值觀念的企業作為合作對象，透過前期充分考察外協單位履約能力、環境與社會表現、服務質量、管理理念等，進行嚴格篩選，引進優質服務商及建立可持續的合作夥伴。

光大環境特別制定並落實以下涵蓋本集團所有供應商的供應商管理準則，在供應鏈的各個流程中進行環境與社會管理：

### Code of Conduct for Suppliers

#### 《供應商行為準則》

- The Group has systematically standardised supplier behaviour in economic, environmental and social terms, as a means of encouraging suppliers to fulfil and jointly improve the sustainability performance of the supply chain. Our *Code of Conduct for Suppliers* even encourages suppliers to manage their own suppliers with the same standards, which in turn improves the sustainability of the overall supply chain.

本集團以具系統性的方式規範供應商在經濟、環境及社會領域的行為，鼓勵供應商履行並共同提高供應鏈的可持續發展表現。我們的《供應商行為準則》更鼓勵供應商以相同的標準對待他們的從屬供應商，有助提升整體供應鏈的可持續性。

- On the economic level, the Group demands that suppliers should consider the moral point of view when conducting business activities, operate with integrity and comply with relevant local and international laws. In terms of the environment level, we require suppliers to increase their efforts in monitoring their operations to minimise environmental pollution and other adverse impacts. On the social level, we require suppliers to comply with national labour policies and regulations, including prevention of slavery, forced labour, bonded labour, child labour and abusive employment practices. As such, their employees' basic human rights are safeguarded along with considerations of public welfare.

在經濟層面，本集團規定供應商進行商業活動時需要從道德角度出發，誠實地進行經營，並遵守當地及國際的相關法律；在環境層面，要求供應商在其運營中加大監控力度，盡量減少對環境的污染及負面影響；在社會層面，要求供應商遵守國家的勞工政策和法規，包括避免任何奴役、強迫勞動、抵押勞工、使用童工及虐待行為，維護員工的基本人權，以及考慮公眾福利。

- All suppliers conducting business with the Group or participating in any activities related to the Group shall comply with the *Code of Conduct for Suppliers*.

所有供應商在與本集團進行業務往來或參與任何與本集團有關的活動時都應遵守《供應商行為準則》。

### Supplier Management Measures 《供應商管理辦法》

- It covers detailed regulations and requirements including supplier responsibilities such as equipment, main materials, construction units, design units and operation centres; supplier rankings and evaluations; engagement of new suppliers; continuity management of suppliers; management of unqualified suppliers; and penalties for non-compliances.  
涵蓋包括裝備、主材料、施工單位、設計單位、運營中心等供應商之職責、供應商等級及評價、新供應商的聘用、供應商的持續管理、不合格供應商的管理和違規處罰等在內的詳細規定和要求。
- Current suppliers are continuously assessed based on their professional proficiency, financial status and compliance records, and then categorised into four levels, namely A, B, C and D. If suppliers in the lowest level fail to prove their compliance with the Group's requirements, business relationships may be terminated.  
依照供應商的專業水平、財務狀況及合規記錄等對現有供應商進行持續評估，並將供應商劃分為A、B、C、D四個等級，最低等級的供應商若未能證明能夠達到本集團的要求，本集團或會終止與其合作。

### Contractor ESHS Management Standards 《承包商ESHS管理標準》

- By examining the contractors' backgrounds, qualifications, construction operations and environmental protection performances, we aim to identify and control any potential environmental, social and safety risks arising from outsourced work.  
透過審視承包商在背景、資質、施工作業及環保等方面的表現，藉此識別和控制工作外包過程中產生的與環境、社會和安全相關的風險。
- Based on the Contractor ESHS Questionnaire and the relevant ESHS information provided by contractors, the Group can sort out the list of qualified contractors, ensure that the suppliers and contractors comply with environmental and social responsibility management laws and regulations, as well as any applicable national and local government regulations.  
本集團透過承包商填寫的「承包商ESHS問卷調查表」和相關的ESHS資料整理達標承包商名單，並確保供應商和承包商遵守環境和社會責任的管理法律和規例，以及適用國家和地方政府的規定。
- The information required for submission includes whether the contractor has obtained any international environmental management standards or certifications such as ISO 14001; whether ESHS training and assessment have been conducted; and whether appropriate protective equipment have been provided for its staff, etc.  
要求提交的信息包括承包商是否擁有ISO 14001等國際環境管理標準認證、有否進行ESHS培訓與考核、有否為員工提供適當的保護裝備等。
- The Group provides further guidance to its business partners to enhance their sustainability performance by issuing various policies and guidelines, including *Procurement Management System and Management Measures*, *Tender Management Measures* and *Management Measures for Appraisal Expert Database for Project Construction Procurement*.  
本集團的《採購管理制度及辦法》、《招標管理辦法》及《工程建設採購評審專家庫管理辦法》等相關政策和制度可有助引領業務夥伴提升其可持續發展表現。

## Supply Chain Profile 2022

## 二零二二年供應鏈概況

		No. of Suppliers 供應商數目	Amount of Purchase (HK\$) 採購金額 (港幣元)	Percentage in Total Amount of Purchase 所佔總採購金額的百分比
Total	總數	18,753	11,502,268,330	100%
Critical/Major Suppliers <sup>(1)</sup>	關鍵／主要供應商 <sup>(1)</sup>	5	1,456,692,675	12.7%

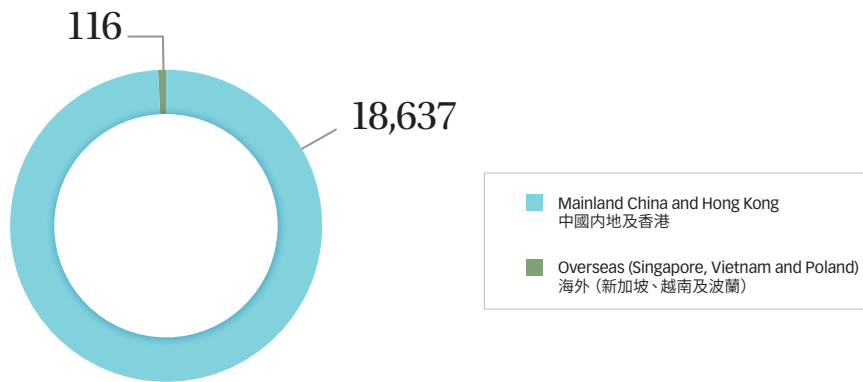
Note:

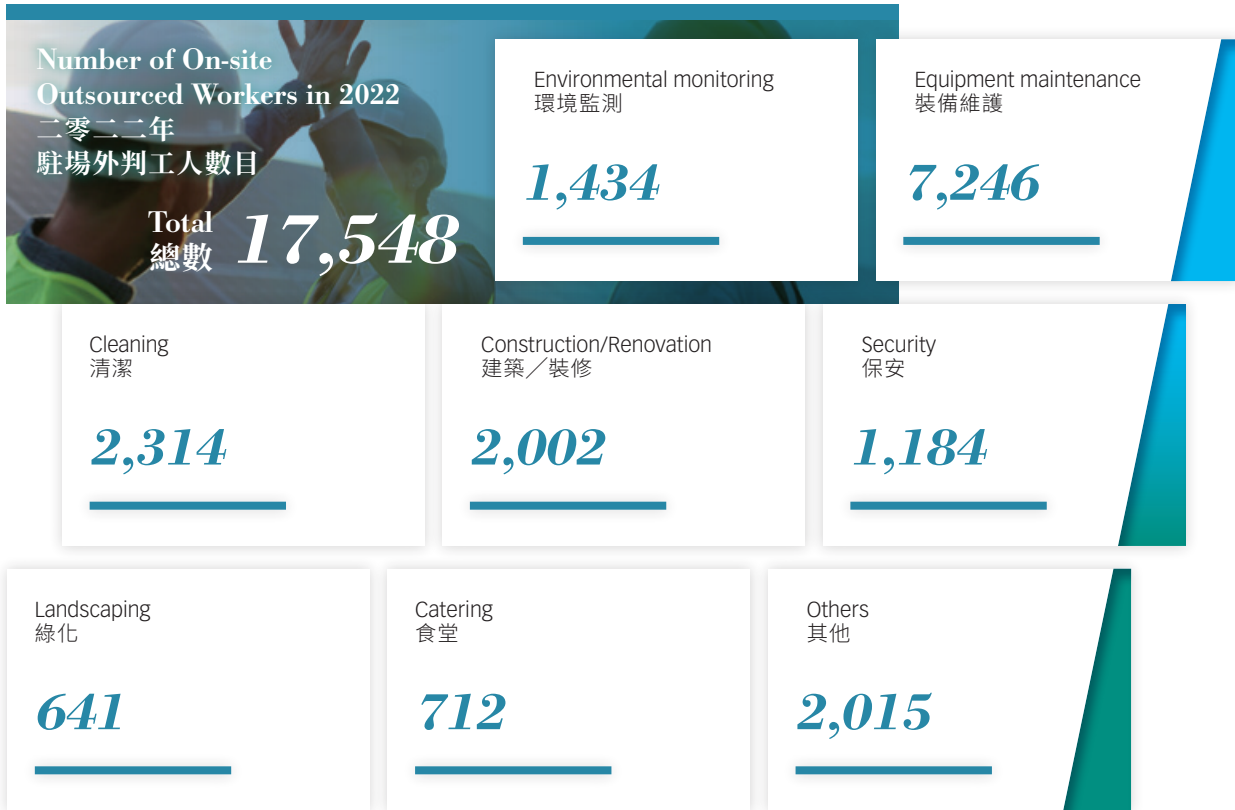
附註：

<sup>(1)</sup> Critical/Major suppliers mean suppliers whose goods, materials, and services have a significant impact on the competitive advantage, market success or survival of the Group.

<sup>(1)</sup> 關鍵／主要供應商是指其商品、材料、服務對本集團的競爭優勢、市場成功或生存空間產生重大影響的供應商。

Number of Suppliers by Geographical Region  
按地區劃分的供應商數目





### Supplier Sustainability Risk Assessment

In order to understand the ESHS performance of suppliers of all categories, the Group commissions an external consultant to conduct sustainability risk assessments for the Group's suppliers every year. In 2022, 355 suppliers (including all major suppliers), whose business categories include electrical equipment, construction, lifting machinery, pumping equipment, air system technology and water treatment equipment, participated in the survey. The scope of the assessment mainly included supplier qualifications in terms of production, operation and safety, etc., as well as their management systems and operating performance related to quality, environment, society, labour rights protection, etc.

### 供應商可持續發展風險評估

為進一步了解各類型的供應商於ESHS方面的表現，本集團每年均會邀請外部顧問為集團供應商進行可持續發展風險評估。二零二二年，共計355家供應商（當中包括所有主要供應商）受訪參與評估，其業務範疇涉及電力裝備、工程施工、起重機械、泵類設備、空氣系統技術、水處理裝備等。評估的範圍主要包括供應商之生產、運營及安全方面的資質，以及質量、環境、社會、保障勞工權益等方面的管理體系和運營表現等。



To integrate ESG into the assessment process, suppliers were asked to demonstrate how their services were aligned to at least one of the ESG objectives: 1. Sustainable Development and Strengthening Climate Resilience; 2. Improving Social Outcomes; 3. Facilitating Carbon Neutrality; and 4. Enhancing Governance. All of the assessed suppliers met the above criteria.

The overall result of the risk assessment was satisfactory and reflected the effectiveness of the Group's guidance and the requirement on suppliers' ESHS performance over the years. None of the assessed suppliers indicated that they had any ongoing commercial litigation, prosecution or fine on environmental and social issues made by relevant authorities. Over 45% of the surveyed suppliers had obtained the internationally certified ISO 9001 Quality Management System, ISO 14001 Environmental Management System and OHSAS 18001/ISO 45001 Occupational Health and Safety Management System, or were currently undergoing related certification process. Moreover, over 25% of the surveyed suppliers had plans to establish a management system and complete the certification process within the next three years. Around 48% of the surveyed suppliers had established occupational health and safety policies and provided related trainings for employees. Only 1 of the surveyed suppliers had reported a safety accident in the past three years, which involved a minor traffic injury. We did not identify any risks associated with child labour and forced labour in this risk assessment.

為將ESG納入評估流程，參與評估的供應商需展示其服務如何與最少一個ESG目標保持一致：(一) 可持續發展和增強氣候變化韌性；(二) 改善社會成果；(三) 促進碳中和；及(四) 加強管治。所有被評估的供應商均符合上述標準。

本次風險評估的結果整體令人滿意，顯示出本集團多年來對供應商ESHS表現的指引和規範所作努力卓有成效。所有被評估供應商均在評估中表示無任何正在進行中的商業訴訟，且無任何由有關部門就環境及社會問題作出的檢控或罰款。超過45%的受訪供應商已獲取國際認證的ISO 9001質量管理體系、ISO 14001環境管理體系及OHSAS 18001/ISO 45001職業健康和安全管理體系或現正進行相關的認證工作。此外，超過25%的受訪供應商計劃在未來三年內建立管理體系並完成認證流程。約48%的受訪供應商制定了職業健康與安全政策，並為員工提供了相關培訓。在受訪供應商中，只有1家供應商在過去三年曾涉及輕微交通意外的安全事故。在是次風險評估中我們未有辨識到與童工和強制勞動相關的風險。



**Suppliers participated in the 2022 supplier sustainability risk assessment accounted for approximately 21.02% of the annual total purchasing amount of the Group.**  
參與二零二二年供應商可持續發展風險評估的供應商佔本集團全年總採購金額約21.02%

According to the risk assessment results, the Group reviewed the implementation and performance of its suppliers on corporate social responsibility, as well as categorised suppliers into low, medium and high risk levels. In this assessment, 57% of the surveyed suppliers were classified as low risk while the rest were classified as medium risk, and no supplier fell into the high-risk category. In order to assist the suppliers with higher risks to improve their management, the Group actively investigated their situations and provided suggestions, so as to ensure that their risks could be effectively controlled. In the future, the Group will continuously monitor the suppliers' performance and maintaining close communication with each party to promote sustainable development along the supply chain.

### Customer Satisfaction

Over the years, the Group has adhered to the customer-centric service principle and has strived to integrate premium customer services into daily operational management, solve relevant key problems for customers and even their industry development, and contribute to build a cleaner environment and a more effective mode of resource utilisation, so as to meet the needs of customers, facilitate industry-wide development, and benefit all of society. Customer satisfaction is one of the Group's short-term goals in sustainable development at the social level, we have therefore commissioned an external consultant to conduct an annual customer satisfaction survey during the Reporting Period, aiming to collect customers' feedbacks on our work and in turn enhance our service quality.

本集團以風險評估結果為參考檢視供應商在企業社會責任方面的執行與表現，並且將相應供應商分別歸入低、中、高三個風險等級。在本次評估中，57%的受訪供應商處於低風險等級，其餘均處於中風險等級，沒有供應商落入高風險等級之中。為了協助較高風險供應商改善其管理，本集團積極調查其情況並提出建議，確保其風險可被有效控制。本集團會在未來繼續監察供應商的表現，保持各方的緊密溝通，促進供應鏈的可持續發展。

### 客戶滿意度

本集團多年來堅持以滿足客戶需求為中心的服務理念，將卓越的客戶服務融入日常運營管理中，與時俱進地解決客戶甚至其行業發展的關鍵問題，以幫助建設更清潔的環境和更有效的資源利用模式，從而滿足客戶、促進行業發展，並為社會造福。客戶滿意度作為本集團在社會層面的可持續發展短期目標之一，我們在報告期內邀請了外部顧問為本集團進行年度客戶滿意度調查，以了解客戶對我們工作的評價和進一步提升我們的服務品質。



Indicators	指標	Average score (out of 10) 平均分 (滿分10分)
Experience and professionalism of project teams	項目團隊的經驗及專業程度	9.41
Environmental, safety and health risk management	環境及安全健康風險管理	9.28
Outcome and quality of work	工作成果及質量	9.38
Effectiveness and timeliness in communication	有效和及時的溝通	9.45
Adherence to agreed project schedules	遵守商定的項目進度	9.38
<b>Overall satisfaction rate</b>	<b>整體滿意度</b>	<b>9.38</b>

A total of 80 valid questionnaires were collected in this survey, with the overall customer satisfaction rate of 9.38 (out of 10) and the percentage of satisfied customers (customers who rated Everbright Environment's performance with an average score of 7 or above) was 93.75%. Majority of the customers highly recommended Everbright Environment and would be happy to work with the Group again.

是次調查共收集到80份有效問卷，客戶整體滿意度達9.38分（滿分10分），滿意客戶（給予光大環境表現平均分7分及以上的客戶）佔比93.75%。絕大部分客戶表示非常願意推薦光大環境並樂意與本集團再次合作。

Among 80 surveyed customers, 36 customers, accounting for 45%, were working with the Group for the first time. Among these new customers, 97.22% rated the Group with an average satisfaction score of 7 or above. Customers' affirmation is the motivation driving the Group to move forward. In the future, the Group will continue to adhere to the customer-oriented philosophy and maximise the added value of projects to achieve win-win outcomes.

在80個受訪客戶中，首次與本集團合作的客戶有36人，佔總受訪客戶的45%。其中，平均滿意度為7分及以上的客戶佔97.22%。本集團會把客戶的肯定作為未來前進的動力，積極和持續秉承以客戶為中心的理念，致力發揮項目的附加價值，實現互利共贏。



*STAKEHOLDER*  
ENGAGEMENT  
持份者參與

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*We Draw on*

COLLECTIVE WISDOM,  
ADVICE & SUGGESTIONS

集思廣益 · 建言獻策

Maintaining close communication with stakeholders is crucial to the Group's everyday operations. By listening and responding to the stakeholders' concerns through various channels, we are able to formulate project-specific sustainable development strategies more effectively.

與持份者緊密溝通對本集團日常運營至關重要。透過從不同渠道聆聽以及回應持份者的意見，我們將能更有效於每個項目落實持續發展策略。

The Group's business covers a wide range of stakeholder groups, including investors, shareholders, governments, villagers, local communities, investment analysts, business partners, suppliers, customers, employees, media, and non-governmental organisations. The Group identifies stakeholders based on the five following principles:

本集團經營業務涉及多個持份者組別，當中包括投資者、股東、政府、村民、當地社區、投資分析員、業務夥伴、供應商、客戶、員工、媒體和非政府組織。本集團基於以下五個原則識別持份者：





Responsibility 責任	Influence 影響力	Proximity 鄰近性	Dependency 倚靠性	Representativeness 代表性
Stakeholders linked to the Group through legal, financial, operational procedures, contracts, and/or policies 通過法律、財務、運營規則、合約及／或政策而聯繫本集團的持份者	Stakeholders with formal decision-making power or informal influence on the Group 具有本集團正式決策權或非正式影響力的持份者	Stakeholders located geographically close to the Group's operating plants and who interact closely with the Group's daily operations 居於本集團運營廠房附近及與本集團日常運營關係密切的持份者	Stakeholders who are highly dependent on the Group's business operations 很大程度上倚靠本集團業務運營的持份者	Stakeholders who are the representatives of the organisations that are closely connected with the Group 與本集團聯繫最緊密的組織的持份者代表

During the Reporting Period, we remained proactive and closely connected with various stakeholders through diversified channels of communication:



報告期內，我們繼續透過多元化的溝通途徑與各持份者進行積極和緊密的聯繫：

Stakeholder Group 持份者組別	Channel of Engagement or Communication 參與或溝通途徑	Engagement Frequency or Duration 參與頻率或時間
 <p><b>Investors, Shareholders</b> 投資者、股東</p>	<p>Annual/extraordinary general meeting 股東週年／特別大會</p> <p>Press release/announcement/circular 新聞稿／公告／通函</p> <p>Results presentation 業績發佈會</p> <p>Interim report/annual report 中期報告／年報</p> <p>Roadshow 路演</p> <p>Meeting/telephone conference/email 會議／電話會談／電郵聯繫</p> <p>Site visit 現場考察</p> <p>Company website 公司網站</p>	<p>Annually/as needed 每年／根據需要</p> <p>Regularly/as needed 定期／根據需要</p> <p>Half-yearly/annually 半年／每年</p> <p>Half-yearly/annually 半年／每年</p> <p>Regularly/as needed 定期／根據需要</p> <p>Regularly/as needed/upon request 定期／根據需要／根據需求</p> <p>As needed/upon request 根據需要／根據需求</p> <p>As needed 根據需要</p>
 <p><b>Governments</b> 政府</p>	<p>Progress report 進度報告</p> <p>Site visit 現場考察</p> <p>Meeting 會議</p> <p>WeChat and QQ 微信及QQ</p> <p>Phone or email 電話或電郵聯繫</p> <p>Customer satisfaction survey 客戶滿意度調查</p>	<p>Weekly/monthly/quarterly 每週／月／季</p> <p>Weekly/monthly/quarterly 每週／月／季</p> <p>Weekly/monthly/quarterly 每週／月／季</p> <p>As needed 根據需要</p> <p>Weekly/monthly/quarterly 每週／月／季</p> <p>Annually 每年</p>

Stakeholder Group 持份者組別	Channel of Engagement or Communication 參與或溝通途徑	Engagement Frequency or Duration 參與頻率或時間
 <p><b>Villages, Local Communities</b> 村民、當地社區</p>	<p>Project visit/site visit 項目參觀／現場考察</p> <p>Survey 意見調查</p> <p>Public hearing 公聽會</p>	<p>Before construction/open day on the first weekend of every month/upon request 工程施工前／每月第一個週末之公眾開放日／根據需求</p> <p>Before construction/as needed 工程施工前／根據需要</p> <p>Before construction/as needed 工程施工前／根據需要</p>
 <p><b>Investment Analysts</b> 投資分析員</p>	<p>Project visit/site visit 項目參觀／現場考察</p> <p>Meeting/telephone conference/email 會議／電話會談／電郵聯繫</p> <p>Press release/announcement 新聞稿／公告</p> <p>Results presentation 業績發佈會</p> <p>Interim report/annual report 中期報告／年報</p> <p>Company website 公司網站</p>	<p>As needed/upon request 根據需要／根據需求</p> <p>As needed/upon request 根據需要／根據需求</p> <p>Regularly/upon request 定期／根據需要</p> <p>Half-yearly/annually 半年／每年</p> <p>Half-yearly/annually 半年／每年</p> <p>As needed 根據需要</p>
 <p><b>Business Partners, Suppliers</b> 業務夥伴、供應商</p>	<p>Pre-tender meeting 採購招標會</p> <p>Phone interview 電話回訪</p> <p>Questionnaire 調查問卷</p> <p>WeChat and QQ 微信及QQ</p>	<p>Every tender event 每次招標活動</p> <p>As needed 根據需要</p> <p>Ad hoc 不定期</p> <p>As needed 根據需要</p>

Stakeholder Group 持份者組別	Channel of Engagement or Communication 參與或溝通途徑	Engagement Frequency or Duration 參與頻率或時間
 <p><b>Customers</b> 客戶</p>	<p>Meeting 會議</p> <p>Phone or email 電話或電郵聯繫</p> <p>Customer satisfaction survey 客戶滿意度調查</p>	<p>Weekly/monthly/quarterly 每週／月／季</p> <p>Weekly/monthly/quarterly 每週／月／季</p> <p>Annually 每年</p>
 <p><b>Employees</b> 員工</p>	<p>Work meeting/project meeting 工作會議／項目會議</p> <p>Performance review meeting 表現評估會議</p> <p>Internal publication 內部刊物</p> <p>Charitable activity 公益活動</p> <p>Face-to-face meeting/ telephone conference/email 當面會談／電話會談／電郵聯繫</p> <p>Email to CEO and/or the Chairman of the Audit Committee 電郵至總裁及／或審核委員會主席</p>	<p>Regularly 定期</p> <p>Interim/year-end 年中／年末</p> <p>Monthly 每月</p> <p>As needed 根據需要</p> <p>As needed 根據需要</p> <p>As needed 根據需要</p>



Stakeholder Group 持份者組別	Channel of Engagement or Communication 參與或溝通途徑	Engagement Frequency or Duration 參與頻率或時間
 <p><b>Media</b> 媒體</p>	<p>Project visit/site visit 項目參觀／現場考察</p> <p>Press release/announcement 新聞稿／公告</p> <p>Management interview 管理層採訪</p> <p>Results presentation 業績發佈會</p> <p>Company website 公司網站</p>	<p>As needed/upon request 根據需要／根據需求</p> <p>Regularly/as needed 定期／根據需要</p> <p>Regularly/as needed/upon request 定期／根據需要／根據需求</p> <p>Half-yearly/annually 半年／每年</p> <p>As needed 根據需要</p>
 <p><b>Non-Governmental Organisations (NGOs)</b> 非政府組織</p>	<p>Charitable activity 公益活動</p> <p>Site visit 現場考察</p> <p>Meeting 會議</p>	<p>As needed 根據需要</p> <p>Regularly/as needed 定期／根據需要</p> <p>As needed 根據需要</p>

## Materiality Assessment

The Group conducts a comprehensive materiality assessment on sustainability topics each year to identify and prioritise economic, environmental and social topics that are most material to the Group; set the sustainability reporting scope and boundaries; and enhance communication with stakeholders and their participation in the process.

In 2022, we have continued to adopt the four-stage methodology for materiality assessment and strive towards advancing the sustainable development agenda. The four stages are as follows:

## 實質性評估

本集團每年都會就可持續發展議題進行一次全面的實質性評估，以便分辨對本集團而言最優先的經濟、環境和社會議題及確立可持續發展報告範圍和邊界，並且促進與持份者溝通以及持份者在過程中的參與。

二零二二年，我們依然以四個階段作為實質性評估方法，並繼續致力追求和推進可持續發展議程。四個階段如下：

### Stage 第一階段

#### Identification of Sustainability Topics 識別可持續發展議題

The Group engages an external sustainability consultant to identify and review comprehensively the sustainability topics that are most relevant to the Group's business (refer to "List of Sustainability Topics"). These topics are determined from extensive information sources, including the GRI Standards, SDGs, opinions from stakeholders, the Board and management, internal publications, media information analysis, etc., to ensure these topics can reflect the Group's business nature as well as the results from previous communication with our stakeholders.

本集團委聘外部可持續發展顧問進行全面識別及檢視與本集團業務最密切的可持續發展議題（見「可持續發展議題列表」）。這些議題透過GRI準則、SDGs、持份者意見、董事會及管理層建議、內部刊物及媒體信息分析等廣泛來源所得，以確保這些議題反映本集團的業務性質及以往與持份者溝通的結果。

### Stage 第二階段

#### Collection of Stakeholders' Opinions and Development of Materiality Matrix 收集持份者意見， 建立實質性矩陣

The Group's sustainability consultant conducts a stakeholder engagement survey with the nine key stakeholder groups and prioritises the sustainability topics identified in Stage 1 based on the survey results. The consultant then conducts a quantitative analysis of these topics based on two parameters: perceived materiality to the stakeholders and to Everbright Environment. Results of the analysis are presented in the form of a matrix to identify the most important topics on two levels. The topics that are most material to stakeholders and the Group shall then become the focus of disclosure in the Report.

本集團的可持續發展顧問對九個重點持份者組別進行持份者參與調查，並根據持份者調查結果為第一階段識別到的可持續發展議題作優先排序。顧問隨後以持份者對議題的重要性評分和議題對光大環境的重要性這兩個參數，對這些議題的實質性進行量化分析，以及將分析結果以矩陣形式顯示，從而確定在兩個層面最為重要的議題。在持份者和本集團層面最為重要的議題將會是本報告的披露重點。

## Stage 3 第三階段

### Validation of Material Topics and Data Analysis 驗證實質性議題及分析數據

In order to ensure the reasonableness, balance and completeness of the Report, the Board shall validate the prioritised material topics and their boundaries. Subsequently, the sustainability consultant shall disclose the material topics based on the GRI Standards. Furthermore, the specialist of the Group's relevant departments shall ensure that all project companies regularly provide accurate and comprehensive sustainability data through systematic data collection and monitoring mechanisms.

為確保本報告的合理性、平衡性及完整性，董事會對經優先排序的實質性議題及其邊界作驗證。隨後，可持續發展顧問會按GRI準則報告實質性議題。另外，為確保所有項目公司定期提供準確、全面的可持續發展數據，本集團各相關部門的專員亦會採用系統式收集數據和監測機制。

## Stage 4 第四階段

### Materiality Review 檢視實質性

Prior to the preparation of the Report, the Group reviews the material topics and disclosure practices of its previous reports and collects stakeholder opinions through the annual stakeholder engagement survey on Everbright Environment's sustainability performance during the Reporting Period. All opinions and data are reported during the Board meetings, where the Board reviews and verifies their materiality, so as to help stakeholders participate more fully in the sustainable development management and disclosure process, which is at the same time beneficial to realising long-term sustainable development goals.

在準備本報告前，本集團對過往報告的實質性議題和披露工作進行了回顧及審閱，以及透過年度持份者參與調查收集持份者對光大環境於報告期內可持續發展表現的意見。所有意見及數據皆會於董事會會議中匯報，並由董事會檢視核實實質性，以助持份者更全面參與可持續發展的管理和披露過程，同時有利於實踐長遠的可持續發展目標。

## List of Sustainability Topics

The following table ranks the corresponding sustainability topics according to the three aspects of economy, environment and society, and reveals the importance of allowing stakeholders to prioritise issues in the stakeholder survey. Most of these topics are determined with reference to the topic standards under the GRI Standards, while the remaining ones are added based on past opinions of the stakeholders. Since we are to disclose in accordance with the GRI Standards updated in 2021, in which two topic-specific standards: environmental compliance and social compliance have been incorporated into general disclosures, hence, the Group has aligned with the update by removing these two topics from the list.

## 可持續發展議題列表

以下列表按照經濟、環境和社會三個範疇排列出相應的可持續發展議題，並呈現在持份者調查中讓持份者作優先排序議題的重要性。這些議題大多參考GRI準則的議題標準而定，而餘下的都是按照持份者以往提出的意見添加。由於今年需按照二零二一年作出更新的GRI準則進行披露，當中包括將環保合規和社會合規兩項特定主題標準納入一般披露當中，所以本集團也順應更新，在議題列表中剔除了這兩個議題。

Economic 經濟	Environmental 環境	Social 社會	
Economic Performance 經濟績效  Market Presence 市場地位  Indirect Economic Impacts 間接經濟影響  Procurement Practices 採購行為  Anti-corruption 反貪腐  Anti-competition Behaviour 反競爭行為  Technological R&D 技術研發	Material Usage 物料使用  Energy Efficiency 能源效益  Usage of Water Resources 水資源使用  GHG Management and Climate Change Mitigation 溫室氣體管理及氣候變化的應對  Waste Water Treatment 污水處理  Waste Management 廢物管理  Biodiversity 生物多樣性  Supplier Environmental Assessment 供應商環境評估  Construction Management 在建項目施工管理  Environmental Education 環保教育	Employee Welfare 員工福利  Occupational Health and Safety 職業健康與安全  Employee Training 員工培訓  Diversity and Equal Opportunity 多元化及平等機會  Internal Communication 內部溝通  Child Labour and Forced Labour 童工與強制勞工  Rights of Indigenous Peoples 原住民權利  Protection of Human Rights and Freedoms 保障人權及自由  Poverty Alleviation 扶貧  Supplier Social Assessment 供應商社會評估	Community Health and Safety 社區健康及安全  Customer Privacy 客戶私隱  Disaster and Emergency Planning and Response 災難及應急預案規劃  Community Participation 社區參與

GRI 2-29

GRI 3-1

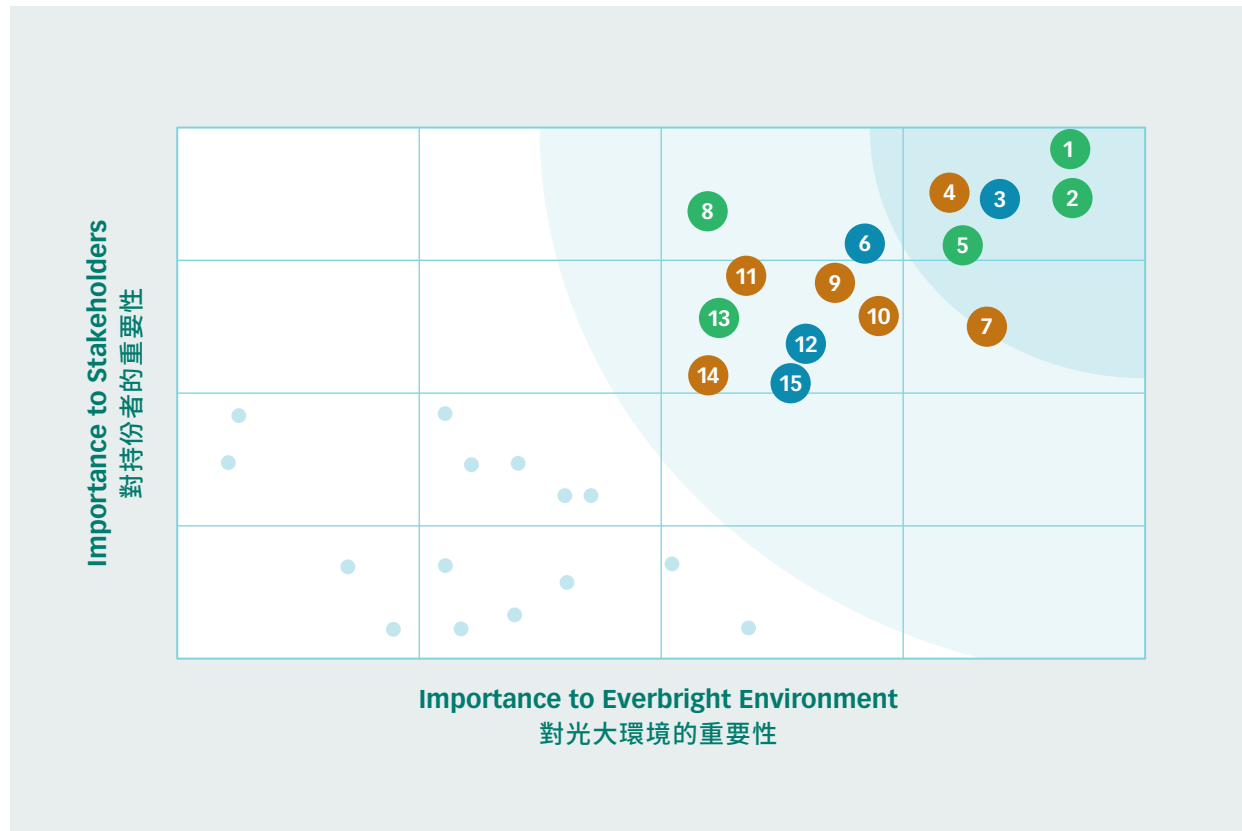
GRI 3-2

### Materiality Matrix

Based on the results of the materiality assessment, 15 topics most material to the Group are identified and ranked in the matrix below according to their priority, while impacts and boundaries of the concerned impacts, the corresponding GRI Standards as well as the SDGs are determined.

### 實質性矩陣

根據實質性分析的結果，我們識別了與本集團最具關連的十五個重要議題，按優先次序按矩陣圖排列如下，並分辨相關議題的影響及範圍、其相應的GRI準則及相關的SDGs。



Stakeholder Engagement  
持份者參與

GRI 2-29 GRI 3-1 GRI 3-2

Key Topics/ Stakeholder Concerns 主要議題 / 持份者的關注	Impact and Boundary 影響及範圍										GRI Standards GRI準則	Key Relevant SDGs 主要相關的 可持續發展目標
	Investors/Shareholders 投資者·股東	Employees 員工	Governments 政府	Villagers's Local Communities 村民·當地社區	Customers 客戶	Business Partners, Suppliers 業務夥伴·供應商	Investment Analysts 投資分析員	Media 媒體	NGOs 非政府組織			
1 GHG Management and Climate Change Mitigation 溫室氣體管理及氣候變化的應對	•	•	•	•	•	•	•	•	•	•	GRI 305 Emissions 排放	
2 Waste Management 廢物管理	•	•	•	•	•	•	•	•	•	•	GRI 306 Waste 廢棄物	
3 Economic Performance 經濟績效		•	•	•	•	•	•	•	•	•	GRI 201 Economic Performance 經濟績效	
4 Occupational Health and Safety 職業健康與安全	•	•	•	•	•	•	•	•	•	•	GRI 403 Occupational Health and Safety 職業健康與安全	
5 Anti-corruption 反貪腐	•	•	•	•	•	•	•	•	•	•	GRI 205 Anti-corruption 反腐敗	
6 Energy Efficiency 能源效益	•	•	•	•	•	•	•	•	•	•	GRI 302 Energy 能源	
7 Usage of Water Resources 水資源使用	•	•	•	•	•	•	•	•	•	•	GRI 303 Water and Effluents 水資源與污水	 
8 Waste Water Treatment 污水處理	•	•	•	•	•	•	•	•	•	•	GRI 303 Water and Effluents 水資源與污水	 
9 Disaster and Emergency Planning and Response 災難及應急預案規劃	•	•	•	•	•	•	•	•	•	•	Not Applicable 不適用	
10 Employee Training 員工培訓	•	•	•	•	•	•	•	•	•	•	GRI 404 Training and Education 培訓與教育	 
11 Customer Privacy 客戶私隱	•	•	•	•	•	•	•	•	•	•	GRI 418 Customer Privacy 客戶私隱	
12 Technological R&D 技術研發	•	•	•	•	•	•	•	•	•	•	Not Applicable 不適用	
13 Child Labour and Forced Labour 童工與強制勞工	•	•	•	•	•	•	•	•	•	•	GRI 408 Child Labour 童工 GRI 409 Forced or Compulsory Labour 強迫或強制勞動	
14 Rights of Indigenous Peoples 原住民權利	•	•	•	•	•	•	•	•	•	•	GRI 411 Rights of Indigenous Peoples 原住民權利	
15 Anti-competition Behaviour 反競爭行為	•	•	•	•	•	•	•	•	•	•	GRI 206 Anti-competitive Behaviour 不當競爭行為	

In 2022, we have identified two additional key topics through the materiality assessment: anti-competition behaviour and customer privacy.

於二零二二年，我們通過實質性評估確定了兩個重要的新議題：反競爭行為和客戶私隱。

## Stakeholders' Feedback 持份者反饋

### Average stakeholders' rating for the sustainable development performance of Everbright Environment in 2022:

持份者對光大環境二零二二年可持續發展表現的平均評分：

**9.4** (out of 10)  
(10分為滿分)

### Average stakeholders' rating for the Sustainability Report 2021 of Everbright Environment:

持份者對光大環境二零二一年可持續發展報告的平均評分：

**9.3** (out of 10)  
(10分為滿分)

**93.8%** of stakeholders agreed that Everbright Environment has sufficient engagement with them  
的持份者認同光大環境與他們保持充足的聯繫



*RESPONDING to*  
CLIMATE CHANGE  
應對氣候變化

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*DECARBONISATION*

BLUEPRINT for  
a NEW GREEN CHAPTER

擘畫三碳藍圖 · 續寫綠色篇章



Given the increasing importance of sustainable finance, there has been a notable trend towards disclosing climate-related information, including how a company streamlines climate-related risks into its management decisions. Climate change is the primary risk threatening the world today. It is also the most important sustainable development issue for the Group and its stakeholders. In order to enhance the transparency and accuracy of information disclosure, the Group makes climate-related disclosures to stakeholders including investors and fund providers by preparing this Report in accordance with the framework of the Task Force on Climate-related Financial Disclosure (“TCFD”). This is also to facilitate the stakeholders in tackling climate change. Everbright Environment signed up to become a TCFD Supporter in 2020, further demonstrating the Group’s commitment to supporting climate-related information disclosure.

由於可持續融資的重要性不斷提高，氣候變化信息的披露已顯著增加，包括如何將氣候相關風險納入企業管理決策。氣候變化是當下威脅全球的首要風險，亦是本集團及持份者最為重視的可持續發展議題。本集團按照氣候相關財務信息披露工作組（「TCFD」）的框架編寫本報告，向包括投資者及資金提供者在內的持份者披露氣候相關風險信息，務求加強信息透明度及確實性，協助各界應對氣候變化。二零二零年，光大環境作為支持機構加入TCFD，進一步證明了本集團對氣候相關信息披露的承諾。



### About TCFD

TCFD covers four key areas for disclosure: governance, strategy, risk management, metrics and targets.

### 關於TCFD

TCFD涵蓋了四個信息披露重點：治理、策略、風險管理、指標和目標。

## Governance

Everbright Environment has incorporated the concept of sustainable development into its corporate governance structure. While paying close attention to the risks and opportunities related to climate change, the Group continuously improves its agenda, so as to implement climate risk response goals and strategies with a united attitude and from top to down.

### Board Level

The Board is the highest governance body of the Group and is the highest leading unit for managing climate risks, formulating sustainable development strategic goals and steering the effective implementation of relevant goals. The Board is responsible for formulating the strategic direction of the Group. When formulating strategic goals and development directions, the Board takes climate change-related issues and corporate social responsibility into consideration, sets goals for the management and supervises the achievements thereof.

Fully supported by the Risk Management Committee, the Board retains ultimate responsibility for the oversight of Everbright Environment's risk management activities. The Risk Management Committee under the Board takes accountability on risk management, and reviews corporate risk management and internal controls at least twice a year.

Under the Management Decision Committee, the Group has established a Safety and Environmental Management Committee led by the CEO. The Safety and Environmental Management Committee provides practical guidelines and support to the Group's sustainable development work, and is tasked to ensure thorough implementation of the Group's sustainable management policies.

### Management Level

The risks brought on by climate change are placed high on the Group's agenda, and therefore, the Group is committed to building resilience against these risks. In particular, the Group has established a working group that integrates the four main levels of the Group, namely: headquarters, all business sectors, regional centers and project companies. The leader of the working group is mainly responsible for its leadership role, and annually develops, monitors and reviews safety and environmental indicators and targets. The same leader shall firmly discharge his responsibilities and guide the various executive departments in taking measures to address climate risks.

## 治理

光大環境將可持續發展概念納入公司治理結構，並持續關注氣候變化的相關風險和機遇，同時不斷完善其議程，以上下一心的態度落實氣候風險的應對目標與策略。

### 董事會層面

董事會是本集團的最高管理機構，也是管理氣候變化風險、制定可持續發展的長期戰略目標以及督導落實相關目標的最高領導單位。本集團的戰略方向必須由董事會確定，在制定戰略目標和發展方向的同時，董事會把氣候變化相關議題和企業社會責任納入考慮，設定及監督實現相關管理目標。

在風險管理委員會的全力支持下，董事會對光大環境的風險管理舉措持有最終監管責任。董事會旗下的風險管理委員會負責風險管理，每年至少對企業風險管理和內部監控進行兩次評估。

另外，管理決策委員會下設有由總裁領導的安全與環境管理委員會。為保證本集團的可持續管理政策得到妥善實施，安全與環境管理委員會為本集團的可持續發展工作提供切實可行的指導和支持。

### 管理層面

本集團十分重視氣候變化帶來的各種風險，因此本集團致力提升這些風險的抵禦能力。本集團特別成立了一個工作小組，整治了集團總部、各業務板塊、區域中心和項目公司四個主要的層級。該工作小組的領導主要負責領導職責，並每年制定、監察和審查安全和環境指標和目標。該負責人將堅決履行職責，並指導不同的執行部門採取行動減輕氣候威脅。



## Strategy

Everbright Environment acknowledges that climate change will bring various risks to its business and therefore, it has been taking active and prudent steps in formulating corresponding strategies. The Group's physical risks mainly include water stress, natural disasters such as floods and droughts, and other extreme weather events such as extreme precipitation, extreme temperatures, etc. Other changes are categorised into transition risks, including policy changes, reputation shifts, technological expansion/phase-out, etc. These risks may negatively affect the assets and supply chains and cause negative financial impacts. The Group is committed to reducing and offsetting GHG emissions, and enhancing the resilience of its projects in response to climate change in order to build a more livable environment.

At the same time, Everbright Environment embraces the opportunities brought by climate change and is determined to promote the sustainable development of the city as a whole through its response to climate change. Therefore, Everbright Environment has established and implemented a series of strategies to deal with climate risks, repositioning the Group in the everchanging world, in order to enhance the city's climate resilience and promote sustainable development. The Group has adopted the following three strategies to adapt/mitigate climate impact in a more active manner:

## 策略

光大環境深明氣候變化所帶來的多種風險，因此一直採取審慎積極的態度制定應付策略。本集團業務所面臨的實體風險主要包括水資源壓力、洪水乾旱等天然災害、其他極端天氣事件如極端降水、極端氣溫等；其他變化則與轉型風險相關，包括：政策改動、聲譽轉移、科技擴展／淘汰等。這些風險或對資產及供應鏈造成負面壓力，構成潛在的財務影響。因此，本集團致力抵銷和減少溫室氣體排放，同時強化旗下項目對氣候變化的應變能力，以建設更宜居的環境。

與此同時，光大環境亦充分認知氣候變化所帶來的機遇，銳意藉著氣候變化的應對工作來推動城市整體的可持續發展。因此，本集團制定和落實了一系列應對氣候風險的策略，旨在身處持續變化的世界中仍能保持清晰定位。本集團採取了以下三大策略，並致力以更進取的姿態以適應／減緩氣候變化帶來的影響：



## Understanding Climate Risks Through "Climate Scenario Analysis"

Climate scenarios refer to the future climate conditions at different levels of greenhouse gas emissions. To align with the global climate change governance and gain an in-depth understanding of the significant climate risks faced by the Group, the Group has created climate scenario simulations with reference to internationally recognised guidelines. In accordance with the TCFD framework, climate risks are divided into two categories, namely, physical risks and transition risks. Climate scenario analysis helps the Group to assess the impact of future climate change trends specifically by measuring and estimating its potential threats to various assets (such as projects under preparation, construction, commissioning and operation). The risk calculations enable the Group to make better-informed decisions, so as to reduce the business vulnerabilities while seizing various emerging opportunities in the context of climate change.

### Physical Scenarios

According to the *Sixth Assessment Report* ("AR6") on climate change published by IPCC in 2021, the Group also considers a combination of "Shared Socioeconomic Pathways" ("SSP") and "Representative Concentration Pathways" ("RCP") to assess the current climate state (applicable to water stress assessment) and the climate change scenarios in 2040. The comparative analysis identifies acute and chronic climate risks faced by the Group. Considering the majority of projects are operated under a concession for approximately 20 to 30 years, the selection of 2040 as the future assessment year is considered appropriate.

## 透過「氣候情境分析」了解氣候相關風險

氣候情境是指在不同程度的溫室氣體排放情境下對未來氣候條件的描述。為了深入了解本集團所面對的重大氣候風險並跟隨全球氣候變化治理的步伐，本集團參照國際認可之指引對氣候情境進行模擬，遵從TCFD框架把氣候風險分作兩大類，包括：實體風險和轉型風險。氣候情境分析將有助本集團評估未來氣候變化趨勢帶來的影響，具體量度並估計其對各類資產（如在籌備、建設、投產和運營的項目）的潛在風險。通過風險計算，本集團能藉此未雨綢繆，減低氣候變化對業務的影響，同時把握各種新機遇。

### 實體情境

本集團根據IPCC於二零二一年公佈的氣候變遷《第六次評估報告》（「AR6」），同時考量「共享社會經濟路徑」（Shared Socioeconomic Pathways，簡稱「SSP」）與「代表濃度途徑」（Representative Concentration Pathways，簡稱「RCP」）評估當前氣候狀態（適用於水資源壓力評估）和二零四零年的氣候變化情境，然後進行分析比較，從而辨析本集團所面對的急性和慢性氣候風險。另外，考慮到大多數項目的特許經營年期約介乎20至30年之間，故本集團選用了二零四零年作為未來評估之年份。

Physical Scenarios<sup>(1)</sup>

實體情境<sup>(1)</sup>

Physical Risk 實體風險	Scenario 情境	Scenario Simulation 模擬情境
Water Stress <sup>(2)</sup> 水資源壓力 <sup>(2)</sup>	Current State 當前狀態	Simulating the scenario in absence of climate anomalies: using the ordinary least squares method to calculate the state of water resource stress from 1960 to 2014, and estimate the current risk of water resource stress. 模擬沒有氣候異常的情境：使用普通最小平方法，計算一九六零年至二零一四年的水資源壓力狀態，並以此推算現時的水資源壓力風險。
	SSP2 RCP4.5 (Optimistic Scenario) SSP2 RCP4.5 (樂觀情境)	Simulating the scenario of stable economic development: 模擬經濟穩定發展的情境： Carbon emissions will peak and decline by 2040. Before 2100, carbon dioxide equivalent emissions must be limited to about 650 ppm, and temperatures should be maintained between 1.1°C and 2.6 °C. 碳排放量將於二零四零年前達到峰值並下降。而在二零二零年之前，二氧化碳排放當量必須限制在約650 ppm，溫度應保持在攝氏1.1至2.6度之間。
	SSP2 RCP8.5 (Business-as-Usual) SSP2 RCP8.5 (如常運作)	Simulating the scenario of stable economic development and stable growth of global carbon emissions: 模擬經濟發展穩定、全球碳排放穩定增長的情境： The concentration of carbon dioxide equivalent will reach about 1,370 ppm before 2100; and compared with 1986 to 2005, the global average temperature will increase 2.6°C to 4.8°C. 二氧化碳當量濃度將於二零二零年前達到約1,370 ppm；而相對於一九八六年至二零零五年，全球的平均溫度將會上升攝氏2.6至4.8度。
Coastal Flood Risk <sup>(3)</sup> 沿海洪水風險 <sup>(3)</sup>	SSP2-4.5 (Optimistic Scenario) SSP2-4.5 (樂觀情境)	Simulating the climate scenario of a medium emission pathway: 模擬中間路徑的氣候情境： Greenhouse gas emissions peak and decline around 2040, and by 2100, global temperatures will be about 2.7°C above pre-industrial levels. 溫室氣體排放量大約在二零四零年達到峰值並下降，而到達二零二零年時，全球氣溫將比工業化前高出約攝氏2.7度。 This simulated scenario is in general consistent with the total emission reductions pledged by countries in the 2015 <i>Paris Agreement</i> . 此模擬情境與二零一五年《巴黎協定》中各國所承諾的總減排量大致相符。
	SSP5-8.5 (Unchecked Emissions Scenario) SSP5-8.5 (無節制排放情境)	Simulating the climate scenario of a high emissions pathway: 模擬高排放路徑的氣候情境： Greenhouse gas emissions would increase rapidly within this century and will double by 2050; global temperatures will be about 4.4°C higher than that of the pre-industrial levels. 溫室氣體排放量在本世紀內迅速增加，並於二零五零年達到雙倍放量；全球氣溫將比工業化前高出約攝氏4.4度。

Notes:

附註：

- (1) The descriptions of various scenarios refer to the technical manual – *Guidance on Scenario Analysis for Non-Financial Companies* published by TCFD in 2020.
- (2) The description of the scenario simulation for the water stress assessment referred to the technical note document of the Aqueduct Water Risk Assessment Tool developed by the World Resources Institute.
- (3) The description of the scenario simulation for coastal flood risk assessment referred to the Coastal Risk Screening Tool developed by Climate Central and the IPCC AR6.

- (1) 各種情境的描述均參考TCFD在二零二零年發佈的技術手冊—《非金融公司情境分析指南》。
- (2) 水資源壓力評估的模擬情境描述參考世界資源研究所所開發的Aqueduct水風險評估工具的技術說明文件。
- (3) 沿海洪水風險評估的模擬情境描述參考氣候組織所開發的沿海洪水風險篩檢工具及IPCC AR6。

## Transition Scenarios

To analyse the various transitional climate risks that the Group are facing and, formulate and implement the corresponding management policies, the Group has adopted the climate change scenarios in the *World Energy Outlook 2022* report released by the International Energy Agency for the purpose of the Group's development. In addition, this Report adopts the recommendations of TCFD's *Guidance on Scenario Analysis for Non-Financial Companies* and adopts a 1.5°C scenario, which is in line with IPCC's latest scientific research, and the growing momentum of pledges to ensure net-zero emissions by 2050. This Report adopts the "Net Zero Emissions by 2050 Scenario" from the *World Energy Outlook 2022* report to represent a not more than 1.5°C warming scenario, and the "Stated Policies Scenario" is used to represent a future climate change scenario based on a projection of the prevailing policy measures.

## 轉型情境

為了分析本集團正面臨的各種轉型氣候風險及該實施的管理方針，本集團的評估參考並採用了國際能源署發佈的《二零二二年世界能源展望》報告中的氣候變化情境，以促進本集團發展。此外，本報告採納TCFD《非金融公司情境分析指南》的建議，採用一個攝氏1.5度情境。此情境符合IPCC最新的科學研究，同時亦能反映全球多國承諾在二零五零年達到淨零排放的國際趨勢。本報告採用《二零二二年世界能源展望》報告中的「二零五零淨零排放情境」以代表全球增溫不多於攝氏1.5度的情境，並採用「既定政策情境」代表根據現行政策措施推算的未來氣候變化情境。

Scenario 情境	Scenario Simulation 模擬情境
Net Zero Emissions by 2050 Scenario 二零五零淨零排放情境	CO <sub>2</sub> emissions will fall to 23 Gt by 2030 and to zero in 2050, which is consistent with limiting the temperature increase to less than 1.5°C in 2100. In 2030, the spending on clean energy and infrastructure will triple together with an increase in the investments in emerging market and developing economies. 到二零三零年，二氧化碳排放量將降至230億噸，並到二零五零年降至零。這一軌跡與二一零零年將溫度升幅限制在攝氏1.5度以下一致。到二零三零年，清潔能源和基礎設施支出將增至三倍，而新興市場和發展中經濟體的投資亦會增加。
Stated Policies Scenario 既定政策情境	Based on prevailing policy measures, the increase in global energy demand of around 1% per year will be met entirely by renewable energy by 2030. Emerging market and developing economies will experience increase in terms of the varieties of fuels and technologies, while nearly all of the net increase in energy demand of well developed market will be met by low-carbon sources. Energy-related CO <sub>2</sub> emissions will reach a plateau at around 37 Gt before falling slowly to 32 Gt in 2050, which will lead to a 2.5°C rise in global average temperatures by 2100. 根據現行政策措施，到二零三零年，全球能源需求每年增長約1%將有機會全部由可再生能源滿足。新興市場和發展中經濟體將在更廣泛的燃料和技術方面實現增長，而幾乎所有發達經濟的淨增加能源需求均由低碳的排放源補足。與能源相關的二氧化碳排放量將達到約370億噸的平穩期，然後在二零五零年緩慢下降到320億噸，並將導致二一零零年的全球平均氣溫升幅達至攝氏2.5度。

### Promote the Development of Renewable Energy

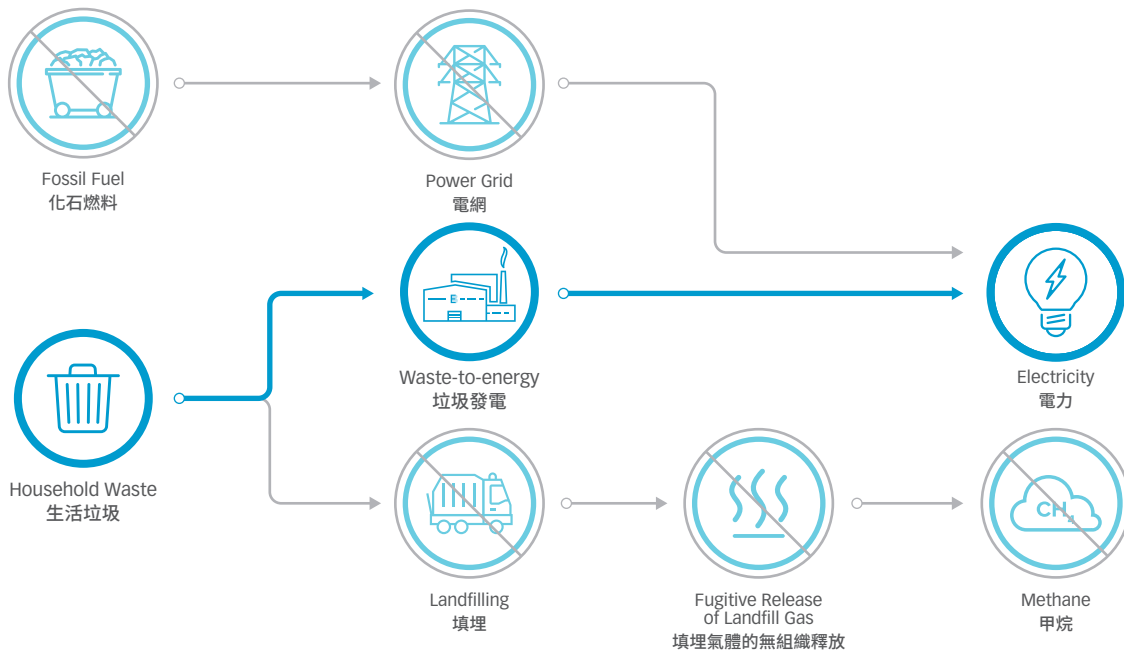
Following the implementation of the "Dual Carbons" goal in the "14th Five-Year Plan", the Group continues paying close attention to the project operation and the sustainable development of the integrated environmental management industry. In addition to ensuring reliability of its projects, the Group also highly values energy conservation and emissions reduction. Therefore, the Group promotes the reduction of consumption of non-renewable energy by generating electricity from renewable energy sources such as waste, biomass, wind power and solar energy.

### 推動發展可再生能源

緊隨著「十四五」規劃中的「雙碳」目標落地推進，本集團持續關注項目運營以至整個環境綜合治理行業的可持續發展。除了維持項目的可靠性外，本集團亦十分重視節能減排。因此，本集團推廣透過垃圾和生物質發電、風力發電及光伏等可再生能源發電，降低非再生能源消耗。

### Advanced Technologies to Reduce Carbon Emissions

### 先進技術達致減碳



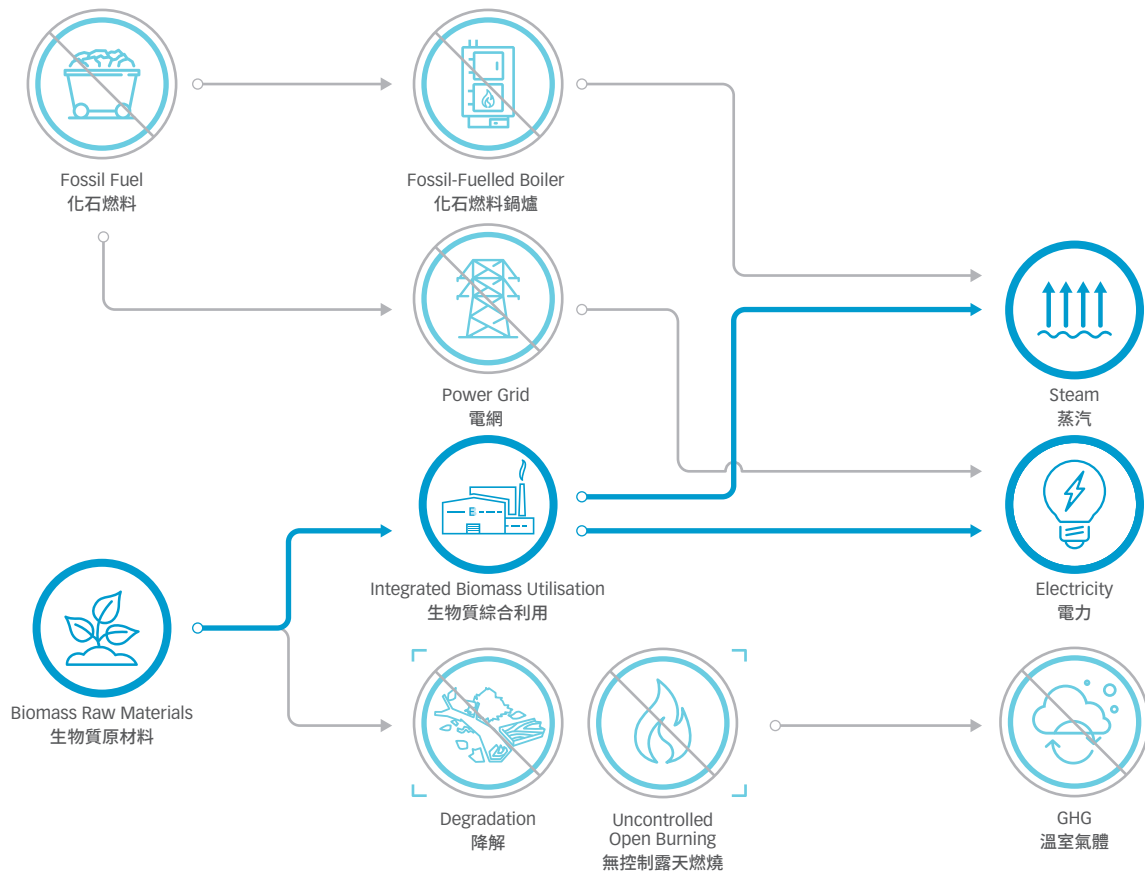
The Group's waste-to-energy projects recover the heat generated from incineration of household waste for electricity generation, thus offset GHG emissions by replacing the use of fossil-fuelled power. GHG emissions offset is also achieved by diverting household waste from landfills where the anaerobic degradation of organic waste would cause the fugitive release of landfill gas which is rich in methane, a strong GHG.

本集團的垃圾發電項目，透過回收生活垃圾焚燒所產生的熱量來發電，從而替代化石燃料能源的使用，以抵銷溫室氣體排放。此外，將生活垃圾從填埋場分流，避免有機廢物在填埋場厭氧降解所釋放的無組織填埋氣體（含大量甲烷，一種強力的溫室氣體），亦抵銷溫室氣體排放。



**GHG Emissions Offset through Integrated Biomass Utilisation**

**以生物質綜合利用方式抵銷溫室氣體排放**



Apart from waste-to-energy operations, the Group's integrated biomass utilisation projects utilise biomass raw materials for power and heat generation, which offset GHG emissions through replacement of fossil fuels and avoidance of uncontrolled open burning or degradation of biomass which would otherwise generate GHG.

除了運營垃圾發電外，本集團的生物質綜合利用項目，使用生物質原材料發電及供熱，通過替代使用化石燃料及避免生物質不受管地露天燃燒或降解，從而抵銷溫室氣體的排放。

**GHG Emissions Offset through Waste Water Treatment**

**以污水處理方式抵銷溫室氣體排放**

Reducing nitrous oxide released from effluent through waste water treatment: the amount of N<sub>2</sub>O emissions depends on the nitrogen contents of effluent, thus nitrogen removal through waste water treatment is a process that offers GHG removals.

透過污水除氮處理工藝，減少從出水中釋放的氧化亞氮：污水出水的氧化亞氮排放量，取決於污水的氮含量，因此透過污水除氮處理工藝降低出水的氮含量，能夠達到溫室氣體抵銷。

## Risk Management

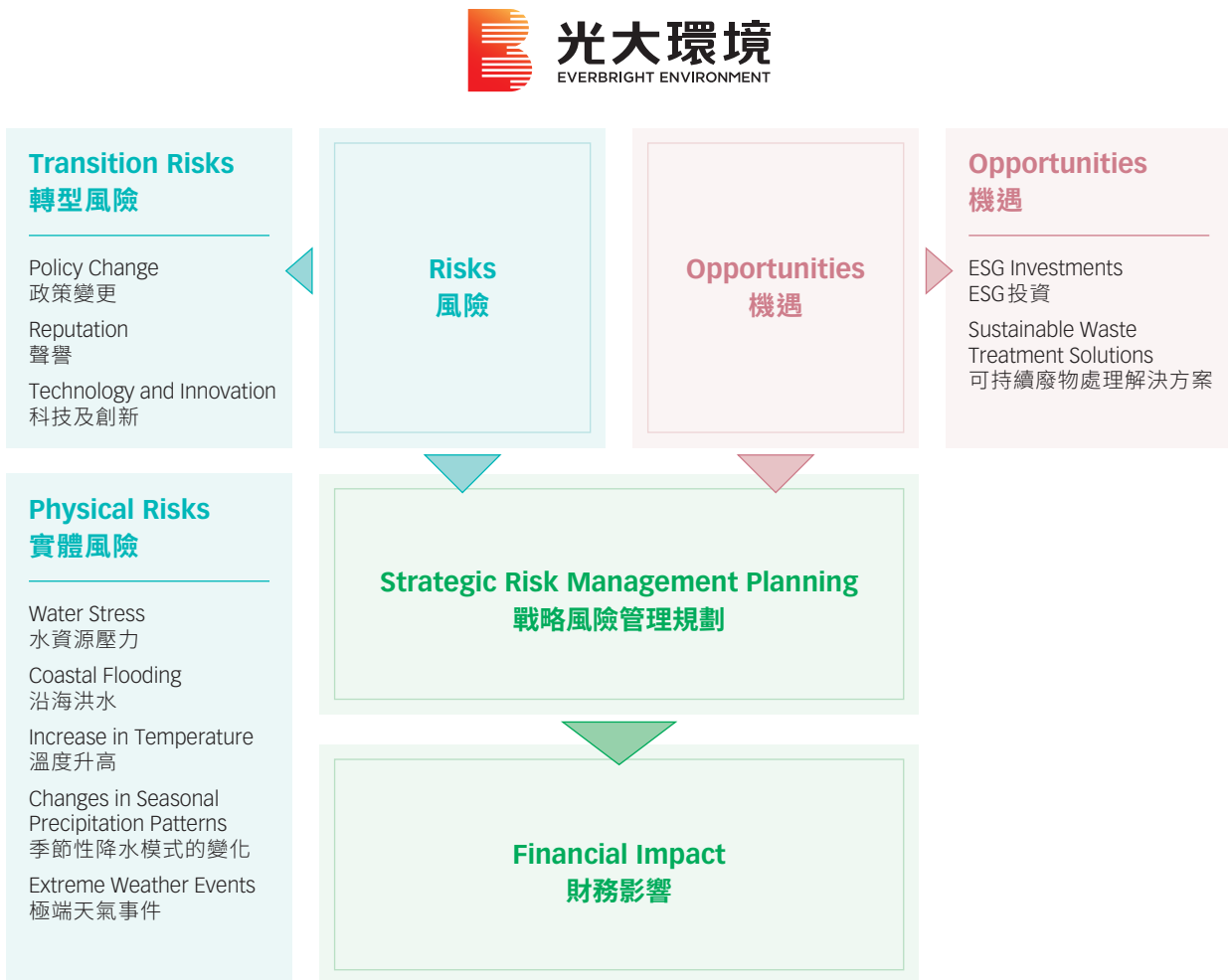
According to the framework and recommendations of TCFD, the Group assesses the potential climate-related risks and opportunities of each aspect, takes actions based on the analysis results of physical risks and transition risks, and formulates and implements climate risk control measures. At the same time, the Group also analyses the effectiveness and implementation risks of various measures in order to improve the efficiency of the overall operation.

The diagram below shows an overview of the Group's key climate-related risks and opportunities.

## 風險管理

根據TCFD框架的建議，本集團評估了各個範疇的潛在氣候相關風險及機遇，並根據實體風險和轉型風險的分析結果，制定實施氣候風險控制措施。同時，本集團亦分析了各個措施的有效性以及執行風險，期望提升整體運營的效率。

下圖概述了有關本集團的主要氣候相關風險和機遇。



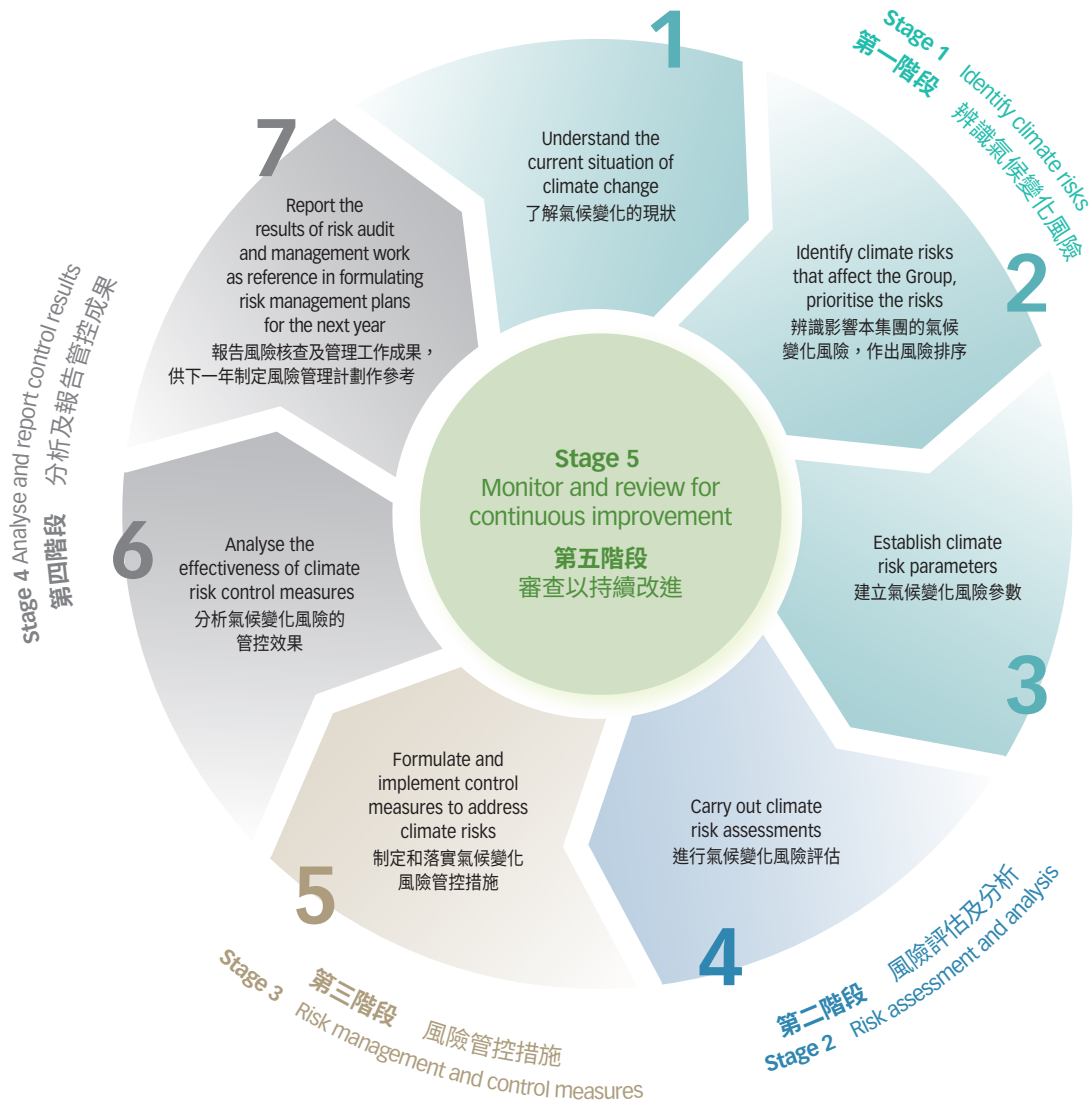
## Risk Management Process

According to the risk management plan, the Group has formulated and implemented a risk management process in order to effectively identify potential risks through clear contingency instructions and formulate and implement relevant measures for each project in a timely manner. Systematic measures can provide a complete and reliable set of decision-making principles and steps to ensure the Group's continued steady operation and development in a changing environment.

## 風險管理流程

根據風險管理計劃，本集團制定並實施了風險管理流程，務求通過清晰的應變指令有效識別潛在風險，適時為各個項目制定和落實相關措施。系統化的措施能夠提供一套完整可靠的決策原則與步驟，確保本集團在變動環境之下繼續穩健經營和發展。

Process of Climate Risk Management  
氣候變化風險管理流程



Everbright Environment has thoroughly conducted the identification, assessment and situational analysis of climate risks, and formulated corresponding mitigation measures according to the results of risk assessment and quantitative analysis to minimise the climate risks faced by the Group. In accordance with the TCFD recommendations, the Group divides climate-related risks into two categories, including physical risks and transition risks, and evaluates material risks by carrying out a scenario analysis.

### Strategy

Everbright Environment is committed to offsetting GHG emissions and building a cleaner and environmentally friendly future. On the other hand, the Group strives to address and manage risks and opportunities imposed by climate change on its businesses.

#### Physical Climate Scenario Analysis

In 2022, the Group revised the analysis results based on the project-level modelling study conducted in 2021 and an updated list of projects. The study evaluates both the acute and chronic physical climate risks under climate scenarios that jointly consider SSPs and RCPs based on the IPCC AR6. The physical climate scenario analysis aims to assess key climate-related risks under the current situation and potential future climate states. The assessments cover water stress and coastal flood risk to all Everbright Environment's assets that were under preparation, construction, commissioning and operation during the Reporting Period.

為降低本集團所面臨的氣候風險，光大環境對氣候風險進行深入的識別、評估和情境分析，並根據風險評估和定量分析的結果制定相應的緩解措施。本集團根據TCFD建議將氣候相關風險分為兩類，包括實體風險和轉型風險，並使用情境分析評估重大風險。

### 策略

光大環境致力於減少溫室氣體排放，建立更清潔和環保的未來。另外，本集團致力於應對及管理氣候變化給其業務帶來的威脅和機會。

#### 實體氣候情境分析

基於二零二一年進行的項目層面模擬分析，本集團於二零二二年根據其最新的項目清單進行了回顧並更新了分析結果。該研究根據IPCC AR6，以綜合考慮SSPs及RCPs的氣候情境的方式評估本集團所面對的急性和慢性實體氣候風險。這個實體氣候情境分析旨在評估當前的關鍵氣候相關風險狀況，以及未來潛在的氣候狀態。該評估涵蓋了光大環境於報告期內所有在籌備、建設、投產以及運營中的資產所面對的水資源壓力和沿海洪水風險。



## Water Stress Assessment 水資源壓力評估

### Why Assess Water Stress? 為什麼要評估水資源壓力程度?

The majority of the Group's projects, including waste-to-energy projects, integrated biomass utilisation projects, hazardous and solid waste treatment projects, etc., require a considerable amount of water for cooling purpose. A prolonged drought or insufficient water supply could affect the reliability of waste processing systems.

本集團的大部分項目，包括垃圾發電項目、生物質綜合利用項目、危廢及固廢處置項目等，在冷卻過程中均需消耗大量水資源。長期乾旱或供水不足會威脅廢物處理系統的可靠性。

### Climate Scenario 氣候情境

The three scenarios include: current state scenario, 2040 SSP2 RCP4.5 scenario (optimistic scenario) and SSP2 RCP8.5 scenario (business-as-usual scenario).

三種情境包括：當前狀態情境、二零四零年SSP2 RCP4.5情境（樂觀情境）和SSP2 RCP8.5情境（如常運作情境）。

### Methodology 方法

Based on the "Water Stress Assessment", the Group measures the ratio of the total water withdrawals to available renewable surface water and groundwater supplies<sup>(1)</sup>. A higher water stress risk indicates a higher associated risk and more competition among local users for freshwater.

本集團利用「水資源壓力評估」量度總取水量及可再生地表水和地下水供應量的比率<sup>(1)</sup>。若水資源受壓程度高，則意味相關風險系數高，亦代表本地用戶之間對淡水的需求存在激烈競爭。

### Findings 分析結果



#### By Percentage of Capital Investment in Projects 按項目資本投資的百分比

From the Group's analysis, water stress is a dominant climate-related risk of the Group's projects in the future. 46.37% of the Group's project investments under preparation, construction, commissioning and operation are categorised with high water stress or above under the current state scenario. The figures will be increased to 68.86% and 68.89% respectively under the optimistic scenario (SSP2 RCP4.5) and the business-as-usual scenario (SSP2 RCP8.5) by 2040.

根據本集團的分析，水資源壓力是未來本集團項目的主要氣候相關風險。在當前狀態情境下，本集團在籌備、建設、投產和運營中的項目投資，有46.37%屬於水資源壓力程度高或以上級別。到二零四零年，在樂觀情境(SSP2 RCP4.5)和如常運作情境(SSP2 RCP8.5)下，數字分別增加到68.86%和68.89%。



#### By Percentage of Number of Projects 按項目數目的百分比

42.11% of the Group's projects under preparation, construction, commissioning and operation, are categorised with high water stress or above under the current state scenario. By 2040, the figures will be increased to 68.24% and 68.42% respectively under the optimistic scenario (SSP2 RCP4.5) and the business-as-usual scenario (SSP2 RCP8.5).

在當前狀態情境下，本集團在籌備、建設、投產和運營的項目中，有42.11%屬於水資源壓力程度高或以上級別。到二零四零年，在樂觀情境(SSP2 RCP4.5)和如常運作情境(SSP2 RCP8.5)下，數字分別增加到68.24%和68.42%。

Note:

<sup>(1)</sup> The calculation of water stress level is based on Aqueduct 3.0 introduced by the World Resources Institute (WRI) in 2019.

附註：

<sup>(1)</sup> 水資源壓力水平的計算是基於世界資源研究所(WRI)在二零一九年推出的Aqueduct 3.0。

Under current state scenario, 2040 SSP2 RCP4.5 scenario (optimistic scenario) and 2040 SSP2 RCP8.5 scenario (business-as-usual scenario), Everbright Environment's water stress assessment is as follows:

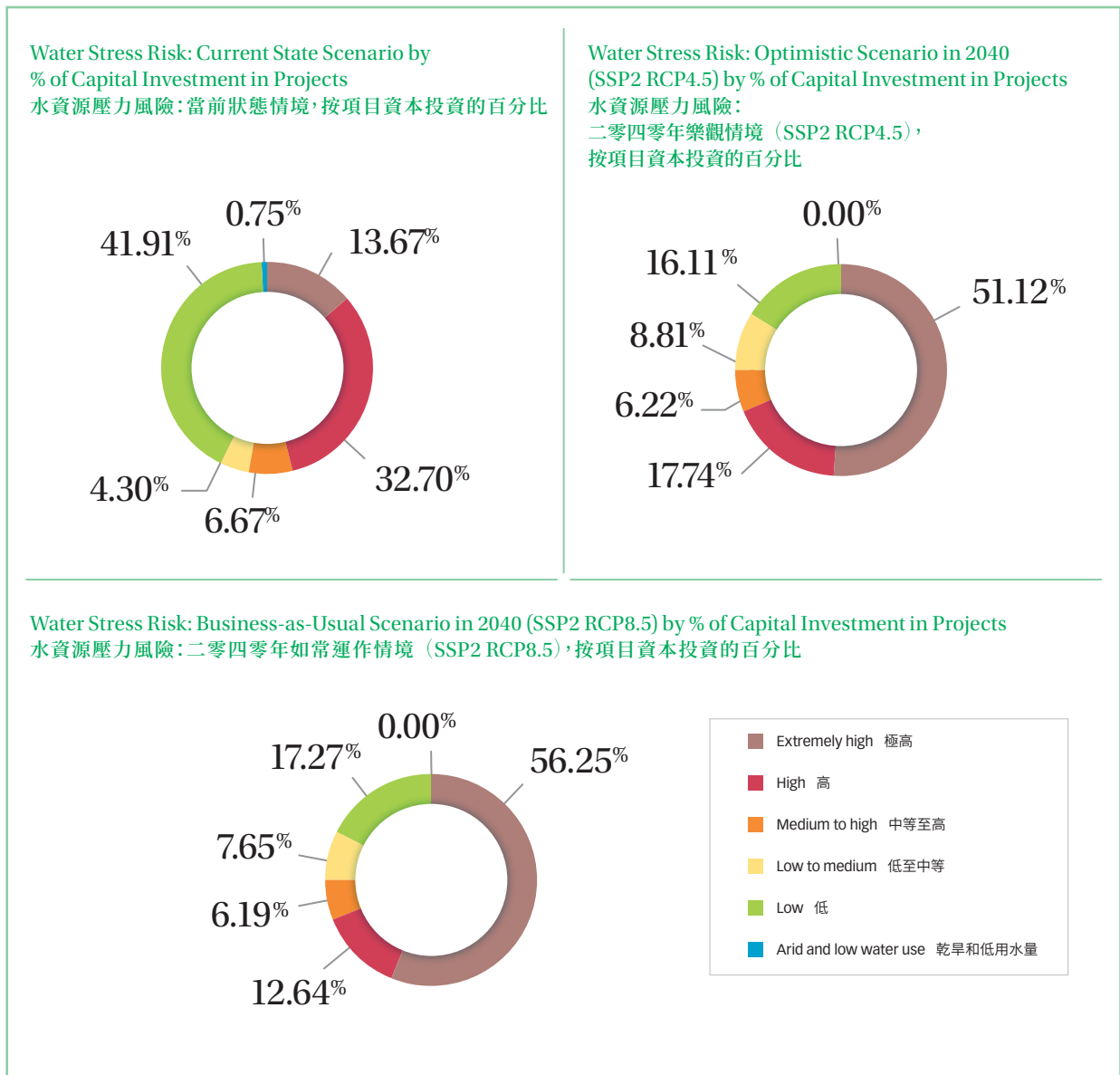
當前狀態情境、二零四零年SSP2 RCP4.5 (樂觀情境) 和二零四零年SSP2 RCP8.5情境 (如常運作情境) 下，光大環境的水資源壓力程度評估如下：

**By Percentage of Capital Investment in Projects**

**按項目資本投資的百分比**

As of 31 December 2022, the total amount of investment was RMB157.675 billion.

截至二零二二年十二月三十一日，投資總額為人民幣1,576.75億元。



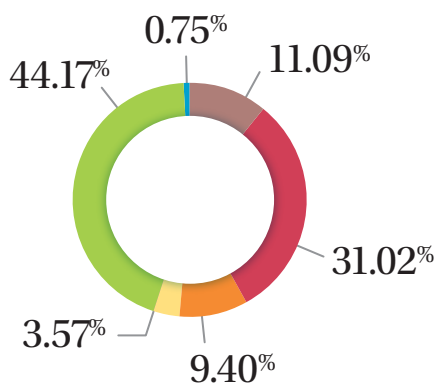
### By Percentage of Number of Projects

During the Reporting Period, Everbright Environment's water stress risk by percentage of number of projects:

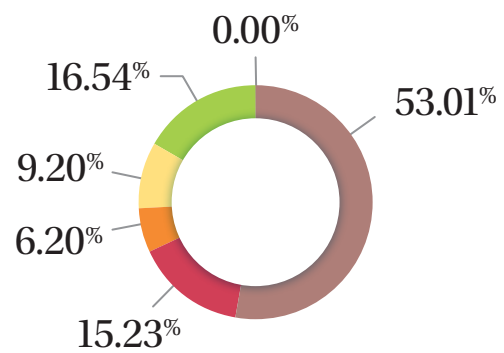
### 按項目數目的百分比

在報告期內，光大環境按項目數目百分比的水資源壓力風險：

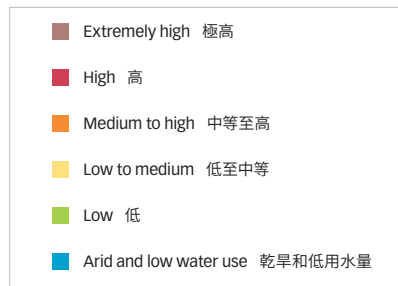
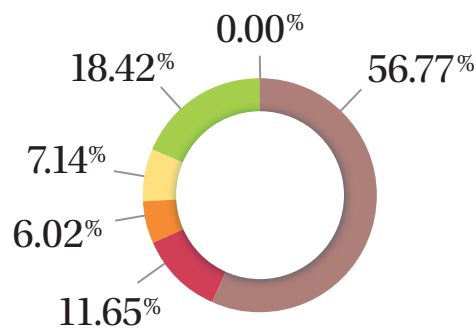
Water Stress Risk: Current State Scenario by % of Number of Projects  
水資源壓力風險：當前狀態情境，按項目數目的百分比



Water Stress Risk: Optimistic Scenario in 2040 (SSP2 RCP4.5) by % of Number of Projects  
水資源壓力風險：二零四零年樂觀情境（SSP2 RCP4.5），按項目數目的百分比



Water Stress Risk: Business-as-Usual Scenario in 2040 (SSP2 RC8.5) by % of Number of Projects  
水資源壓力風險：二零四零年如常運作情境（SSP2 RCP8.5），按項目數目的百分比



## Mitigation Measures for Water Stress Risk

### Water Stress Management

To better manage water stress, the Group has advanced its technology in reusing and re-circulating water. For instance, the third generation of the leachate treatment technology has been adopted in the Group's Hangzhou Jiufeng Waste-to-energy Project ("Hangzhou Jiufeng Project"). Through undergoing a series of treatments including ultrafiltration, nanofiltration and reverse osmosis, the effluent quality could meet the standard for use as cooling water. With the adoption of such technology water recovery rate of 80% could be attained. The advanced waste water treatment process supports our vision towards "Reuse All Water, Zero Discharge".

## 針對水資源壓力風險的緩解措施

### 水資源壓力管理

為了更好地控制用水壓力，本集團提高了其回用水和循環水的技術標準。例如，本集團的杭州九峰垃圾發電項目（「杭州九峰項目」）採用了第三代滲濾液處理技術。超濾、納濾和反滲透是在出水達到冷卻水所需標準之前使用的一些技術。通過使用這種技術可以達到80%的水回收率。先進的廢水處理技術將協助我們實現「全回用、零排放」的目標。

#### Re-circulated Water 循環水

Water is re-circulated within the waste water treatment system as far as practical to reduce the use of freshwater.  
為盡量減少淡水資源的使用，我們盡可能通過污水處理系統對水進行循環使用。

#### Reclaimed Water 再用水

Reclaimed water refers to the effectively treated effluent which is clear and safe for general industrial use or non-potable uses such as street cleaning, vehicle washing, landscaping, toilet flushing, firefighting, etc.  
再用水是指經過有效處理的廢水，可安全地用於一般工業用途或非飲用水用途（如街道清潔、車輛清洗、環境綠化、沖廁、消防等）。

#### Reusable Water 中水回用

Reusable water refers to the water that is purified by the reusable water projects of Environmental Water. The reusable water projects purify effluent from waste water treatment plants in accordance with *Reuse of Urban Recycling Water – Water Quality Standard for Industrial Uses* (GB/T 19923-2005) or equivalent standards. Reusable water produced by reusable water projects can be used for power plants and general industrial use, reducing freshwater demand of cities.  
中水回用是描述通過環保水務的中水回用項目淨化的水。中水回用工程對污水處理廠出水進行處理，採用《城市污水再生利用工業用水水質》(GB/T 19923-2005)或相等標準。通過將中水回用項目產生的回用水用於發電廠和其他工業用途，可以減少城市所需的淡水量。



Coastal Flood Risk 沿海洪水風險

**Why Assess Coastal Flood Risk?**

為什麼要評估沿海洪水風險？

Coastal flood risk will pose a direct threat to the safety of the Group's assets and employees.

沿海洪水風險將對本集團資產及員工安全構成直接威脅。

**Methodology**

方法

For coastal areas' projects, coastal flood risk will be measured through the projects that will be below the combined level of projected sea level rise and local annual flood height by 2040.

針對沿海地區項目，沿海洪水風險透過計算將在二零四零年位於低於預測的海平面上升及當地年度洪水疊加水位總和的項目所得。

Evaluation results will be expressed in percentage of capital investment and percentage of number of projects. The Group's coastal flood risk assessment covers all projects that are under preparation, construction, commissioning and operation<sup>(1)</sup>.

評估結果將按資本投資和項目數目百分比表示。本集團的沿海洪水風險評估涵蓋了所有正在籌備、建設、投產和運營中的項目<sup>(1)</sup>。

**Climate Scenario**

氣候情境

2040 SSP2-4.5 scenario (optimistic scenario) and SSP5-8.5 scenario (unchecked emissions scenario).

二零四零年SSP2-4.5情境（樂觀情境）和SSP5-8.5情境（無節制排放情境）。

**Findings**

分析結果



**By Percentage of Capital Investment in Projects**  
按項目資本投資的百分比

According to the analysis of the Group, 27.33% of the investments of the Group's projects under preparation, construction, commissioning and operation are located in coastal areas.

根據本集團的分析，在所有正在籌備、建設、投產和運營的項目之中，有27.33%的投資位於沿海地區。

The risk calculations for the optimistic scenario (SSP2-4.5) and the unchecked emissions scenario (SSP5-8.5) are similar: 16.61% of the investment will be below the combined level of projected sea level rise and local annual flood height by 2040.

樂觀情境(SSP2-4.5)和無節制排放情境(SSP5-8.5)的風險計算結果相似：將在二零四零年位於低於預測的海平面上升及當地年度洪水疊加水位總和投資佔16.61%。



**By Percentage of Number of Projects**  
按項目數目的百分比

According to the analysis of the Group, 27.44% of the number of the Group's projects under preparation, construction, commissioning and operation are located in coastal areas.

根據本集團的分析，在所有正在籌備、建設、投產和運營的項目之中，有27.44%的項目位於沿海地區。

The risk calculations for the optimistic scenario (SSP2-4.5) and the unchecked emissions scenario (SSP5-8.5) are similar: 17.11% of projects will be below the combined level of projected sea level rise and local annual flood height by 2040.

樂觀情境(SSP2-4.5)和無節制排放情境(SSP5-8.5)的風險計算結果相似：將在二零四零年位於低於預測的海平面上升及當地年度洪水疊加水位總和的項目數量佔17.11%。

Note:

<sup>(1)</sup> The calculation of coastal flood risk referred to the Coastal Risk Screening Tool developed by Climate Central in 2020.

附註：

<sup>(1)</sup> 沿海洪水風險計算方法利用氣候組織於二零二零年推出的沿海洪水風險篩檢工具得出結果。

Mitigation Measures for Coastal Flood Risk

Flood Risk Management

Projects with Built-in Flood Retention Measures

The Group's projects have over 3 million m<sup>2</sup> site of greenery area in total, providing aesthetically pleasing landscapes while incorporating flood retention designs.

Some Project Highlights:  
部分亮點項目：



**Suzhou Waste-to-energy Project**  
蘇州垃圾發電項目

Overall site greenery area: 23,000 m<sup>2</sup>  
(整體廠區綠化面積：23,000平方米)



**Dangshan Integrated Biomass and Waste-to-energy Project**  
蕩山生物質及垃圾發電一體化項目

Overall site greenery area: 38,000 m<sup>2</sup>  
(整體廠區綠化面積：38,000平方米)



**Jianguyin Waste Water Treatment Project**  
江陰污水處理項目

Overall site greenery area: 98,000 m<sup>2</sup>  
(整體廠區綠化面積：98,000平方米)



**Ji'nan Waste Water Treatment Project**  
濟南污水處理項目

Overall site greenery area: 94,000 m<sup>2</sup>  
(整體廠區綠化面積：94,000平方米)

針對沿海洪水風險的減緩措施

洪水管理

內置防洪措施的項目

本集團的項目共擁有逾300萬平方米的廠區綠化面積，提供了美麗的景觀之餘亦包含了防洪設計。

### Elevation of Key Equipment/Machinery

To the extent practicable, key equipment and machinery are elevated to avoid damages due to flooding.

### Sponge City

The Group puts the “blue-green infrastructure” concept in practice in its sponge city projects, which aims to improve a city’s ability in absorption, infiltration, retention and release and purification of rainwater, and to strengthen the urban ecosystem through building systems that can effectively control surface runoff and relieve pressure on urban river channels. A series of water storage tanks, rainwater pumping stations, rainwater drainage networks, waste water treatment facilities, as well as ecological restoration works are integrated into the sponge city projects.



Zhenjiang Sponge City Construction PPP Project  
鎮江海綿城市PPP項目

### River-Basin Restoration

To a broader extent, the Group undertakes river-basin restoration projects to help protect the water sources at the catchment scale. River-basin restoration (or river-basin ecological restoration) refers to river ecosystem restoration through establishing a healthy, comprehensive and stable river ecosystem using artificial reclamation measures, while meeting the basic needs for flood prevention, stormwater drainage and diversion within the river’s and land boundary.

### 提升主要設備／機械的高度

在切實可行的範圍內提升主要設備和機械的位置高度，以避免洪水造成損壞。

### 海綿城市

本集團海綿城市項目通過打造城市地表徑流管理、防洪排澇通道，提高城市對雨水的吸收、蓄水、緩釋、淨化能力，增強城市生態系統功能，實現藍綠建造的概念。許多雨水收集系統、泵站、排水系統、污水處理廠和生態恢復舉措都是海綿城市概念的一部分。

### 流域治理

本集團已啟動更大規模的流域管理計劃，以保護集水區的水源。流域管理（又稱流域生態修復治理）是指在河道陸域控制線內，在滿足防洪、排澇和引水等河道功能的前提下，以人工修復措施促進河道水生生態系統恢復，營造健康、完整和穩定的河道水生生態系統。

Climate-Related Physical Risk Matrix

Based on the current state and different climate change scenarios in 2040, the Group analysed the risks of relevant entities and created a physical risk matrix.

Key Findings:

- Medium impact was imposed on the Group’s projection water stress in the current state scenario, 2040 SSP2 RCP4.5 scenario (optimistic scenario) and 2040 SSP2 RCP8.5 scenario (business-as-usual scenario).
- Low impact was imposed on the Group’s projection the coastal flood issue in the 2040 SSP2-4.5 scenario (optimistic scenario) and SSP5-8.5 scenario (unchecked emissions scenario).

與氣候相關的實體風險矩陣

基於當前狀態及二零四零年不同氣候變化情境，本集團分析了相關實體風險，並建立了實體風險矩陣。

主要發現：

- 在當前狀態、二零四零年SSP2 RCP4.5情境（樂觀情境）和SSP2 RCP8.5情境（如常運作情境）下，水資源壓力對本集團的項目均產生了中度影響。
- 在二零四零年SSP2-4.5情境（樂觀情境）和SSP5-8.5情境（無節制排放情境）下，沿海洪水對本集團的項目均產生了較低影響。

Consequences of Climate Change on Everbright Environment’s Projects under Different Scenarios

光大環境項目在不同情境中的氣候變化後果

	Current state 當前狀態	SSP2 RCP4.5 (Optimistic) SSP2 RCP4.5 (樂觀情境)	SSP2 RCP8.5 (Business-as-Usual) SSP2 RCP8.5 (如常運作)	SSP2-4.5 (Optimistic) SSP2-4.5 (樂觀情境)	SSP5-8.5 (Unchecked Emissions) SSP5-8.5 (無節制排放)
Water Stress Risk 水資源壓力風險	M	M	M	/	/
Coastal Flood Risk 沿海洪水風險	/	/	/	L	L

**L** Low impact  
較低影響  
 $<25\%$   
of project investments impacted with high risk or above<sup>(1)</sup>  
的項目投資受高風險或以上影響<sup>(1)</sup>

**M** Medium impact  
中度影響  
 $\geq 25\%$  and  $<75\%$   
of project investments impacted with high risk or above<sup>(1)</sup>  
的項目投資受高風險或以上影響<sup>(1)</sup>

**H** High impact  
高度影響  
 $\geq 75\%$   
of project investments impacted with high risk or above<sup>(1)</sup>  
的項目投資受到高風險或以上影響<sup>(1)</sup>

Note:

<sup>(1)</sup> For coastal flood risk, Group’s projects that would be below the combined level of the projected sea level rise and local annual flood height by 2040 were categorised as high risk.

附註：

<sup>(1)</sup> 在沿海洪水風險方面，本集團所有將在二零四零年位於低於預測的海平面上升及當地年度洪水疊加水位總和的項目均被評價為高風險。

Other Physical Risks  
其他實體風險

Physical Risk 實體風險	Potential Impact 潛在影響
Increase in average and daily maximum temperature 平均和每日最高溫度升高	<ul style="list-style-type: none"> <li>Health risks to employees due to hotter workplaces 工作場所溫度升高所引致的員工健康風險</li> <li>Increase in perceived odour impacts due to hotter ambient 因環境溫度升高而增加的氣味影響</li> </ul>
Change in seasonal precipitation patterns – generally wetter winters (with less precipitation as snow) and drier summers (with a greater possibility of drought) 季節性降水模式改變——一般而言冬季較濕(降雪減少)和夏季較乾(乾旱可能性較大)	<ul style="list-style-type: none"> <li>Changes to site hydrology 現場的水文模式改變</li> <li>Impose stressful environment to on-site vegetation 施加於現場植被的環境壓力</li> <li>Reduce water availability during dry seasons 乾旱季節供水減少</li> </ul>
Increase in frequency and magnitude of extreme weather events 極端天氣事件的頻率和幅度增加	<ul style="list-style-type: none"> <li>Increased risk of storm damage to buildings and facilities 暴風雨破壞建築物和設施的風險增加</li> <li>Increased storm-related disruption to critical transport for waste delivery 關鍵廢物運輸受風暴相關的干擾增加</li> <li>Increased risk of blowing away of open-stored materials by wind 缺乏掩蓋的材料被風吹走的風險增加</li> <li>Increased health and safety risks to employees exposed to extreme weather conditions 暴露於極端天氣條件下的員工的健康和安全風險增加</li> <li>Impacts on revenue due to interrupted operations (e.g. blockage in delivery of waste, unscheduled shutdown of facilities) 因運營中斷而對收入造成的影響(例如廢物運送的阻塞或設施的非計劃停工)</li> </ul>

Strategy to Mitigate Climate-Related Risks

Everbright Environment has prepared to commence adaptation measures to mitigate the adverse impacts of climate change that may impose on the Group's human capitals and projects. It will continue to promote these measures in the next five years.

實體風險的緩解措施

為了減輕氣候變化可能對本集團的人力資源和項目的不利影響，光大環境已實施了一系列的適應措施，並會在未來五年內繼續推進。

## 1. Emergency Response

The Group has enhanced its emergency preparedness for rapid response and recovery from extreme weather events, including heaving rainstorms, floods, typhoons, thunderstorms, sandstorms, etc. In response to the flood seasons and the occurrence of extreme weather events, the Group has deployed necessary measures in advance, and issued a number of procedural documents, namely *Notice on Strengthening Work Safety in May Day Holiday*, *Notice on Commencing "Safety Production Month"*, *Notice on Safe Management of Production Safety during Flood Seasons and under Catastrophic Weather Conditions*, *Notice on Management of Production Safety during Adverse Weather*, and *Notice on Work Measures to Prepare for Strong Wind, Rainstorm, Thunderstorm and Lightning*. In 2022, we have launched the safety and environmental risk information platform, which combines both online monitoring and offline supervision, to strengthen safety and environmental risk analysis and early warning through technical means, and relying on technological innovation to enhance the level of management and control.

At project levels, all project companies conduct regular inspections on adverse weather protection measures, as well as communication, logistics support and protection of emergency supplies to ensure safe operation at all times. A few days before the arrival of the anticipated extreme weather event, all relevant project companies advance their contingency plans including stocking up of emergency supplies, strengthening backup power systems and enhancing information exchange and operational liaison among the emergency response units.

The Group also carried out dedicated investigation and rectification works to ensure precautionary measures against potential hazards were adequately in place. Furthermore, with an aim to improve accident prevention and handling capabilities of staff, emergency preparedness drills were carried out. Targeting key locations and positions, on-site plan and key emergency drills are carried out. In particular, the operational and practical preliminary emergency response drills for frontline employees of the workshop teams are conducted to enhance their capabilities in emergency response.

## 1. 應急響應

本集團提高了對暴雨、洪水、颱風、雷雨、沙塵暴等突發事件的快速反應和恢復能力。在應對汛期及極端天氣事件的發生方面，本集團提前做好準備，推出了《關於加強「五一」假期安全生產工作的通知》、《關於展開「安全生產月」活動的通知》、《關於認真做好汛期和災害性天氣安全生產管理工作的通知》、《關於加強災害性天氣期間安全生產管理工作的通知》和《關於做好暴雨雷電大風等惡劣天氣防範應對工作的通知》。二零二二年，我們更啟動了安環風險信息化平台建設，通過線上監控與線下監管相結合，利用技術手段強化安環風險分析和預警，依靠科技創新提高管控水平。

在項目層面，所有項目公司必須定期審查與惡劣天氣相關的防護措施，並實施通信、物流支援和應急物資援助，以確保始終安全運行。在預計極端天氣事件發生前幾天，各相關項目公司都提前部署了額外的應急準備工作，包括儲備應急物資，加強備用電源，改善前線應急成員單位之間的溝通和工作聯繫。

本集團還對可能存在的風險進行了專門的調查和修改工作，以確保未雨綢繆。另外，為提高員工處理和預防事故的能力，我們組織了應急準備演習。演習針對重點場所和重點崗位，特別是車間班組一線員工操作式、實戰化的應急處置演練和現場處置演練，提升應急反應能力。

## 2. Robust Preventive Maintenance Programme

To maintain infrastructures within the same ranges of serviceability especially in the era of climate change, the Group has implemented a robust preventive maintenance programme that features regular, frequent maintenance activities to be performed on key systems to reduce the change of failure and extend uptime. The programme allows project companies to address any problems before they arise.

## 3. Sustainable Financing

In April 2022, Everbright Greentech issued the 2022 green medium-term notes (series 1) (bond connect) in the national inter-bank bond market for the repayment of interest-bearing debts of Everbright Greentech and its subsidiaries, replenishment of their working capital and/or investment and construction of their environmental protection projects and other business development purposes. Everbright Environmental Protection (China) Limited\* (“EEP China”), the Company's wholly-owned subsidiary, issued the 2022 Series 1 Green Private Placement Asset-backed notes (Carbon Neutrality Bond) in the national inter-bank bond market for the replenishment of the working capital of EEP China and its subsidiaries, repayment of debts to financial institutions and/or any other purposes in compliance with relevant national industrial policies and applicable laws and regulations, amounting to a combined issue size of approximately RMB2.058 billion.

## 4. Climate-Related Risk Insurance

The Group has insurance against climate-related natural hazards including lightning, rainstorms, floods, storms, tornadoes, hail, typhoons, hurricanes, sandstorm, blizzards, landslide, collapse, mudslide, ground subsidence and other natural disasters. Insurance covers the compensation for damages of projects, interruption in operations, health of workers, etc.

In order to better understand the impact of climate change on operations, the following climate related indicators were added this year. The Group will continue to disclose and monitor these indicators in order to track the effectiveness of the adaptation measures of each project company and will further improve the risk management process.

\* For identification purpose only  
\* 僅供識別用途

## 2. 健全的預防性維修計劃

本集團實施了全面的預防性維護計劃，對關鍵系統進行日常和頻繁的維修活動，以減少故障的變化並增加正常運行時間，以在氣候變化的影響下保持基礎設施的運行性能。這個計劃使項目公司可以在問題發生之前處理所有問題。

## 3. 可持續融資

於二零二二年四月，光大綠色環保於全國銀行間債券市場發行二零二二年度第一期綠色中期票據（債券通），用於償還光大綠色環保及其附屬公司的計息債務、補充營運資金及／或投資和建設環保項目及其他業務發展用途。本公司全資附屬公司光大環保（中國）有限公司（「光大環保中國」）於全國銀行間債券市場發行二零二二年度第一期綠色定向資產支持票據（碳中和債）。用於補充光大環保中國及其附屬公司的流動資金，並償還其金融機構借款及／或其他符合國家有關產業政策和適用法律法規的用途，總發行規模約人民幣20.58億元。

## 4. 氣候相關風險的保險

本集團已為與氣候相關的自然災害風險投保，包括閃電、暴雨、洪水、風暴、龍捲風、冰雹、颱風、颶風、沙塵暴、暴風雪、滑坡、塌陷、泥石流、地面塌陷和其他自然災害。保險包括對項目損害、運營中斷、工人健康等的賠償。

為了更好地瞭解氣候變化對運營所帶來的影響，以下為我們於本年度新增的氣候變化有關的指標。本集團會持續披露和監測指標，以便追蹤各項目公司適應措施的成效和進一步完善集團風險管理流程。

Indicators 指標	Unit 單位	2022
Number of forced outage days due to extreme weather 由極端天氣所導致而被迫停運天數	天 Day	1
Number of employee sick days due to extreme weather 由極端天氣所導致的員工病假天數	Day 天	0
Number of employee injury days due to extreme weather 由極端天氣所導致的員工工傷天數	Day 天	0
Hours of drills for tackling climate change 應對氣候變化演練的時數	Hour 小時	424.5
Area that incorporates flood retention & sponge city design 採用排水防洪及海綿城市設計的綠化面積	平方米 m <sup>2</sup>	757,284.3

### Transition Risks

The acceleration of low-carbon economy transformation brings numerous transformation risks to enterprises. In order to achieve carbon reduction goals, the governments and relevant regulatory agencies have introduced successively various policies and measures to encourage various industries in implementing green and low-carbon transformation. The innovative technologies that companies adopt when moving towards low-carbon operations will add uncertainty to their operations. As investors pay more attention to climate change issues, companies are also facing pressure from investors and other competitors in the industry to enhance their reputation by developing low-carbon transition strategies and enhancing GHG auditing and disclosure.

### 轉型風險

低碳經濟快速發展，企業面臨諸多轉型風險。各國政府和監管機構紛紛出台相關政策措施，支持各行各業綠色低碳轉型，實現減碳目標。企業在向低碳運營轉型時採用的尖端技術將給運營帶來不確定性。隨著投資者更加關注氣候變化問題，公司面臨來自投資者和同一行業其他競爭對手的壓力，要求他們通過制定低碳轉型戰略和改進溫室氣體核算和披露來提高聲譽。



## Transition Risk Scenario Analysis and Management Approach

## 情境分析及管理方針

The transition risks, potential impacts and management approaches identified for the “Net Zero Emissions by 2050 Scenario” and the “Stated Policy Scenario” are as follow.

針對「二零五零年淨零排放情境」及「既定政策情境」而識別出的轉型風險、潛在影響及管理方針詳列如下。

Categories 類別	Major Risks 主要風險	Potential Financial and/or Operational Implications 潛在財務及／或運營影響	Management Approach in the Next Five Years 未來五年的管理方針
Policy Change Risk 政策改變風險	<p><b>Carbon tax, fuel/energy tax, total volume and trading control</b> 碳稅、燃料／能源稅、總量管制與交易</p> <p>Affected by regulatory authorities’ restrictions on GHG emissions or mandatory carbon trading. For example, China’s plan to achieve carbon neutrality by 2060. 受到監管部門關於溫室氣體排放的限制及／或者強制碳交易的影響。例如，中國計劃於二零六零年達致碳中和。</p> <p>Under the “Net Zero Emissions by 2050 Scenario”, more stringent policies will be applied. 在「二零五零年淨零排放情境」下，監管部門將實施更嚴格的限制和措施。</p>	<ul style="list-style-type: none"> <li>Increase of operating cost 增加運營成本</li> <li>Early retirement of existing assets due to policy changes 現有資產因政策變更而提前報廢</li> <li>Investment expenditure on developing low-carbon intensity technology 加大投資開發低碳強度技術</li> </ul>	<ul style="list-style-type: none"> <li>Enhancement of communication with various monitoring authorities, adjustment to regulations promptly, and active implementation of measures to address changes in prevailing policies. 加強與各監管部門的溝通聯繫，及時根據法規，同時根據政策變化主動調整。</li> <li>Improvement in energy efficiency of operating assets and consider deploying more carbon offsetting measures (e.g. large-scale tree planting, investment in renewable energy). 提高運營資產的能源效率，並積極考慮採取更多的碳補償措施（例如大規模植樹，可再生能源投資）。</li> </ul>
	<p><b>Sustainability/ESG Reporting</b> 可持續發展／ESG報告</p> <p>The major local and international guidelines for sustainability reports and sustainability ratings have been strengthened with emphasis on climate change. 更嚴格和著重於氣候變化的主要本地和國際可持續發展報告和評級相關指南</p> <p>Under the “Net Zero Emissions by 2050 Scenario”, more stringent policies will be applied by the regulatory authorities. 在「二零五零年淨零排放情境」下，監管部門將實施更嚴格的限制和措施。</p>	<ul style="list-style-type: none"> <li>Increase in R&amp;D expenditures on developing the matrix and targets for climate-related risks 增加用於開發與氣候相關風險的矩陣和目標的研究與開發支出</li> <li>Increase of compliance cost 增加合規成本</li> </ul>	<ul style="list-style-type: none"> <li>Commitment to the latest sustainability/ESG reporting requirements and attempt to become an industry leader in sustainability. 致力遵守最新的可持續發展／ESG報告要求，並成為可持續發展行業的領頭。</li> </ul>

Categories 類別	Major Risks 主要風險	Potential Financial and/or Operational Implications 潛在財務及／或運營影響	Management Approach in the Next Five Years 未來五年的管理方針
<p><b>Reputation Risk</b> 聲譽風險</p>	<p><b>Relationship with ESG Investors</b> 與ESG投資者的關係</p> <p>Due to its incineration operations, waste-to-energy is usually misperceived as a carbon-intensive business, which may be less preferred by carbon-conscious investors compared with other types of renewable energy.                      垃圾發電的焚燒運作模式使其經常被誤認為高碳強度的業務。因此，與其他可再生能源相比時，垃圾發電對於注重碳排放的投資者或會成為較次要的選擇。</p> <p>Under the “Net Zero Emissions by 2050 Scenario”, more stringent policies will be applied by the regulatory authorities.                      在「二零五零年淨零排放情境」下，監管部門將實施更嚴格的限制和措施。</p>	<ul style="list-style-type: none"> <li>Increase of financing cost 增加融資成本</li> </ul>	<ul style="list-style-type: none"> <li>Conduct evidence-based, scientific calculations to estimate total GHG emissions from waste-to-energy projects and their contributions to offsetting GHG emissions through their replacement of fossil-fuelled power, and diversion of household waste from landfills where the fugitive release of landfill gas (a strong GHG) would pose a threat to global warming.                      以實證、科學的計算來估計垃圾發電項目的總溫室氣體排放量，及其透過取代使用化石燃料生產的電力，把生活垃圾從填埋場分流，以避免釋放無組織填埋氣體（為強力的溫室氣體，嚴重導致全球變暖）而得出對溫室氣體抵銷的貢獻。</li> <li>Improvement in communication with stakeholders to help them understand the unique nature of the waste-to-energy business, as well as the overall environmental benefits brought by waste-to-energy business aspects other than GHG emission reduction (i.e. resolving the waste crisis and the associated environmental implications to land, groundwater, etc.).                      與持份者更緊密的溝通以幫助他們了解垃圾發電業務的獨特性，以及其除減少溫室氣體排放以外，所帶來的整體環境效益（解決垃圾危機及其對土地、地下水相關的環境影響等）。</li> </ul>

Categories 類別	Major Risks 主要風險	Potential Financial and/or Operational Implications 潛在財務及／或運營影響	Management Approach in the Next Five Years 未來五年的管理方針
<b>Technology and Innovation Risk</b> 科技與創新風險	<p><b>Technological advancement required</b> 科技發展需求</p> <p>More advanced technologies are needed to meet the increasingly stringent decarbonisation requirements. 需要採用更先進的科技以符合日益嚴格的減碳要求。</p> <p>Under the “Net Zero Emissions by 2050 Scenario”, more stringent policies will be applied by the regulatory authorities. 在「二零五零年淨零排放情境」下，監管部門將實施更嚴格的限制和措施。</p>	<ul style="list-style-type: none"> <li>• Increase of operating cost 增加運營成本</li> <li>• R&amp;D expenditures in new and alternative technologies 新型和替代型技術研發支出</li> <li>• Capital investments in technology development 技術開發的資本投資</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of scientific and technology R&amp;D, actively recruits technical expertise, commence R&amp;D on self-developed technology, promote the transformation of technological achievements to project applications, insist on “Innovation-Driven Development”. 堅持「創新引領發展」的宗旨，推動科技研發與創新，積極吸納專業技術人才、展開自主技術研發、推動技術成果轉化以至項目應用。</li> </ul>

### Exploring Future Adaptation and Mitigation Measures Against Climate Change Risks

Everbright Environment recognises the long-term challenges presented by climate change and has continued to explore measures to adapt and mitigate physical and transition risks. The exploration efforts cover the entire cycle of projects from early-stage planning and design till on-going operation and management. Those physical risk adaptation and mitigation measures will be progressively implemented in the next 10 years to all applicable projects of the Group.

### 探索應對氣候變化風險的未來適應及減緩措施

因應氣候變化帶來的長期挑戰，光大環境繼續積極探索措施以適應及減緩實體和轉型風險。探索工作涵蓋了從早期計劃和設計到正在進行的運營和管理的整個項目週期。該等實體風險適應和減緩措施涵蓋本集團所有應用項目，並將在未來十年內逐步實施。



## Planning 規劃

### Climate-Sensitive Site Selection

#### 氣候敏感的選址

- Mainstream climate considerations into the site selection process of projects.  
項目選址過程將引入氣候考慮因素。
- Avoid choosing sites with unfavourable hydrometeorological parameters and/or potential extreme weather conditions as appropriate.  
盡可能避免選擇水文氣象參數不利和／或潛在極端天氣條件的地點。

### Green Building/Infrastructure Development

#### 綠色建築／基礎設施開發

- Consider climate-related impacts in the building lifecycle and obtain green building certifications for new buildings/infrastructures where possible. The Group will also closely monitor the energy performance of existing buildings through advanced technologies such as real-time energy monitoring for smart energy management, thereby reducing GHG emissions.  
探討氣候變化對建築物生命週期相關的影響，並在可能的情況下獲得新建築物／基礎設施的綠色建築物認證。本集團還會引入先進技術（例如用於智能能源管理的實時能源監控）密切監控現有建築物的能源效能，從而減少溫室氣體排放。

## Design 設計

### Improve structural integrity

#### 改善結構完整性

- Improve structural integrity of plants by adopting a more stringent wind load factor, larger temperature differences, and increased snow load in resilient building design, where appropriate.  
為改善工廠的結構完整性，在適當的情況下，在彈性建築設計中採用更嚴格的風荷載系數，更大的溫差以及增加的雪荷載。

### Drainage and Flood Prevention

#### 防洪及排水設計

- Adopt climate resilient drainage design that caters for a higher rainfall intensity and shorter return period.  
採用氣候適應性排水設計，可滿足更高的降雨強度和更短的返回期。
- Install flood gates in areas that are prone to flooding.  
在容易發生水災的區域安裝水閘。
- Improve design to ensure proper drainage along key access roads to ensure uninterrupted transportation of waste and biomass raw materials to the plants.  
改進設計，確保沿主要通道的排水妥當，以確保垃圾和生物質原料到項目的運輸不受阻礙。

### Improve Performance of Equipment under High Temperatures

#### 提高設備在高溫下的性能

- Conduct thermodynamic modelling to investigate how higher temperatures and humidity would affect long term plant performance. Thermodynamic modelling allows the future performance of the power plant to be simulated under different scenarios and helps identifying limitations in performance and areas of the plant where operational efficiency can be gained. The modelling results can facilitate adjustments in operations and maintenance or installation of additional infrastructure such as inlet cooling, to adapt to long-term changes to ambient conditions.

使用熱力學模型以研究較高的溫度和濕度將如何影響項目的長期性能。熱力學模型模擬發電廠在未來不同情況下的性能，有助確定發電廠的性能和可獲得運行效率的領域的局限性。模型結果可以促進操作和維護方面的調整或安裝其他基礎設施（如入口冷卻），以適應環境條件的長期變化。

### Rainwater Harvesting

#### 雨水收集

- Explore opportunity to increase rainwater harvesting.  
探索增加雨水收集的機會。

### Transportation Route

#### 運輸路線

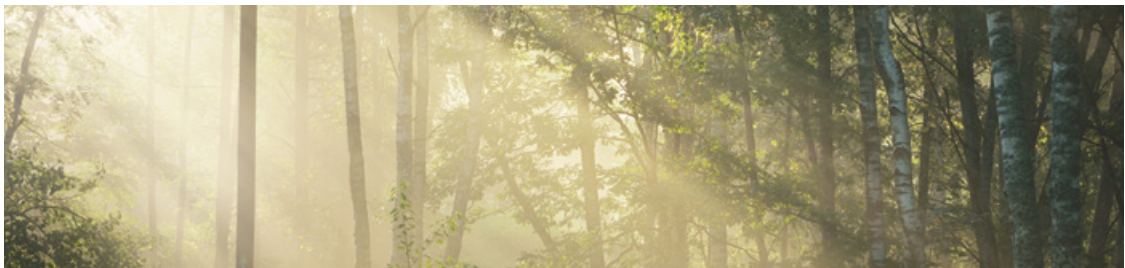
- Carefully design transportation routes to reduce climate-related impacts that may affect the delivery of waste and raw materials.  
精心設計運輸路線，以減少氣候變化對阻礙垃圾和原材料運輸的相關影響。

### Sustainable Construction

#### 可持續施工

- Select suitable low-carbon materials for construction.  
選擇合適的低碳材料進行施工。
- Use biodiesel to power the construction projects and equipment to lower carbon emission.  
於在建項目及設備中使用生物柴油，以減少碳排放。

## Construction 施工



*Operation and  
Management*  
運營及管理

**Improve Flood Resilience of Operating Assets**

提高運營資產的抗洪能力

- Review and improve design and operation of existing assets to enhance waterproofing ability of buildings.  
審查並改善現有資產的設計和運營，以提高建築物的防水性。

**Assessing Climate Resilience of Utilities**

評估公用設施的氣候適應能力

- Communicate with utility authorities to assess climate resilience of utilities with consideration given to rerouting of pipelines, use of underground pipelines, etc.  
與公用事業當局進行溝通，以評估公用設施的氣候適應能力，並考慮管道的重新分佈、地下管道的使用等。

**Capacity Building**

能力建設

- Conduct training for all staff to ensure their awareness of potential climate-related impacts.  
對所有員工進行培訓，以確保他們意識到與氣候相關的潛在影響。

**Supply Chain: Implementing Climatic Guidance for Procurement**

供應鏈：實施採購氣候指引

- Where practical, procurement specifications shall clearly identify the climatic conditions (current and future) in which the equipment or asset will operate.  
採購規範應盡可能明確標識設備或資產將在其中運行的氣候條件（當前和將來）。

Climate-related Opportunities

氣候相關機遇

Categories 類別	Major Opportunities 主要機遇	Potential Financial and/or Operational Implications 在財務及/ 或運營影響	Management Approach in the Next Five Years 未來五年管理方針
<b>Corporate Reputation</b> 企業商譽	<b>ESG investments</b> <b>ESG投資</b> Climate change leads to ESG investment opportunities, and investors will make investment considerations based on the corporate's ESG performances. 氣候變化帶來ESG方面的投資機遇，投資者會依照企業的ESG方面的績效作投資考慮。	<ul style="list-style-type: none"> <li>Increase value of assets 提高資產價值</li> <li>Enhance the Group's reputation and competitiveness 提高本集團聲譽及競爭地位</li> </ul>	<ul style="list-style-type: none"> <li>Adopt international best practices in sustainability reporting. 採用國際的最高標準撰寫可持續報告。</li> <li>Increase transparency in ESG information disclosure. 增加披露ESG資料的透明度。</li> <li>Incorporate ESG considerations into the Group's operations. 於本集團的運營中納入ESG的考慮。</li> </ul>
<b>Market Change</b> 市場轉變	<b>Sustainable waste treatment solutions</b> <b>可持續的廢棄物處理方案</b> In the era of climate change, the market has been looking for more effective and sustainable waste treatment solutions that facilitate landfill diversion and generate green electricity, which is in line with Everbright Environment's business practice. 在氣候變化的時代下，市場趨勢與光大環境的業務工作一致，均在尋覓一個更有效與可持續的廢棄物處理方案，以促進廢棄物從填埋場的分流與綠色電力的生產。	<ul style="list-style-type: none"> <li>Increase in demand of sustainable waste solutions 對可持續廢棄物管理方案的需求大增</li> <li>Enhance the Group's reputation and market standing 提高本集團聲譽及市場地位</li> </ul>	<ul style="list-style-type: none"> <li>Waste-to-energy will remain a core business of Everbright Environment. The Group will step up the efforts in technology R&amp;D in order to improve operational efficiencies in waste treatment and supply of green electricity. 垃圾發電仍然將會是光大環境未來的核心業務，本集團將會加強在技術研發的努力，以改善其在廢棄物處理及供應綠色電力的運營效率。</li> <li>The Group will actively explore alternative waste management models such as waste sorting and resource recycling to support the development of "zero-waste cities". 本集團會積極探索廢棄物管理的替代模式，如垃圾分類及資源回收，以支持「無廢城市」的發展。</li> </ul>

## Metrics and Targets

The Group has used the internationally recognised CDM under the United Nations Framework Convention on Climate Change (“UNFCCC”) to estimate the projects’ GHG emissions and offset.

## Data Calculation Methodologies

The calculation of GHG emissions and offset is referenced to CDM methodologies ACM0022: Alternative Waste Treatment Processes (Version 2.0), AM0080: Mitigation of Greenhouse Gases Emissions with Treatment of Wastewater in Aerobic Wastewater Treatment Plants (Version 1.0), ACM0018: Electricity Generation from Biomass Residues in Power-Only Plants (Version 3.0), ACM0006: Electricity and Heat Generation from Biomass (Version 14.0) and AMS-I.C.: Thermal Energy Production With or Without Electricity (Version 20.0). GHG emissions from air travel are calculated by International Civil Aviation Organization Carbon Emissions Calculator.

During the Reporting Period, we followed the same calculation methods for GHG emissions and offset as last year. The calculation principle was primarily based on CDM methodologies, however, some of the coefficients or emission factors that are more in line with China’s situation were adopted, which includes application of a higher default water content of household waste as per our operational experience. Compared to last year, there were no discrepancies in GHG emissions and offset data.

## 指標和目標

本集團使用受國際認可的《聯合國氣候變化框架公約》下的CDM溫室氣體排放計算方法來估算項目的溫室氣體排放量及抵銷。

## 數據計算方法

溫室氣體的排放及抵銷的計算參照CDM方法《ACM0022：多選垃圾處理方式（2.0版）》、《AM0080：透過在有氧污水處理廠處理污水減少溫室氣體排放（1.0版）》、《ACM0018：純發電廠利用生物廢棄物發電（3.0版）》、《ACM0006：生物質熱電聯供（14.0版）》及《AMS-I.C.：電力或非電力用戶提供熱能（20.0版）》。飛機差旅的溫室氣體排放，以國際民航組織的碳排放計算器計算得出。

報告期內，我們沿用與去年相同的溫室氣體排放量和抵銷量計算方法。我們的計算原則主要基於CDM方法，但採納了一些更符合中國國情的系數和排放因子，當中包括根據運營經驗，應用了平均較高的預設生活垃圾含水量。與去年相比，溫室氣體排放和抵銷數據沒有不相符之處。



Scope 1 – Reference was made to the *Household Waste Incineration Engineering Technology* by Bai Liang Cheng regarding household waste incineration-related emissions, by adopting relevant carbon content data of various waste types that are instead more in line with China's conditions, and applying a relatively higher default moisture content for household waste as per our operational experience; scope 2 – emissions related to purchased electricity from non-renewable sources were based on the *Regional Baseline Grid Emissions Factor for Emission Reduction Projects in China 2019*, which is more in line with the local operating conditions. In addition, the weighted average of the operating margin (OM) and build margin (BM) as stated in CDM's *Methodological Tool – Tool to Calculate the Emission Factor for an Electricity System* was adopted; and for emissions offsets related to waste-to-energy projects, the methane conversion factors (MCF), the fractions of degradable organic carbon (DOCj), and the decay rates (Kj) of various waste types that are more in line with China's conditions were adopted instead of the CDM default values.

The emissions factors used to calculate emissions related to energy combustion correspond to data in the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories from the IPCC*. Electricity emissions factors follow the *Regional Baseline Grid Emissions Factor for Emission Reduction Projects in China 2019* issued by the Ministry of Ecology and Environment of the PRC.

範疇一—生活垃圾焚燒的相關排放參考白良成著作《生活垃圾焚燒處理工程技術》，改用較符合國情的各類垃圾碳含量相關數據，應用了與我們的運營經驗相應並相對平均較高的預設生活垃圾含水量；範疇二—外購非再生能源電力的相關排放採用更符合當地營運情況的《二零一九年度減排項目中國區域電網基線排放因子》，並根據CDM發佈的指南《方法學工具—計算電力系統排放因子的工具》，採用電量邊際排放因子及容量邊際排放因子的加權平均；與垃圾發電項目相關的排放抵銷量取用符合國情的甲烷轉換因子(MCF)、可降解有機碳比例(DOCj)及各類垃圾的降解率(Kj)，而非CDM的默認數值。

用於計算與能源燃燒有關的排放因子與《2006年IPCC國家溫室氣體清單指南2019修訂版》中的數據相對應。電力排放因子遵循中華人民共和國生態與環境部發佈的《二零一九年度減排項目中國區域電網基線排放因子》。



*ENVIRONMENTAL*  
PROTECTION  
環境保護

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*IMPLEMENTING*

GREEN OPERATION,  
PROTECTING BLUE SKY and LUSH WATER

實行綠色運營 · 保護藍天碧水

Since the Company transformed its major business to environmental protection in 2003, Everbright Environment has been focusing on this sector for almost two decades, with its main business covering waste-to-energy and synergistic waste treatment, integrated biomass utilisation, hazardous and solid waste treatment, new energy environmental remediation, water environment management, equipment manufacturing, waste sorting, environmental sanitation integration, resource recycling, development of zero-waste cities, energy-saving lighting, analysis and testing, ecological and environmental planning and designing, R&D relating to green technologies, as well as environmental protection industrial parks.



本公司自二零零三年起將環境保護作為主營業務。近二十年來光大環境涉足垃圾發電與協同處置、生物質綜合利用、危廢和固廢處置、新能源、環境修復、水環境綜合治理、裝備製造、垃圾分類、環衛一體化、資源循環利用、無廢城市建設、節能照明、分析檢測、生態環境規劃設計、綠色技術研發、環保產業園等。



While focusing on the development of environmental business, Everbright Environment also actively adopts measures to reduce impacts on the environment and natural resources arising from its operations. We will continue our established development strategy, enhancing our policy, R&D and innovation related to “Peaking Carbon Emissions” and “Achieving Carbon Neutrality”, while at the same time strive to better cope with climate change through working with parties from all social circles, thus committing to the development of ecological civilisation, achieving green and low-carbon development, as well as contributing to the national climate response and environmental initiatives.

光大環境在發展環保業務的同時，亦積極採取多項措施減少經營對環境和自然資源的影響。我們將保持原有的發展規劃，加強「碳达峰」和「碳中和」的政策和研發，同時通過與社會各界的合作，加大努力投入到我們的工作中。我們致力於建設生態社會，實現綠色低碳發展，支持國家應對氣候變化的環保活動。

2022 Highlights  
亮點



Everbright Environment was awarded the “Blue Ocean Award” by the Asian Development Bank (“ADB”) for its effective solid waste management methods to promote the development of circular economy and reduce land-based marine pollution.  
光大環境憑藉有效的固廢管理手段促進循環經濟發展和減少陸源海洋污染，獲得亞洲開發銀行（「亞發行」）頒發「藍色海洋獎」。

The Company has remained committed to the “Blue Economy” by ensuring the “sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem.” In 2021, the Company signed a memorandum of understanding (“MoU”) with ADB for a strategic cooperation to foster and promote ocean health in Asia. Under the framework of the MoU, both parties have proactively raised awareness of solid waste treatment’s critical contribution to protecting ocean health, and carried out research on marine debris reduction and its associated impacts on marine life, coastal livelihoods and human health. In 2022, Everbright Environment led the “Pioneer Study on Waste-to-energy Projects’ Contribution to Marine Plastic Debris Reduction” under the MoU based on the Sanya Waste-to-energy Project (“Sanya Project”) in Hainan, China. The study showed Sanya Project contributed to the reduction of 28,242-75,312 tonnes of marine plastic debris and 2.48 kg of microplastics, with net environmental and social benefit of RMB34.84 million-405.49 million.

本公司一直致力於「藍色經濟」，並確保「可持續地利用海洋資源促進經濟增長、改善生活和就業，同時維護海洋生態系統的健康」。於二零二一年，本公司與亞發行簽署了《戰略合作備忘錄》（「備忘錄」），以促進及推廣亞洲的海洋健康。在備忘錄的框架下，雙方積極提高了有關固體廢物處理對保護海洋健康的重要貢獻的意識，並就減少海洋廢棄物及其對海洋生物、沿海生活和人類健康的相關影響展開了研究。於二零二二年，光大環境根據備忘錄，基於中國海南的三亞垃圾發電項目（「三亞項目」）牽頭開展了「垃圾發電項目對減少海洋塑膠垃圾的貢獻的開創性研究」。研究結果顯示了三亞項目減少了28,242-75,312噸海洋塑膠垃圾和2.48公斤微塑料，淨環境和社會效益為人民幣0.3484-4.0549億元。

### Everbright Environment was Awarded the “Best ESG Report Award” by BDO China 光大環境獲BDO中國授予「最佳ESG報告大獎」

Everbright Environment won the “Best ESG Report Award” in the category of “Middle Market Capitalisation” in the “BDO Environmental, Social and Governance Awards”.

光大環境在「BDO環境、社會及管治大獎」獎項評選中獲得「主板中市值」組別的「最佳ESG報告大獎」。

### Everbright Environment was included in the Dow Jones Sustainability Index for the Seventh Consecutive Year 光大環境連續第七年入選道瓊斯可持續發展指數

Member of  
**Dow Jones  
Sustainability Indices**  
Powered by the S&P Global CSA

With its continuous outstanding performance, Everbright Environment has been selected into the Dow Jones Sustainability Emerging Markets Index for the seventh consecutive year. It is one of the only four companies from mainland China that have been included in the Index this year. Over the past seven years, no more than five mainland Chinese companies have been included in the Index each year and Everbright Environment is one of them.

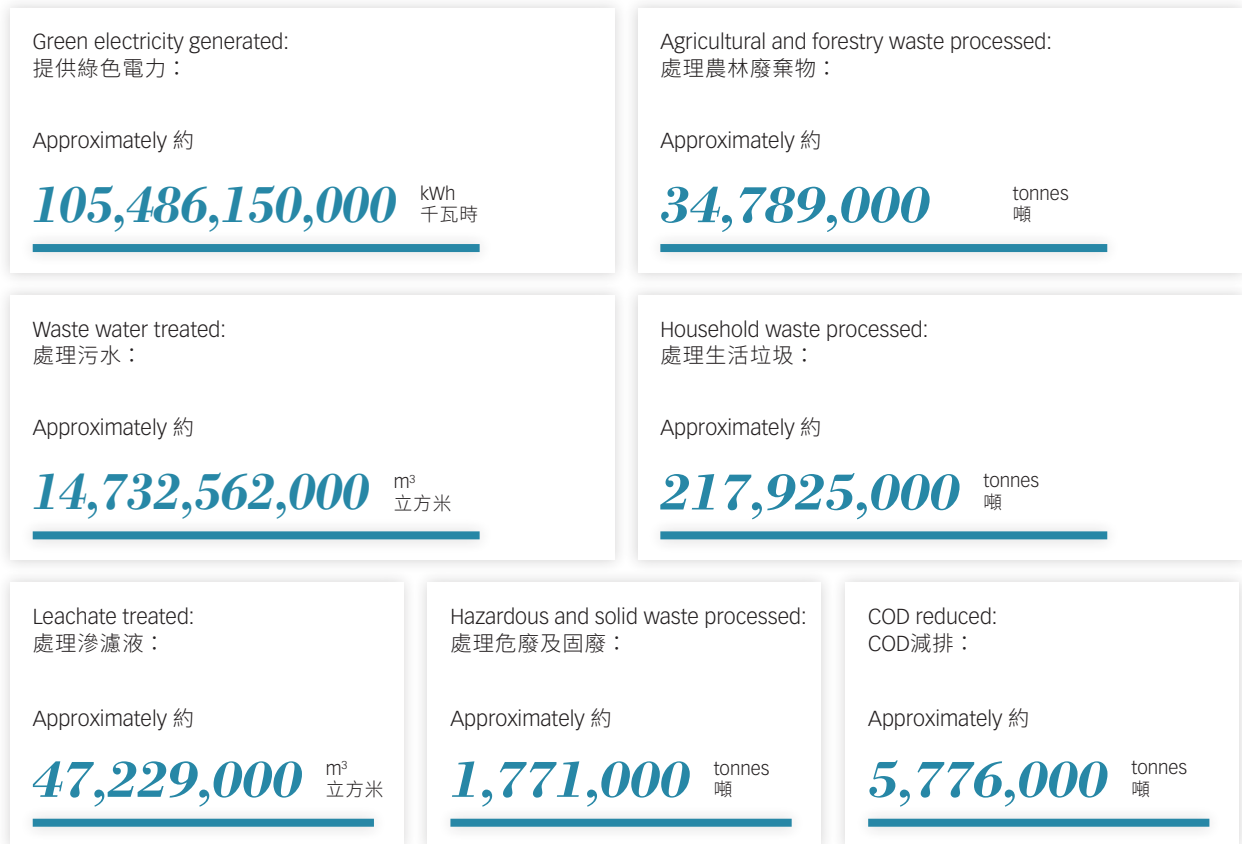
光大環境憑藉持續優異表現，連續第七年入選道瓊斯可持續發展新興市場指數，為入選的四家中國內地企業之一，也是過去七年每年不多於五家入選的中國內地企業之一。

### Everbright Environment’s Danzhou Waste-to-energy Project Won the Luban Award 光大環境儋州垃圾發電項目榮獲魯班獎

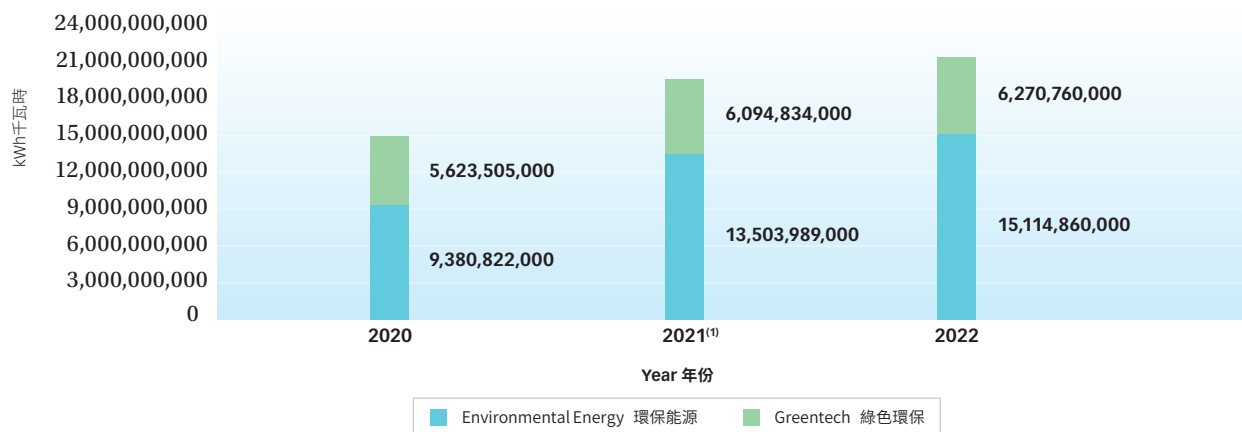
The Danzhou Waste-to-energy Project won the most prestigious award in the national construction engineering industry, the Luban Award, in 2022. It is the fourth environmental protection project of our Group to receive this prestigious honour, following the Quzhou project in Hainan, the Jinan project in Shandong and the Hangzhou project in Zhejiang. This fully demonstrates the excellent capabilities of our group and environmental energy in the planning, construction, and management of environmental protection projects.

儋州垃圾發電項目於二零二二年內獲得國家建築工程行業最高獎項魯班獎，成為繼海南衢州項目、山東濟南項目、浙江杭州項目後，本集團第四個獲此權威榮譽的環保項目，充分體現了本集團及環保能源在環保領域工程規劃、建設和管理方面的卓越能力。

Since the commissioning of the Group's first environmental protection project in 2005  
自二零零五年本集團首個環保項目運行以來



On-grid Green Electricity Supplied by Sector  
按板塊分類的綠色上網電量



Note:

<sup>(1)</sup> Numbers were rounded to the nearest thousand to align with the numbers presented in Annual Report 2021.

附註：

<sup>(1)</sup> 數字經四捨五入調整至最接近的千位數，並與二零二一年年報中載列的數字保持一致。

## Environmental Management Overview

The Group upholds its mission of being “Devoted to Ecology and Environment for a Beautiful China” and its core value of “To Create Better Investment Value and Undertake More Social Responsibility”. We pay close attention to the environmental impacts brought by our operations and keep an eye on the environmental management of all projects.

The Group’s *Corporate Policy on Environmental Management* provides an important framework for the implementation of the Group’s environmental management, striving to minimise the burden on the environment and natural resources imposed by the Group. The policy also provides detailed guidance on the management of environmental impacts arising from the Group’s operations. The Group has developed various policies and manuals and provided policy training to ensure their effective execution. These included the *Overall Framework of Safety and Environmental Management*, *Regulations on the Structure and Responsibilities of Safety and Environmental Management*, *Regulations on Safety Accident and Environmental Accident*, *the Manual of Technical Support to Safety Operation and Pollutants Control*, *Regulations on Fire Prevention Management*, *Regulations on Occupational Health*, *the Regulations on Flooding Prevention*, etc.

## 環境管理概覽

本集團高度重視企業運營所帶來的環境影響，一直以「情繫生態環境，築夢美麗中國」為企業使命，以「創造更好投資價值，承擔更多社會責任」為企業追求，為所有項目的環境管理把關。

本集團的《環境管理企業政策》提供重要綱領，有助環境管理的落實，大大減輕本集團對環境及天然資源造成的負擔。政策亦提供了詳細指引，清晰帶出本集團運營中所涉及的环境影響。本集團亦制定了多項制度及指引，并提供制度培訓，確保制度之有效執行。制度及指引包括《安全環境管理總則》、《安全與環境管理機構設置及其職責的規定》、《安全與環境事故及環境事件管理規定》、《安全生產與污染防治技術保障工作指引》、《消防管理規定》、《職業健康管理規定》、《防洪防汛工作管理規定》等。

### Six Key Areas of the *Corporate Policy on Environmental Management* 《環境管理企業政策》的六大領域



**Compliance**  
合規



**Risk management and due diligence**  
風險管理和  
盡職調查



**Environmental protection**  
環境保護



**Health and safety**  
健康和  
安全



**Supply chain management**  
供應商管理



**Monitoring and communication**  
監察和  
溝通

Air and GHG emissions  
廢氣及溫室氣體排放

Discharges into water and land  
向水及土地的排污

Generation and treatment of hazardous and non-hazardous waste  
有害及無害廢棄物的產生及處置方法

Energy  
能源

Water resources  
水資源

Use of raw material  
原材料使用

To fully implement environmental monitoring, the Group continues to thoroughly enforce the ESHS Management System, ISO 14001 Environmental Management System and other environmental and safety systems, and extensively utilises technology to enhance the operational effectiveness of all systems. The Group also set up the Safety and Environmental Management Committee, in order to further enhance the efficiency and reliability of environmental monitoring work.

為了有效落實執行環保監察工作，本集團繼續全面、深入落實ESHS管理體系、ISO 14001環境管理體系、各環境與安全制度，並廣泛利用科技，以增強全系統的運營成效。本集團更成立安全與環境管理委員會，進一步提升環保監察工作的效率與可靠性。



### Promote ESHS Management System and strictly implement various environmental and safety systems

#### 推動ESHS管理體系，嚴格執行各環境與安全制度

Apply standardised management throughout project investment, construction and operation management, improving overall operational efficiency and effectiveness.

實現項目投資、建設及運營管理過程中各環節管理的規範化，加強整體運營效率和成效。



### Promote ISO 14001 Environmental Management System in the operating projects

#### 推行ISO 14001環境管理體系於運營項目

Reduce and where possible prevent pollution from project operations, and make great efforts to protect the environment from harm and degradation.

減少及避免項目運營帶來的污染問題，盡力保護環境免受危害和退化。



### Set up Safety and Environmental Management Committee

#### 成立安全與環境管理委員會

Regulate, monitor and supervise the implementation of environmental and safety measures across all sectors of the Group.

重點規範、監督、督導本集團各板塊環境及安全工作的實施。



### Strengthen environmental management through technology

#### 以科技加強環境管理

Adopt new management models of "Internet +" and "Informatisation and Intelligence", utilise new technologies such as cloud computing, Internet of Things (IoT) and big data, to develop a new online environmental management information platform; through connecting with the database of the Ministry of Ecology and Environment, data and information regarding air emissions and effluent discharge of all projects of Everbright Environment could be linked directly to the relevant platforms for real-time disclosure.

實時更新光大環境下各項目廢氣、廢水排放數據，採用「互聯網+」和「資訊化、智慧化」的新型管理模式，以雲計算、物聯網、大數據等新技術構建新型在線環境管理信息平台；並通過與生態環境部資料庫聯網，即時更新光大環境旗下各個項目的廢氣、廢水排放資料。



In addition, the Group screens the relevant environmental and social risks before making an investment in any projects and ensures that all required permits and environmental impact assessment approvals are obtained before construction. During construction stage and after commencement of operation, all projects are subject to surveillance by local environmental authorities in accordance with relevant environmental laws and regulations, including real-time continuous emissions monitoring, regular environmental sampling and analysis, ad hoc environmental due diligence audit, etc.

### Community Development

During the planning stage of each project, the project company has to prepare a stakeholder participation plan which covers identification of stakeholders, proposed consultation method and frequency, resources and responsibilities planning, and key performance indicators. The participation plan is to be updated and maintained throughout the entire lifecycle of a project, from planning till operation. The purpose of the use of participation plan is to monitor and report community development efforts of each project. Aided by the use of participation plans, the Group is committed to:

- supporting and collaborating with local community groups to identify local stakeholders and their needs;
- allocating resources to community development programmes that address community needs;
- creating job opportunities for local communities to foster long-term economic growth; and
- encouraging employees to support community development through volunteering and using their expertise to benefit the local communities.

另外，本集團亦會在投資前評估項目的環境和社會風險，並確保在開工前獲得必要的許可證和環評報告。每個項目在建設階段和竣工投產後都按照相關環保法律法規和定期接受當地環保部門監測，當中包括環境排放連續在線監測、定期接受環境採樣分析及不定期環境盡職審核等。

### 社區發展

在每個項目的規劃階段，項目公司必須制定持份者參與計劃，其中包括辨認持份者、建議協商方法和頻率、資源和責任規劃以及關鍵績效指標。參與計劃將在項目的整個生命週期（從規劃到運營）中進行管理及更新。使用參與計劃的目的是監測和匯報每個項目的社區發展工作。在參與計劃的幫助下，本集團致力於：

- 支持當地社區團體並與之合作，以確定當地持份者及其需求；
- 為解決社區需求的社區發展計劃分配資源；
- 為當地社區創造就業機會以促進長期經濟增長；及
- 鼓勵員工通過志願服務支持社區發展，並利用他們的專業知識造福當地社區。





## Developing Environmental Protection Business

Our environmental energy business helps reduce the adverse per capita environmental impact and preserves precious urban land resources via green treatment of municipal household waste; greentech's business reduces air pollution in rural areas by converting biomass raw materials such as agricultural and forestry waste into electricity and heat, hence avoiding open burning of agricultural and forestry straw. Both businesses increase the share of renewable energy in the PRC's energy mix, demonstrating Everbright Environment's dedication to the green energy era in China. Meanwhile, environmental water's business helps solve the water quality and sanitation problems by effectively treating municipal and industrial waste water, following stringent national standards and producing high-quality reusable water for industrial use. On the other hand, the envirotech sector continuously promotes the strategic plan of pursuing development that is driven by technology and innovation, and ensures the commercialisation of the technology R&D results. The equipment manufacturing sector integrates advanced manufacturing and modern services and carry out upgrades towards the goal of becoming a "Zero-carbon Factory". By incorporating the greenergy sector, the equipment manufacturing settler is fostering a new development paradigm for the "Intelligently Made by Everbright".

Throughout project construction and operations management, Everbright Environment has been strictly conducting relevant testing, complying with relevant emissions and discharge standards, and developing garden-like plant areas that have proven performance in four aspects (plant appearance, odour management, noise control and emissions standard). The Group's 14 waste-to-energy projects are located in Suzhou, Nanjing, Wujiang, Changzhou, Changzhou Xinbei, Ningbo, Sanya, Boluo, Weifang, Rizhao, Yiyang, Ma'anshan, Hangzhou and Lantian have been awarded the "National AAA-Rated Waste-to-Energy Plants", signifying the Group's unwavering pursuit in quality enhancement and environmental performance.

## 打造環保業務

本集團的環保能源業務，透過綠色模式處理生活垃圾，減少人均環境影響及保存城市珍貴的土地資源；綠色環保業務則利用農林廢棄物等生物質原材料，轉化成電力和熱能，避免農林秸稈的露天焚燒，從而減低農村地區的空氣污染。這兩項業務通過增加中國可再生能源的使用比重，彰顯光大環境對中國綠色能源時代的奉獻精神。與此同時，環保水務業務嚴格按照國家標準，有效處理城市及工業污水，生產高質量的工業用回用水，改善水質和衛生問題。另一方面，研究院持續推動科技創新引領發展的戰略構想，保障科技研發的實效產出；裝備製造板塊促進先進製造與現代服務深入融合，升級打造「零碳工廠」，並通過併入光大照明板塊，構建「光大智造」發展新格局。

光大環境在項目建設與運營管理過程中，嚴格檢測達標排放，堅持打造「四個經得起」（經得起看、經得起聞、經得起聽、經得起測）的花園式廠區。本集團在蘇州、南京、吳江、常州、常州新北、寧波、三亞、博羅、濰坊、日照、益陽、馬鞍山、杭州及藍田等14個垃圾發電項目，已獲得國家「AAA級生活垃圾焚燒廠」評定，這充分肯定了本集團一直以來為提升項目品質和環境表現作出的努力。



### GHG Emissions

Everbright Environment discloses all three carbon emissions scopes in absolute figures and intensities. In 2022, the Group generated 0.63 kg of CO<sub>2</sub> equivalent (“CO<sub>2</sub>e”) per kWh of on-grid green electricity supplied.

The scope 1 emissions were increased due to the increase in the number of operating projects each year. The huge project portfolio implies the increase in total GHG emissions. Furthermore, we have expanded our reporting boundary of scope 3 emissions since 2021 to include indirect emissions due to transportation of biomass and wastes by third parties to project companies under environmental energy and greentech sectors.

### 溫室氣體排放

光大環境披露三個碳排放範圍的絕對數值和強度。二零二二年，本集團每提供一度上網綠色電力便產生0.63公斤二氧化碳當量。

由於運營項目的數量每年都在增加，範疇一的排放量有所增加。龐大的項目組合，意味著溫室氣體總排放量的增加。此外，我們自二零二一年起擴大了範疇三排放的匯報範圍，包含環保能源及綠色環保項目第三方運送垃圾至項目公司的間接排放。

GHG Emissions Statistics in 2022

二零二二年溫室氣體排放統計

Unit: tonnes of CO<sub>2</sub>e  
單位：噸二氧化碳當量

		2022	2021	2020
Scope 1 (Direct Emissions)	範疇一 (直接排放)	<b>12,801,212.33</b>	15,242,857.68	10,717,354.60
– Incineration of household waste <sup>(1)</sup>	– 生活垃圾焚燒 <sup>(1)</sup>	<b>12,549,458.34</b>	15,044,641.21	10,548,374.40
– Other sources	– 其他來源	<b>251,754.00</b>	198,216.46	168,980.20
Scope 2 (Energy Indirect Emissions)	範疇二 (能源引致的間接排放)	<b>547,406.34</b>	519,975.72	454,575.00
Scope 3 (Other Indirect Emissions)	範疇三 (其他間接排放)	<b>171,048.09</b>	149,597.88	42,076.01
Total GHG Emissions	溫室氣體排放總量	<b>13,519,666.77</b>	15,912,431.28	11,214,005.61
GHG Emissions Intensity (kg CO <sub>2</sub> e/kWh of on-grid green electricity supplied)	溫室氣體排放強度 (公斤二氧化碳當量 / 千瓦時綠色上網電量)	<b>0.63</b>	0.81	0.75
GHG Emissions Offset <sup>(2)</sup>	溫室氣體排放抵銷量 <sup>(2)</sup>	<b>20,463,178.57</b>	20,893,834.20	15,273,840.27
GHG Emissions Reductions <sup>(3)</sup>	溫室氣體減排量 <sup>(3)</sup>	<b>6,943,511.81</b>	4,981,402.92	4,059,834.66

Notes:

- (1) GHG emissions from the incineration of household waste are calculated based on the fraction of fossil carbon in total carbon content of the household waste. The amount of such GHG emissions may substantially fluctuate from time to time due to the varying composition of the household waste received, which is beyond Everbright Environment's control.
- (2) "GHG Emissions Offset" reveals an optimistic estimation of the total offset that could be potentially contributed by Everbright Environment's key operation (waste-to-energy and integrated biomass utilisation in particular) based on the referenced CDM methodologies. The actual contribution is dependent on the "without project" scenario of each location, which may vary case by case. The value is not a confirmation of GHG removal from the atmosphere and is for reference only.
- (3) GHG emissions reductions refer to GHG emissions offset minus total GHG emissions.

附註：

- (1) 生活垃圾焚燒引致的溫室氣體排放以生活垃圾中化石碳佔總碳的比例為計算基礎。因此，生活垃圾成分的差異可對此溫室氣體排放不時造成大幅波動，這不屬於光大環境的控制範圍之內。
- (2) 「溫室氣體排放抵銷」展示了光大環境基於參考CDM方法論，對其的主要業務（尤其是垃圾焚燒發電和生物質綜合利用）可能貢獻的總抵銷量的樂觀估算。實際貢獻取決於每個地點的「沒有項目」情境，而個別具體狀況可能會有所不同。該值並非從大氣中移除溫室氣體的確認值，數字僅供參考。
- (3) 溫室氣體減排量是指溫室氣體排放抵銷量減去溫室氣體排放總量。

**GHG Emissions in 2022 by Sector**  
二零二二年按板塊劃分的溫室氣體排放量

**Total Scope 1 (Direct Emissions):**  
範疇一 (直接排放) 排放總量：

**12,801,212.33** tonnes CO<sub>2</sub>e  
噸二氧化碳當量

1

Operation Unit 運營單位	Emission Sources 排放來源	2022 (tonnes CO <sub>2</sub> e) (噸二氧化碳當量)
<b>Environmental Energy</b> 環保能源	Fuel consumption by operation of facilities; incineration of household waste; fugitive methane emissions from leachate 設施運營的燃料消耗、生活垃圾焚燒、滲濾液的無組織甲烷排放	<b>11,681,035.16</b>
<b>Environmental Water</b> 環保水務	Fuel consumption by operation of facilities; fugitive methane emissions from waste water treatment projects; nitrous oxide emissions from the biological treatment process 設施運營的燃料消耗、污水處理項目的無組織甲烷排放、生物處理過程中的氧化亞氮排放	<b>35,489.99</b>
<b>Greentech</b> 綠色環保	Fuel consumption by operation of facilities; incineration of household waste; combustion of biomass raw materials; fugitive methane emissions from leachate 設施運營的燃料消耗、生活垃圾焚燒、生物質原材料燃燒、滲濾液的無組織甲烷排放	<b>1,077,067.13</b>
<b>Envirotech, Equipment Manufacturing, Headquarters, Representative Office, Offices and Management Centres</b> 研究院、裝備製造、總部、代表處、辦事處及管理中心	Fuel consumption by operation of facilities 設施運營的燃料消耗	<b>7,620.06</b>

Total Scope 2 (Energy Indirect Emissions):  
範疇二 (能源引致的間接排放) 排放總量：

**547,406.34** tonnes CO<sub>2</sub>e  
噸二氧化碳當量

**2**

Operation Unit 運營單位	Emission Sources 排放來源	2022 (tonnes CO <sub>2</sub> e) (噸二氧化碳當量)
Environmental Energy 環保能源	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	32,188.54
Environmental Water 環保水務	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	425,932.99
Greentech 綠色環保	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	71,668.19
Envirotech, Equipment Manufacturing, Headquarters, Representative Office, Offices and Management Centres 研究院、裝備製造、總部、 代表處、辦事處及管理中心	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	17,616.62

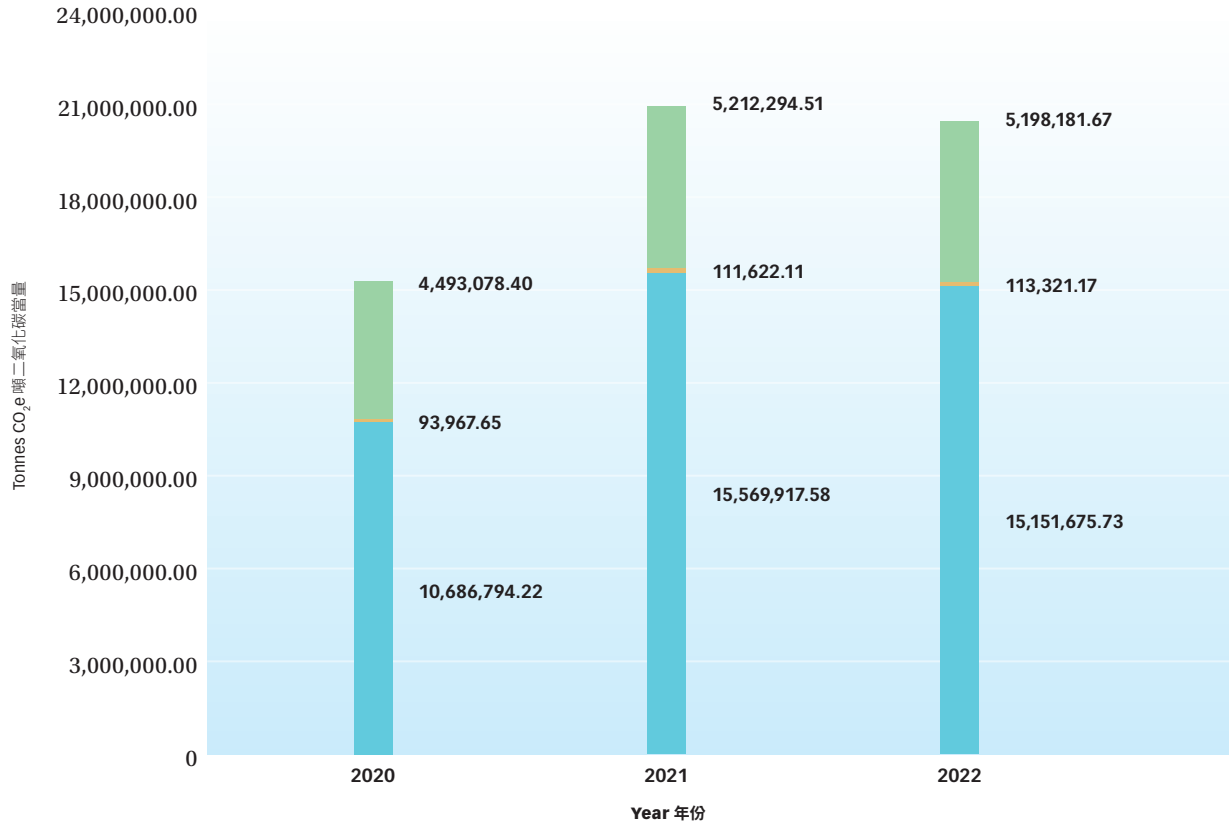
Total Scope 3 (Other Indirect Emissions):  
範疇三 (其他間接排放) 排放總量：

**171,048.09** tonnes CO<sub>2</sub>e  
噸二氧化碳當量

3

Operation Unit 運營單位	Emission Sources 排放來源	2022 (tonnes CO <sub>2</sub> e) (噸二氧化碳當量)
<b>Environmental Energy</b> 環保能源	Fuel consumption for the delivery of waste to project companies by third parties; fuel consumption for the delivery of stabilised and solidified fly ash to designated landfills by project companies; air travel by employees 第三方運送垃圾至項目公司的燃油消耗、項目公司運送穩定化及固化後的飛灰至指定填埋場的燃油消耗、員工飛機差旅	<b>112,089.98</b>
<b>Environmental Water</b> 環保水務	Fuel consumption for the transportation of sludge by third parties; nitrous oxide released from effluent; air travel by employees 第三方運送污泥的燃油消耗、從出水中釋放的氧化亞氮、員工飛機差旅	<b>26,728.35</b>
<b>Greentech</b> 綠色環保	Fuel consumption for the delivery of biomass raw materials and waste to project companies by third parties; fuel consumption for the delivery of stabilised and solidified fly ash to designated landfills by project companies; air travel by employees 第三方運送生物質原材料及垃圾至項目公司的燃油消耗、項目公司運送穩定化及固化後的飛灰至指定填埋場的燃油消耗、員工飛機差旅	<b>31,886.82</b>
<b>Envirotech, Equipment Manufacturing, Headquarters, Representative Office, Offices and Management Centres</b> 研究院、裝備製造、總部、代表處、辦事處及管理中心	Air travel by employees 員工飛機差旅	<b>342.93</b>

GHG Emissions Offset by Sector  
按板塊劃分的溫室氣體抵銷量



- Environmental Energy (Waste-to-energy)  
環保能源 (垃圾發電)
- Environmental Water (Sludge Methane-to-energy, Reducing N<sub>2</sub>O Released from Effluent through Waste Water Treatment)  
環保水務 (污泥沼氣發電、減少從出水中釋放的氧化亞氮)
- Greentech (Integrated Biomass Utilisation, Solar Energy and Wind Power, Reducing N<sub>2</sub>O Released from Effluent through Waste Water Treatment)  
綠色環保 (生物質綜合利用、光伏發電及風電、減少從出水中釋放的氧化亞氮)

## Air and GHG Emissions Management

Facing the new challenges brought by air pollution to the society, Everbright Environment will bear more social responsibilities, improve local environmental quality and sustainable development, and strive to reduce the impacts of air emissions on the environment.

Through implementing stringent operational procedures with frequent inspection and extensive supervision, the Group strictly controls stack emissions such as particulate matter (PM), sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) in all combustion operations. The Group also pays attention to the effective control of fugitive air emissions at our projects to prevent air pollution. In particular, all odour-generating areas are maintained under negative pressure to ensure that odourous gases are properly collected and treated.

## 大氣及溫室氣體排放管理

光大環境將繼續履行更多社會責任，推動國內環境質量改善和可持續發展，努力減少廢氣排放對環境的負面影響，以應對大氣污染給社會帶來的新挑戰。

本集團採納了嚴謹的操作程序、高頻率的檢查和嚴謹的監督，嚴格控制所有在燃燒過程中所排放的顆粒物(PM)、二氧化硫(SO<sub>2</sub>)及氮氧化物(NO<sub>x</sub>)等大氣排放物。本集團亦關注項目無組織排放的有效控制，對於各臭氣產生區域均保持負壓狀態，以確保適當收集和處理臭味氣體，避免造成空氣污染。

### Waste-to-energy Projects 垃圾發電項目

The Group's waste-to-energy projects are designed and operated fully in compliance with the *Standard for Pollution Control on the Municipal Solid Waste Incineration* (GB 18485-2014), local standards, as well as other requirements as set forth in the environmental impact assessment reports approved by the local government<sup>(1)</sup>, while the daily average values of online continuously monitored parameters are well below the respective emissions limits as stipulated under the *Industrial Emissions Directive* (2010/75/EU) and its relevant annexes and amendments ("Euro 2010 emission standards").

本集團的垃圾發電項目的設計和運營完全符合所有適用的國家環境規例和標準，當中包括《生活垃圾焚燒污染控制標準》(GB 18485-2014)、相關地方標準及獲當地政府審批的環境影響評價報告中的其他要求<sup>(1)</sup>。煙氣在線監測指標日均值更全面優於歐盟《工業排放指令》(2010/75/EU)及其相關附表／修訂中的相關排放限值（「歐盟2010排放標準」）。

### Integrated Biomass Utilisation Projects 生物質綜合利用項目

Apart from household waste incineration operations as explained above, all of the Group's biomass combustion operations meet the *Emission Standard of Air Pollutants for Thermal Power Plants* (GB 13223-2011), local standards, as well as other requirements as set forth in the environmental impact assessment reports approved by the local government<sup>(2)</sup>.

除上述生活垃圾焚燒運營概況外，本集團生物質燃燒的運營則達《火電廠大氣污染物排放標準》(GB 13223-2011)、相關地方標準及獲當地政府審批的環境影響評價報告中的其他要求<sup>(2)</sup>。

#### Notes:

- <sup>(1)</sup> Air pollutants regulated by relevant national laws and regulations mainly include dioxins, PM, SO<sub>2</sub>, NO<sub>x</sub>, hydrogen chloride, carbon monoxide, mercury and other heavy metals (and their chemical compounds), odour pollutants.
- <sup>(2)</sup> Major air pollutants regulated by relevant national laws and regulations include PM, SO<sub>2</sub>, NO<sub>x</sub>.

#### 附註：

- <sup>(1)</sup> 受相關國家法律及規例規管的大氣污染物主要包括二噁英、顆粒物、二氧化硫、氮氧化物、氯化氫、一氧化碳、汞和其他重金屬（及其化合物）、惡臭污染物。
- <sup>(2)</sup> 受相關國家法律及規例規管的大氣污染物主要包括顆粒物、二氧化硫、氮氧化物。



In addition, other air pollutants such as dioxins and various heavy metals are tested by Everbright Environment with frequencies much higher than the national requirements. For instance, the testing of dioxins for all the Group's waste-to-energy projects in China is conducted at least four times a year, which is significantly higher than the national requirement of once per year. Dioxin concentrations of all samples are substantially lower than the emissions limits of the *Standard for Pollution Control on the Municipal Solid Waste Incineration* (GB 18485-2014). The respective environmental emissions and discharge concentration targets and the attainment statuses of the Group's operating waste-to-energy projects can be found at the "Environmental Management" section of Everbright Environment's website at [www.cebenvironment.com](http://www.cebenvironment.com). During the Reporting Period, environmental emissions and discharge targets of all projects were met.

Besides, following the application of the self-developed technologies to the Group's integrated biomass utilisation projects, e.g. low-nitrogen combustion, flue gas recirculation, enhanced selective non-catalytic reduction (SNCR) and ozone oxidation, the combustion of biomass has successfully achieved ultra-low emissions (with NO<sub>x</sub> emissions concentration below 50mg/m<sup>3</sup>), which can guarantee the compliant emissions of flue gas from the projects.

The Group strives to ensure that people everywhere can conveniently access its projects' environmental performance information. Since August 2015, the Group continued timely disclosing emissions data and environmental management information of its projects on Everbright Environment's website, including the groundbreaking initiative of online disclosure of hourly average emissions rates of all the Group's operating waste-to-energy projects. In accordance with the environmental management requirements of the Ministry of Ecology and Environment of the People's Republic of China, since 2 January, 2020, the daily average values of the five indicators of flue gas and furnace temperature data from the operation of waste-to-energy projects have been connected to the automatic monitoring data information disclosure platform of the Ministry of Ecology and Environment of the People's Republic of China: <https://ljgk.envsc.cn/index.html>. The Group is also devoted to improving the information sharing platform which connects with the Group's Hong Kong headquarters and Shenzhen management office for real-time capture of projects' operational information to ensure compliant operation, and to timely report the performance of the Group's projects to the stakeholders.

此外，光大環境對煙氣二噁英和重金屬等其他污染物均以高於國家要求頻密程度作檢測，而當中本集團位於中國的所有垃圾發電項目的煙氣二噁英的檢測頻率更達每年至少四次，遠高於國家每年一次的檢測要求，所有煙氣二噁英檢測樣本濃度均低於《生活垃圾焚燒污染控制標準》(GB 18485-2014)中所列的限值。各運營垃圾發電項目的環境排放濃度目標及達標表現可於光大環境網站「環境管理」部份([www.cebenvironment.com](http://www.cebenvironment.com))查看。於報告期內，所有項目的環境排放均能達標。

此外，由本集團自主研發的低氮燃燒、煙氣再循環、選擇性非催化還原脫硝技術(SNCR)優化、活性分子氧化等技術於生物質綜合利用項目中，得到全面推廣應用，生物質的燃燒實現超淨排放(NO<sub>x</sub>排放濃度低於50mg/m<sup>3</sup>)，保證項目煙氣的達標排放。

本集團致力確保所有人都能隨時隨地掌握其項目的環境表現信息。自二零一五年八月起，本集團採取主動對項目的排放數據和環境管理信息實施適時披露的舉措，包括於光大環境網站每小時更新所有運營垃圾發電項目的煙氣在線監測均值，為開創性的舉措。自二零二零年一月二日起，本集團按照國家生態環境部環境管理要求，所有運營垃圾發電項目煙氣五項指標日均值和爐膛溫度數據已連接國家生態環境部自動監測信息公開平台：<https://ljgk.envsc.cn/index.html>。本集團還積極完善信息共享平台建設，旨在讓香港總部及深圳管理中心實時掌握所有項目運營狀況，確保所有項目達標運營，及能迅速地向本集團持份者報告項目的運營表現。

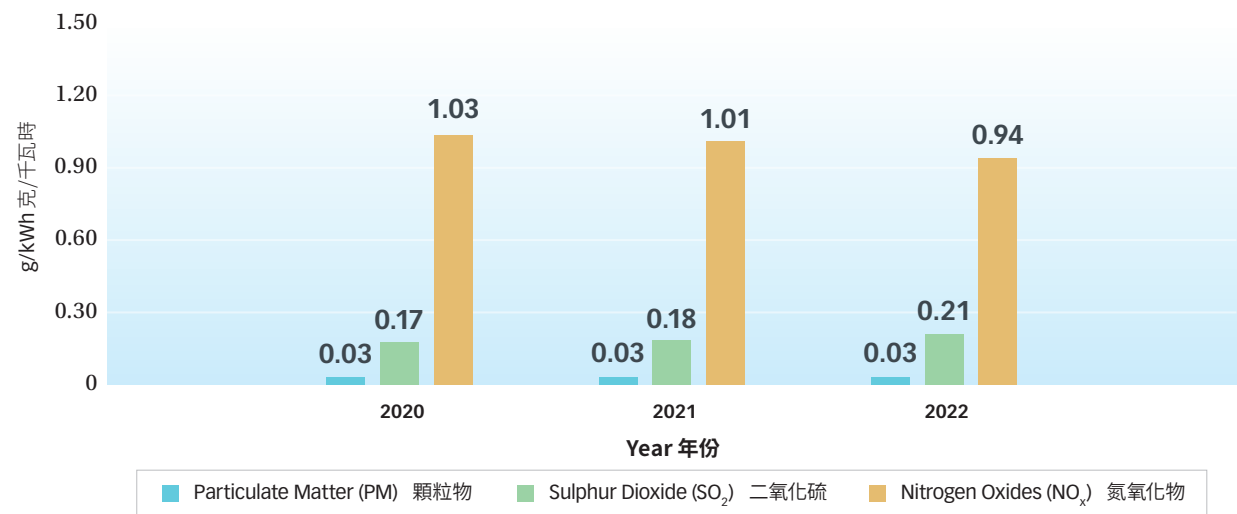
### Key Air Emissions in 2022

二零二二年主要煙氣



### Air Emissions per kWh of Green Electricity Generated

每千瓦時產生綠色電量的煙氣排放量



### The Group's Climate-related Targets

GHG emissions (scope 1) from the incineration of household waste are calculated based on the fraction of fossil carbon in total carbon content of the household waste. It is not feasible for the Group to set an overall reduction target for Scope 1 GHG emissions as the amount of such emissions may substantially fluctuate from time to time due to the varying composition of the household waste received, which is beyond Everbright Environment's control.

To drive long-term decarbonisation to align with the *Paris Agreement*, we are actively considering setting relevant emissions reduction targets for different sectors. Specific targets are currently under development and details will be disclosed in due course.

### 本集團的氣候相關目標

生活垃圾焚燒引致的溫室氣體排放(範疇一)以生活垃圾中化石碳佔總碳的比例為計算基礎。生活垃圾成分的差異，對溫室氣體排放不時造成大幅波動，這不屬於光大環境的控制範圍之內。故此，本集團不可能針對範疇一溫室氣體排放定下總體減排目標。

為了推動長期脫碳以符合《巴黎協定》，我們正在積極考慮為不同板塊設定相關的減排目標。我們目前正在製定具體目標中，有關細節將在適當時候披露。

## Energy and Materials Usage

The Group has adopted various measures to reduce energy and material consumption across the Group. The waste-to-energy and methane-to-energy projects in the environmental energy sector; and the integrated biomass utilisation projects, solar energy and wind power projects in the greentech sector all make use of the projects' own electricity to minimise the consumption of electricity from non-renewable energy sources. On the other hand, due to the characteristics of the projects waste treatment projects of environmental energy and greentech sectors pay special attention to the performance and efficiency of the boilers. Through regular maintenance and the use of advanced environmental protection and energy-saving technologies, the effective use of energy can be ensured, while at the same time reducing the use of boiler fuel and the consumption of energy and materials. In addition, the project companies of the Group also formulate various energy-saving measures according to their own circumstances, such as implementing electronic processes to reduce the number of official documents and the scale of meetings, formulating concrete energy-saving targets and measures, setting up dedicated energy-saving and consumption-reducing leading group to supervise energy saving practices, etc.



## 能源及物料使用

本集團採取了多方面的措施，以減低集團上下的能源及物料消耗。環保能源板塊的垃圾發電及沼氣發電項目；以及綠色環保板塊的生物質綜合利用、光伏發電及風電項目等皆會使用項目自產電力，以盡量減少外購源自非再生能源的電力。另一方面，因應項目特質，環保能源及綠色環保的各類垃圾處理項目格外重視鍋爐的性能及效率。透過定期維護保養及採用先進的環保節能技術，可確保能源的有效利用，同時節約鍋爐燃料，減少能源及物料的消耗。除此之外，集團的各項公司亦會按照各自情況自行制定各種節約措施，如落實電子流程以減少公文數量及會議規模、制定明確的節能目標及措施、以至設立專門的節能降耗工作領導小組以監督節能工作等。



To ensure a proper energy and inventory management, the Group records in detail the monthly energy and main materials consumption of each project company, with the regional management centre coordinating the integration work. Through the collected data, the Group could clearly understand the resource utilisation situation in the business development process, thus allocate and adjust the energy and material usage accordingly. Data recording is also conducive to the Group's long-term resource management strategy and to reduce resource wastage.

每月本集團都會對各項目公司的能源和主要材料消耗量進行詳細記錄，而且由區域管理中心協助整合工作，這樣確保了妥善的能源和庫存管理。憑藉收集到的數據，本集團可以清晰地了解資源在公司發展過程中的使用情況，然後可以相應地分配和調整能源和材料的分配。此外，數據記錄有助於集團制定防止資源浪費的長期資源管理計劃。

## Ideas on Energy Conservation

During the Reporting Period, project companies under the Group all implemented the *Annual Energy Saving and Consumption Reduction Plan and Management Measures* to actively carry out energy-saving and consumption reduction activities as well as implementing effective energy-saving measures. A number of projects even established their own energy-saving targets and evaluation systems. The key measures and targets are detailed below.

## 節能巧思

報告期內，本集團旗下的項目公司均各自實施了《年度節能降耗計劃及管理措施》，積極展開節能降耗活動及推進有效的節能措施，更有多個項目自行建立了節能目標及評價考核制度。重點措施及目標詳列如下。

### Energy-saving Measures

- Phase out outdated and inefficient electrical appliances, and install industrial frequency converters for high-power motors in the production system to reduce electricity consumption
- Retrofit the cooling fans of the boilers' auxiliary burners to reduce their power consumption rates
- Strengthen the inspection and cleaning of the dust accumulation in the flue pipes to prevent them from being blocked, thereby reducing the energy consumption of the fans
- Incorporate equipment energy consumption management into the procurement process, and use equipment and spare parts with low energy consumption as much as possible
- Strengthen the management of sewage and overflow water in the plant areas so as to reduce the use of rainwater pump and thus the corresponding power consumption

### Energy-saving Targets

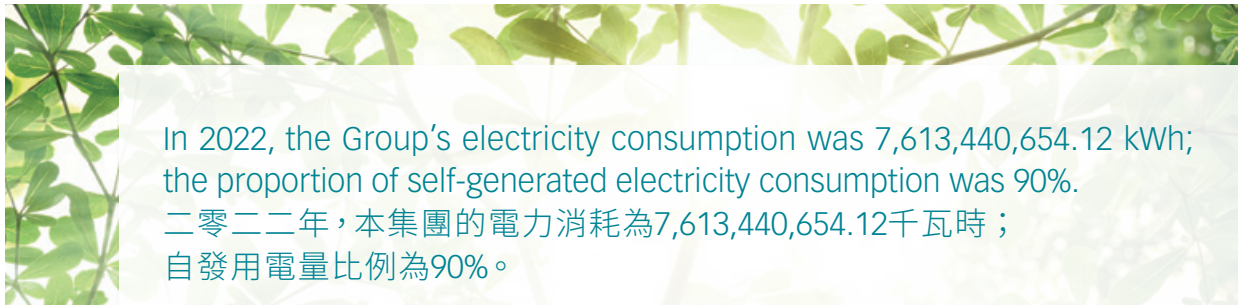
- The leachate transformers and waste circulation water transformers in the plants shall attain Grade II efficiency as specified in *Minimum Allowable Values of Energy Efficiency and the Energy Efficiency Grades for Power Transformers* (GB 20052-2020)
- The main transformer in the plants shall attain Grade II efficiency as specified in *Minimum Allowable Values of Energy Efficiency and the Energy Efficiency Grades for Power Transformers* (GB 20052-2020)
- Strive to reduce power consumption continuously and to increase the proportion of self-generated electricity consumption within the projects
- Retrofit the lighting system in the plant area so that the switching time is adjusted according to the hours of sunlight
- Replace the streetlights in the project plant area with Everbright New Sodium Lamps

### 節能措施

- 淘汰落後低效的電器設備，並為生產系統的大功率電機加裝工業變頻調速器，降低用電消耗
- 對鍋爐輔助燃燒器的冷卻風機進行改造，以降低廠用電率
- 加強檢查及清理煙道的積灰，防止煙道堵塞，從而減少風機的運行耗能
- 將設備耗能管理納入採購流程，盡量採用低能耗的設備和備件
- 加強廠區排污及溢流水管理，減少雨水泵啟動次數，降低雨水泵電耗

### 節能目標

- 廠內的滲濾液變壓器、垃圾循環水變壓器需達到《電力變壓器能效限定值及能效等級》(GB 20052-2020)中2級能效要求
- 廠內的主變壓器需達到《電力變壓器能效限定值及能效等級》(GB 20052-2020)規定的2級能效
- 致力不斷降低電力消耗及提高項目自發電比例
- 技術改造廠區照明系統，根據日照時間變化調整開關時間
- 逐步將項目廠區的路燈更換為光大新鈉燈



In addition, the Group's product Everbright New Sodium Lamp focuses on building a full industry chain that includes the R&D and manufacturing of energy-saving street lamps, urban outdoor lighting projects and other types of energy-saving lighting products. Replacing the existing high-pressure sodium lamps with Everbright New Sodium Lamps improves the quality of street lighting and reduces the energy consumption.

此外，本集團旗下產品光大新鈉燈，著力打造節能路燈、城市戶外亮化工程和其他節能照明產品研發和製造的全產業鏈。以光大新鈉燈替代現有高壓鈉燈，將能提高路燈照明質量，降低能耗。

Furthermore, the Group's Jiangsu Changzhou Waste-to-energy Project, Hainan Sanya Waste-to-energy Project and Hunan Yiyang Waste-to-energy Project were shortlisted in the first batch of green Public-Private-Partnership ("PPP") project case studies by the National Development and Reform Commission of the PRC. These PPP projects aim to play a leading role for other waste-to-energy projects, and at the same time advocate advanced green technologies and concepts to both the industry and society, and enhance the effect of ecological construction and environmental protection. The three projects generate electricity through the combustion of waste, providing green electricity in a total of about 580 million kWh per year.

此外，本集團的多個垃圾發電項目入選中國國家發展改革委首批綠色政府和社會資本合作(PPP)項目典型案例，旨在能夠在其他環保能源項目發揮帶動作用，同時希望向產業及社會推廣綠色先進技術和理念，提升生態建設和環境保護效果。入選項目包括：江蘇常州垃圾發電項目、海南三亞垃圾發電項目，以及湖南益陽垃圾發電項目。這三個項目透過焚燒垃圾發電，每年共提供綠色電力約5.8億千瓦時。



Energy Consumption Statistics in 2022  
二零二二年能源消耗統計

Unit: GJ  
單位：吉焦

Operation Unit 運營單位	Diesel 柴油	Petrol 汽油	Natural Gas 天然氣	Liquefied Petroleum Gas 液化石油氣	Non-renewable Electricity 非再生能源電力	Renewable Electricity 可再生電力消耗
Environmental Energy 環保能源	1,854,331.10	42,535.50	201,405.84	6.22	74,030.39	10,215,241.84
Environmental Water 環保水務	1,329.71	7,375.74	–	0.01	2,541,317.51	18,095.62
Greentech 綠色環保	487,936.54	11,899.29	328,622.83	2.63	443.97	14,506,858.05
Envirotech, Equipment Manufacturing, Headquarters, Representative Offices, Offices and Management Centres 研究院、裝備製造、總部、代表處、 辦事處及管理中心	26,548.74	3,131.47	1,100.98	0.05	47,500.08	4,898.88
<b>Total 總計</b>	<b>2,370,146.08</b>	<b>64,942.01</b>	<b>531,129.65</b>	<b>8.91</b>	<b>2,663,291.95</b>	<b>24,745,094.41</b>

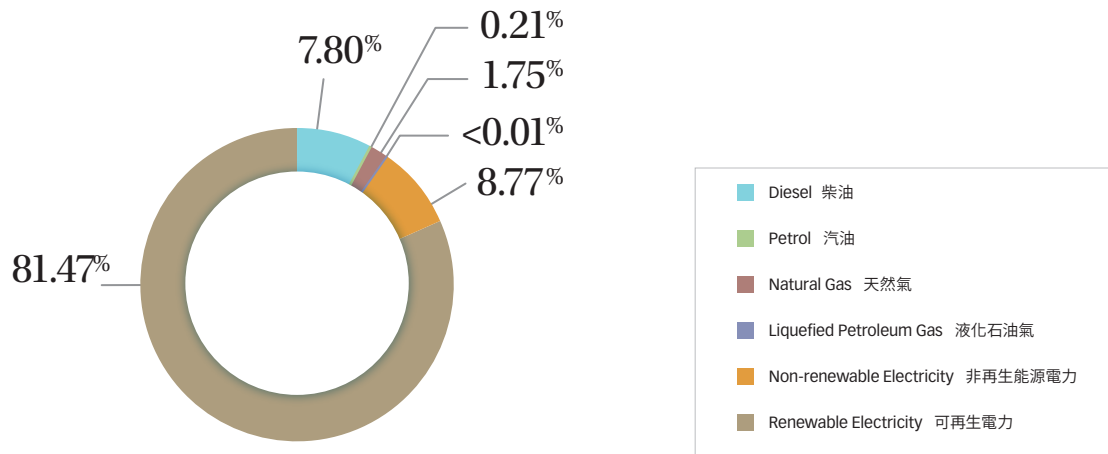
Note:

<sup>(1)</sup> Relevant energy conversion factors from *China Energy Statistical Yearbook 2021* are adopted.

附註：

<sup>(1)</sup> 能源單位根據《中國能源統計年鑒2021》的參考系數作換算。

Energy Consumption Statistics of Projects under Construction and in Operation in 2022  
二零二二年各在建及運營項目的能源消耗統計



Total Energy Consumed  
能源消耗總量

**30,374,613.01** GJ  
吉焦

Key Production Materials Consumption in 2022  
二零二二年主要生產物料使用統計

Unit: Tonne 單位：噸





Environmental Water  
環保水務

<p>pH adjustment 酸鹼調整</p> <p><b>29,982.36</b></p>	<p>Coagulant &amp; flocculant 凝結劑及絮凝劑</p> <p><b>178,471.97</b></p>	<p>Disinfectant 消毒劑</p> <p><b>26,828.28</b></p>	<p>Chemical oxidiser 化學氧化劑</p> <p><b>24,622.87</b></p>
<p>Carbon source 碳源</p> <p><b>191,361.41</b></p>	<p>Biological treatment 生物處理</p> <p><b>190.56</b></p>	<p>Other 其他</p> <p><b>274.34</b></p>	

Greentech  
綠色環保

Unit: Tonne 單位：噸

<p>Lime 石灰</p> <p><b>120,909.70</b></p>	<p>Activated carbon 活性碳</p> <p><b>16,860.82</b></p>	<p>Ammonia water 氨水</p> <p><b>68,990.66</b></p>	<p>Chelating agent 螯合劑</p> <p><b>2,911.81</b></p>
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## Office Materials and Packaging Materials Consumption in 2022 二零二二年辦公室物料及包裝材料使用統計

Unit: Tonne 單位：噸

Operation Unit 運營單位	Office Materials Consumption (Paper Products, Metal and Plastics) 辦公室物料使用 (紙製品、金屬及塑料)	Packaging Materials (Paper Products, Plastics, Foams and Boards) 包裝材料 (包括紙製品、塑料、泡沫及木板)
Environmental Energy 環保能源	348.10	
Environmental Water 環保水務	93.91	—
Greentech 綠色環保	38.92	
Envirotech, Equipment Manufacturing, Headquarters, Representative Offices, Offices and Management Centres 研究院、裝備製造、總部、代表處、辦事處及管理中心	30.57	44.92
<b>Total 總計</b>	<b>511.50</b>	<b>44.92</b>

### Water Use and Management

Water scarcity is an increasingly severe crisis. However, our daily operation such as drinking water, cleaning, washrooms, etc.; and various production process, such as unit cooling for waste-to-energy projects and integrated biomass utilisation projects, as well as preparing chemical solvents for various projects including waste water treatment projects, etc., require the use of a large amount of water resources. Therefore, as a responsible enterprise, Everbright Environment pays close attention to the relevant national water conservation policies, while at the same time strives to reduce the water consumption among projects and ensure the proper treatment of waste water. When conducting environmental impact assessment, we also take into consideration of water resource related impacts so as not to deprive the rights to use water resources of other stakeholders.



### 水資源使用及管理

水資源短缺乃日益嚴峻的危機。然而，我們的日常營運，例如飲用水、清潔、洗手間等；以及多個生產過程，例如垃圾發電項目及生物質綜合利用項目的機組冷卻、以及包括污水處理項目在內的各項目製備化學溶劑等皆需要運用到大量的水資源。因此，作為負責任的企業，光大環境密切關注國家相關的用水節水政策，同時致力減少項目耗水並確保污水妥善處理。在進行各項目的環境影響評估時，我們亦會考慮水資源的相關影響，確保項目不會剝奪其他持份者使用水資源的權利。



During the Reporting Period, we referenced the Aqueduct 3.0 published by the World Resources Institute (“WRI”) in 2019 to assess water stress of the Group’s projects, and to formulate action plan for project companies with high water stress. WRI assesses the water stress of an area with the ratio of total water withdrawals to available and renewable surface and groundwater supplies, higher water stress indicates more competition among users.

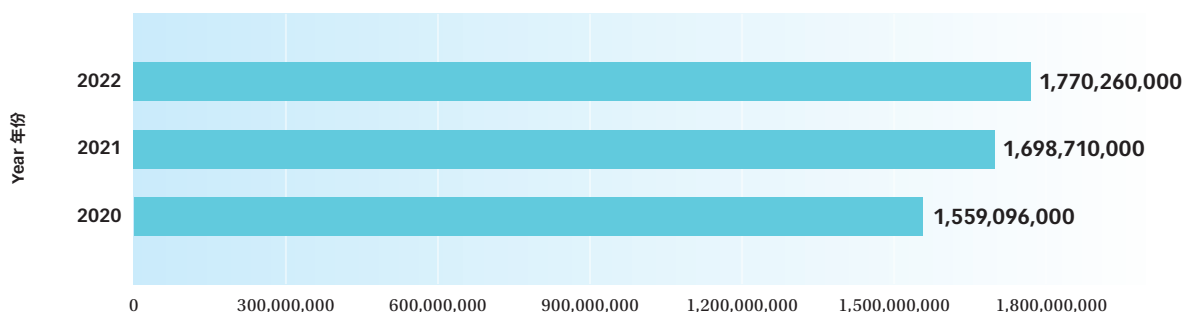
報告期內，我們參照世界資源研究所在二零一九年發佈的Aqueduct 3.0，評估本集團各項目的水資源壓力，並為存在高水資源壓力的項目公司制定應對計劃。世界資源研究所跟據地區的總取水量與可用及可再生地表及地下水供應量的比率判斷該地區的水資源壓力，水資源壓力愈高，代表用戶之間的競爭愈大。

Through the network of environmental water’s project companies across the country and a series of water environment management services including municipal and industrial waste water treatment and reusable water, the Group continues improving the environmental and hygiene conditions of water bodies in China. The projects have greatly minimised the environmental damage caused by waste water discharge, and protect the health and well-being of the public.

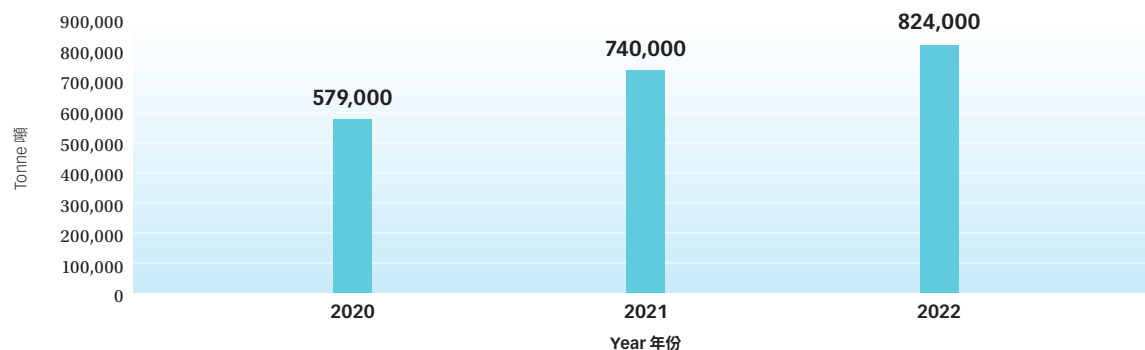
另外，通過環保水務遍佈全國的項目公司分佈網絡，包括市政和工業污水處理、中水回用等一系列的水環境綜合治理服務，本集團持續提升中國水體狀況的環境和衛生標準，大幅地減少污水排放對環境造成的破壞，保障民眾健康福祉。

### Waste Water Treated in the Past Three Years 過往三年的污水處理量

Unit: m<sup>3</sup> 單位：立方米



### COD Discharge Reduced in the Past Three Years 過往三年的COD減排量



## Discharge Standards and Water Quality Testing

The Group's waste-to-energy projects treat leachate and municipal waste water in accordance with *Reuse of Urban Recycling Water – Water Quality Standard for Industrial Uses* (GB/T 19923-2005)<sup>(1)</sup>, *Reuse of Urban Recycling Water – Water Quality Standard for Scenic Environment Use* (GB/T 18921-2019) or other relevant standards. We will also take corresponding considerations into the environmental impact assessment based on the water bodies receiving the effluent from each project.

All of the Group's waste water treatment projects adopt stringent discharge standards. Through continuous upgrading works, effluent discharged from all of the Group's waste water treatment projects complies with the requirements as stipulated in the environmental impact assessment reports approved by the local governments<sup>(1)</sup>, whilst the majority of the projects comply with Grade 1A standard of *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB 18918-2002). To guarantee the highest standard of the water quality of the effluent, all waste water treatment projects of the Group have installed systems that are rapid, reliable and continuous to monitor the water quality of the effluent. Third-party laboratories are also appointed regularly to perform testing on effluent samples, striving to reduce environmental pollution and burden brought to the ecological environment. Also, the Group's new biological deodourisation technologies are capable of adjusting the processing parameters in response to different types of odorous gases, reducing odour released from waste water treatment plants and making the facilities more efficient and environmentally friendly.

Besides being reused internally by project companies and being supplied to third parties as reclaimed and/or reusable water, the Group's waste water is mainly discharged to waste water treatment plants operated by third parties, the sea, and rivers and lakes. Following stringent effluent discharge standards could ensure that no negative impacts would be caused on downstream users of the water bodies (including agricultural, public recreation or potable uses, etc.).

Note:

<sup>(1)</sup> Major effluent parameters regulated by relevant national regulations and standards include COD, biological oxygen demand, suspended solids, animal fats and vegetable oils, total nitrogen, ammoniacal nitrogen, total phosphorus, pH, colour, *Escherichia coli*, mercury and other heavy metals (and their chemical compounds).

## 排放標準及水質檢測

本集團的垃圾發電項目均依照《城市污水再生利用工業用水水質》(GB/T 19923-2005)<sup>(1)</sup>以及《城市污水再生利用景觀環境用水水質》(GB/T 18921-2019)或其他水循環標準處理滲濾液及生活污水。我們亦會根據接收各項目出水的水體，在進行環境影響評估時作相應考量。

本集團的所有水處理項目採用嚴格的出水標準。通過持續的提標改造工程，在符合當地政府批准的環境影響評估報告中所有相關要求<sup>(1)</sup>的基礎上，大部分項目的出水水質更達到《城鎮污水處理廠污染物排放標準》(GB 18918-2002)的一級A標準。為了出水水質的最大程度保證，本集團的所有污水處理項目均安裝了快速、可靠、無間斷記錄出水水質資料的監測系統，並定期聘請第三方廠商化驗監測出水樣本，竭力減少對環境造成的污染及對生態環境帶來的負荷。在解決污水處理廠產生的臭氣問題上，本集團的新型生物除臭系統可以根據不同類型的氣體對處理參數作出調整，減少污水處理廠釋出氣味，使設施更加高效環保。

本集團的污水除了供項目公司內部重用以及供應至第三方作再用水及／或回用水使用外，其餘主要排放至第三方機構運營的污水處理廠、大海、河流及湖泊。遵循嚴格的出水標準可確保水體的下流使用者（包括農業灌溉、公眾休憩或飲用等）皆不會受到負面影響。

附註：

<sup>(1)</sup> 受相關國家規例及標準規管的出水指標主要包括化學需氧量、生物需氧量、懸浮物、動植物油、總氮、氨氮、總磷、酸鹼值、色度、大腸桿菌數量、汞及其他重金屬（及其化合物）。

## Leachate Treatment and Reuse

Through continuous research on the combination of advanced processes by the Group such as ultrafiltration, nanofiltration, softening, high-pressure reverse osmosis, and separating membrane, the Group embarks its research on the fourth-generation leachate treatment technology to simplify operation and maintenance workflow, reduce energy consumption and related costs, site area, as well as achieving fully quantified management. Leachate meeting reusable water standards are recirculated in the Group's waste-to-energy projects, while the reverse osmosis concentrate is used in other processes, such as lime preparation. In 2022, around 77.82% of the treated leachate at the Group was reused.

## Water Conservation

Each project company of the Group has independently formulated their water-saving measures for 2022, established a water-saving management system, and established a dedicated water-saving leading group; measures are also more stringent in areas with high water stress. Through various actions, we strive to make the best use of the precious water resources and improve water use efficiency. The key measures are detailed below:

### Water-saving Measures

- Periodically measure the temperature of the drains of main steam, water supply, ventilation, bypass, discharge and other systems and the drain valves of steam turbine to monitor the tightness of the drains, so as to facilitate timely detection of leakage defects in the drain system and to avoid leakage.
- Maintain the control system for steam temperature and pressure running at designed parameters with automatic settings, so as to reduce the usage of cooling water.
- Reuse condensate from completed water treatment process to the desalinated water tank, thus reducing costs of purchasing desalinated water while avoiding the wastage of discharging condensate of water treatment process.
- Reuse high-temperature steaming water, domestic waste water, in-plant ground-rinsing water, and rainwater to the quench tower of the incineration line.
- After retrofitting, the slag conveyor could utilise self-backwashing water from the integrated units to reduce water consumption.

In 2022, the Group mainly withdrew fresh water from municipal water supplies or other water facilities, followed by rivers, lakes and groundwater.

## 滲濾液處理及回用

本集團研發第四代滲濾液處理技術，不斷研究組合超濾、納濾、軟化、高壓反滲透、物料分離膜等先進工藝，使其運行維護更簡單，運行能耗費用更低，佔地面積更少，有助實現全量化處理。達到循環補充水水質標準的反滲透出水將回用作為垃圾發電項目循環補充水，而濃水則回用於石灰漿製備等其他工藝。二零二二年，本集團經處理的滲濾液回用比例超過約77.82%。

## 節約用水

本集團各項目公司推行了針對二零二二年的節水政策、建立了節水管理體系、甚至創建了獨具特色的節水領導小組。在處理水源壓力高的地區，政策也得到了更嚴格的執行。我們致力於通過各種措施最大限度地利用有限的水資源並提高用水效率。主要行動詳列如下：

### 節水措施

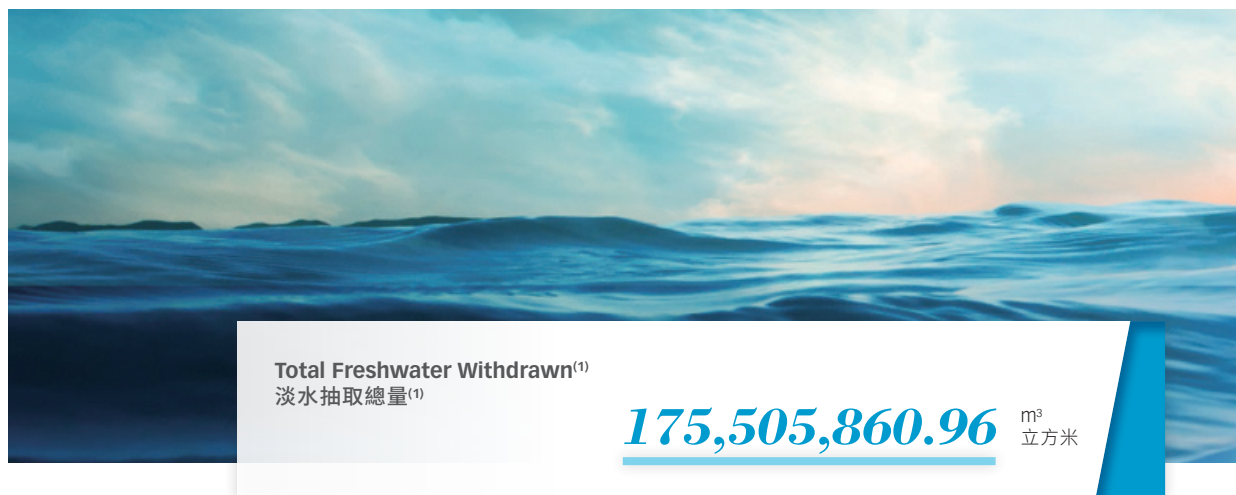
- 對主汽、給水、抽汽、旁通管路、排污等系統的疏水和汽輪機缸體的疏水閥門定期測溫，以監視疏水閥的嚴密性，便於及時發現疏水系統的洩漏缺陷及避免洩漏情況。
- 控制汽溫汽壓的調節保持壓紅線運行，盡可能自動設置在設計值，從而減少冷卻水用量。
- 將完成水處理冷凝水回用至除鹽水箱，節約了外購除鹽水的費用，同時避免水處理冷凝水外排造成浪費的現象。
- 將高溫蒸煮廢水、生活污水、廠區地面沖洗水以及初期雨水回用至焚燒線的急冷塔。
- 經技術改造後撈渣機用水採用一體化自反洗出水以節約用水。

二零二二年，本集團取用的淡水主要源自市政供水或其他水務設施，其次為河流及湖泊和地下水。

Freshwater Withdrawn by Source in 2022  
二零二二年按來源劃分的淡水抽取量

Unit: m<sup>3</sup> 單位：立方米

Operation Unit 運營單位	Rivers and Lakes 河流及湖泊	Groundwater 地下水	Municipal Water Supplies or Other Water Facilities 市政供水或 其他水務設施
Environmental Energy 環保能源	28,484,705.53	688,833.80	18,965,026.95
Environmental Water 環保水務	108,000,887.00	125,633.00	229,729.00
Greentech 綠色環保	11,897,661.60	717,881.47	6,262,295.80
Envirotech, Equipment Manufacturing, Headquarters, Representative Offices, Offices and Management Centres 研究院、裝備製造、總部、代表處、辦事處及管理 中心	–	12,864.10	120,342.72
<b>Total 總計</b>	<b>148,383,254.13</b>	<b>1,545,212.37</b>	<b>25,577,394.47</b>



Note:

- (1) The total freshwater withdrawn recorded a sharp increase compared to 2021 due to the operational commencement of environmental water's raw water protection project in 2022, with the key objective of purifying water resources for use by the public/clients. Total freshwater withdrawn does not reflect the total freshwater consumed by the Group.

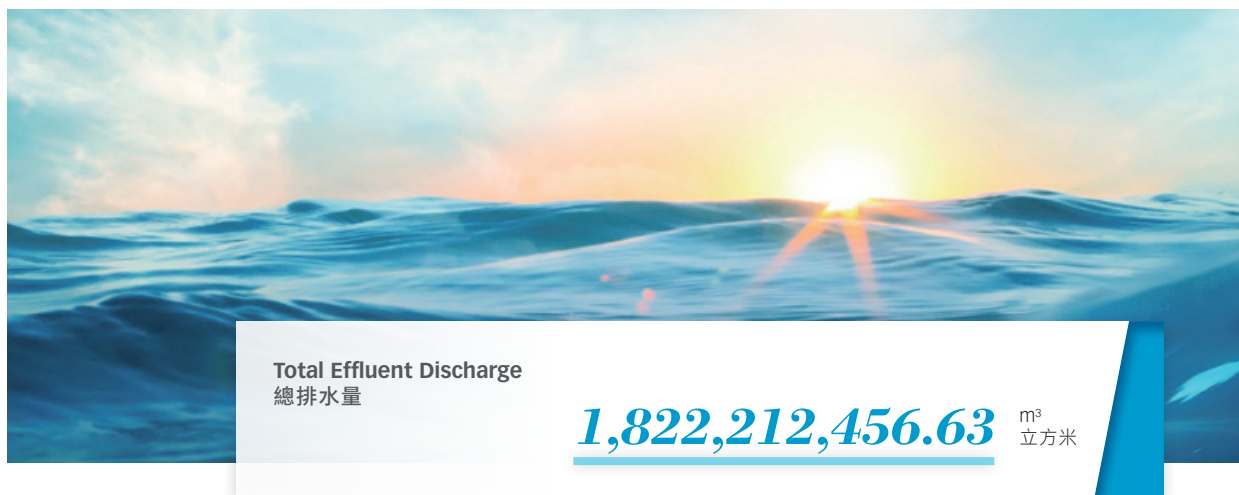
附註：

- (1) 由於環保水務的原水保護項目於2022年開始運作，其主要目標是淨化水資源以供公眾／客戶使用。淡水抽取總量雖較2021年大幅增加，但抽取的淡水總量並不反映本集團消耗的淡水總量。

**Effluent Discharge by Destination in 2022**  
二零二二年按目的地劃分的排水量

Unit: m<sup>3</sup> 單位：立方米

Operation Unit 運營單位	Surface Water 地表水	Groundwater 地下水	Sea 大海	Waste Water Treatment Plants Operated by Third Parties 第三方機構運營 的污水處理廠	Water Supplied to Third Parties for Use as Reusable Water 作回用水供應至 第三方使用
Environmental Energy 環保能源	1,080,998.60	138,286.50	-	4,260,225.74	-
Environmental Water 環保水務	1,442,712,801.60	26,000.00	195,283,183.00	82,959,070.00	114,002,167.0
Greentech 綠色環保	54,300.00	-	-	1,562,217.37	-
Envirotech, Equipment Manufacturing, Headquarters, Representative Offices, Offices and Management Centres 研究院、裝備製造、總部、代表處、 辦事處及管理中心	-	-	-	133,206.82	-
<b>Total</b> 總計	<b>1,423,848,100.20</b>	<b>164,286.50</b>	<b>195,283,183.00</b>	<b>88,914,719.93</b>	<b>114,002,167.0</b>



## Waste Management

The General Office of the State Council of the PRC published the *Plan for Pilot Development of "Zero-waste Cities"* in 2019, proposing the concept of "Zero-waste Cities". For an environmental protection enterprise, waste reduction is always a vital part. The Group strives to achieve environmentally sound management of all wastes throughout their life cycles, and significantly reduce their release to air, water and soil through comprehensive recycling and resource utilisation schemes. We monitor various waste data through the in-plant weighbridge that is regularly calibrated, and properly record it in the monthly production or environmental reports. At the same time, we only hire qualified downstream contractors or recyclers, and regularly check their trip tickets to ensure that waste is legally and properly handled.

In 2022, Everbright Environment's eco-recycling and environmental planning sectors were merged into the Environmental Energy sector, with businesses consisting of waste sorting and zero-waste cities, integrated urban-rural environmental sanitation services and recyclable resources utilisation, to realise a full-chain business system that ranges from waste collection at source to final treatment and disposal. Everbright Environment is pioneering its unique business model that covers waste reduction at source, waste sorting, recycling and ultimate treatment in a harmless manner. These initiatives support reduction of solid waste at source, resource utilisation, and assist the development of zero-waste cities.

## 廢棄物管理

國務院辦公廳於二零一九年年初印發《「無廢城市」建設試點工作方案》，提出「無廢城市」概念，而惜物減廢一直是本集團作為環保企業的重要一環。本集團務求達至對所有廢物全生命週期的綠色管理，並透過全面的回收及資源化利用計劃，減少向空氣、水和土壤的排放。我們透過廠內定期校正的磅橋監察各類廢棄物的數據，並妥善紀錄在月度生產或環保報告內。同時，我們只會僱用合資格的下流承辦商或回收商，並定期檢查他們的運載紀錄，以確保廢棄物獲合法、妥善處理。

於二零二二年，光大環境之生態資源及環境規劃板塊被拼進環保能源板塊，包括了垃圾分類及無廢城市、城鄉綜合環衛服務、再生資源回收利用業務，實現了從源頭收集至末端處置的固廢全產業鏈業務體系。光大環境正在創建源頭減量、垃圾分類、循環利用、末端無害化處置的獨有模式，以此推進固體廢物源頭減量、資源化回收利用，協助無廢城市的建設。








## Resource Utilisation and Recycling

The Group is committed to reducing waste generation and encouraging resource utilisation and recycling. In terms of waste generated from the projects, the Group is committed to recycling the by-products arising from the Group's operations in various fields and contributing to green construction as well as urban greening. Bottom ash generated from our waste-to-energy projects is recycled to make bricks to support green construction; furnace ash produced from biomass combustion can be used as fertilisers, while sludge generated from municipal waste water treatment can be used for producing compost, supporting horticultural greening.

## 資源利用及回收

本集團致力減少廢物產生及促進資源利用和回收。在項目生產廢物方面，本集團致力於循環使用各行業活動產生的副產品，對綠色建築和城市綠化做出積極貢獻。為了支持綠色建設，我們垃圾發電計劃將爐渣回收用於製磚；為了支持園景綠化，肥料可以由生物質燃燒產生的灰燼製成，而堆肥可以由生活污水處理產生的污泥製成。

<p><b>Bottom ash generated from waste-to-energy projects can be used for making bricks</b></p> <p>垃圾發電項目產生的爐渣可用於製磚</p> 	<p><b>Furnace ash produced from biomass combustion can be used for producing fertilisers</b></p> <p>生物質燃燒產生的爐灰可用於製作肥料</p> 	<p><b>Sludge generated from municipal waste water treatment can be used for producing compost (for horticultural use)</b></p> <p>生活污水處理產生的污泥可用於製作堆肥 (作園藝用途)</p> 
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Fly Ash<sup>(1)</sup> and Furnace Ash Generated and Processed in 2022  
二零二二年飛灰<sup>(1)</sup>及爐灰產生量及處置方式

Unit: Tonne 單位：噸

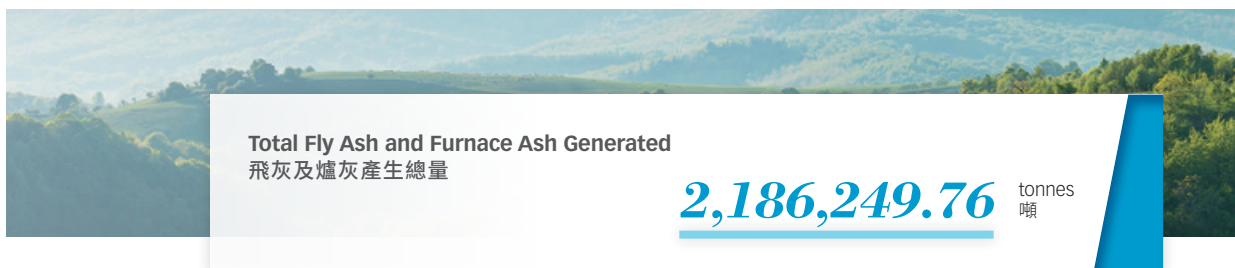
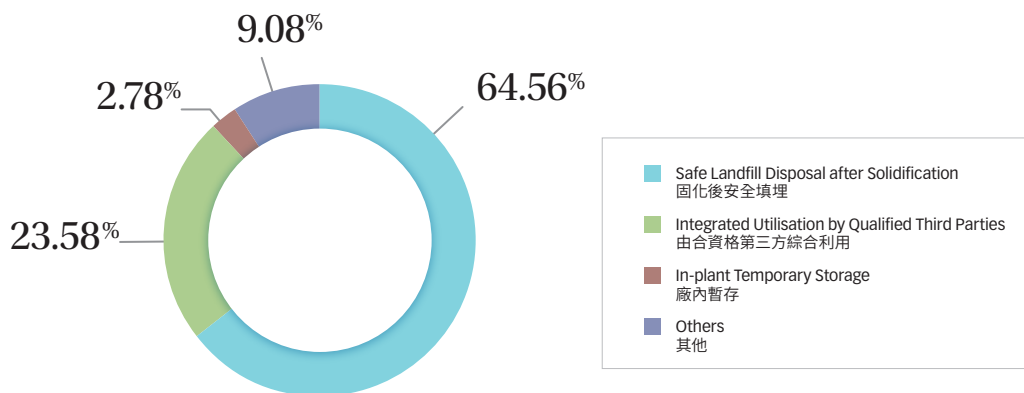
Operation Unit 運營單位		Safe Landfill Disposal after Solidification 固化後安全填埋	Integrated Utilisation 綜合利用	In-plant Temporary Storage 廠內暫存	Others 其他
<b>Fly Ash</b> 飛灰					
Environmental Energy 環保能源	Waste-to-energy Projects 垃圾發電項目	1,267,302.81	103,751.89	45,086.71	32,302.49
Greentech 綠色環保	Integrated Biomass Utilisation Projects (Waste-to-energy) 生物質綜合利用項目 (垃圾發電)	92,005.47	8,178.07	6,370.25	3,608.43
	Hazardous Waste Incineration Projects 危廢焚燒項目	52,086.60	142.08	277.78	3,267.63
<b>Furnace Ash</b> 爐灰					
Greentech 綠色環保	Integrated Biomass Utilisation 生物質綜合利用項目	–	403,446.12	9,000.00	159,423.43
<b>Total</b> 總計		<b>1,411,394.88</b>	<b>515,518.16</b>	<b>60,734.74</b>	<b>198,601.98</b>

Note:

<sup>(1)</sup> Refers to the amount of fly ash after solidification.

附註：

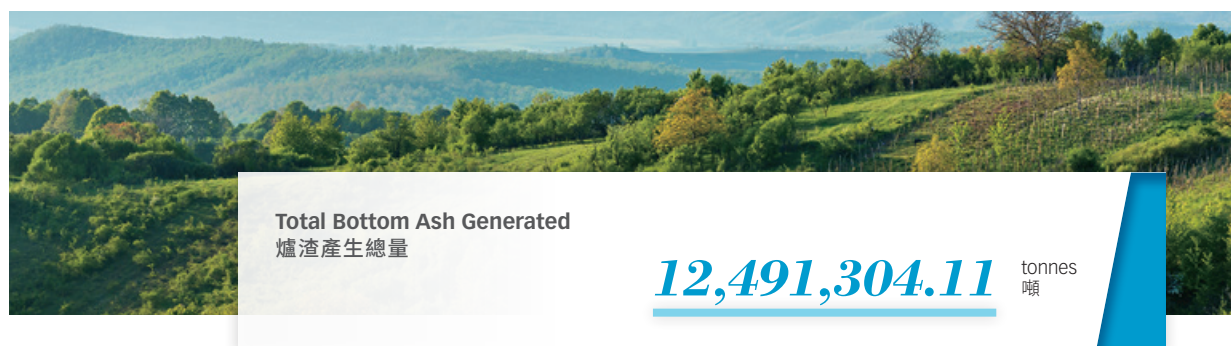
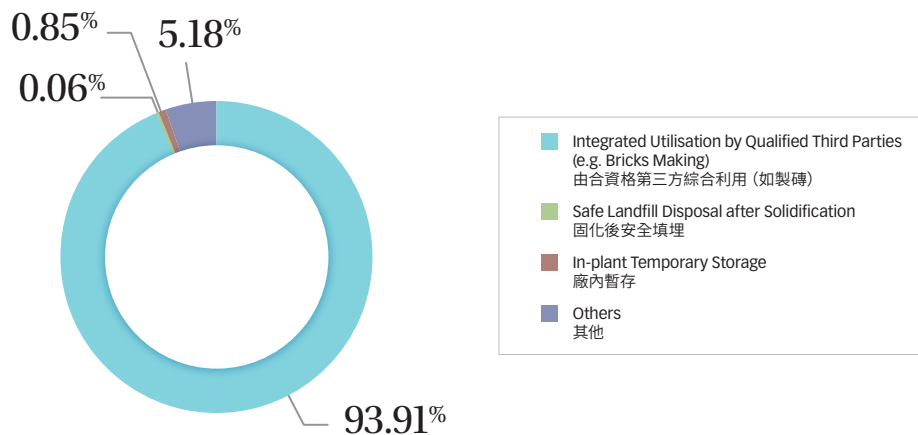
<sup>(1)</sup> 指固化後的飛灰量。



**Bottom Ash Generated and Processed in 2022**  
二零二二年爐渣產生量及處置方式

Unit: Tonne 單位：噸

Operation Unit 運營單位		Integrated Utilisation by Qualified Third Parties (e.g. Bricks Making) 由合資格第三方綜合利用(如製磚)	Safe Landfill Disposal after Solidification 固化後安全填埋其他	In-plant Temporary Storage 廠內暫存	Others 其他
Environmental Energy 環保能源	Waste-to-energy Projects 垃圾發電項目	9,623,622.51	-	43,387.14	221,236.74
Greentech 綠色環保	Integrated Biomass Utilisation Projects 生物質綜合利用項目	2,093,890.57	6,446.23	3,300.00	425,460.33
	Hazardous incineration Projects 危廢焚燒項目	12,461.09	1,671.92	59,787.57	-
Total 總計		<b>11,730,014.17</b>	<b>8,118.15</b>	<b>106,474.71</b>	<b>646,697.07</b>



The Group continues to conduct technological R&D in the fields of sludge treatment and disposal and properly dispose of the sludge it produces. Most of the sludge treatment technologies consist of recycling measures, so as to achieve energy recovery and resource recycling, promoting sustainable waste management. The municipal waste water treatment projects of the Group strictly comply with the national standards such as *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002) for the treatment of sludge. These operating projects under environmental water also consider relevant international standards including the World Bank Group's *General Environmental Health and Safety Guidelines and Environmental, Health and Safety Guidelines for Water and Sanitation* to reduce the environmental impacts of sludge. Most of the treated sludge with satisfactory testing results are sent to qualified third parties for further treatment, reuse and/or integrated utilisation, such as the production of compost, utilisation as construction materials, etc. A small amount of sludge that cannot be utilised is sent to designated landfills for disposal after undergoing dewatering process for the reduction of water content and volume. In order to promote the concept of sustainable waste management to the downstream of our value chain, the Group only hires qualified third-party organisations for further treatment of sludge produced by our project companies, ensuring that the sludge treatment and disposal process complies with national environmental laws and regulations.

本集團在污泥處理處置等領域繼續進行技術研發，並妥善處理其生產的污泥。大部份的污泥處理技術更包含循環措施，能夠達致能源回收及物料再生利用，推動可持續廢棄物管理。本集團的市政污水處理項目嚴格遵從《城鎮污水處理廠污染物排放標準》(GB18918-2002)等國家標準處理污泥。環保水務的運營項目還把世界銀行集團的《通用環境、健康和安全管理指南》及《水與衛生環境、健康與安全管理指南》等相關國際標準納入考慮，以減少污泥對環境的影響。大部分經處理並通過檢測的污泥會被送到合資格第三方作進一步處理、循環再用及／或作綜合利用，如製作堆肥、建材利用等。少數無法循環再用的污泥則會進行脫水工序以減低含水量及體積，並送到指定填埋場作填埋處理。為把可持續廢棄物管理理念推廣至價值鏈下游，本集團只會僱用合資格的第三方組織進一步處理項目公司所產生的污泥，確保污泥處理及處置流程遵循國家環保法律及規例。

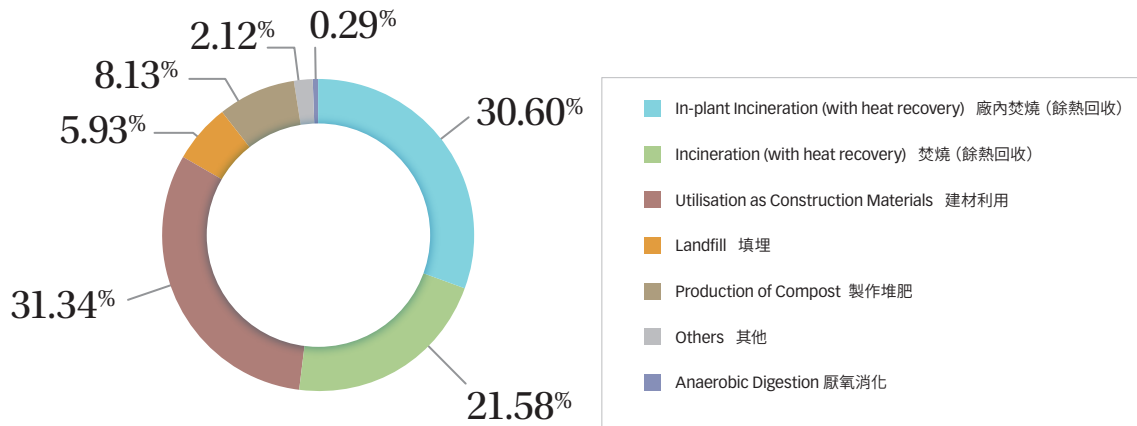
## Amount and Methods of Disposal of Sludge Generated in 2022

### 二零二二年污泥產生量及處置方式

Unit: Tonne 單位：噸

Operation Unit 運營單位		In-plant		Utilisation as Construction Materials 建材利用	Anaerobic Digestion 厭氧消化	Production of		Others 其他
		Incineration (with Heat Recovery) 廠內焚燒 (餘熱回收)	Incineration (with Heat Recovery) 焚燒 (餘熱回收)			Landfill 填埋	Compost 製作堆肥	
Environmental Energy 環保能源	Waste-to-energy Project 垃圾發電項目	367,231.07	28,059.20	-	-	-	-	-
Environmental Water 環保水務	Waste water Treatment Projects 污水處理項目	-	264,816.70	425,515.48	3,921.49	80,476.56	110,462.39	28,823.75
Greentech 綠色環保	Integrated Biomass Utilisation Projects 生物質綜合利用項目	30,084.21	-	-	-	-	-	-
	Solid Waste Treatment Projects 固廢處置項目	18,265.84	137.10	-	-	93.79	-	-
Total 總計		415,581.12	293,013.00	425,515.48	3,921.49	80,570.35	110,462.39	28,823.75

Ultimate Treatment/Disposal Methods of Sludge Generated in 2022  
二零二二年所產生的污泥最終處理/處置的方式



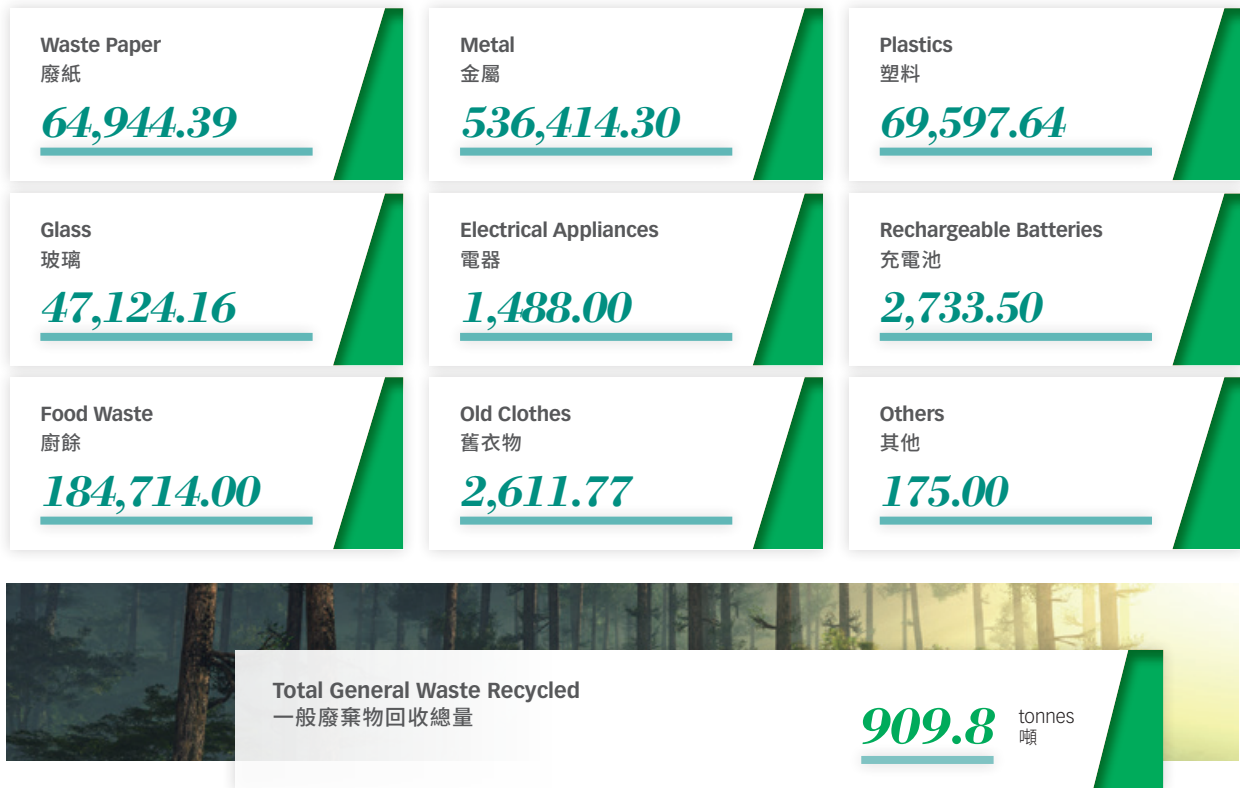
The Group fully implements waste recycling and reuse policy from production facilities to offices and dormitories. The recycled waste includes paper, metal, plastic and food waste, etc. We also call on our employees to support resource recovery. All general waste is handled by dedicated external waste collectors and recyclers to prevent illegal waste disposal.

本集團在生產場所和辦公室、宿舍等全面執行廢物回收和循環再用政策，例如紙張、金屬、塑料和廚餘都是回收的廢棄物；我們還鼓勵員工支持資源回收。為防止非法垃圾處理，所有一般廢物均由專門的外部廢物收集者和回收者管理。

## General Waste Recycling Statistics in 2022

二零二二年一般廢棄物回收量統計

Unit: kg 單位：公斤



### Hazardous and Solid Waste Treatment

The Group's hazardous and solid waste treatment projects process over 90% of hazardous waste types listed in the National Catalogue of Hazardous Wastes by ways of incineration, landfill, physico-chemical treatment and integrated utilisation, ensuring that hazardous chemicals are properly detoxified before disposal. All of the Group's hazardous and solid waste treatment projects operate in compliance with respective requirements stipulated in the environmental impact assessment approved by the government as well as national standards, including the *Standard for Pollution Control on the Security Landfill Site for Hazardous Wastes* (GB 18598-2019) and the *Pollution Control Standard for Hazardous Wastes Incineration* (GB 18484-2020)<sup>(1)</sup>. The Group did not import or export any hazardous waste from/ to foreign countries in 2022.

Note:

<sup>(1)</sup> Key air pollutants regulated by relevant national laws and regulations include smoke blackness, particulate matter, carbon monoxide, sulphur dioxide, hydrogen fluoride, hydrogen chloride, nitrogen oxides, mercury and other heavy metals (and their compounds), and dioxins.

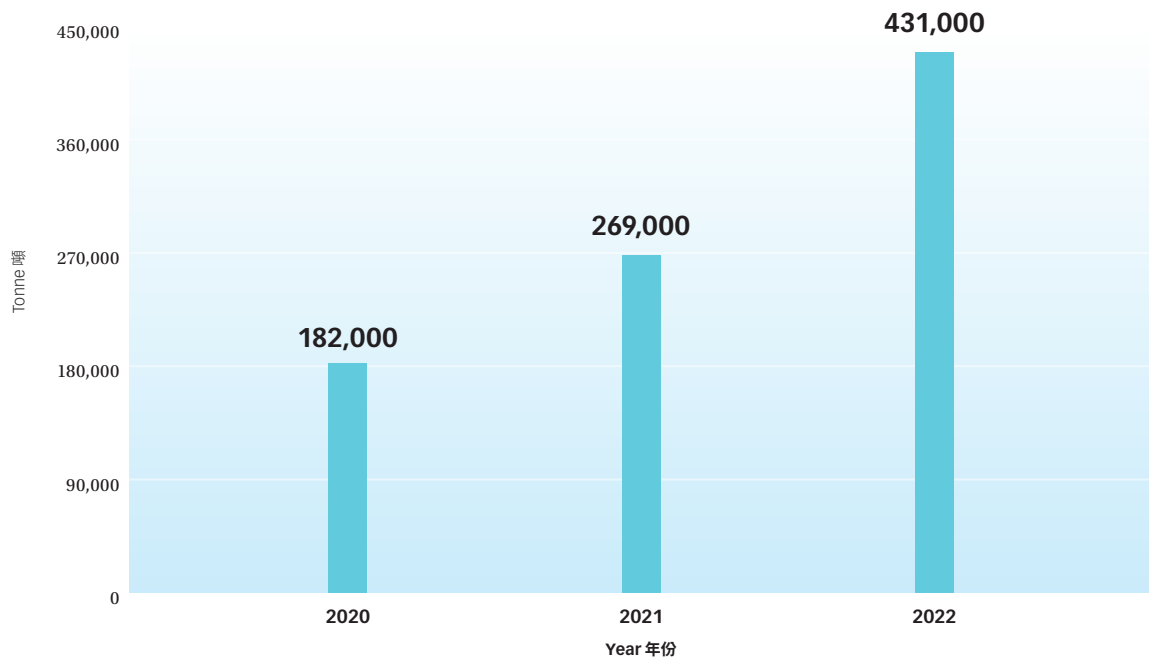
### 危廢及固廢處置

本集團的危廢及固廢處置項目通過焚燒、填埋、物化處理及綜合利用等方式安全處置《國家危險廢物目錄》中百分之九十以上的危廢種類，以確保危險化學物質在棄置前進行適當的無害化工序。本集團所有危廢及固廢處置項目遵照政府部門批准的環境影響評價的相關規定及《危險廢物填埋污染控制標準》(GB 18598-2019)及《危險廢物焚燒污染控制標準》(GB 18484-2020)<sup>(1)</sup>等國家標準的相關要求運營。本集團於二零二二年沒有從國外輸入或向其輸出任何危險廢物。

附註：

<sup>(1)</sup> 受相關國家法律及條例規管的大氣污染物主要包括煙氣黑度、懸浮物、一氧化碳、二氧化硫、氟化氫、氯化氫、氮氧化物、汞和其他重金屬（及其化合物）及二噁英。

Hazardous and Solid Waste Processed in the Past Three Years  
過去三年危廢及固廢處置統計



Committing to “No Net Loss” of Biodiversity

Everbright Environment recognises the importance of biodiversity and nature for human to thrive. Under the guiding light of the ADB-endorsed *Environmental and Social Management System*, we are driven by our commitment to ensure no net loss of biodiversity and no net deforestation across the Group’s business. To safeguard ecosystems, we further commit to apply suitable mitigation hierarchy (including avoidance, minimisation, restoration and offset) when operating in areas in close proximity to critical habitats.

Aside from inclusion of biodiversity assessment in our new projects as necessary, many of our projects have already embedded the concept of “no net loss” in their mode of operation:

- Our waste-to-energy projects enabled landfill diversion and avoided dumping of household waste in the rural areas which would otherwise pollute the land and ecosystems;

致力達至生物多樣性「無淨損失」

光大環境深知生物多樣性和自然對人類生存的重要性。在亞發銀行認可的《環境和社會管理體系》的引領下，我們承諾致力確保整個集團業務不會引致生物多樣性的淨損失和森林的淨砍伐。我們進一步承諾於靠近關鍵棲息地的區域作業時，我們定當應用適當的緩解架構（包括避免、最小化、恢復和抵銷）以保護生態環境。

除了按實際需要於新項目中納入生物多樣性評估外，我們的許多項目已經在其運營模式中嵌入了「無淨損失」的概念：

- 我們的垃圾發電項目實現了垃圾從填埋場分流，避免了將生活垃圾傾倒在鄉郊地方，從而防止土地和生態系統污染；

- Our municipal waste water treatment plants effectively treated municipal waste water and returned them to the freshwater bodies at similar or higher water quality, so as to protect the freshwater ecosystems; and
- Our river-basin ecological restoration projects aim at establishing an aesthetically pleasant, healthy and comprehensive river ecosystem at large scale through aquatic ecological enhancement.
- 我們的市政污水處理廠有效地處理了城市污水，並將其以相似或更高的水質返回淡水體，從而保護淡水生態系統；及
- 我們的流域治理項目旨在透過河道水生生態修復，大規模建立一個美觀、健康、全面的河流生態系統。

In addition, under our *Environmental and Social Management System*, regular monitoring activities are practised across all projects to ensure group-wide compliance with biodiversity and forest regulations and mandatory standards. To extend the effort across the supply chain, we commit to engage with suppliers and business partners to manage and mitigate biodiversity and deforestation risks.

### Biodiversity Risk

The Group attaches great importance to the protection of the ecological environment and biodiversity risks. At the 26th Conference of the Parties to the *United Nations Framework Convention on Climate Change* ("COP26") held in 2021, a great amount of attention was given on the issues relating to nature conservation and biodiversity. In the same year, the 15th Conference of the Parties to the *Convention on Biological Diversity* ("CBD COP15") was also held and the Information Office of the State Council of China published a white paper on Biodiversity Conservation in China. These initiatives fully reflect the international community's recognition that the ecosystem is an inseparable whole, and that the challenges of climate change and biodiversity loss require the co-operation of all parties. The way humans use the land, and the geographical distribution of endangered species are major threats to biodiversity.

Everbright Environment actively practices ecological environment conservation from the planning stage to the operation stage, by evaluating the local ecological environment and biodiversity before constructing new projects, and avoiding building project facilities near natural habitats and highly ecologically sensitive areas as possible. The Group's projects are equipped with ecological buffer areas to minimise the impact on the local ecological environment.

另外，在我們的《環境和社會管理體系》下，全部項目都定期審查情況，以確保本集團完全遵守生物多樣性、森林有關法則和強制性規範。我們致力與供應商和業務合作夥伴合作，監控和降低生物多樣性和森林砍伐風險，以擴大我們在整個供應鏈中的努力。

### 生物多樣性風險

本集團非常關注生態環境保護及生物多樣性風險。二零二一年舉行的《聯合國氣候變化框架公約》第二十六次締約方大會（「COP26」）中，關於自然保護和生物多樣性的議題備受關注。同年亦舉行了《生物多樣性公約》締約方大會第十五次會議（「CBD COP15」），中國國務院新聞辦公室發表了《中國的生物多樣性保護》白皮書。這些舉措都充分反映出國際社會意識到地球生態系統是一個不可分割的整體，同時應對氣候變化及生物多樣性喪失的挑戰，有賴社會各方攜手合作。人類使用土地的方式、瀕危物種的分佈地區等，都是對生物多樣性構成威脅的主要因素。

光大環境從規劃階段到運營階段都積極踐行生態環境保護，在新項目開工前對當地生態環境和生物多樣性進行全方面評估，盡量避免在靠近自然棲息地和生態極度敏感區域建設項目設施；為減少對當地生物環境的影響，本集團的項目包括了生態緩衝區。



The Group uses the Integrated Biodiversity Assessment Tool (“IBAT”) to assess the impact of its economic activities on biodiversity using contextual analysis based on the IUCN Red Book of Endangered Species, the World Database of Protected Areas and the Biodiversity Critical Areas Database, in order to develop effective investment and operational strategies to combat the loss of biodiversity.

### Findings of IBAT Assessment

Protected areas are areas recognised and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values. From the Group’s analysis, about 75% of the Group’s projects are not located in or adjacent to any protected area; around 13% and 7% of the Group’s projects are recognised to be located within 50 km to 1 and 2 protected areas, respectively. Only around 5% of our projects are located in proximity to 3 or more protected areas.

### Number of Protected Areas within 50 km of Projects, by % of Number of Projects

Number of Protected Areas within 50 km of Projects 項目50公里範圍內的保護區數目	% of Number of Projects 項目數目百分比
0	75.37%
1	13.16%
2	6.77%
3	0.38%
4	1.50%
≥5	2.82%

Key biodiversity areas are sites contributing significantly to the global persistence of biodiversity, in terrestrial, freshwater and marine ecosystems. About 44% of the Group’s projects are not located in or adjacent to any key biodiversity area; around 24% and 15% of the Group’s projects are recognised to be located within 50 km to 1 and 2 key biodiversity areas, respectively. Around 17% of our projects are located in proximity to 3 or more key biodiversity areas.

本集團使用綜合生物多樣性評估工具（「IBAT」），按照世界自然保育聯盟瀕危物種紅皮書、世界保護區資料庫及生物多樣性關鍵區域資料庫，以評估本集團的經濟活動對生物多樣性的影響，從而制定有效的投資及運營策略，遏止生物多樣性的喪失。

### IBAT評估調查結果

保護區是通過法律或其他有效手段劃分和管理的地區，用作實現具有相關生態系統服務和文化價值的長期自然保育。根據本集團的分析，約75%旗下的項目並不位於或鄰近保護區；約13%及7%項目的50公里範圍內有一至兩個保護區。我們只有約5%的項目鄰近於三個或以上的保護區。

### 項目50公里範圍內的保護區數目，按項目數目百分比

生物多樣性關鍵區是對維持全球生物多樣性具有重要意義的地區，當中包括陸地、淡水及海洋生態系統。約44%本集團旗下的項目並不位於或鄰近任何生物多樣性關鍵區；約24%及15%項目的50公里範圍內有一至兩個生物多樣性關鍵區域。我們的項目當中有約17%鄰近於三個或以上的生物多樣性關鍵區域。

### Number of Key Biodiversity Area within 50km of Projects, by % of Projects

### 項目50公里範圍內的生物多樣性關鍵區數目，按項目數目百分比

Number of Key Biodiversity Area within 50km of Projects 項目50公里範圍內的生物多樣性關鍵區域數目	% of Number of Projects 項目數目百分比
0	43.80%
1	24.06%
2	14.85%
3	8.83%
4	2.63%
≥5	5.83%

The Group's projects strictly comply with the national and international environmental standards to ensure that no adverse impact would be caused to the nearby ecosystems and wildlife. During the Reporting Period, no significant impact on biodiversity and species on IUCN Red List of Threatened Species from the Group was observed. The Group will continue to monitor any potential impact of our projects on biodiversity in the future.

本集團的項目嚴格遵循國家及國際環境標準，以確保項目不會對鄰近的生態系統及野生生物造成負面影響。於報告期間，本集團並沒有發現對生物多樣性及瀕危物種紅皮書上的物種造成顯著影響。本集團將於未來繼續監察我們的項目對生物多樣性的潛在影響。

### Valuing Technology R&D and Applying Innovative Technologies

### 重視科技研發 應用創新技術

Adhering to scientific and technological innovation and enhancing endogenous driving force and core competitiveness are the unswerving goals of Everbright Environment, and investment in scientific and technological research and development must be sustained.

秉持科技創新，提升內生驅動力和核心競爭力是光大環境不變的方針。我們必須持續投入科技研發，以實現其目標。

In 2022, Everbright Environment will further promote the optimisation and revision of its own technology research and development structure, and clarify the important role of technology research and development in leading and promoting the development of the Group.

二零二二年，光大環境將進一步推進自身技術研發結構的優化和修訂，並闡明技術研發在引領和推動集團發展中的重要作用。

In the future, Everbright Environment will promote the technology research and development system of Envirotech in Hong Kong, Shenzhen, Nanjing and Qingdao, with technology research and development as the continuous focus and major breakthrough point. In order to better promote enterprise development and environmental protection, a world-class green technology innovation and technology transformation center has been established.

未來，光大環境將以研究院的技術研發體系為核心，以技術研發為持續關注點和主要突破口，推進香港、深圳、南京和青島的技術研發工作。為進一步推動企業發展和環境保護，我們更致力於打造世界級的綠色技術創新與技術轉化中心。

## Everbright Water Project Won the First Prize of Jiangsu Science and Technology Award

光大水務項目獲江蘇省科學技術一等獎

Everbright Water Technology Development (Nanjing) Co., Ltd. participated in the “Waste Water Toxicity Reduction and Deep Purification Key Technology and Application” project, which was awarded the first prize of the “2021 Jiangsu Provincial Science and Technology Awards” in February 2022. Everbright Water (Shenzhen) Co., Ltd. participated in the “Innovation and Application of Key Technologies on Synergistic Efficiency of Industrial Waste Water Autotrophic Denitrification, Carbon Reduction and Resource Recovery” and won the first prize of the “2021 Environmental Protection Science and Technology Awards”.

光大水務科技發展(南京)有限公司參與的《廢水毒性削減與深度淨化關鍵技術及應用》項目於二零二二年二月獲頒「二零二一年度江蘇省科學技術獎」一等獎，光大水務(深圳)有限公司參與的《工業廢水自養脫氮降碳資源回收協同增效關鍵技術創新與應用》項目榮獲「二零二一年度環境保護科學技術獎」一等獎。





*TALENT*  
DEVELOPMENT  
人才發展

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*CARING*

OUR PEOPLE & CREATING  
the PATH to SUCCESS

關懷員工 · 共創成功之路

Everbright Environment adheres to the “People-oriented” management principle, and is committed to creating a fair, harmonious, and healthy working environment for its employees. The Group also provides employees with professional training and career development opportunities, allowing them to have greater room for growth and development.

光大環境秉承「以人為本」的管理理念，致力建造一個公平、快樂和健康的工作環境。本集團還盡量為員工提供專業培訓及職業發展機會，讓他們充分發揮潛力。

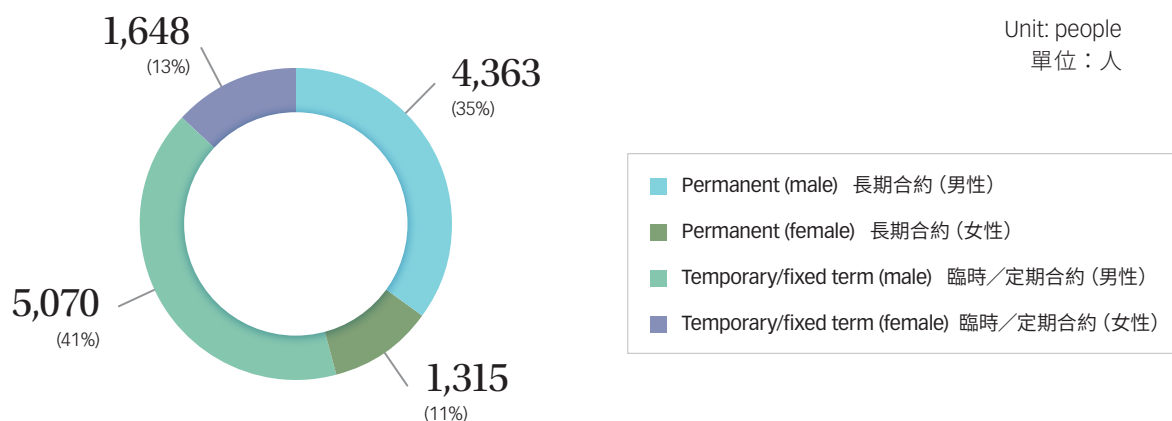
### Our Professional Team

The Group’s continuous business growth is attributed to our driven professional team. As at 31 December 2022, the Group had a total of 12,396<sup>(1)</sup> employees, who give a full play to their abilities in different areas.

### 我們的專業團隊

本集團的穩步業務發展與我們精益求精的專業團隊有著密不可分的關係。截至二零二二年十二月三十一日，本集團共有12,396<sup>(1)</sup>名員工於不同領域群策群力，各展所長。

#### By Employment Contract and Gender 按合約類型及性別劃分



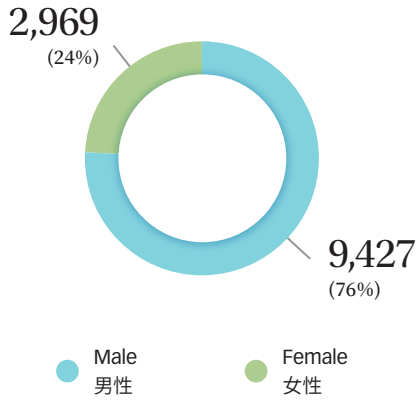
Note:

<sup>(1)</sup> All employees were full-time employees.

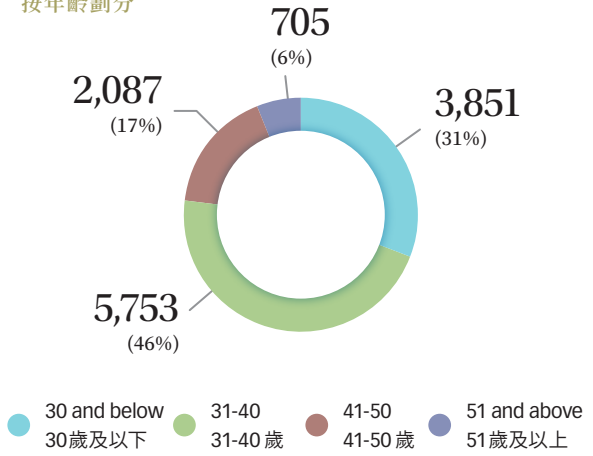
附註：

<sup>(1)</sup> 所有員工均為全職員工。

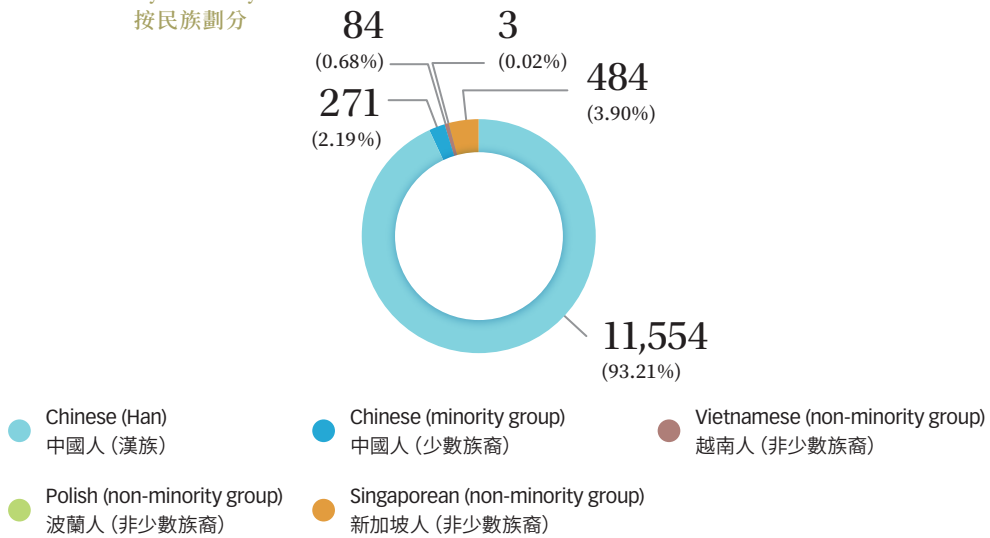
By Gender  
按性別劃分



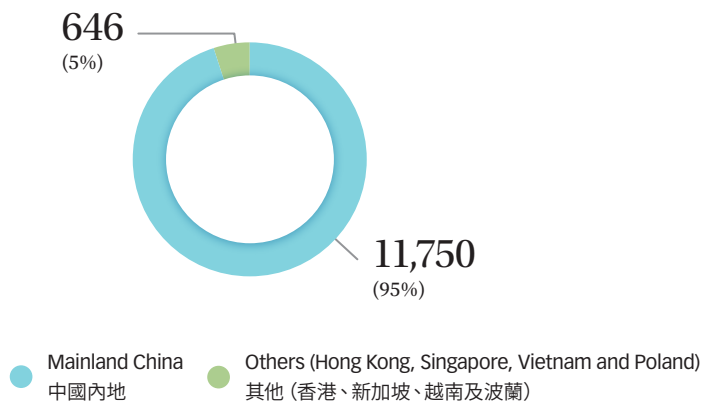
By Age  
按年齡劃分



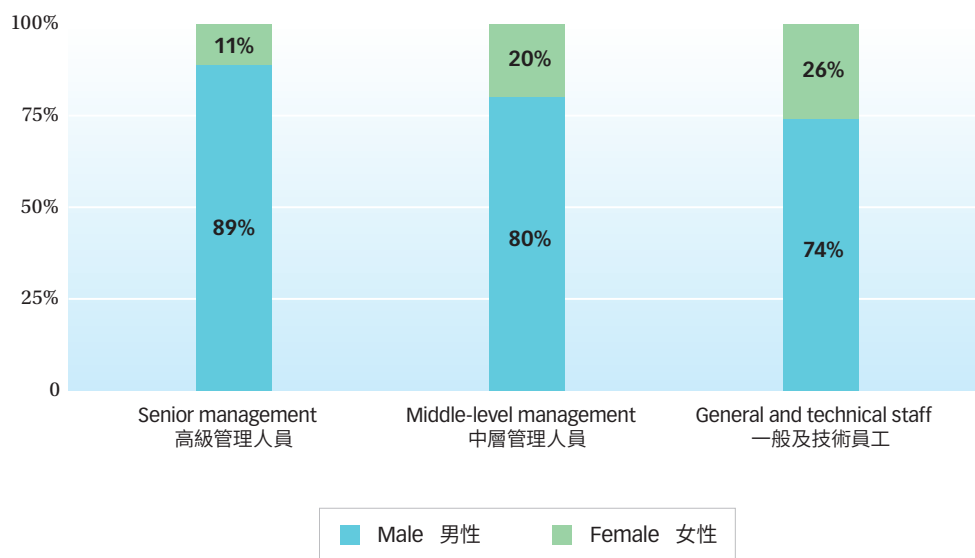
By Ethnicity  
按民族劃分



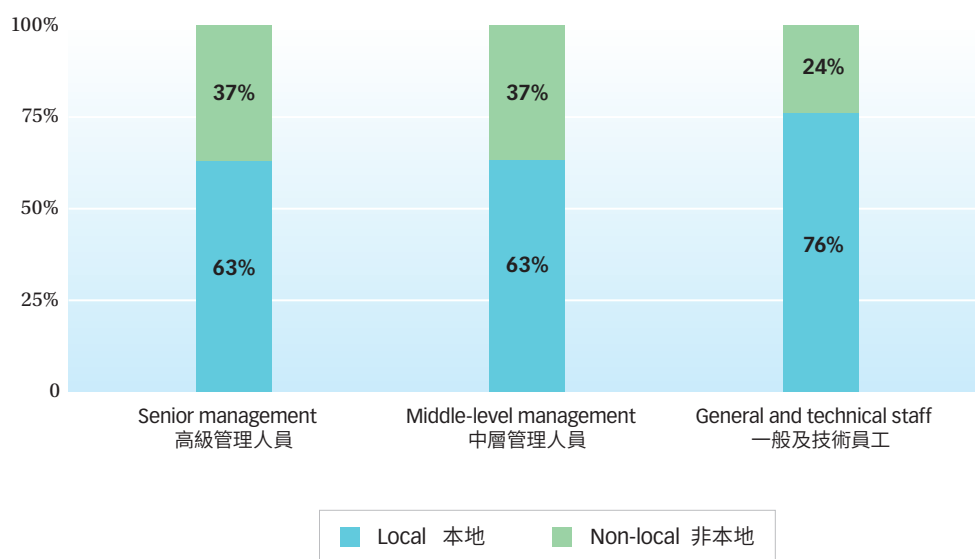
By Geographical Region  
按地區劃分



Male to Female Ratios by Employee Ranking  
各員工職級的男女比例



Employees Hired by Geographical Region<sup>(1)</sup>  
按地區劃分的受僱員工<sup>(1)</sup>



Note:

<sup>(1)</sup> Employees hired from the same province in Mainland China are regarded as local employees, whereas the employees hired from other provinces in Mainland China are regarded as non-local employees.

附註：

<sup>(1)</sup> 在中國內地同省受聘的員工被視為本地員工，而在中國內地外省受聘的員工則被視為非本地員工。

## Highlights of 2022

## 二零二二年亮點



*Everbright Environmental Energy (Pei County) Limited was awarded the "Jiangsu Healthy Enterprise 2021"*  
光大環保能源(沛縣)有限公司獲評「二零二一年度江蘇省健康企業」

Pei County Waste-to-energy Project ("Pei County Project") has further strengthened its policy management, enhanced the creation of a healthy environment, optimised health management and services, actively cultivated a healthy cultural construction, continuously consolidated construction achievements, and safeguarded the health and rights of employees. Pei County Project also strengthened health education and training, adhering to the concept that "caring for employees is caring for the company, and caring for the company is caring for oneself", so to improve the quality and health literacy of employees. Through unremitting efforts, Pei County Project was awarded the "Jiangsu Healthy Enterprise 2021" by the Jiangsu Commission of Health in February 2022.

沛縣垃圾發電項目(「沛縣項目」)進一步加強制度管理,加強健康環境營造,優化健康管理和服務,積極培育健康文化建設,不斷鞏固建設成果,保障員工健康權益。沛縣項目還加強健康教育培訓,堅持「關愛員工就是關愛企業,關心企業就是關心自己」的理念,提高員工的素質和健康素養。透過一直以來不懈的努力,沛縣項目於二零二二年二月被江蘇省衛生健康委員會評為「二零二一年度江蘇省健康企業」。

*Everbright Environmental Energy (Quzhou) Limited was awarded the "Advanced Enterprise of Safety Production Management 2021"*  
光大環保能源(衢州)有限公司榮獲「二零二一年度安全生產先進企業」稱號



Quzhou Waste-to-energy Project ("Quzhou Project") has established a safety officer management team that covers every shift and resident external office unit within the company. We have promoted the special rectification of safe production's three-year action plan, and constructed a dual prevention system for hidden danger investigation and management. Through continuous optimisation, Quzhou Project was awarded the "Advanced Enterprise of Safety Production Management 2021" and "Grade A Enterprise in Power Work Safety Standardisation" in June 2022.

衢州垃圾發電項目(「衢州項目」)在公司內部率先建立覆蓋每個班組和常駐外辦單位的安全員管理隊伍,推進安全生產專項整治三年行動計劃工作,構建安全風險分級管控和隱患排查治理雙重預防體系。通過不斷的優化,衢州項目於二零二二年六月獲頒發「二零二一年度安全生產先進企業」及「電力安全生產標準化一級企業」。



## Human Rights and Ethics

The Group has established the *Human Rights Policy* to support all international norms and codes regarding human rights, including the “UN’s Universal Declaration of Human Rights”, “Guiding Principles on Business and Human Rights” and related regulations of the “UN Global Compact” and the International Labour Organisation. The policy upholds human rights and sets specific guidelines for diversity and inclusion, equal opportunity, reasonable working hours, gender equal pay, workplace health and safety, freedom of association, and collective employee-employer negotiations. The policy covers all employees of the Group, including but not limited to women and migrant workers. The Group adopts a zero-tolerance attitude towards child labour, forced labour and human trafficking; and at the same time strictly follow the requirements of the main human rights declaration and labour regulations. The Group is committed to providing adequate living security for its employees. The average salary level of employees is much higher than the local salary level. In addition, considering that medical expenses directly affect the living standards of employees, the Group provides employees with additional medical insurance, physical examination, accident insurance, etc. The Group also has established the Employee Health Fund which provided additional monetary support for employees, who were suffered from accidents or serious illnesses, to cope with large medical expenses. Furthermore, the Group may consider committing to living wage in the future in order to ensure the living security of its employees.

During the Reporting Period, there were no violations of human rights or the use of child labour or forced labour, and no young workers were exposed to hazardous work. The Group conducts human rights performance review annually to ensure that the above human rights issues will not be triggered.

## 人權與道德

本集團制定了《人權政策》，以支持所有國際人權標準和規範，例如「聯合國世界人權宣言」、「工商業與人權指導原則」以及「聯合國全球契約」和國際勞工組織的相關條款。該政策尊重人權，並規定了多樣性和包容性、平等機會、合理工作時間、性別平等薪酬、工作場所健康和 safety、結社自由及全部僱員與僱主集體商量訂立了具體指導方案。本政策適用於本集團全部員工，包括但不限於女性和外地勞工等群體。同時，本集團對童工、強迫勞動和人口販賣採取零容忍的政策，嚴格遵守關鍵人權宣言和勞動法規的要求，不使用任何童工或強制勞工。本集團致力於為員工提供體面的生活標準，員工的工資標準皆比該地區的工資標準高。此外，本集團理解到醫療支出直接影響員工維持生活質量的能力，所以為員工提供補充醫療保險、體檢、意外保險等。本集團亦設有員工健康基金，為發生意外或重大疾病的員工提供額外的經濟援助，以幫助他們管理高昂的醫療費用。此外，本集團將考慮未來承諾生活工資，以確保其員工的生活保障。

於報告期內，本集團並沒有任何侵犯人權或存在使用童工或強迫／強制勞動之事件，亦沒有年少工作者從事危險工作。本集團每年進行人權表現回顧，以確保不會引發上述人權問題。

The Group highly values the ethical, personal and professional conduct standards of its employees. We require all employees to strictly comply with the Group's *Employee Code of Conduct*, including avoiding conflicts of interest, discrimination, and sexual and non-sexual harassment as well as bribery (including any form of facilitating payment), extortion, fraud and money laundering, etc. Employees' ethical performance is reflected in their appraisals to ensure the Group is operating ethically in the Group's businesses. In addition, the Group adopts a zero-tolerance policy and will strictly handle in accordance with the law against those who are committed to discrimination and harassment, breach of confidence, and bribery. To ensure staff's awareness of these important issues, the Group provides regular training to all employees on anti-discrimination, anti-harassment, duty of confidence, and anti-corruption, including expected behaviour, incident reporting procedures/escalation processes and disciplinary actions.

During the Reporting Period, the Group was not aware of any case relating to violation of the *Employee Code of Conduct*.

### Equal Opportunities and Integration

The Group's Staff Handbook covers topics such as compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, preventing child and forced labour, and other benefits and welfare. We provide employees with a fair, transparent, and respectful career platform that is free of discrimination on the grounds of gender, age, ethnicity, nationality, marital status, and religion, etc.

The Group implements a fair and competitive remuneration and welfare system. The remuneration is determined based on qualification, experience, nature of work, performance and market conditions, so as to create equal employment opportunities. In view of the fact that the human resources distribution in energy and engineering sectors polarises on male, the Group pays special attention to issues including gender equality and remuneration, with an aim to reduce the impact of gender factors on pay scale and structure. Besides, the Group strives to safeguard the rights of vulnerable employees, including offering pregnant employees with sufficient maternity leave and male employees with paternity leave. The Group reserves positions for employees on maternity or paternity leave, encourage them to return to work, and ensures their career development and remuneration are unaffected.

本集團高度重視員工的道德、個人和專業行為，並要求每個人都遵守其製定的《員工守則》，內容例如避免利益衝突、歧視和性及非性騷擾、賄賂（包括任何形式的通行費）、勒索、欺詐和洗黑錢等違法行為。為確保本集團的工作符合社會及企業道德標準，績效評估亦會考慮員工的道德表現。此外，本集團遵守法律，會嚴正處理歧視行為和騷擾、洩露機密和貪污受賄者等違法行為，而且採取零容忍態度。本集團定期對全部員工進行反歧視、反騷擾、保密義務和反腐敗培訓，包括正當行為、事件報告程序／升級程序和紀律處分，以確保他們充分了解這些關鍵議題。

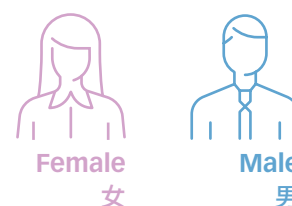
於報告期內，本集團並沒有發現任何違反《員工守則》的個案。

### 平等機會及共融

除了其他待遇和福利外，本集團的《員工手冊》還涉及薪酬和解僱、僱傭和晉升、工作時間、假期、平等機會以及停止童工和強迫勞動等議題，避免基於性別、年齡、膚色、國籍、婚姻狀況、宗教等引起的歧視，為所有求職者和員工提供公正、開放的工作環境。

本集團實行公平和有競爭力的薪酬福利制度，以資歷、經驗、工作性質、表現和市場狀況為基礎釐定薪酬，促進平等的就業機會。本集團特別關注性別平等和薪酬等問題，以減少性別因素對薪酬水平和結構的影響，以回應能源和工程相關行業對男性的側重。另外，本集團致力於保護弱勢員工的權利，包括為懷孕員工及男性員工分別提供充足的產假和侍產假。本集團為鼓勵休產假或陪產假的員工重返工作，會預留他們原有的工作崗位，並確保他們的職業發展和薪酬不受影響。

Employee Maternity/Paternity Leave Statistics in 2022 二零二二年產假／侍產假數據



Number of female and male employees who took maternity/paternity leave in 2022	二零二二年放產假／侍產假的男女員工數目	225	484
Number of employees who returned to work after maternity/paternity leave in 2022	二零二二年產假／侍產假結束後重返工作崗位的員工數目	146	435
Number of employees who returned to work after maternity/paternity leave ended in 2021 and still employed by the end of 2022	二零二一年產假／侍產假結束後重返工作崗位並於二零二二年底仍在職的員工總數	135	315
Percentage of employees who returned to work after maternity/paternity leave ended in 2022	二零二二年產假／侍產假結束後重返崗位的員工比例	64.89%	93.60%
Percentage of employees who returned to work after maternity/paternity leave ended in 2021 and still employed by the end of 2022	二零二一年產假／侍產假結束後並於二零二二年底仍在職的員工比例	87.10%	84.91%

## Employees' Benefits

The Group has a comprehensive welfare and safeguard system, official employees are provided with maternity leave and paternity leave, life insurance, medical insurance, disability and critical illness coverage, etc. The Group also distributes discretionary bonuses to reward outstanding employees. In addition to providing mandatory pension insurance as required by law, the Group has also developed a supplementary pension system for eligible employees as an additional retirement benefit.

To safeguard the physical and mental health of employees, free body check and occupational disease prevention inspection are provided every year, including physical diagnosis, blood test, kidney function test, liver function test and other items. Starting from 2019, in addition to free body check, front line workers can also receive follow-up support to safeguard their health.

The Group has always play great attention to employee retirement protection. In addition to implementing the retirement plans stipulated by relevant laws, the Group provides employees with additional retirement protection, such as annuity plan, voluntary pension contributions, etc., to provide support for employees' retirement life, so that employees can focus on serving the Group in the long run.

## Two-way Communication

To create an ideal working environment for employees to grow, the Group proactively communicates with employees. Employees can express their thoughts about the Group through different channels, including regular staff meetings and employee satisfaction surveys. The Group also welcomes employees to communicate directly with the CEO and/or the chairman of the audit committee via email, allowing them to express their views under a comfortable and private environment. The Group's grievance mechanisms cover different topics including workplace harassment and discrimination, labour relations, human rights, etc., provide employees a platform to lodge their grievances, share their views, and express their concerns on corporate governance.

## 員工福利

本集團擁有健全的保障及福利制度，正式員工均有資格享受產假、陪产假、殘疾和重大疾病保險、人壽保險和醫療保險。表現優異的員工也可能會酌情獲得本集團的獎勵金。除了依法提供強制性養老保險外，本集團還為符合條件的員工建立補充養老制度，作為額外的退休福利。

本集團每年皆為員工提供免費體檢和職業病預防檢查服務，包括體檢、血液檢查、腎功能檢查、肝功能檢查等項目，以支持員工身心健康。自二零一九年，前線員工除了可以享受免費體檢外，還將開始接受後續支持，為他們的健康保駕護航。

本集團一向重視員工退休保障，除了執行相關法例規定的退休計劃外，亦會向員工提供額外退休保障，如企業年金、自願性供款等，為員工退休生活提供支持及讓員工可專心為本集團長期服務。

## 雙向溝通

本集團積極主動地與員工進行溝通，為他們創造一個理想的工作場所。本集團會定期舉行員工會議及調查員工滿意度，為員工提供發表意見的渠道。本集團還鼓勵員工直接向總裁和／或審核委員會主席發送電子郵件，以便他們可以在安心和保密的環境中發表意見。本集團設計了一個申訴程序，解決工作場所的騷擾、歧視、勞資關係和人權等問題，也為員工提供了一個表達有關本集團公司治理的不滿、意見和問題的平台。



The Group also regularly publishes internal publications, such as the “Everbright Environment Monthly Magazine”, to share the Group’s updates and encourage employees to contribute articles as a way to express their opinions.

此外，本集團亦定期出版如「光大環境月刊」等內部刊物，以分享集團資訊和動向，同時鼓勵員工積極投稿，發表己見。

### 2022 Collection of Employees’ Opinion

In order to encourage employees to express their opinions, in addition to daily meetings, the Group has set up a “Opinions and Suggestions” platform on the intranet, allowing all employees to submit opinions or suggestions anytime, anywhere. In 2022, there were more than 90 opinions and suggestions, covering compensation and benefits, daily operation procedures, environmental regulations, market development, Dual Carbons strategy, information management, etc. The Group arranged special personnel to give feedback one by one, and other employees can also refer to relevant information and communicate at any time. Through an open and transparent communication platform, the Group can fully consider the suggestions of employees when reviewing its policies and systems, so as to achieve a better balance between the interests of the Group and employees.

### 二零二二年員工意見徵集

本集團在內聯網建立了「建言獻策」平台，讓所有員工在例行會議交流以外隨時隨地提出意見或建議。二零二二年超出90項意見和建議，內容涉及薪酬福利、常規運作流程、環保法規、市場拓展、雙碳戰略、信息化管理等，本集團安排專人逐一反饋，其他員工也可以隨時查看相關內容並進行交流，在公司和員工利益之間取得更好的平衡。

### Everbright Environment Senior Management Conducts Site Visits

From 22 to 28 September 2022, Mr. Huang Haiqing, Chairman of the Board of Everbright Environment, led a team to visit some of the project companies in Jinan, Shandong Province; Suzhou, Changzhou and Nanjing, Jiangsu Province; and Hangzhou, Zhejiang Province, etc. The aim of the in-person visit was to engage front line employees and understand the local operation conditions. At the same time, it allowed the team to better comprehend the working conditions and major demands of the employees, encourage them to focus on their responsibilities and further exert their subjective awareness and creativity to contribute to the Company’s transitional development.

### 光大環境高管一線實地考察

二零二二年九月二十二日至二十八日，光大環境董事會主席黃海清帶隊，前往山東省濟南市，江蘇省蘇州市、常州市、南京市，浙江省杭州市等地，深入項目一線看望慰問員工，實地瞭解項目公司生產運營工作情況。藉著此行了解前綫員工的工作情況和主要訴求，鼓勵員工謹守崗位，進一步發揮主觀能動性和工作創造性，為本公司轉型發展貢獻力量。

## Talent Recruitment and Retention

Everbright Environment's project management team comprises members with extensive and in-depth experience in project planning, procurement, construction, operations, and R&D. The Group actively develops its talent pool through local, overseas and on-campus recruitments and various internal training initiatives to attract and cultivate professional and international talents. The Group had issued the Management Measures and Awards for Talent Referral by Internal Staff to encourage existing staff to refer suitable candidate(s) to the Group. In line with the Group's "Technology Leads Development" strategy, the Group actively brings in management and technical talents in technological R&D through industrial-academic collaboration and acquisition of technology companies in recent years. In 2022, the hiring costs per full-time new hire was HK\$2,832.84.

The Group is committed to providing open and equal employment opportunities and platforms, where the ability and qualification of candidates remain as the most important assessment criteria in the recruitment process. Their employment opportunities are never affected by factors such as gender, age and ethnicity. Meanwhile, the Group is committed to promoting local economic development and employment opportunities through hiring local talents for the Group's projects in remote areas. In 2022, 28.73% of open positions were filled by internal candidates.

In addition to basic remuneration and fringe benefits, the Group provides various types of appropriate support to its employees.

In addition to ordinary annual leave, the Group provides additional paid personal leave for employees to handle various emergencies, and will also take the initiative to care for the needs of employees and provide timely support. In the face of the Pandemic, the Group not only cleans and disinfects the working environment, but also provides different anti-epidemic support for employees, such as providing epidemic prevention materials, correct epidemic prevention knowledge, providing supplies for confirmed employees and their families, arranging employees to work from home, door-to-door virus antibody test, etc.

## 人才招募及挽留

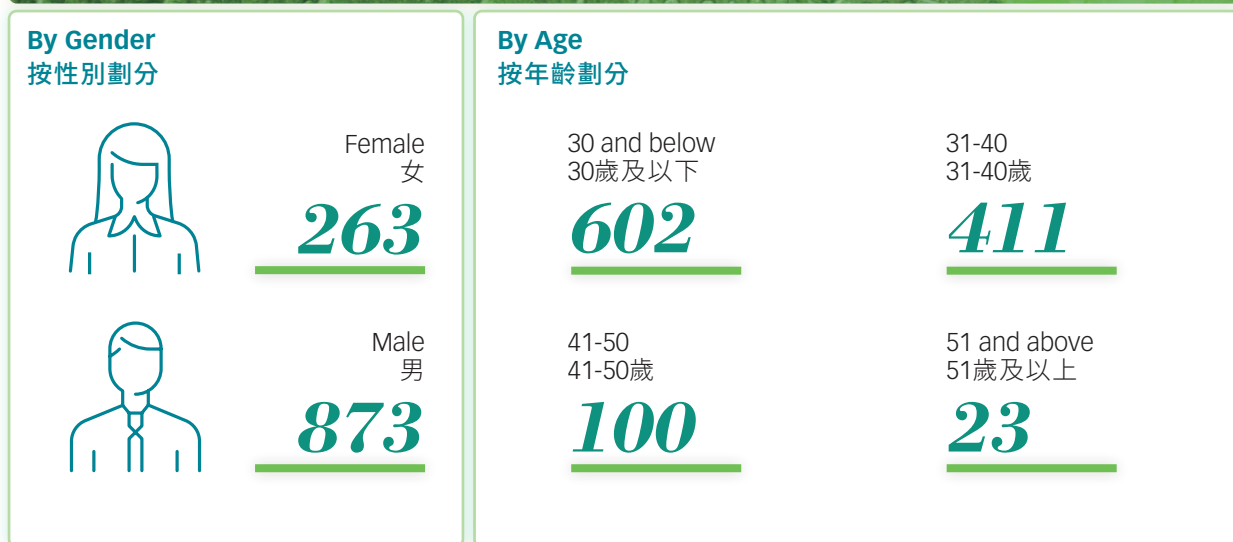
光大環境擁有一支頂尖的人才隊伍，項目管理團隊均是由在項目規劃、採購、施工、運營及研發等多方面具有廣泛經驗的資深成員組成。為了在國際上吸納及培養專業的人才，本集團一直通過社會招聘、海外招聘、校園招聘及自身培養等方式不斷加強人才隊伍建設。本集團已制訂了《內部員工推薦外部人才管理及獎勵辦法》，鼓勵員工引薦合適人員加入本集團發揮所長，從更多途徑招賢納士。為了配合我們「科技引領發展」的策略，本集團近年更透過產學合作、收購技術公司等方式，積極引進技術研發的管理及技術專才。二零二二年，每名新全職員工的招聘成本為2,832.84港元。

本集團致力於提供開放、平等的就業機會和平台，將候選人的技能和資格作為招聘過程中最重要的考慮因素，以確保候選人的就業機會不會受到性別、年齡、種族等因素影響。本集團還致力在偏遠地區的项目積極聘用當地人才，以支持當地經濟增長和就業機會。二零二二年，內部候選人填補了28.73%的空缺職位。

除了基本薪酬及福利外，本集團為員工提供各類合適的支援。

除定期年假外，本集團亦為員工提供額外的個人休假，以應付各種緊急事件，也會主動照顧員工需要，給予他們及時支持。為應對新冠疫情，本集團除了對工作場所做好消毒清潔外，還為員工提供不同防疫支持，例如提供防疫物資、準確的防疫知識、為確診員工及家人提供物資、安排員工在家工作、上門病毒抗體檢測等。

Unit: people  
單位：人



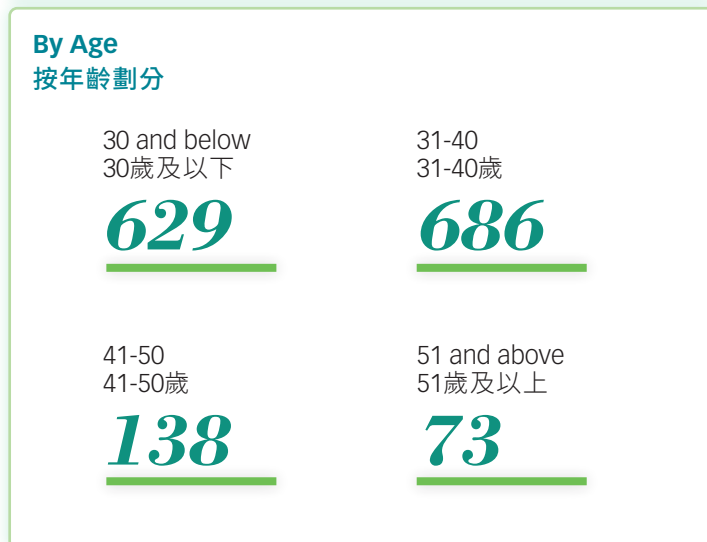
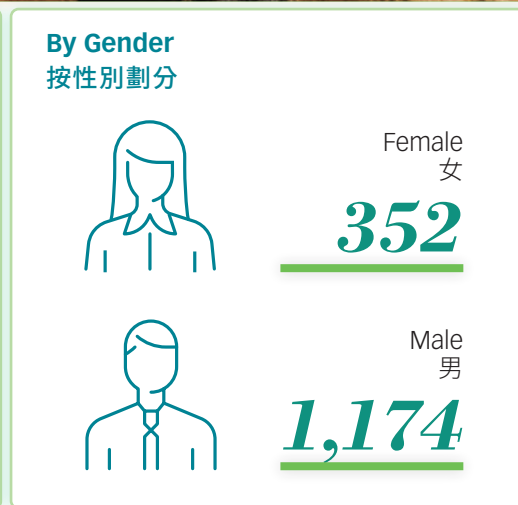
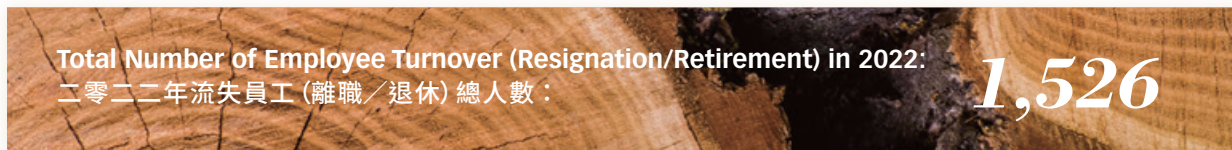
Note:

<sup>(1)</sup> Employees employed in the same province in Mainland China are regarded as local employees, while employees employed in other provinces in Mainland China are regarded as non-local employees

附註：

<sup>(1)</sup> 在中國內地同省受聘的員工被視為本地員工，而在中國內地外省受聘的員工則被視為外地員工。

Unit: people  
單位：人



The Group deeply understands that talent development takes time, therefore, we monitor the number of employees who are going to be eligible for retirement every year in order to formulate a human resources strategy while providing employees with appropriate career management plans, including retirement arrangements.

本集團深知人才培養需要時間，因此我們每年均會透過統計即將合資格退休的員工數目，以調整人員管理安排，並為員工提供包括退休安排的妥當職業生涯管理計劃。



## Percentage of Employees Eligible for Retirement in 5 and 10 years

## 五年及十年內合資格退休的員工百分比

Employee Ranking	員工職級	In 5 years 五年內	In 10 years 十年內
Senior management	高級管理人員	11.2%	23.77%
Middle-level management	中層管理人員	3.31%	10.66%
General and technical staff	一般及技術員工	2.64%	5.34%

## Training and Development

## 培訓及發展

Talent is the key to the corporate development. The Group attaches great importance to human resources management, incorporates employee training into normal management, establishes training files, and continuously strengthens the building of its talent team. In response to the needs of the Group's business development, appropriate training was arranged in a unified manner. Various training courses have also been held successively to allow management and employees to continue their education and enhance their professional and comprehensive capabilities. During the Reporting Period, the Group continued to improve its training management and issued the Training Instructors and Course Management. In addition, each project company will also provide appropriate training for employees on a regular basis according to their own needs, so that employees can exert their strengths and provide enterprises with excellent professional talent teams. In 2022, the average resources allocated to each full-time employee was HK\$1,527.52.

我們明白企業發展的關鍵是人才。本集團高度重視人力資源管理，把員工培訓納入常態管理，建立培訓檔案，不斷加強人才隊伍建設，並針對本集團業務發展需要，統一安排合適培訓。我們亦先後舉辦了各類培訓班，給予管理層及員工持續進修的機會，提升專業和綜合能力。本集團於報告期內繼續完善培訓管理，獲頒發了《培訓講師及課程管理》。同時，公司亦會按照各項目自身需要定期為員工提供合適培訓，讓員工發揮所長、為企業提供優秀的專業人才隊伍。二零二二年，投放至每名全職員工的平均資源為1,527.52港元。

During the year under review, in response to the Pandemic, the Group successively held safety and environmental management training, the cybersecurity training, tendering management training, construction cost training, anti-corruption training, etc. through online and offline blended training mode. The management and employees were well equipped with relevant knowledge and skills with a view to address new opportunities and challenges. The Group makes full use of the advantages of diversified business to provide employees with a broad development platform. In addition to cross-sector and cross-regional job rotation, the Group has enriched the backup management talent pool and international talent pool to prepare for the sustainable and steady development of the Group.

回顧年度內，為應對新冠疫情，本集團結合線上與線下的培訓模式，先後舉辦了安環管理培訓、信息網路安全培訓、採購專題培訓、工程造價培訓、廉政講座等，讓管理層及員工持續學習，迎接新的機遇與挑戰。本集團充分利用業務多元的優勢，為員工提供寬闊發展平台，除了跨板塊、跨區域輪崗交流外，本集團充實後備管理人才庫及國際人才庫，為本集團可持續穩健發展作好準備。

The Group has established a comprehensive and assessable staff appraisal system to enhance the work quality, competitiveness and motivation of its staff. In 2022, all employees obtained constructive feedback and career planning suggestions from their respective performance appraisals, laying a solid foundation for talent pool and sustainable development of the company.

本集團設立了全面及可評估的員工考核制度，以提升員工的工作質素、競爭力及積極性。二零二二年，所有員工均從各自的績效考核中取得具建設性的回饋和職業生涯規劃建議，為人才儲備及企業持續發展奠定了堅實的基礎。



In 2022, total training hours of employees in Everbright Environment were 659,468 hours. Average training hours per employee were 53.20 hours. Amongst which, staff training rate of 100% was attained and the trainings covered the topics of anti-corruption, anti-harassment and anti-discrimination.

二零二二年，光大環境的員工培訓總時數為659,468小時，人均培訓時數為53.20小時。當中，員工培訓率達100%並涵蓋了反腐敗、反騷擾和反歧視等議題。



### Back-up Talent Management

To ensure that the talent pool can coordinate with the Group's sustainable development, the Group continues to enrich the Group's back-up management personnel pool across the five sectors of the Group. There are currently 739 back-up management personnel acting as the major budding talents that will support the future development of the Group and enhance the competitiveness of the Group in the industry for future.

### 後備人才管理

為確保人才儲備配合本集團的持續發展，本集團繼續致力完善五大板塊的後備管理人員庫。本集團目前共有739名後備管理人員，將作為集團未來發展的主力軍和新力軍，提高集團未來的行業競爭力。

The Group also provides recruitment opportunities in the form of voluntary registration and bottom-up recommendation by posting recruitment information in the talent pool to select and nurture excellent management personnel, so that employees who have ability and aspirations could have greater room for growth and development. Meanwhile, the Group issued a series of management measures for human resources to improve the efficiency of human resource management, including the procedures for the appointment and dismissal, the regulation of appointed directors and supervisors of subsidiary, the regulations of overseas travel, etc.

為了培養和選拔優秀的管理人才，本集團還通過在人才庫中公佈招聘信息，通過自願申請和由下而上的推薦提供內部選拔機會，這將使有能力和理想的員工獲得更大的成長和發展。同時，本集團還發佈了多項人力資源管理辦法，提高人力資源管理效率，包括職務任免工作流程，派遣董事、監事管理辦法、因公出國(境)管理辦法。

### As at 31 December 2022

截至二零二二年十二月三十一日

Total number of back up management personnel  
後備管理人員總數共

**739** 人

Number of Deputy General Managers promoted to General Managers

副總經理獲晉升為總經理的人數共

**57** 人

Number of back-up management personnel promoted to the new project's General Managers, Construction Supervisors or Project Management Team Leaders  
後備管理人員赴任新項目的總經理、總指揮或籌備組長的人數共

**51** 人

### Internal Inheritance and Exchange

The Group values the internal exchange and inheritance of human resources. To help the young employees grow into talents, the Group actively makes use of its human resources advantage to pursue the "Apprenticeship Programme", in which experienced and skilled employees sign apprenticeship agreements with new employees, which helps to cultivate a positive learning atmosphere for the company's internal teaching and learning. The mentors are responsible for imparting knowledge and skills, helping the apprentices to integrate into the working environment, driving them to learn actively and work hard, and finally achieve the internal inheritance.

### 內部承傳和交流

本集團關注人力資源的內部溝通和承傳。我們採用「師帶徒」培訓計劃，鼓勵青年員工成長發展，借助自身人力資源優勢，鼓勵具有豐富經驗或綜合素質較高的員工與新員工形成師徒關係，有助於公司內部建立傳師傳藝的良好學習環境。為了將信息和技能代代相傳，師父們通過「傳幫帶」的方式傳遞知識技能，幫助徒弟適應工作環境，以積極的態度對待學習和工作，最後達到薪火相傳。

## Work-Life Balance

Everbright Environment has always attached great importance to the physical and mental health of its employees, practiced the principle of “People-oriented”, and actively organised various physical and mental activities to promote employee relations and help them maintain a good balance between life and work.

## Cultivating Healthy Lifestyle

The Group’s project companies have provided comfortable and well-equipped staff quarters for the Group’s employees with multiple recreational facilities including sports grounds, gymnasiums, chess and bridge rooms, libraries, etc., to help employees relax and relieve work stress. The Group also encourages employees to maintain a healthy lifestyle, and thus various leisure and sports activities are organised every year, including swimming competitions, fun sports days, basketball friendly matches, birthday celebrations, etc., with aims to promote employees’ health, and reach a win-win situation for both the enterprise and employees.



Furthermore, some projects have set up a dietary committee. By regularly learning about employees’ dining experience, we continuously improve the dining arrangement to provide them with nutritious and delicious meals.

## 工作與生活平衡

光大環境一向重視員工的身心健康，踐行「以人為本」的原則。我們積極舉辦各類有益身心的活動，以促進員工關係，幫助他們在生活與工作之間保持良好平衡。

## 締造健康生活

本集團在各項目均為員工提供舒適和設備齊全的宿舍，例如配備運動場、健身房、棋牌室和圖書館等康樂設施，讓員工放鬆身心，減輕工作壓力。為促進員工健康發展，創造企業與員工雙贏局面，本集團亦鼓勵員工保持身心健康的生活方式，每年組織及參與多項文娛休閒和體育活動，包括游泳比賽、趣味運動會、籃球友誼比賽和生日慶祝活動等，以實現企業和員工雙贏局面。



此外，個別項目更設立了膳食委員會，通過定期了解員工的用餐體驗，不斷改進菜餚款式，為員工提供營養豐富而且美味的飯菜。

## Take Action and Participate in Environmental Protection

As a leading enterprise in the environmental protection industry, the Group actively promotes employees to practice environmental protection at work and in their daily lives starting from the small things around them and fostering good environmental protection awareness. In 2022, the employees of the Group actively participated in environmental protection activities in their spare time, joined hands with friends, families and community groups to protect the environment and build a greener and better future for the next generation.

## Everbright Environment's Project Companies Organised Voluntary Tree Planting Activities

## 身體力行參與環保

本集團是環保領域的龍頭企業，積極鼓勵人們在工作和日常生活中開展環保工作，從身邊的小事做起，培養強烈的環保意識。二零二二年，員工積極地在工作以外的時間參與環保行動，與朋友、家人和當地組織一起保護環境，為下一代創造更綠色美好的未來。

## 光大環境項目公司組織義務植樹活動



On the occasion of "Earth Day", Nanjing Water Affairs launched a voluntary tree planting donation activity on World Earth Day "Green the Earth, Support Dual Carbons". In this regard, the activity has been enthusiastically supported by the majority of employees to fulfill the responsibility of "Greening". In this voluntary tree planting activity, 53 employees donated a total of RMB3,180, equivalent to planting 159 trees. The activity implements Everbright Group's "Notice on Doing a Good Job in Voluntary Tree Planting Work in 2022", and actively uniting the Group to contribute to the "Dual Carbons" national goal.

在「世界地球日」到來之際，南京水務展開了「植綠地球，助力雙碳」之世界地球日義務植樹捐贈活動。對此，活動受到廣大員工的熱烈支持，以履「植」盡責。是次義務植樹活動獲得53名員工捐贈共人民幣3,180元，相等於植樹159株。活動貫徹光大集團《關於做好二零二二年義務植樹工作的通知》，積極凝聚集團上下為國家的「雙碳」目標貢獻力量。



*SAFETY*  
CULTURE  
安全文化

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*UPHOLDING*  
SAFETY OPERATION,  
ENHANCING QUALITY OF SERVICES

堅守安全運營 · 提升服務品質

Safety culture is of utmost importance to the Group. The Group attaches great importance to safeguarding the health and safety of employees and the public, therefore, we resolutely implement the safety management system, and strive to provide a safe working environment for employees. Moreover, we also actively promote education and advocacy on safety to enhance employees' safety awareness. We have adopted a dual-layered protection to prevent any safety incidents and reduce any potential negative impacts during operations.

### Full Implementation of the ESHS Management System

The Group fully implements the ESHS Management System to enhance the effectiveness of the regulatory mechanism's implementation in our operations and promote safety management standard. The system includes ESHS related management procedures on identification, audit, incident investigation and reporting, work-related injury, contractors' ESHS management, etc., thus extending the safety culture and related policies to throughout the Group's supply chain. All projects have established their own standard operating procedures and on-site work checklists in accordance with the ESHS Management System to ensure the safety of the working environment and the public, employees, third-party contractors and resident subcontractors against occupational injuries.

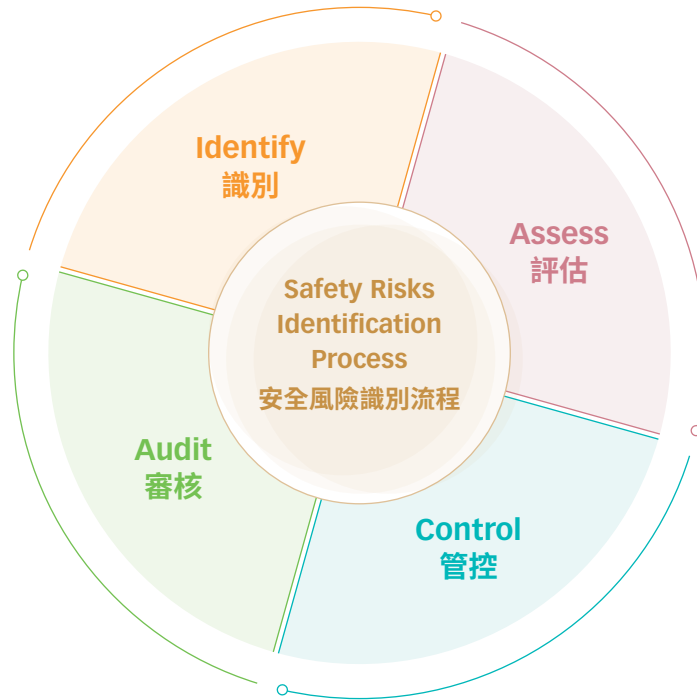
本集團一向重視安全文化，對於員工及公眾的健康和安全從不鬆懈。我們的安全管理體系為員工提供安全的工作環境。本集團亦致力透過積極推廣安全教育與宣傳來提高員工的安全意識。我們運用雙重保障，決心阻絕任何安全事故，以及減輕運營期間有機會產生的不良影響。

### 全面施行ESHS管理體系

本集團全面施行ESHS管理體系，以完善監管機制在運營中的有效實踐，進一步提升安全管理水平。體系內容包括了重要ESHS議題的識別、審核、事故調查及匯報、工傷處理及承包商ESHS管理方面等指導程序的管理標準。體系能有效將安全文化和相關政策延伸到本集團的整個供應鏈中。ESHS管理體系為本集團的所有項目建立了標準操作流程和現場工作檢查表，以確保僱員工作環境和公眾的安全、保障僱員、第三方承包商及分包商駐場工人免受職業性傷害。

### Safety Risks Identification Process

### 安全風險識別流程



In order to enhance management efficiency, in terms of ESHS Management System structure, the Group has established a “four-in-one” management system. The Group has set up a Safety and Environmental Management Committee and a corresponding Operation, Safety and Environmental Management Department or Safety and Environmental Management Department at the four main levels of headquarters, business sectors, regional centres and subordinate project companies.

為進一步提升管理效能，在ESHS管理體系結構方面，本集團搭建了「四位一體」的管理體系，在總部、業務板塊、區域中心及轄屬項目公司四個主要層面皆成立了安全與環境管理委員會和相應的運營與安環管理部或安全與環境管理部。





The Safety and Environmental Management Committee has the decision-making authority and is responsible for regulating, overseeing and supervising the implementation of the environmental and safety standards in each sector of the Group, and meets regularly every year to review the Group's ESHS Management System.

安全與環境管理委員會具有決策權，專責重點規範、監督、督導本集團的各業務板塊環境及安全工作的實施，並每年定期召開檢討會議審視集團的ESHS管理體系。

At the same time, we encourage employees of all levels to propose to their superiors at any time their suggestions to improve the ESHS Management System, and the safety policies and measures that are already in place. In order to prevent any safety incidents due to non-reporting, the system also protects safety risk of whistle blowers from retaliation.

與此同時，我們亦博採眾議，鼓勵各階級的員工隨時向上級提出對ESHS管理體系、和現有的安全制度及措施的改善建議。為了避免因知情不報而引致安全事故，體系亦會保障舉報者的私隱，好讓他們毋須畏懼報復。

Guided by our internal *ESHS Audit Management Standards*, on-site ESHS audits of the project companies under each sector are conducted to examine their respective performance, and determine whether preventive and corrective measures are required for relevant project companies. Except for solar energy and wind power projects, which conduct internal ESHS on-site audits every two years, all other operating and under-construction projects under the Group conduct annual internal ESHS on-site audits as well as unscheduled audits. The scope of these audits covers the environment (such as pollution discharge, temporary storage of hazardous waste), safety (such as fire services design, vehicle use), occupational health (such as occupational hazards, annual body check), and social responsibility (such as supplier screening, charitable activities), where risk factors are categorised as high, medium and low based on its severity and impact.

On top of that, we have also formulated the *Safety Accidents, Environmental Incident Management Policy* to establish the procedures for responding to and following up on accidents. All accidents are categorised into level one to four according to their severity and impact. Level one to three accidents must be directly reported to Everbright Environment's Safety and Environmental Management Committee, which is responsible for overseeing the investigation; while level four accidents must be reported to the Safety and Environmental Management Department of the respective sector, which will then submit investigation reports to Everbright Environment's Safety and Environmental Management Committee. The investigation content will include the cause of the accident and related risks, accident prevention and rectification measures, and summaries of lessons learnt for safety production management as well as other topics, so as to prevent the recurrence of accidents.

Meanwhile, the Group has been actively implementing the internationally certified OHSAS 18001/ISO 45001 Occupational Health and Safety Management System in its operating project companies.

The Group insists on operating each environmental protection project with high standards. Work safety and health of employees are particularly important. After the project is put into operation, different units always actively apply for various certifications, such as occupational health certification.

我們以內部制定的《ESHS審核管理標準》為指引，對各業務板塊項目公司實施光大環境的ESHS現場審核，考察相關績效表現，決定是否需要對項目公司現場的ESHS表現採取預防及整改措施。本集團旗下的在建及運營項目每年均會進行一次內部ESHS現場審核以及進行不定期的現場考核，而光伏發電及風電項目則每兩年進行一次內部ESHS現場審核。審核範圍涵蓋環境（例如污染排放、危險廢物暫存）、安全（例如消防設計、車輛使用）、職業健康（例如職業病危害因素、年度體檢）及社會責任（例如供應商篩選、公益活動），跟據嚴重性及影響評定低、高、中風險因素。

此外，我們修訂了《安全事故、環境事件管理標規定》，確立應對意外事故的流程及後續跟進。各類事故按照嚴重性及影響被分成一至四級，一級為最嚴重事故。一級至三級事故都必須直接上報至光大環境的安全與環境管理委員會，並由委員會負責監督調查工作；四級事故則須上報至所屬板塊的安全與環境管理部，其後由該部門向光大環境安全與環境管理委員會提交調查報告。調查內容包括事故發生原因及相關風險、事故防範和整改措施、總結包括安全生產管理方面的教訓等，以防止事故再次發生。

本集團亦積極於運營項目公司推行獲國際認證的OHSAS 18001/ISO 45001職業健康和安全管理體系。

本集團堅守以高標準運營每個環保項目的承諾，並尤其重視員工之工作安全及健康。此外，各單位在投運項目後均積極申報各項認證，如職業健康認證。

## Implementation of Safety Policies

Each project company under the Group has set up customised emergency plans to manage the potential risks of different scopes and management processes in the plants, ensuring the safety management of the project companies and neighbouring communities. The emergency plans are also regularly adjusted and improved to reflect actual needs according to the evaluation mechanism. The Group has also formulated management systems such as the *Regulations on the Filing and Assessment Management of Safety and Environmental Management Institutions and Personnel* to enhance the level of safety management by strictly establishing preventive mechanisms and standardising production practices.

The Group unremittingly strives to design and construct projects with the highest safety standards, as well as advance and implement legal compliance procedures, in order to ensure legal construction with each project. At the same time, the Group has continuously increased investing in project safety, to ensure civilised construction and safe construction. The Group has a well-established system of construction rules and regulations. Through the implementation of diverse safety and environmental specified inspections and assessments for projects under construction, the Group improves the level of standardised management across construction sites, while at the same time strengthens the management and assessment of construction parties and suppliers, as well as science-based programme planning, etc. The Group has also signed Letters of Responsibility for Construction Unit Safety with the construction contractors to promote the principle of "Everyone is a Safety Officer and Should be Responsible for Safety".

## Pandemic Prevention and Control Management

Since 2021, under the normalised Pandemic prevention and control trend, the Group has determined Pandemic prevention and control a daily priority. Existing prevention measures remain in effect and employees are constantly reminded to maintain good personal hygiene and mind their health situation. Apart from that, the Group actively cooperates with local authorities with regards to their respective prevention and control measures, such as encouraging employees to get vaccinated after they are cleared from a physical assessment. In order to ensure the safety and health of employees and full-scale productivity for all projects, our management and department heads meet from time to time to review and improve all prevention measures.

## 落實項目安全制度

本集團各項目公司均設有專門的應急預案，對應廠區不同範圍和管理流程的潛在風險，為項目公司和鄰近社區的安全管理把關。應急方案亦會根據評估機制定期按實際需要作出相應的調整及改進。本集團亦制定了《關於安全與環境管理機構及人員備案、考核管理的規定》等管理制度、嚴格設置預防機制，規範生產行為，全面提升安全管理水平。

本集團一直致力以最高的安全標準設計及建設項目，推進及落實合法合規的手續辦理工作，確保各項目的施工建造符合法律規定。同時，集團不斷加大工程項目安全投入，確保文明施工、安全施工。現時，本集團具備完善的工程建設規章制度，透過定期對在建工程項目開展多元化的安全與環境專項檢查和考核工作，提升工程現場標準化管理水準，同時加強對施工方、供應商的管理與考核，科學編製工期計劃等。此外，本集團亦與施工單位簽訂「施工單位安全責任書」，倡首「人人都是安全員、人人都為安全負責」的原則。

## 新冠疫情防控管理

隨著新冠疫情防控常態化，本集團自二零二一年起，已把疫情防控融於日常運營要點，繼續執行各項防疫措施，時常提醒員工保持良好個人衛生，注意健康狀況。本集團更積極配合各地政府防疫管控措施，包括鼓勵員工於評估個人身體狀況合適後接種新冠疫苗；管理層與部門負責人亦不時召開專題會議檢討和改進各項防疫工作，保障了員工安全健康和各項目生產正常進行。

In terms of daily operations, the Group fully considers various Pandemic risks, and prevention and control measures, and continues to maintain normal operation in the plant workplace with the concerted efforts of the management and staff at all times. In 2022, where Pandemic cases across provinces and cities in China rebounded irregularly, the Group successfully implemented Flexible Management to resume operation whilst possible. During the Reporting Period, the Group's projects under construction or in operation were operating normally. The Group has strictly required all units to coordinate with both employees and outsourced workers to adopt all possible Pandemic prevention measures in accordance with the requirements stipulated by the local authorities and actual working conditions. All units should reduce personnel flow, reserve sufficient resources for work, life and pandemic prevention, pay attention to employee health, provide sufficient protection for employees, and ensure safe and stable operations while meeting the emission standards.

### Establishing Safety Culture and Securing Operational Safety

The Group has set a long-term goal in 2018 and is committed to maintaining the work injury rate at less than 0.25 per year within five years (2018-2022). As such, during the Reporting Period, the Group has adhered to the basic principle of "securing operational safety and meeting emission standards", strictly implemented the relevant national laws and regulations, and actively conducted daily safety, environmental and occupational health checks. In combination with "Safety Production Month", the Group has paid close attention to safety management, checked for potential safety hazards, and ensured that all projects under construction and in operation have strictly implemented various safety systems.

在日常運營方面，本集團充分考慮新冠疫情風險及各項防控措施，在廣大管理層及員工的集體努力下，盡力保持工作廠區運作正常。在二零二二年，本集團亦透過實現靈活部署，在病毒不斷變種而引致疫情反復的變化下，盡可能地維持正常運營。靈活部署包括嚴格要求各單位按照各地政府要求及實際工作情況，組織內部員工及外包單位人員做好一切可能的疫情防範應對措施，各單位減少人員流動，儲備好充足的生產、生活和防疫物資，不時關注員工健康情況，為員工提供足夠保護，確保項目安全穩定生產和達標排放。

### 建立安全文化保障安全運營

本集團已於二零一八年制定了長期目標，致力將工傷率於五年間（二零一八至二零二二年）每年維持在0.25或以下。因此，本集團於報告期內繼續秉持「安全穩定運營、達標排放」的原則，嚴格執行國家相關法律法規，積極開展安全、環境與職業健康日常檢查工作，並結合「安全生產月」，嚴密落實安全管理，排查安全隱患，確保各在建及運營項目嚴格執行各項安全制度。

The Group has fully promoted the construction execution information system, allowing relevant functional modules to be fully operational online; at the same time carrying out project-specific inspections and random inspections to achieve full coverage of areas like inspection of key processes, safety knowledge transfer, construction plan reviews, supplier inspections, etc. In order to enhance emergency preparedness of the staff, the Group also organises emergency drills regularly to improve their overall emergency handling capability.

本集團全面推進工程執行資訊系統，相關功能模塊已全面上線運行；同時開展工程項目專項檢查和隨機檢查，實現對重點部位工序檢查、安全技術交底、施工方案審查、供應商考察等領域的全覆蓋。我們亦定期組織應急演練，務求全面提升員工應對危機時的應變技巧。

### Key Safety Actions

### 安全行動重點



## Emergency Drills

### *Quzhou Waste-to-energy Project – COVID-19 Pandemic Control Drill*

On 22 February 2022, Quzhou Project organised a COVID-19 Pandemic Control Drill with the aim to review and improve current pandemic preventive and control strategies and emergency preparedness.

In the modelled scenario of the drill, an employee of Quzhou Project was tested positive for COVID-19 and the Kecheng District COVID-19 Pandemic Control Command Center activated the contingency response plan. The drill was the project company's first participation in joint pandemic control drills. Nonetheless, all the staff of Quzhou Project proactively coordinated with the lockdown operation group, the organisation group, and the COVID-19 PCR test group to complete the tasks in a fast, safe, and orderly manner. From the drill, Quzhou Project was able to review and accurately correct its existing limitations in pandemic preventive and control strategies.

### *Huangshi Venous Industrial Park – Fire Drill and Training Activities*

On 28 April 2022, Huangshi Venous Industrial Park organised fire drill and training activities, aiming at reviewing the practicality and reliability of the project company's fire emergency management strategies, strengthening the cooperation among different emergency rescue departments, and improving employees' abilities to respond to fire accidents. The activities were guided by the Huangshi Xialu District's Fire Department and all employees and external units were invited to participate.

Through performing the drill, Huangshi Venous Industrial Park managed to identify limitations in its existing emergency management strategies, such as ineffectiveness in some collaboration procedures and the areas of improvement in employees' emergency management skills. Huangshi Venous Industrial Park will continue to attach great importance to employee trainings and drills, so as to improve the emergency management abilities of employees and minimise limitations. It will strive to ensure effective implementation of all emergency management strategies.

## 事故應急演練

### *衢州垃圾發電項目－新冠疫情防控應急實戰演練*

二零二二年二月二十二日，衢州項目舉行了新冠肺炎疫情防控應急實戰演練，以完善疫情應急方案，提升應急反應能力。

演練模擬因柯城區新型冠狀病毒肺炎疫情防控應急指揮部發現衢州項目一名職工核酸檢測結果為陽性而啟動應急工作方案。此次實戰演練為項目公司第一次參加聯動實戰防疫演練。當中，衢州項目全體職工積極參與配合封控組、流調組、核酸檢測組的工作，快速、有序、安全地完成相關程序。衢州項目透過演練檢驗了現時疫情防疫工作中的不足，從而精確針對演練中存在的問題進一步修訂應急方案。

### *黃石靜脈產業園開展消防教育暨消防應急演練活動*

二零二二年四月二十八日，黃石靜脈產業園開展了消防知識培訓暨消防應急演練活動，旨在檢驗消防應急救援預案的操作性、可靠性，加強應急救援部門之間的協同配合，提高突發消防事故的應急處置能力。活動邀請了黃石市下陸區消防大隊來現場指導，全體員工、外協單位均有參與。

通過此次演練，黃石靜脈產業園發現了應急預案中存在的問題，比如員工雖然可以正確使用消防栓，但存在銜接不順暢、配合不默契等問題，暴露出部分員工應對突發事件的能力仍有不足。黃石靜脈產業園將繼續注重各項預案的演練和人員應急處置能力的提升，找出預案需要進一步完善和修正的地方，確保應急預案的整體或關鍵部分得以有效付諸實施，提高應急反應和應急救援能力。

## Lianyungang Hazardous Waste Incineration Project – ESHS Knowledge Quiz

June 2022 was the “Safety Production Month”. On 20 June 2022, the Lianyungang hazardous waste incineration project company organised the ESHS Knowledge Quiz to encourage employees to abide by the long-term mechanism of safer production in an interactive way. The activity advanced the project company’s development in safer production by deeply rooting the safety concept into the hearts of every employee.

### Safety Trainings

The Group strives to conduct safety trainings in an “All Angles, Full Coverage, Normalised, Systematic” manner. Through organising diverse activities that are rich in content, the Group makes solid progress in training all its employees and third-parties. A sense of responsibility in safety production is promoted. Safety-first culture is thus upheld in all businesses of the Group. Certain projects have also established safety education experience areas, including fire simulation, VR experience for operating accidents, safety knowledge competition, safety test trainings, etc. Actual simulation experiences can help deepen employees’ impression and understanding of various common accidents. Compared with traditional safety trainings, such innovative training method saves a lot of training time while being more effective at raising safety awareness among employees.

The Group also regularly collects feedback from employees on training activities and evaluates the content and effectiveness of the training activities in order to make timely improvements.

## 連雲港危廢焚燒項目－ESHs知識競賽

二零二二年六月是「安全生產月」。於二零二二年六月二十日，連雲港危廢焚燒項目公司舉辦了ESHs知識競賽，利用員工喜聞樂見的活動形式，鼓勵員工遵守安全生產工作的長效機制。活動推動了項目公司安全生產工作向縱深發展，把安全觀念深植於每一位員工心中。

### 安全培訓

本集團積極構建「全方位、全覆蓋，常態化、系統性」大宣貫大培訓的工作理念，通過組織形式多樣、內容豐富的培訓活動，扎實推進全員及第三方人員培訓工作，強化安全生產責任感，讓安全發展理念貫穿於工作始終。個別項目包括安全教育體驗區，包括消防模擬、作業過程事故的VR體驗、安全知識搶答、安全考試培訓等內容。透過實際情境體驗，加深各級員工對各類常見事故的印象和理解。與傳統安全培訓相對比，該創新培訓形式大大節省了培訓時間，更有效提高全員安全意識。

本集團定期收集員工對培訓活動的反饋意見，評估培訓活動的內容及成效，以便適時作出改善。



The Group's health and safety trainings cover the following:

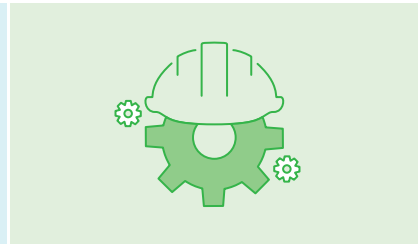
本集團為員工提供的健康與安全培訓涵蓋以下內容：



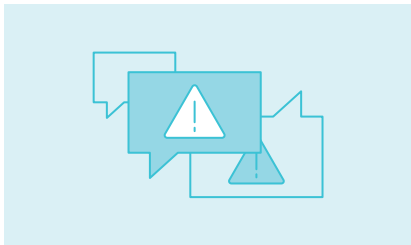
Health and Safety Laws  
and Regulation  
健康與安全方面的  
法律法規



ESHS Management System  
ESHS管理體系



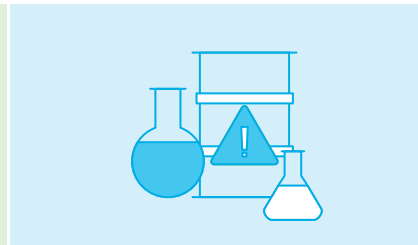
Safe Use of  
Equipment  
設備裝置的安全使用



Identification and Control of  
Sources of Hazards  
危險源的辨識和  
控制措施



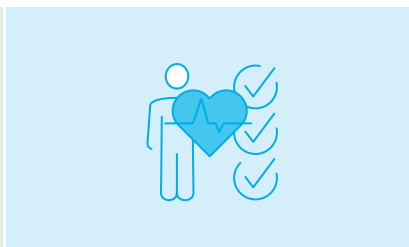
Risk Control and Troubleshoot  
by Risk Level  
風險分級管控和  
隱患排查



Procurement and  
Storage of  
Hazardous Items  
採購及貯存危險物品



Accident Contingency Plan  
事故應急管理



Occupational Health  
職業健康管理



First Aid  
急救

We also provide trainings to third-party contractors and subcontractors working on-site, covering topics such as ESHS management systems and accident contingency management.

我們亦向第三方承包商及分包商駐場工人提供培訓，內容涵蓋ESHS管理體系及事故應急管理等。



## Health and Safety Statistics in 2022

## 二零二二年健康與安全統計

### Total Working Hours

### 工作總時數

Employees of Everbright Environment  
光大環境員工

**25,175,456** hours  
小時

On-site third party contractors and subcontractors  
第三方承包商及分包商駐場工人

**35,657,536** hours  
小時

### Employees

### 員工

Number of work-related fatalities  
因工死亡個案

**0**

Rate of work-related fatalities<sup>(1)</sup>  
因工死亡率<sup>(1)</sup>

**0**

Number of high-consequence  
work-related injuries  
(excluding fatalities)<sup>(2)</sup>  
嚴重工傷個案  
(不包括死亡個案)<sup>(2)</sup>

**0**

Rate of high-consequence  
work-related injuries  
(excluding fatalities)<sup>(2),(3)</sup>  
嚴重工傷率 (不包括死亡個案)<sup>(2),(3)</sup>

**0**

Number of work-related injuries<sup>(4)</sup>  
工傷個案<sup>(4)</sup>

**10**

Rate of work-related injuries<sup>(4),(5)</sup>  
工傷率<sup>(4),(5)</sup>

**0.08**

Days of absence from work  
due to work-related injury  
因工傷缺勤日數 (天)

**434**

Number of occupational  
disease cases  
職業病個案

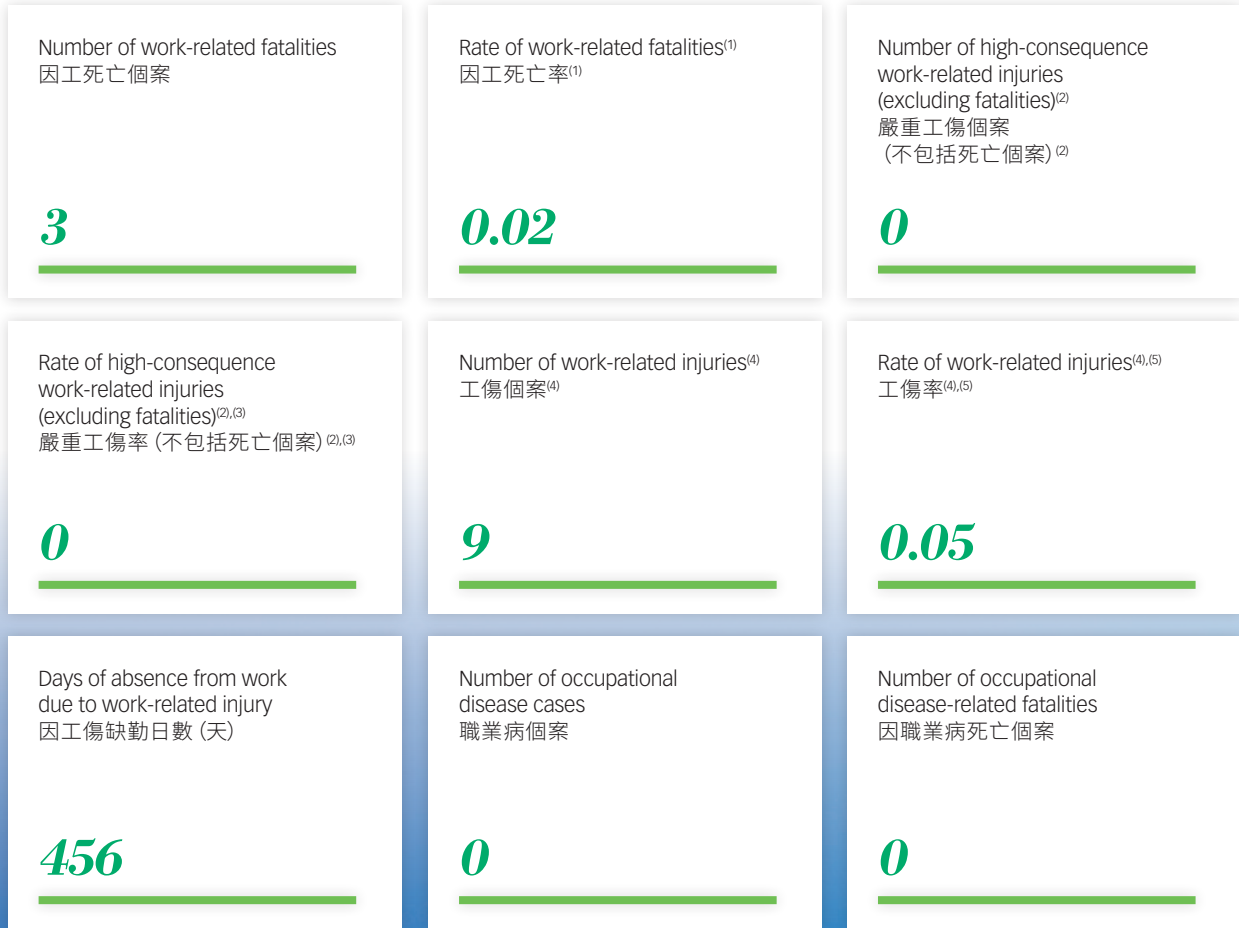
**0**

Number of occupational  
disease-related fatalities  
因職業病死亡個案

**0**

On-site Third-party Contractors and Subcontractors

第三方承包商及分包商駐場工人



Notes:

- (1) Rate of work-related fatalities = (Total number of fatalities as a result of work-related injury/Total working hours) × 200,000.
- (2) High-consequence work-related injuries (excluding fatalities) refer to work-related injuries that result in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months.
- (3) Rate of high-consequence work-related injuries (excluding fatalities) = (Total number of high-consequence work-related injuries(excluding fatalities)/Total working hours) × 200,000.
- (4) Work-related injuries also include work-related fatalities and high consequence work-related injuries.
- (5) Rate of work-related injuries = (Total number of work-related injuries/Total working hours) × 200,000.

附註：

- (1) 因工死亡率= (因工傷所造成的死亡個案總計 / 工作總時數) × 200,000。
- (2) 嚴重工傷(不包括死亡個案)是指導致工作者無法或難於六個月內恢復至受傷前健康狀態的工傷。
- (3) 嚴重工傷率(不包括死亡個案) = (嚴重工傷個案總計(不包括死亡個案) / 工作總時數) × 200,000。
- (4) 工傷亦包含因工死亡及嚴重工傷。
- (5) 工傷率 = (工傷個案總計 / 工作總時數) × 200,000。





*COMMUNITY*  
CARE  
社區關懷

---

*BUILDING*

A SUSTAINABLE ENVIRONMENT  
and GIVING BACK to the SOCIETY

創造可持續環境 · 回饋社會大眾

Everbright Environment has long been adhering to the corporate pursuit of “Creating Better Investment Value and Undertaking More Social Responsibility” by implementing the *Environmental and Social Management System* to actively fulfil the responsibility of a good corporate citizen.

During the Reporting Period, the Group organised a series of community welfare activities mainly focusing on four areas i.e., quality education, community engagement, poverty alleviation and climate action, constantly attending to the needs of various social groups and establishing friendly ties with the community. The Group is committed to giving back to the community and the general public, actively promoting the comprehensive development of local communities through our operations, and strengthening their resilience against climate change and natural disasters.

一直以來，光大環境都毋忘作為社會企業的責任與使命，堅持以「創造更好投資價值，承擔更多社會責任」為企業追求，落實《環境與社會管理制度》，由衷履行良好企業公民的責任。

於報告期內，本集團的社區工作主要圍繞優質教育、社區共融、扶貧濟困、氣候行動四大方面。本集團不時組織社區公益活動，積極關注社會各社群的不同需求，與社區建立友好聯繫。我們更致力於回饋社會及公眾，在業務運營中積極促進當地社區的綜合發展，幫助社區增強抵禦氣候變化和自然災害的能力。



**Battling Against the Pandemic**  
抗疫前線



**Community Engagement**  
社區共融



**Quality Education**  
優質教育



**Poverty Alleviation**  
扶貧濟困

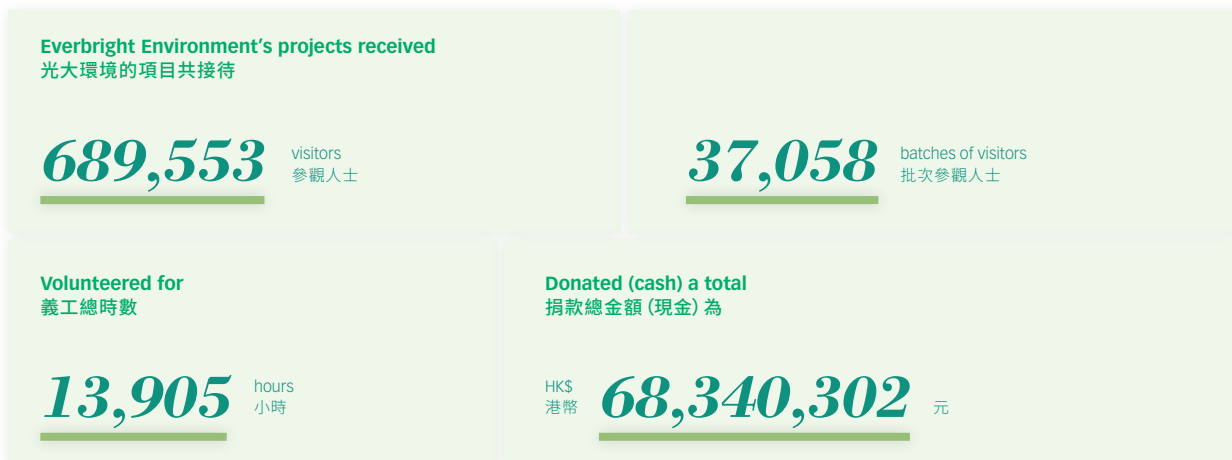


**Climate Action**  
氣候行動

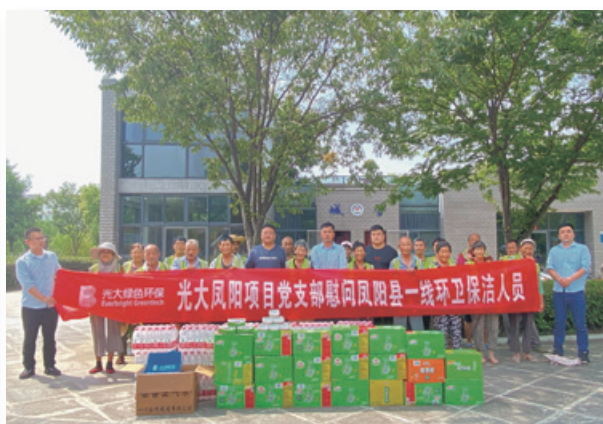
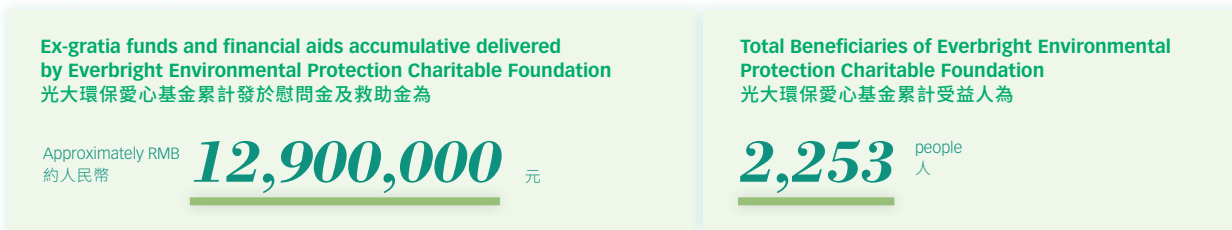


## Cumulative Social Contributions 累計社會貢獻

Since 2017  
自二零一七年起



Since 2013  
自二零一三年起



Since 2011  
自二零一一年起

Anhui Dangshan No.5 High School<sup>(1)</sup> has accumulatively provided educational opportunities for 安徽蕩山縣第五中學<sup>(1)</sup>已累計提供教育機會予

**7,291** students  
名學生

Since 2010  
自二零一零年起

The Group has  
本集團共有

**255** projects that were recognised as “Environmental Education Hubs” or “Science Popularisation and Education Hubs”  
項目獲得「環境教育基地」或「科普教育基地」的稱號

Note:

附註：

<sup>(1)</sup> The School was formerly known as “Everbright Environment True Love School.”

<sup>(1)</sup> 該學校前稱「光大環境愛心學校」。



## Key Activities 重點活動里程碑

Supported the planning and construction of sports facilities for kids in Schönewalde of Germany  
支持德國舍訥瓦爾德社區兒童體育活動場地設施規劃和建設

NOV  
2017  
二零一七年  
十一月

“Everbright International Protection Charitable Foundation”<sup>(2)</sup> supported Heifer International Hong Kong branch’s “Read to Feed” fundraising programme  
「光大國際環保公益基金」<sup>(2)</sup>全力支持國際小母牛香港分會舉辦的「開卷助人」閱讀籌款計劃

2016-  
2019  
School Year  
二零一六年至  
二零一九年  
學年

Sponsored the Yan Oi Tong Environmental City Exploration Tour  
全力支持「仁愛堂環保城市探索之旅」

2015  
二零一五年

Double Diamond Member of the World Wide Fund for Nature (WWF) Hong Kong and lead sponsor for the “Earth Hour” campaign for many consecutive years  
為世界自然基金會香港分會雙鑽石會員，連續多年首席贊助香港「地球一小時」活動

SINCE  
2014  
二零一四年起

Established Everbright International Environmental Protection Charitable Foundation Company Limited<sup>(3)</sup> to manage the “Everbright International Protection Charitable Foundation”  
在香港成立光大國際環保公益基金會有限公司<sup>(3)</sup>，專責管理「光大國際環保公益基金」

2013  
二零一三年

As the co-founder of the “Everbright Environmental Protection Charitable Foundation”, provided RMB1.5 million annually to support sanitation workers and their families who need financial and psychological support in Suzhou Province  
參與成立「光大環保愛心基金」，並每年向基金會捐贈人民幣150萬元支持需要財政及情緒支援的蘇州市環衛工人及其家庭

2013  
二零一三年

Established “Everbright International True Love School”<sup>(1)</sup> in Dangshan, Anhui  
在安徽蕩山建立「光大國際愛心學校」<sup>(1)</sup>

2011  
二零一一年

Notes : (1) The school has been renamed as Anhui Dangshan No. 5 High School.  
附註：該學校已更名為安徽蕩山縣第五中學。

(2) The foundation has been renamed as Everbright Environment Charitable Foundation since September 2020.  
該基金會已於二零二零年九月更名為光大環境慈善基金會。

(3) The Company has been renamed as Everbright Environment Charitable Foundation Company Limited since September 2020.  
該公司已於二零二零年九月更名為光大環境慈善公益基金會有限公司。





## Battling Against the Pandemic and Natural Disasters

Despite the continued global impact from the Pandemic in 2022, Everbright Environment fully utilised its competitive edge in the industry to make sure all projects maintained normal operations, so as to treat municipal and medical waste to protect the public's health and safety.

In March 2022, the COVID-19 Pandemic situation in China got difficult again. In response to the planning of local governments, project companies of Everbright Environment coordinated with different parties to contribute at their best to pandemic prevention. Our projects took up the responsibilities as corporate citizens to help with pandemic prevention in the difficult times. Lianyungang Hazardous Waste Incineration Project served 247 medical authorities during the period. It also collaborated with the Lianyungang Solid Waste Treatment Project to facilitate the arrangement of staff from customer service, transportation, and off-site logistics departments to support the tasks related to hazard waste treatment, i.e., transportation scheduling, plant disinfection, medical waste discharge, etc. The efforts provided significant support to battling against the Pandemic.

## Quality Education

Providing quality education for the youth is key to grooming them into future pillars of the country. As a result, Everbright Environment has continued to devote a considerable amount of resources to education over the years to nurture future generations. At the same time, we actively popularise environmental protection knowledge, promote green technology, and contribute to China's sustainable development.

### Donation to Anhui Dangshan No. 5 High School

Quality education is the foundation for sustainable development. Over the years, Everbright Environment has been supporting the operation of Anhui Dangshan No. 5 High School, which has provided educational opportunities for accumulatively 7,291 students in rural areas. Our employees serve as teacher volunteers to provide teaching support at the school for underprivileged school-age children. During the Reporting Period, our 20th and 21st batches of teacher volunteers provided teaching support at the school for the underprivileged students to give them access to better educational opportunities and supports.

## 抗疫抗災前線

儘管新冠疫情於二零二二年繼續肆虐，衝擊全球各國，光大環境仍充分發揮自身行業優勢，各項目在疫情爆發期間堅持正常運作，處理生活、醫療垃圾，保障公共衛生安全。

二零二二年三月，本地疫情反彈，光大環境多地項目按照當地政府的要求及相關部署，整合各方力量，迎難而上，統籌安排，以踐行企業公民責任，築牢防疫安全線。當中，連雲港危廢公司服務多達247家醫療機構。在疫情高峰期，連雲港危廢焚燒項目更一直與連雲港固廢處理項目同心同德、通力協作，不懈調派客服人員、運行人員及勞務外包人員支援危廢處理的運輸調度、全廠消殺、醫廢卸貨等工作，為抗擊新冠疫情提供有力援助。

## 優質教育

光大環境深信兒童和青少年都擁有無限潛能，是國家未來的棟樑。我們多年來不斷投入大量資源於教育工作，用心栽培出色的下一代。與此同時，我們積極向下一代普及環保知識、推廣綠色科技，以支持祖國的可持續發展。

### 捐助安徽蕩山縣第五中學

我們明白優質的教育是創建可持續發展的堅實基礎。光大環境多年來捐助安徽蕩山縣第五中學，累計已為7,291名位於偏遠地區的學生提供教育機會。於報告期內，我們的第二十批及第二十一批員工化身成義務教師赴學校提供教學支援，給山區的適齡學生提供教育資源及幫助。

## Promoting Opening Up of Projects to the Public and Popularising Environmental Protection Education

Everbright Environment continuously utilises its project facilities in different locations as environmental education bases and science popularisation centres, which constantly organise various environmental education activities to promote sustainable development and green lifestyle to youngsters and the general public. In 2022, Zoucheng Everbright Environmental Energy Limited was awarded “Shandong Province’s Top 10 Public Environmental Protection Facilities 2022” by the Shandong Province Government. The award recognised Zoucheng Project’s contribution to raising the province’s environmental awareness. On top of that, one employee of the project company was awarded “Shandong Province’s Top 10 Public Environmental Protection Facilities Guides” for his outstanding explanations.

The public opening-up events cover primary and secondary schools, universities, local and international peers, environmental protection organisations and communities. To further enhance the procedures and quality relating to receiving visitors, each project company has formulated policies including the Reception Etiquette Guideling for Visits and Reception Safety Guideline for Visits, and set up a dedicated team managed by the integrated management department together with the production department which is responsible for all project opening-up events.

## 推動公眾開放，普及環保教育

光大環境持續利用項目位於各地的設施，以作環保教育基地和科普教育體驗中心，組織各類環保教育活動，從而深化年輕人和大眾對可持續發展和綠色生活的認識。鄒城光大環保能源有限公司更於二零二二年憑着其出色的表現，累計接待近萬公眾人次的成績，榮獲由山東省政府頒發的「二零二二年山東省十佳環保設施開放單位」稱號，表揚其對提高全省民眾的環境意識的貢獻。其中，一名員工藉着其專業的講解，獲得頒發「二零二二年山東省環保設施開放十佳講解員」。

公眾活動開放的受眾覆蓋中小學生、大專院校、國內外同行企業、環保組織、社會民眾等。為進一步提高參觀接待的水平及素質，各項目公司更先後制定了《參觀接待禮儀準則》、《參觀接待安全須知》等制度規範，成立以綜合管理部為主，生產相關部門為輔的公眾開放日接待小組。



In 2022, with the Pandemic still lingering, the Group continued to adopt a combination of online and offline promoting models to open up the environmental facilities, and advocate environmental protection and sustainable development to the public. During the Reporting Period, the Group's environmental protection projects played an important role in promoting environmental education, environmental science popularisation, circular economy and industrial tourism, with over 40,000 domestic and foreign visitors from all social circles visited the projects.

二零二二年，縱然新冠疫情局勢繼續反覆，本集團仍盡力堅守環保教育，採取綫上綫下相結合的宣傳模式對外開放環保設施，向公眾推廣及宣傳環境保護、可持續發展等議題。於報告期內，本集團旗下環保項目積極承擔環境教育、環境科普、循環經濟及工業旅遊基地的重要角色，共接待國內外各界人士參觀考察達超過40,000人次。



In 2022  
二零二二年

Our projects received over  
我們的項目共接待超過

**40,000** visitors  
名參觀人士

Exceeding  
超過

**2,600** batches of visitors  
批次

A total of **104** projects were recognised as "Environmental Education Hubs" or "Science Popularisation and Education Hubs"  
共有 **104** 項目獲得「環境教育基地」或「科普教育基地」的稱號

The Group opened up to the public  
本集團已向公眾開放

**151** environmental protection facilities  
個環保設施

## Case Studies 個案分享

### Promote Opening Up of Environmental Facilities

#### Henglin Experiment Primary School's Visit to Changzhou Waste-to-energy Project

On 21 January 2022, Changzhou Waste-to-energy Project ("Changzhou Project") received 30 teachers and students from Henglin Experiment Primary School. The visit was the closing session for "Little Journalist Winter Camp – Following Waste to Explore". During the visit, professional guides from Changzhou Project led the group to look around different parts in the plant area, i.e., central control room and waste handling cranes. The visit was educational to the teachers and students as it deepened their understanding on waste-to-energy.

### 促進公眾開放

#### 橫林實驗小學師生參觀 常州垃圾發電項目

二零二二年一月二十一日，常州垃圾發電項目（「常州項目」）開放予橫林實驗小學師生一行30人參觀學習。本次參觀是「快報小記者寒假冬令營－跟著垃圾去旅行」活動的收官之站。常州項目專業講解員帶領師生一起參觀了主廠房的中控室、垃圾吊等工作場所，從而加深他們對垃圾焚燒發電的認識。

## Case Studies 個案分享

### An Environmental Protection Tour at Hubei Zhongxiang Urban and Rural Integration Project by Yangtze University

On 4 January 2022, 60 Environmental and Ecological Engineering students of class 2018 from Yangtze University's Resources and Environment Faculty visited Hubei Zhongxiang Urban and Rural Integration Project for a half-day "Environmental Protection Tour". The tour was an integrated learning experience for the students, where they enriched understanding on processes and equipment regarding biomass power generation, domestic waste water treatment, leachate treatment and household waste treatment. Under the guidance of our employees, teachers and students from Yangtze University visited different facilities of the project, i.e., waste crane control room, central control room and water treatment centre, etc. The visit gave students the chance to take a close look at the working environment of the project, and allowed them to better understand the operation and structure of Everbright Environment's projects.

### 長江大學生在湖北鐘祥城鄉一體化項目的環保之旅

二零二二年一月四日，長江大學資源與環境學院二零一八級環境生態工程專業學生一行60人來到湖北鐘祥城鄉一體化項目開展為期半天的「環保之旅」綜合實習，深入了解生物質發電工藝，學習生活污水處理、垃圾滲濾液處理及生活垃圾處理工藝技術和設備。在工作人員的帶領下，長江大學師生們參觀了項目的不同設施，如集中控制室，垃圾吊控制室，水處理中心等。學生們在活動中能夠近距離觀察工作環境，通過走訪不同部門更加深入地了解光大環境項目的運營和結構。



## Case Studies 個案分享

### Laiwu Waste-to-energy Project – Online Training for Graduates from Shandong Jianzhu University

On 13 April 2022, the Production Skills Department of Laiwu Waste-to-energy Project (“Laiwu Project”) accepted the invitation of the Shandong Jianzhu University to provide an online training session to graduating students from the Department of Thermal Engineering. The training was divided into three parts: an introduction of Everbright Environment and Laiwu Project, an explanation on the significance of Laiwu Project, and an explanation on the procedures of the project’s Waste-to-energy system. The in-depth explanations of the training allowed students to understand the strengths and responsibilities of Everbright Environment and Laiwu Project. It gave them a better understanding on waste-to-energy’s significant contribution towards improving the environment, saving energy and reducing carbon emissions. On top of that, students could see the “harmlessness, reduction and reuse” characteristics of waste-to-energy processes. Although the training was held online under the Pandemic restrictions, the detailed and illustrated explanation still served a good education purpose to the students. Laiwu Project demonstrated its advantages as an “Environmental Protection Education Hub”, “Science Popularisation and Education Hub”, and an “Internship hub for University Students”.

### 萊蕪垃圾發電項目的線上 山東建築大學畢業培訓

二零二二年四月十三日，萊蕪垃圾發電項目（「萊蕪項目」）生產技術部應山東建築大學的邀請，為該校熱能動力專業即將畢業的學生們上了一堂線上實習培訓課。整個培訓分為三部分：光大環境及萊蕪項目簡介、垃圾焚燒發電項目的意義和萊蕪項目垃圾焚燒發電工藝流程。通過這三個部分的詳細講解，山東建築大學的同學們了解到光大環境與萊蕪項目的實力與擔當，得悉垃圾發電項目對改善環境、節能降碳的重要意義，更理解了垃圾發電如何一進四出實現「無害化、減量化、資源化」處理的工藝及過程。縱使受疫情所限學生們無法進行現場參觀，但通過圖文並茂的講解，萊蕪項目仍展現了環保教育基地、科普教育基地、大學生實習基地的風采。

## Case Studies 個案分享

### A Visit to Xiajin Waste-to-energy Project by Xiajin Sunshine Youth Group

In May 2022, Xiajin Sunshine Youth Group organised a student visit to Xiajin Waste-to-energy Project, where students learnt about the processes of how waste ferments and transforms into energy, as well as treatment methods of flue gas after incineration. Students were able to learn about waste-to-energy and the importance of waste separation through the visit.

### 夏津縣陽光少年團到夏津垃圾發電項目 參觀研學

二零二二年五月，夏津縣陽光少年團組織學生來到夏津垃圾發電項目進行參觀學習，了解垃圾從發酵到轉換為電力的過程和焚燒後煙氣處理的環保流程，學到垃圾發電的相關知識，認識垃圾分類的重要性。

## Community Engagement

Everbright Environment has always adhered to its corporate pursuit of “Creating Better Investment Value and Undertaking More Social Responsibility” towards sustainability. The Group not only strives to ensure safe and stable operations and compliant emissions of the projects, but also proactively integrates into the neighbouring communities of the projects. The Group has been actively engaging the local communities of the rural areas where its projects are operated for joint development, such as giving priority to local residents when the projects provide employment opportunities, in order to improve the environment and facilitate industrial upgrading locally and in the surrounding areas.

To guarantee the Group’s projects comply with the international safeguarding principles and the requirements in the environmental and social aspects, the Group has taken the initiative to refer to the relevant requirements of ADB by including social concerns into the beginning phase of the project life cycle, including environmental and social impact screening and classification, relocation, indigenous groups, local communities, environmental impact assessment, information disclosure, public engagement, gender equality, due diligence and review, as well as the requirements for monitoring and reporting such topics. This ensures that the Group will properly manage any resettlement associated with its projects in compliance with related laws, with all affected citizens receiving fair and adequate compensation and rehabilitation. The Group’s ESHS Management System also includes a strict Incident Reporting Procedure to ensure that we thoroughly investigate public complaints, as well as properly follow up and resolve issues raised. In 2022, the Group had not received any complaints on our products and services.

## 社區共融

光大環境始終秉承「創造更好投資價值，承擔更多社會責任」的企業理念邁向可持續發展之路。除了致力確保項目安全穩定運行、環保達標排放外，本集團更主動融入項目的周邊社區，積極實踐村企共建，優先考慮為當地居民提供就業機會，拉動周邊區域的環境改善和產業升級。

為確保本集團的垃圾發電項目能滿足國際上對環境及社會的保障原則和要求，本集團遵循亞發行的相關要求，將社會關注點納入項目生命週期的初始階段，包括環境和社會影響篩選和分類、搬遷安置、原住民、當地社區、環境影響評估、資訊披露、公眾參與、性別平等、盡職調查和審查，及監測和報告等範疇的要求等，從而確保與項目開發相關的社區工作按照適用法律進行妥善管理，所有受影響人士將得到公平、充分的補償和修復安排。本集團的ESHS管理體系中亦設有嚴格的《事故匯報程序》，以確保我們徹底調查公眾投訴，並妥善跟進及解決所提出的問題。本集團於二零二二年沒有接獲關於產品及服務的投訴。

The Group's environmental protection projects not only serve as important extracurricular educational resources for universities, secondary and primary schools, the Group's environmental protection projects also actively welcome visits of people from different social sectors, with an aim to drive social and economic benefits through continuous improvement of project opening-up arrangement, promotion of industrial tourism, and encouragement of circular economy.

本集團旗下的環保項目不僅是各大高校和中小學生重要的課外教學資源，我們更積極接待社會各界代表團實地參觀考察，透過不斷完善公眾開放、推廣工業旅遊、鼓勵循環經濟，為當地社區帶來更佳的经济與社會效益。

### Five Key Elements of Everbright Environment's Benchmark Environmental Protection Projects 光大環境環保項目的五大要素





## Solving the “NIMBY” Effect

The Group’s integrated biomass utilisation projects are aligned with the central government’s goal in achieving green development in rural areas. The introduction of advanced waste treatment facilities in rural areas has effectively prevented waste disposal and reduced pollution, laying the foundation for sustainable development in the Chinese rural areas. In addition, the Group’s Hangzhou Project opened up its project area borders, following the Group’s Changzhou Project to have become another typical case that solves the NIMBY effect, essentially becoming a “living room of the city” for the public, which not only provides a leisure space for local residents but also sets an example for the development of waste-to-energy industry nationwide and provides a good reference for tackling the not-in-my-backyard (“NIMBY”) effect.

## Poverty Alleviation

Everbright Environment has been actively responding to the national policies on targeted poverty alleviation and is committed to creating a better living environment for urban and rural residents. The Group insists on promoting volunteer work, disaster relief efforts and charitable activities to enhance the engagement with the community. At the same time, the projects provide employees with multiple volunteering opportunities, encouraging them to actively participate in community activities.

## Poverty Alleviation Industry Chain

The Group is committed to solving local problems by continuously encouraging and promoting effective public and resident partnerships. Through the integrated biomass utilisation projects, the Group has successfully established and improved the fuel collection and storage system, formulating the strategy of “increasing income for farmers, facilitating corporate development and gaining mutual benefit for multiple parties”, and improving the local rural economy directly and indirectly and reducing the population in poverty. The local governments arranged underprivileged households to collect and sell biomass materials to the Group’s operating projects as a way to provide extra income to the needy while at the same time helping to address the local waste treatment problems. The collaboration model has broken new ground to create a situation that benefits the environment, society and economy.

## 破解「鄰避效應」

為響應中央政府推進鄉村綠色發展的方向，本集團的生物質綜合利用項目將先進的垃圾處理設施引入農村，預防廢物棄置並減少其相關污染問題，為中國農村的可持續發展奠定基礎。與此同時，本集團杭州項目更借鑑常州項目的做法，開放其他合適廠房的邊界，為項目區域建設社區設施，向市民開放作「城市客廳」，不僅為當地居民提供休閒之所，更為國內垃圾發電行業的發展和化解「鄰避效應」提供有益借鑒。

## 扶貧濟困

光大環境一直積極響應國家有關精準扶貧的政策，致力為城鄉居民建設更好的生活環境。本集團堅持推動義務工作、災難救濟及慈善活動，務求以服務回饋社會，與社區融和和交流。同時，項目為員工提供不同義工機會，推動他們攜手參與社區活動，回饋社會。

## 扶貧產業鏈

本集團透過不斷開展並推進有效的公共和公民社會合作，解決當地問題。通過生物質綜合利用項目燃料收儲體系的建立和完善，發展「農民增收、企業發展、多方共贏」的戰略，直接和間接帶動農村經濟，幫助人口脫貧。政府透過此模式組織貧困戶收集生物質原料出售予本集團的運營項目，為人們提供額外收入的同時有助解決當地的廢物處理問題，開創環境、社會和經濟效益共贏的新格局。

In addition, the Group's Xinhua Waste-to-energy Project ("Xinhua Project") is a poverty alleviation project receiving major support by the Group and also a featured Everbright Environment project for fulfilling industrial poverty alleviation. In addition to the construction of local infrastructures and renovation of composting toilets, this project has also helped establish a supply chain between the underprivileged households and poverty alleviation organisations for fruits and vegetables, and daily necessities, making use of every effort to drive economic vitality and efficiency. Take Xinhua Project as an example, its construction is not only effective in promoting local economic developments, but also in lifting local residents from poverty by offering more employment opportunities. The project is conducive to improving environmental construction, ensuring environmental health and safety, and playing a role in targeted poverty alleviation and pollution prevention.

此外，本集團全面支持中國的脫貧攻堅計畫。新化垃圾發電項目（「新化項目」）是本集團重點發展的生態產業脫貧項目，也是光大環境實施環保產業扶貧的特色優勢項目。除了建設當地基礎設施、實施了生態廁所改建工程，此項目更與當地貧困戶和扶貧企業建立果蔬供貨、日用品供貨聯繫，全力拉動貧困地區的經濟活力和經濟效能。新化項目的建設有效大力促進地方經濟發展，幫助當地居民脫貧就業。項目亦有利於改善環境建設，保障環境健康安全，對精準脫貧、污染防治起雙重促進作用。



### In 2022, Integrated Biomass Utilisation Projects of Everbright Environment 二零二二年，光大環境的生物質綜合利用項目

Directly and/or indirectly created  
直接及／或間接提供工作崗位

**60,186** Jobs  
個

Increased farmers' income by approximately  
帶動農民增收約

RMB **2.63** billion  
人民幣 十億元

Benefited over  
令逾

**5.45** million farmers  
百萬名農民受益

## Charitable Activities

Together with the Suzhou Urban Appearance Municipal Management Bureau and the Suzhou Charity Federation, Everbright Environment's project company in Suzhou established the "Everbright Environmental Protection Charitable Fund", which aims at helping sanitation workers and their families who are in need, and launching the promotion activities of caring for the workers. As of the end of 2022, the Fund had supported over 2,253 beneficiaries, to whom a total of RMB12.90 million of consolation money and financial aid was distributed.

## 慈善與公益

光大環境的蘇州項目公司與蘇州市市容市政管理局及蘇州市慈善總會共同發起成立「光大環保愛心基金」，用於慰問和救助貧困環衛工人及其家庭和展開關愛環衛工人的公益宣傳活動。截至二零二二年底，該基金已累計產生2,253名受益者，共計已發放超過人民幣1,290萬元慰問金及救助金。

### Overview of Charity Work in 2022

#### 二零二二年慈善公益活動概覽



## Climate Action

Everbright Environment continues to focus on the areas of environment, energy and resources, safeguard local residents' living and ecological environment, and work together with all social circles in better responding to climate change.

Since 2014, Everbright Environmental Protection Charitable Foundation has cooperated with World Wide Fund for Nature, Hong Kong branch (WWF) to promote the knowledge of environmental protection and environmental-friendly habits in Hong Kong community. Between 2014 and 2020, Everbright Environmental Protection Charitable Foundation has been supporting World Wide Fund for Nature (WWF) Hong Kong's large-scale environmental initiative "Earth Hour" for seven consecutive years, advocating to the public to make lifestyle changes to avoid unnecessary consumption and overconsumption of energy in order to save the Earth.

In 2022, as "Earth Hour" approached, eight project companies in Suzhou region jointly formed a "Global Village" to act as spokespersons for the environment of the six Earth sectors, and manifested the current situation of the representative animals of each sector through various forms to raise public awareness on protecting biodiversity. Each project company also advocates the public to practice low-carbon life through various forms, such as giving out low-carbon publicity handbooks, explaining environmental protection knowledge panels; organising activities such as tree planting, garbage collection, waste sorting and green travel, spreading green concepts, promoting green and low-carbon actions for the community, and helping to achieve the national goal of "Dual Carbons".

During the Reporting Period, the Group's employees in Hong Kong volunteered to take part in the Salvation Army's Recycling Scheme by donated used or unwanted clothes to those in need; or sell them at the Salvation Army store and use the proceeds to develop other community care initiatives. These initiatives will be geared towards helping affected individuals rebuild normal lives during these unusual times due to the Pandemic, and at the same time practicing the concepts of resource conservation and recycling and reuse.

## 氣候行動

光大環境持續深耕環境、能源和資源領域，保障各地人居與生態環境，與各界攜手更好地應對氣候變化。

光大環境公益基金（「光大公益金」）與世界自然基金會香港分會（「WWF香港」）自二零一四年起一直合作無間，致力提升香港各界群體對環境保護的認識，並培養其環保習慣。從二零一四年至二零二零年，光大公益金連續七年支持WWF香港「地球一小時」大型環保活動，呼籲大眾透過避免不必要的及過度的消費來拯救地球。

在二零二二年，「地球一小時」來臨之際，蘇州區域八個項目公司聯合組成一個「地球村」，化身六大地球板塊環境代言人，通過多種形式體現各板塊代表性動物當前處境，倡導公眾關注、保護生物多樣性。各項目公司還通過多種形式倡導公眾踐行低碳生活，如發放低碳宣傳手冊，講解環保知識展板；開展植樹、撿拾垃圾、垃圾分類、綠色出行等活動，傳播綠色理念，推行綠色低碳全民行動，助力國家「雙碳」目標的實現。

此外，本集團香港員工於報告期內自發參與了救世軍循環再用計劃，將舊衣物贈予香港有需要人士，或將其於救世軍家品店售賣並用相關收益開展社區關懷服務，在新冠疫情特殊時期切實幫助在港受困人士重建正常生活，踐行節約資源、循環利用的理念。

## June 5th World Environment Day Events

### Science Popularisation and Education in Changzhou – June 5th World Environment Day

On 25 May 2022, Changzhou Waste-to-energy Project (“Changzhou Project”) and Songjian Lake Primary School co-held the “World Environment Day, Take Action, Bit by Bit, Happy Recycling” activities. The activities included “Upcycling Used Items”, which allowed students to recreate waste from home into creative handicrafts. The concept of environmental protection was promoted in a fun and relaxing way.

On 2 June 2022, Changzhou Economic Development Zone also launched the June 5th Environment Day themed activities, announcing the organisation of “Kids joining adults to foster green economic development together”, a parent-child ecological civilisation study activity, and Changzhou Project Company became the final station of the ecological civilisation study route. After the kick-off ceremony, a group of young environmental volunteers from Changzhou Economic Development Zone visited Changzhou Project to learn about the principle of waste-to-energy and different environmental protection knowledge.

### Quzhou Project – “Zero Waste City” Theme Activity

As the World Environment Day approached in 2022, Quzhou Project joined hands with Quzhou Ecological Environment Bureau and Quzhou Daily Media Group to hold a series of themed activities of “Building a Clean and Beautiful World and Creating a Zero Waste City Together”. 40 young reporters from Quzhou Daily wearing interview cards and holding professional record books went to the garden-style factory – Quzhou Project to experience on the spot the journey of “turning waste into treasure”. This experience deepened the impression of the young reporters on waste separation and waste power generation process, and received enthusiastic response, creating a good atmosphere of caring for and protecting the environment.

## 「六·五」世界環境日系列活動

### 常州的科普教育—六五世界環境日

二零二二年五月二十五日，常州垃圾發電項目（「常州項目」）聯合宋劍湖小學舉辦「世界環境日，我們在行動，點滴行動，快樂循環」六五環境日活動。活動內容包括「舊物改造」，讓學生把家中帶來的廢物再造成創意的手工作品，自由地創作，以輕鬆有趣的方式教育環保理念。

二零二二年六月二日，常州經開區亦開展了六五環境日主題活動，公佈了「小手拉大手綠動經開一起走」親子生態文明研學活動，常州項目公司成為該生態文明研學線路的終點站。當日啟動儀式結束後，常州市經開區環保小志願者一行來到常州項目參觀學習，了解垃圾焚燒發電的原理和不同環保知識。

### 衢州項目「無廢城市」主題活動

二零二二年的世界環境日到來之際，衢州項目聯合衢州市生態環境局、衢州日報傳媒集團開展了「共建清潔美麗世界共創全域無廢城市」主題活動。40名衢報小記者佩戴採訪證、手持專業記錄本來到花園式工廠—衢州項目，實地感受垃圾「變廢為寶」的緣色之旅。這次體驗活動加深了小記者們對垃圾分類和垃圾發電工藝流程的印象，並得到熱烈回應，營造了愛護環境、保護環境的良好氛圍。

*TOGETHER FOR*  
THE SUSTAINABLE  
DEVELOPMENT GOALS  
攜手邁向可持續發展目標

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*TOGETHER FOR*

THE SUSTAINABLE  
DEVELOPMENT GOALS

攜手邁向 · 可持續發展目標

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, which included 17 SDGs and emphasised the need to achieve overall sustainable development.

With the vision to become a world-leading ecological and environmental group, Everbright Environment fully supports the SDGs of the United Nations, and is devoted to join hands to help address the world's most pressing environmental, social and economic issues.

聯合國於二零一五年通過二零三零年可持續發展議程，內容包括17項可持續發展目標，強調要全面達至整體可持續發展。

懷著成為全球領先之生態環境集團的願景，光大環境全力支持聯合國可持續發展目標，致力以攜手緩解世界上最迫切的環境、社會和經濟議題。

## Environment

## 環境

### SDG 可持續發展目標

### Our Contribution 我們的貢獻



#### Ensure healthy lives and promote well-being for all ages

確保健康的生活方式，  
促進各年齡段人群的福祉

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. 到二零三零年，大幅減少危險化學品以及空氣、水和土壤污染導致的死亡和患病人數。

The Group's waste-to-energy projects are designed and operated fully in compliance with the *Standard for Pollution Control on the Municipal Solid Waste Incineration* (GB 18485-2014) with the daily average values of online continuously monitored parameters well below the respective emissions limits as stipulated under the Euro 2010 standards; all of the Group's biomass combustion operations meet the *Emission Standard of Air Pollutants for Thermal Power Plants* (GB 13223-2011). Our hazardous and solid waste treatment business can safely process over 90% of hazardous waste types listed in the *National Catalogue of Hazardous Wastes*, hence effectively minimising public health risk.

本集團垃圾發電項目的設計及運營完全符合《生活垃圾焚燒污染控制標準》(GB 18485-2014)，當中煙氣在線監測指標日均值全面優於歐盟2010排放標準中的相關排放限值；所有生物質燃燒的運營則達《火電廠大氣污染物排放標準》(GB 13223-2011)。我們的危廢及固廢處置業務亦可安全處置《國家危險廢物名錄》超過90%的危廢種類，有效大力減低公眾的健康風險。

Effluent discharged from the majority of the Group's waste water treatment projects comply with Grade 1A standard of *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB 18918-2002).

本集團大部分污水處理廠的出水均符合《城鎮污水處理廠污染物排放標準》(GB 18918-2002)的一級A標準。

SDG

可持續發展目標

Our Contribution

我們的貢獻



**Ensure availability and sustainable management of water and sanitation for all**  
為所有人提供水和環境衛生並對其進行可持續管理

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity. 到二零三零年，所有行業大幅提高用水效率，確保可持續取用和供應淡水，以解決缺水問題，大幅減少缺水人數。

The Group's waste water treatment projects effectively treat waste water strictly in compliance with national standards and produce high quality industrial reusable water to help soothe water quality and sanitation problems.

本集團的污水處理項目嚴格按照國家標準有效處理污水，並生產高質量的工業回用水，以協助舒緩水質量和衛生問題。

The Group treated a total of 1,770,260,000 m<sup>3</sup> of waste water and produced 43,629,000 m<sup>3</sup> of reusable water in 2022.

二零二二年，本集團共處理了約1,770,260,000立方米的污水和生產了約43,629,000立方米的回用水。



**Ensure access to affordable, reliable, sustainable and modern energy for all**  
確保人人獲得負擔得起的、可靠和可持續的現代能源

By 2030, ensure universal access to affordable, reliable and modern energy services. 到二零三零年，確保人人都能獲得負擔得起的、可靠的現代能源服務。

The Group generates clean energy by utilising household waste and agricultural and forestry waste, thus relieving pressure on landfills and saving precious land resources.

本集團利用生活垃圾、農業及林業廢棄物生產清潔能源，減少填埋量壓力，從而節省寶貴的土地資源。

The equipment manufacturing sector of Everbright Environment leverages on one of core products Everbright New Sodium Lamp, and focuses on building a full industry chain that includes the R&D and manufacturing of energy-saving street lamps, urban outdoor lighting projects and other types of energy-saving lighting products. Equipment manufacturing provides integrated lighting solutions to users based on three major business models, namely EMC, EPC and direct sales.

裝備製造板塊以光大新鈉燈為其中一項主營產品，及專注節能路燈、城市亮化工程、節能照明產品研發及製造等全產業鏈佈局，通過EMC、EPC及產品直銷三種主要業務模式，為使用者提供照明整體解決方案。



SDG  
可持續發展目標

Our Contribution  
我們的貢獻



**Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation**  
建造具備抵禦災害能力的基礎設施，促進具有包容性的可持續工業化，推動創新

By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with the increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities. 到二零三零年，所有國家根據自身能力採取行動，升級基礎設施，改進工業以提升其可持續性，提高資源使用效率，更多採用清潔和環保技術及產業流程。

The Group developed a unique business model of urban-rural integration combining biomass utilisation projects and waste-to-energy projects, providing one-stop services for integrated treatment of agricultural and forestry waste as well as rural household waste in a pioneering attempt to ecological environmental management in county areas.

本集團開發出獨特的城鄉一體化業務模式，將生物質處理項目與垃圾發電項目融為一體建設，統籌處理農林廢棄物及農村生活垃圾，開創了縣域生態環境治理的先河。

The Group's river-basin ecological restoration projects construct more stable ecological environment, and thus improve the cities' resilience against regional water environment pollution, while "Sponge City" projects facilitate effective drainage and rainwater reuse, strengthen the urban ecosystem and promote sustainable development.

本集團的流域治理項目透過構建更穩固的生態環境提升城市水污染抵禦能力；海綿城市項目則有助疏導和回用雨水、改善城市生態系統及促進可持續發展。

SDG

可持續發展目標

Our Contribution

我們的貢獻



**Make cities and human settlements inclusive, safe, resilient and sustainable**  
建設包容、安全、有抵禦災害能力和可持續的城市和人類住區

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, municipal and other waste management.

到二零三零年，減少城市的人均負面環境影響，包括特別關注空氣品質，以及城市廢物管理等。

Waste disposal is one of the most pressing environmental problems faced by modern society. The Group's waste-to-energy projects effectively reduce the volume of household waste through thermal treatment, while the majority of the bottom ash produced from waste incineration can be used to produce bricks, thus relieving pressure on landfills and resolving the waste crisis. Through its integrated biomass utilisation projects, the Group introduced advanced waste processing facilities in the rural villages, thereby laying a foundation to support sustainable rural development in China by preventing waste disposal and related pollution problems before they arise.

廢物處置是現代社會面臨最逼切的環境問題之一。本集團的垃圾發電項目透過熱處理有效減少生活垃圾體積，而大部分焚燒垃圾產生的爐渣則可用於製磚，從而減輕填埋場壓力及解決垃圾危機。通過生物質綜合利用項目，我們將先進的垃圾處理設施引入農村，預防垃圾及其相關污染問題發生，從而為中國農村的可持續發展奠定了基礎。

Through a series of water environment integrated management services including raw water protection, municipal waste water treatment, industrial waste water treatment, water supply, reusable water, and sludge treatment and disposal projects, etc., the Group has contributed to the construction of sustainable cities and communities, relieved the pressure on urban water supply and substantially minimised the impact of harmful substances on the aquatic and terrestrial ecosystems.

本集團設有一系列的水環境綜合治理服務，包括原水保護、市政污水處理、工業廢水處理、供水、中水回用及污泥處理處置等，為建設可持續城市和社區作出貢獻，緩解城市供水壓力，並將有害污染物對水體和陸上生態的影響降至最低。



**Ensure sustainable consumption and production patterns**  
採用可持續的消費和生產模式

By 2030, achieve sustainable management and efficient use of natural resources.

到二零三零年，實現自然資源的可持續管理和高效利用。

The environmental energy sector is committed to expanding the eco-recycling business in the areas of household waste sorting, environmental sanitation services and recyclable resources utilisation, aiming to provide front-end waste management services and the utilisation of recyclable resources.

本集團的環保能源板塊致力於拓展生活垃圾分類、環衛作業服務以及再生資源利用三個領域的相關生態資源業務，旨在提供固廢處置前端服務與再生資源綜合利用相關業務。

SDG  
可持續發展目標

Our Contribution  
我們的貢獻



**Take urgent action to combat climate change and its impacts**

**採取緊急行動應對氣候變化及其影響**

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.  
加強各國抵禦和適應氣候相關的災害和自然災害的能力。

The Group's waste-to-energy projects and integrated biomass utilisation projects offset GHG emissions through avoidance of fugitive release of methane generated from the degradation of household waste and biomass raw materials and the production of green electricity that replaces the use of fossil fuel power.

本集團的垃圾發電項目及生物質綜合利用項目有效避免生活垃圾和生物質原材料的降解引致的無組織甲烷釋放。同時，項目產生綠色電力以替代化石燃料能源的使用，從而減少溫室氣體排放。

Besides, the Group's Qingdao Waste Water Treatment Project generates green electricity with biogas produced from sludge treatment so as to replace the consumption of fossil fuel and offset GHG emissions. GHG emissions offset is also attained through the reduction of nitrogen concentration carried out by waste water nitrogen removal treatment progress, and the reduction of N<sub>2</sub>O. Together with carbon offsets contributed by its waste-to-energy and integrated biomass utilisation projects, the Group's operations offset 20,463,178.57 tonnes of CO<sub>2</sub> equivalent emissions in 2022.

另外，本集團位於青島的污水處理項目利用污泥處理時所產生的沼氣產出綠色電力，以代替化石燃料的使用，從而抵銷溫室氣體排放；而我們亦透過污水除氮處理工藝降低污水出水的氮含量以及其所引致的氧化亞氮排放，以抵銷溫室氣體排放。連同其垃圾發電和綜合生物質利用項目所貢獻的碳抵銷，本集團於二零二二年的運營共抵銷了20,463,178.57噸二氧化碳當量排放。

The Group has also included climate risk into its Risk Management System in order to formulate more comprehensive emergency and natural disaster contingency plans.

本集團更已把氣候變化風險納入至現有的風險管理體系中，以制定更完善的緊急與自然災害應變方案。

SDG

可持續發展目標

Our Contribution

我們的貢獻



**Conserve and sustainably use the oceans, seas and marine resources for sustainable development**  
保護和可持續利用海洋和海洋資源以促進可持續發展

By 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution.

到二零二五年，預防和大幅減少各類海洋污染，特別是陸上活動造成的污染，包括海洋廢棄物污染和營養鹽污染。

The Group's project site selection practice complies with stringent environmental impact assessment requirements, which prevents the water bodies and animal habitats nearby the project site from adverse impact.

本集團的項目選址均符合嚴格的環評準則，定能避免對項目周邊的水體和動物棲息地帶來不利影響。



**Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**

保護、恢復和促進可持續利用陸地生態系統，可持續管理森林，防治荒漠化，制止和扭轉土地退化，遏制生物多樣性的喪失

The Group's waste-to-energy projects help tackle the waste problem in an environmentally sound manner. This results in the avoidance of waste in landfills which would otherwise cause environmental problems and affect ecosystems.

本集團的垃圾發電項目以無害環境的方式應對垃圾問題，以防垃圾於填埋場傾倒所導致的環境問題及對生態系統的影響。



**Strengthen the means of implementation and revitalise the global partnership for sustainable development**

加強執行手段，重振可持續發展全球夥伴關係

The Group has been partnering with institutions such as ADB, China Development Bank, etc., to collaboratively promote clean energy and environmental protection.

本集團一直與亞發行及國家開發銀行等機構合作，攜手宣揚清潔能源及環境保護。

## Social

## 社會

### SDG 可持續發展目標

### Our Contribution 我們的貢獻



#### End poverty in all its forms everywhere 在全世界消除一切形式的貧困

By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. 到二零三零年，按各國標準界定的陷入各種形式貧困的各年齡段男女和兒童至少減半。

The Group's biomass utilisation business not only solves the pollution problems caused by the burning of local agricultural and forestry straws, but also creates job opportunities for local farmers and increases their source of income through the establishment of the collection, storage and transportation of agricultural wastes. The Group has actively responded to the country's precision poverty alleviation policy. With the commencement of project operations and the establishment, improvement and development of the biomass intake and storage systems, the Group has developed a strategy of "Increasing Income for Farmers, Ensuring Development for the Enterprise, and Procuring Mutual Success for Multiple Parties" which drives the rural economy in direct and indirect ways to lift villagers from poverty.

本集團的生物質業務能解決當地農林秸稈焚燒帶來的污染問題。同時，也透過成立農林廢棄物收儲運體系，為當地農民創造就業機會，增加收入來源，積極響應國家的精準扶貧方針。隨著項目的投產以及生物質收儲體系的建立、完善和發展，我們打造出「農民增收、企業發展、多方共贏」的戰略，直接和間接帶動農村經濟，幫助人口脫貧。



#### End hunger, achieve food security and improved nutrition and promote sustainable agriculture 消除饑餓，實現糧食安全，改善營養狀況和促進可持續農業

By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round. 到二零三零年，消除饑餓，確保所有人，特別是窮人和弱勢群體，包括嬰兒，全年都有安全、營養和充足的食物。

The Group's food waste processing projects can turn food waste into compost, which can in turn support the agricultural development of the Group's project neighbourhoods. Our projects have an annual food and kitchen waste processing capacity of 2,908,320 tonnes.

本集團的餐廚垃圾處理項目把餐廚垃圾轉換為堆肥，從而支持鄰近地區的農業發展。我們的項目每年能夠處理2,908,320噸餐廚及廚餘垃圾。

SDG

可持續發展目標

Our Contribution

我們的貢獻



**Ensure healthy lives and promote wellbeing for all at all ages**

**確保健康的生活方式，促進各年齡段人群的福祉**

By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. 到二零三零年，大幅減少危險化學品以及空氣、水和土壤污染導致死亡和患病人數。

In response to the resurgence of the Pandemic in various provinces and cities in China during 2022, the Group and all business units made arrangements for internal staff and personnel of contractors to properly implement pandemic prevention and responsive measures. Such measures included minimising the flow of personnel, reserving sufficient materials for production, daily lives and pandemic prevention, paying attention to employees' health conditions, providing sufficient protection for the employees and, based on the changes in pandemic control policies of various regions, timely adjusting the pandemic containment policies of projects and ensured full-scale operations of more than 400 environmental protection projects in operation, which are located in over 180 cities across China. These projects safeguarded the environmental safety and public health of the local communities, by treating household waste and waste water, as well as enhancing the treatment and disposal of medical waste.

面對二零二二年國內多個省市新冠肺炎疫情反彈，本集團及各單位組織內部員工及外包單位人員做好各項疫情防範應對措施，減少人員流動，儲備好充足的生產、生活和防疫物資，關注員工健康情況，為員工提供足夠保護，並根據各地疫情防控政策變化及時調整項目的防疫政策，確保國內180多個城市的400多個運營環保項目全速運轉，保障生活垃圾、污水處理，強化醫療廢棄物處置，守護了當地社區的環境安全和民眾健康。

Many environmental protection projects of the Group volunteered to facilitate the local authorities and institutions to conduct safe treatment of medical waste, waste water, as well as waste from hospitals and quarantine areas.

本集團旗下多個環保項目亦主動請纓，全力協助各地相關部門和機構在疫情期間進行醫療廢物、污水、醫院及隔離區垃圾的安全處置工作。

SDG  
可持續發展目標

Our Contribution  
我們的貢獻



**Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**  
**確保包容和公平的優質教育，讓全民終身享有學習機會**

By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.  
到二零三零年，大幅增加掌握就業、體面工作和創業所需相關技能，包括技術性和職業性技能的青年和成年人數。

The Group's environmental protection projects have been selected as environmental and science popularisation and education hubs and act as demonstration sites for circular economy and industrial tourism. The Group also proactively opens up its projects for public visits, offering every individual with opportunities to understand how environmental infrastructures tackle pollution and improve the community's living environment. During the Reporting Period, the Group's environmental protection projects received over 40,000 domestic and foreign visitors from all social circles.  
本集團的環保項目被選為環保科普教育基地，並作為循環經濟和工業旅遊的示範項目。我們亦積極開放項目供公眾參觀，給予大眾機會以了解環保基礎設施如何處理污染及改善社區的居住環境。報告期內，本集團的項目共接待國內外各界人士超過40,000人次。

In 2022, multiple project companies of the Group continued to carry out project opening-up activities through virtual platforms to break the barriers of limitation brought by the Pandemic. These virtual activities advocated environmental protection and sustainable development concepts to the public with higher flexibility.  
二零二二年，我們的項目公司繼續積極透過「線上」平台展開公眾開放活動。這些虛擬活動在疫情期間，能以更高的靈活性向公眾宣傳環保和可持續發展理念。

As at 31 December 2022, the Group's "Dangshan No. 5 High School" in Anhui Province had accumulatively provided educational opportunities for 7,291 students.  
截至二零二二年十二月三十一日，我們在安徽省的「碭山縣第五中學」累計已為7,291名學生提供教育機會。

SDG  
可持續發展目標

Our Contribution  
我們的貢獻

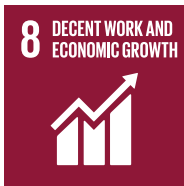


**Achieve gender equality and empower all women and girls**  
實現性別平等，增強所有婦女和女童的權能

End all forms of discrimination against women and girls everywhere.  
在全球消除對婦女和女童一切形式的歧視。

The Group ensures that its human resources management structure, including compensation, training opportunity, career prospect, etc., is not affected by gender biases, thus achieving gender equality.

本集團確保我們的人力資源管理架構，如薪酬水平、訓練機會及就業前景等不受性別影響，從而實現性別平等。



**Promote sustained, inclusive and sustainable economic growth, facilitate full and productive employment and decent work for all**  
促進持久、包容和可持續經濟增長，促進充分的生產性就業和人人獲得體面工作

Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value-added and labor-intensive sectors  
通過多樣化經營、技術升級和創新，包括重點發展高附加值和勞動密集型行業，實現更高水準的經濟生產力。

Through investment, construction and operation of advanced waste-to-energy facilities, the Group drives the development of upstream waste collection industries as well as downstream metal and bottom ash recycling industries, completing a sustainable waste management industry chain.  
本集團透過投資、建造及運營先進的垃圾發電設施帶動上游垃圾清運行業及下游金屬和爐渣回收行業，形成完整的可持續廢物管理產業鏈。

The Group's integrated biomass utilisation projects are located in rural areas, where the Group's operations can foster local economic development through providing job opportunities and improving infrastructure services.

我們的生物質綜合利用項目都是位於市郊地區，因此我們的運營可以提供當地就業機會及改善基礎設施，從而推動當地經濟發展。

In addition, to foster local economic development and employment opportunities, the Group has paid special attention to local talents. During the Reporting Period, many new employees hired are from local regions.

另外，為了促進當地經濟發展和就業機會，本集團特別關顧本地人才，報告期內聘請的新員工不少均來自本地。



SDG  
可持續發展目標

Our Contribution  
我們的貢獻



**Reduce inequality within and among countries**  
**減少國家內部和國家之間的不平等**

By 2030, empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

到二零三零年，增強所有人的權能，促進他們融入社會、經濟和政治生活，而不論其年齡、性別、殘疾與否、種族、族裔、出身、宗教信仰、經濟地位或其他任何區別。

The Group implements a fair and competitive remuneration and welfare system. The remuneration is determined based on qualification, experience, nature of work, performance and market conditions to strive to create equal employment opportunities.

本集團實施公平及具競爭力的薪酬福利制度，薪酬乃根據資歷、經驗、工作性質、表現以及市場情況計算釐定，致力締造平等的就業機會。

The Group also pays special attention to adopting methods to ensure that the Group's project operations do not affect the dignity, rights, livelihood, or culture of indigenous peoples. Local ethnic minorities and Han ethnic group are treated with the same respect and treatment at work.

本集團亦特別關注採取措施以確保項目運營不會影響原住民族的尊嚴、權利、生計或文化。當地少數民族和漢族在工作上均受到同樣尊重和對待。

SDG

可持續發展目標



**Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**  
創建和平、包容的社會以促進可持續發展，讓所有人都能訴諸司法，在各級建立有效、負責和包容的機構

Substantially reduce corruption and bribery in all their forms.  
大幅減少一切形式的腐敗和賄賂行為。

Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.  
根據國家立法和國際協議，確保公眾獲得各種資訊，保障基本自由。

Our Contribution

我們的貢獻

To uphold the public's right to know and to appreciate the importance of public supervision, the Group promotes environmental justice by initiating disclosure of air emissions data of the Group's operating waste-to-energy projects on the public domain.

為了維護公眾的知情權和展現公眾監督的重要性，本集團有向大眾公佈各垃圾發電運營項目的煙氣排放數據，倡導環境正義。

In terms of social justice, the Group follows the requirements of ADB to mainstream social concerns into the entire project life cycle, thus ensuring that any resettlement associated with the Group's project development is properly managed in compliance with applicable laws, and all affected people have received fair and adequate compensation and rehabilitation.

在社會正義方面，本集團遵循亞發行的要求，將社會關注點納入項目生命週期的整個階段，從而確保與項目開發相關的搬遷安置工作將按照適用法律進行妥善管理，受影響人士將得到公平、充分的補償和修復安排。

The Group also strives to promote a peaceful and inclusive working environment. The Group's *Staff Handbook* and *Employee Code of Conduct* prohibit unethical issues such as corruption, bribery (including any form of facilitating payment), conflict of interest and discrimination within the Group's working environment.

本集團亦致力創建和平及包容的工作環境。我們的《員工手冊》及《員工守則》禁止工作環境內出現任何不道德問題，如貪污、受賄（包括任何形式的疏通費）、利益衝突和歧視等。

## Long-term Targets of the Group

## 本集團的長期目標

Material Topics 實質性議題	Targets 目標	Progress as at 31 December 2022 截至二零二二年 十二月三十一日的進度	Relevant SDGs 相關聯合國 可持續發展目標
<b>Technological R&amp;D</b> 科研及開發	To reach accumulated technological R&D investment of RMB1 billion throughout the 5-year period of 2018-2022. 科研及開發於五年間（二零一八至二零二二年）的累計投放資金達人民幣10億元。	Accumulated technological R&D investment reached RMB1.373 billion (i.e. target already achieved) 累計投放科研及開發資金達人民幣13.73億元（已完成目標）。	
<b>Social Integration</b> 社區共融	To receive 120,000 visitors at our environmental protection facilities in every year throughout the 5-year period of 2018-2022. 本集團環保設施於五年間（二零一八至二零二二年）每年接待參觀人數達120,000人次。	In 2022, the Group's environmental protection facilities received over 40,000 domestic and foreign visitors from all social circles. 於二零二二年，本集團環保設施共接待國內外各界人士參觀考察超過40,000人次。  Due to the Pandemic, the number of visitors received during the Reporting Period was unable to meet the target. 受限於疫情，報告期內的接待參觀人次未能達標。	 
<b>Occupational Health and Safety</b> 職業健康與安全	To maintain the rate of work-related injuries of employees at 0.25 or below in every year throughout the 5-year period of 2018-2022. 工傷率於五年間（二零一八至二零二二年）每年維持在0.25或以下。	In 2022, the rate of work-related injuries of employees was 0.08. 二零二二年員工工傷率為0.08。	

## Review of 2022 Targets

## 二零二二年目標回顧

Aspect 範疇	Targets 目標	Achieved 已達成	
<b>Environment</b> 環境	Total GHG emissions intensity 總溫室氣體排放強度	not more than the average of the past three years 不高於過往三年的均值	✓
	Total GHG emissions reduction 總溫室氣體減排量	increased by 5% compared with the previous year 較去年增5%	✓
	Total GHG emissions offset 總溫室氣體排放抵銷量	increased by 10% compared with the average of the past three years 較過往三年的均值增10%	✓
	PM emission per kWh of green electricity supplied 每千瓦時綠色上網電量的顆粒物排放量	not more than the average of the past seven years 不高於過往七年的均值	✓
	NO <sub>x</sub> emission per kWh of green electricity supplied 每千瓦時綠色上網電量的氮氧化物排放量	not more than the average of the past seven years 不高於過往七年的均值	✓
	Renewable electricity to non-renewable electricity consumption ratio 可再生電力與非再生能源電力的消耗比率	increased by 50% compared with the average of the past three years 較過往三年的均值增50%	✓
<b>Society</b> 社會	Farmers' income increased as a result of integrated biomass utilisation projects 生物質綜合利用項目帶動農民增收	increased by 30% compared with the average of the past three years 較過往三年的均值增30%	✓
	Average health and safety training hours per employee 健康與安全培訓平均員工時數	10 hours 10小時	✓
	Overall customer satisfaction rate 客戶整體滿意度	Score 8.5 out of 10 8.5分 (滿分為10分)	✓
<b>Operation</b> 運營	Effective complaints from the public 有效的公眾投訴	not more than 5 cases 不多於5宗	✓
	Suppliers (including contractors) participated in sustainability risk assessment 參與可持續風險評估的供應商 (包括承包商)	amounting to 20% of the total annual purchasing amount 佔全年採購總金額的20%	✓
	Major suppliers' participation in sustainability risk assessment 參與可持續發展風險評估的主要供應商	shall reach 100% 需達到100%	✓
	Suppliers with their own occupational health and safety policies in place 已建立職業健康和安全管理政策的供應商	not less than 40% of suppliers participated in the sustainability risk assessment 佔參與可持續發展風險評估的供應商總數不少於40%	✓

## Economic Performance

## 經濟表現

		2022 HK\$'000 港幣千元	2021 HK\$'000 港幣千元	2020 HK\$'000 港幣千元
<b>Direct Economic Value Generated</b>	<b>產生的直接經濟價值</b>			
Revenue	收益	37,321,229	49,895,384	42,926,426
Other income <sup>(1)</sup>	其他收益 <sup>(1)</sup>	1,170,414	917,338	717,493
Other income and gains/(losses), net	其他收入及收益／(虧損) 淨額	(1,292,897)	(623,055)	(621,614)
<b>Economic Value Distributed</b>	<b>分配的經濟價值</b>			
Staff Costs	員工開支	3,936,061	3,956,078	2,874,560
Other Costs <sup>(1)</sup>	其他成本 <sup>(1)</sup>	20,417,383	31,196,852	27,282,060
Finance Costs	財務費用	3,488,266	3,079,448	2,279,149
Dividends	股息	1,474,314	2,088,611	1,842,893
Taxes <sup>(2)</sup>	稅項 <sup>(2)</sup>	772,316	955,370	924,496
Profit attributable to non-controlling interests	非控股權益應佔盈利	841,339	1,316,244	1,211,097
Holders of perpetual capital instruments	永續資本工具持有人應佔盈利	71,686	–	–
Charitable donations <sup>(3)</sup>	慈善捐款 <sup>(3)</sup>	3,515	9,734	14,184
<b>Economic Value Retained</b>	<b>留存的經濟價值</b>			
Retained for Everbright Environment sustainable operation and development	留存作光大環境的可持續運營和發展	6,193,866	7,587,330	6,593,866

## Operational Performance

## 運營表現

		Unit 單位	2022	2021	2020
<b>Business Performance</b>	<b>業務表現</b>				
On-grid green electricity supplied	綠色上網電量	kWh 千瓦時	21,385,620,000	19,598,823,000 <sup>(4)</sup>	15,004,327,000
Steam supplied	蒸汽供應量	Tonne 噸	2,419,000	2,155,000 <sup>(4)</sup>	1,344,000
Household waste processed	生活垃圾處理量	Tonne 噸	48,968,000	43,452,000	31,545,000
Biomass raw materials processed	生物質原材料處理量	Tonne 噸	8,186,000	7,964,000	6,708,000
Hazardous waste and solid waste processed	危廢及固廢處置量	Tonne 噸	431,000	269,000	182,000
Waste water treated <sup>(5)</sup>	污水處理量 <sup>(5)</sup>	m <sup>3</sup> 立方米	1,770,260,000	1,698,710,000	1,559,096,000
Leachate treated <sup>(6)</sup>	滲濾液處理量 <sup>(6)</sup>	m <sup>3</sup> 立方米	11,357,000	9,635,000	7,094,000
COD reduction	COD減排量	Tonne 噸	824,000	740,000	579,000
Average on-grid green electricity supplied per tonne of waste processed (environmental energy – waste-to-energy projects)	平均處理每噸垃圾綠色上網電量 (環保能源—垃圾發電項目)	kWh/Tonne 千瓦時／噸	332.12	333.15	320.46
<b>Project Overview</b>	<b>項目概覽</b>				
Total number of projects	項目總數	No. 個	564	528	458

Environmental Performance (7)

環境表現 (7)

		Unit 單位	2022	2021	2020
<b>GHG Emissions<sup>(8)</sup></b>		<b>溫室氣體排放<sup>(8)</sup></b>			
Scope 1 (direct emissions)	範疇一 (直接排放)	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>12,801,212.33</b>	15,242,857.68	10,717,354.60
— incineration of household waste <sup>(9)</sup>	— 生活垃圾焚燒 <sup>(9)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>12,549,458.34</b>	15,044,641.21	10,548,374.40
— other sources	— 其他來源	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>251,754.00</b>	198,216.46	168,980.20
Scope 2 (energy indirect emissions)	範疇二 (能源引致的間接排放)	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>547,406.34</b>	519,975.72	454,575.00
Scope 3 (other indirect emissions) <sup>(10)</sup>	範疇三 (其他間接排放) <sup>(10)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>171,048.09</b>	149,597.88	42,076.01
Total GHG emissions	溫室氣體排放總量	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>13,519,666.77</b>	15,912,431.28	11,214,005.61
GHG emissions intensity	溫室氣體排放強度	kg CO <sub>2</sub> e/kWh 公斤二氧化碳當量 /千瓦時	<b>0.63</b>	0.81	0.75
GHG emissions offset <sup>(11)</sup>	溫室氣體排放抵銷量 <sup>(11)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>20,463,178.57</b>	20,893,834.20	15,273,840.27
GHG emissions reductions <sup>(12)</sup>	溫室氣體減排量 <sup>(12)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>6,943,511.81</b>	4,981,402.92	4,059,834.66
<b>Key Air Emissions<sup>(13)</sup></b>		<b>主要煙氣排放<sup>(13)</sup></b>			
Particulate matter	顆粒物	Tonne 噸	<b>641.08</b>	559.41	457.09
Sulphur dioxide (SO <sub>2</sub> )	二氧化硫	Tonne 噸	<b>4,430.37</b>	4,003.39	2,595.33
Nitrogen oxides (NO <sub>x</sub> )	氮氧化物	Tonne 噸	<b>20,077.28</b>	22,467.59	15,463.35
<b>Energy Consumption<sup>(14)</sup></b>		<b>能源消耗<sup>(14)</sup></b>			
Natural gas	天然氣	GJ 吉焦	<b>531,129.65</b>	294,848.41	1,032,927.88
Diesel	柴油	GJ 吉焦	<b>2,370,146.08</b>	1,719,249.14	850,165.78
Petrol	汽油	GJ 吉焦	<b>64,942.01</b>	1,458,030.90	367,534.63
Liquefied Petroleum Gas	液化石油氣	GJ 吉焦	<b>8.91</b>	1.65	253.50
Biogas	沼氣	GJ 吉焦	<b>0</b>	0	104.56
Non-renewable electricity	非再生能源電力	GJ 吉焦	<b>2,663,291.95</b>	3,153,813.54	2,646,391.60 (re-stated) (經重列)
Renewable electricity	可再生電力	GJ 吉焦	<b>24,745,094.41</b>	11,477,931.55	8,653,699.65
Total non-renewable energy consumed	非再生能源消耗總量	GJ 吉焦	<b>5,629,518.60</b>	6,625,943.64	4,897,377.95
Non-renewable energy consumption intensity	非再生能源消耗強度	kJ/kWh 千焦/千瓦時	<b>263.24</b>	338.08	326.40
Total energy consumed	總能源消耗量	GJ 吉焦	<b>30,374,613.01</b>	18,103,875.19	13,551,077.61
Energy consumption intensity	能源強度	kJ/kWh 千焦/千瓦時	<b>1,420.33</b>	923.72	903.14

		Unit 單位	2022	2021	2020
<b>Freshwater Consumption</b>		<b>淡水消耗</b>			
Total freshwater consumed	淡水消耗總量	m <sup>3</sup> 立方米	<b>68,677,293.96<sup>(15)</sup></b>	75,307,157.57	61,859,696.87
Freshwater consumption intensity	淡水消耗強度	m <sup>3</sup> /kWh 立方米/千瓦時	<b>0.003</b>	0.004	0.004
<b>Hazardous Waste Generated</b>		<b>有害廢棄物產生</b>			
Fly ash generated from waste-to-energy projects and integrated biomass utilisation projects (waste-to-energy)	垃圾發電項目和生物質綜合利用項目(垃圾發電)所產生的飛灰	Tonne 噸	<b>1,558,606.12</b>	1,552,033.80	891,953.08
Fly ash and bottom ash generated from hazardous waste incineration projects	危廢處置項目所產生的飛灰及爐渣	Tonne 噸	<b>129,694.67</b>	34,652.16	85,919.91
Total hazardous waste generated	有害廢棄物產生總量	Tonne 噸	<b>1,688,300.79</b>	1,586,685.96	977,872.99
Hazardous waste intensity	有害廢棄物強度	Tonne/MWh 噸/兆瓦時	<b>0.08</b>	0.08	0.07
<b>Non-Hazardous Waste Generated</b>		<b>無害廢棄物產生</b>			
Furnace ash generated from integrated biomass utilisation projects (biomass)	生物質綜合利用項目(生物質)所產生的爐灰	Tonne 噸	<b>571,869.55</b>	283,189.21	362,950.97
Bottom ash generated from waste-to-energy projects and integrated biomass utilisation projects	垃圾發電項目和生物質綜合利用項目所產生的爐渣	Tonne 噸	<b>12,417,343.52</b>	9,811,898.42	6,891,301.07
Sludge generated from waste water treatment projects, waste-to-energy projects and integrated biomass utilisation projects <sup>(16)</sup>	污水處理項目、垃圾發電項目、固廢處置項目和生物質綜合利用項目所產生的污泥 <sup>(16)</sup>	Tonne 噸	<b>1,357,887.58</b>	1,611,679.32	1,808,958.91
General waste generated	一般廢物產生量	Tonne 噸	<b>4,980.66</b>	5,708.16	3,248.78
Total non-hazardous waste generated	無害廢棄物產生總量	Tonne 噸	<b>14,352,081.31</b>	11,712,475.10	9,066,459.73
Non-hazardous waste intensity	無害廢棄物強度	Tonne/MWh 噸/兆瓦時	<b>0.67</b>	0.60	0.60

## Water Withdrawal, Discharge and Consumption Performance

## 取水、排水及耗水表現

		2022		
		All areas 所有地區	Areas with water stress 具水資源壓力的 地區	
<b>Water Withdrawal</b> 取水量				
<b>Water Withdrawal by source (m<sup>3</sup>)</b> 依來源劃分取水量 (立方米)	<b>Surface water (total)</b> 地表水 (總量)	<b>148,383,254.13</b>	<b>123,525,453.30</b>	
	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	148,383,254.13	123,525,453.30	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Groundwater (total)</b> 地下水 (總量)	<b>1,545,212.37</b>	<b>1,118,752.80</b>	
	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	1,545,212.37	1,118,752.80	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Seawater (total)</b> 海水 (總量)	<b>187,890.00</b>	<b>187,890.00</b>	
	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	187,890.00	187,890.00	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Produced water (total)</b> 產出水 (總量)	<b>39,681,716.66</b>	<b>27,158,220.08</b>	
	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	39,681,716.66	27,158,220.08	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Third-party water (total)</b> 第三方的水 (總量)	<b>1,827,905,199.34</b>	<b>1,496,839,416.77</b>	
	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	1,827,905,199.34	1,496,839,416.77	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Total third-party water withdrawal by the withdrawal source</b> 依取水來源劃分第三方的 總取水量			
	Surface water 地表水	25,073,944.17	10,125,700.40	
Groundwater 地下水	503,450.30	502,754.30		
Seawater 海水	–	–		
Waste water 污水	1,783,912,340.41	1,473,596,204.41		
Produced water 產出水	18,415,464.47	12,614,757.67		
<b>Total water withdrawal (m<sup>3</sup>)</b> 總取水量 (立方米)	<b>Surface water (total) + groundwater (total) + seawater (total) + produced water (total) + third-party water (total)</b> 地表水 (總量) + 地下水 (總量) + 海水 (總量) + 產出水 (總量) + 第三方的水 (總量)	<b>2,017,704,272.49</b>	<b>1,648,829,732.95</b>	



		2022		
		All areas 所有地區	Areas with water stress 具水資源壓力 的地區	
<b>Water discharge</b> 排水量				
<b>Water discharge by destination (m<sup>3</sup>)</b> 依終點劃分排水量 (立方米)	Surface water 地表水	1,423,848,100.20	1,159,900,704.20	
	Groundwater 地下水	164,286.50	138,286.50	
	Seawater 大海	195,283,183.00	187,601,744.00	
	Third-party water (total) 第三方的水 (總量)	202,916,886.93	200,909,346.57	
	– Waste water treatment plants operated by third parties – 第三方機構運營的污水處理廠	88,914,719.93	86,907,179.57	
	– Water supplied to third parties for use as reusable water – 作回用水供應至第三方使用	114,002,167.00	114,002,167.00	
	<b>Total water discharge (m<sup>3</sup>)</b> 總排水量 (立方米)	<b>Surface water + groundwater + seawater + third-party water (total)</b> 地表水+地下水+海水+第三方的水 (總量)	<b>1,822,212,456.63</b>	<b>1,548,550,081.27</b>
<b>Water discharge by freshwater and other water (m<sup>3</sup>)</b> 依總溶解固體濃度劃分之排水量 (立方米)	≤1,000mg/L Total Dissolved Solids ≤1,000mg/L總溶解固體	1,822,212,456.63	1,548,550,081.27	
	>1,000mg/L Total Dissolved Solids >1,000mg/L總溶解固體	–	–	
	<b>Water Consumption<sup>(17)</sup></b> 耗水量 <sup>(17)</sup>			
	<b>Total water consumption (m<sup>3</sup>)</b> 耗水量(立方米)	<b>195,491,815.86</b>	<b>100,279,651.68</b>	

## Social Performance

### Employee Profile<sup>(18)</sup>

## 社會表現

### 員工概況<sup>(18)</sup>

				2022	2021	2020
<b>Total Number of Employees</b>		<b>員工總數</b>		<b>12,396</b>	11,330	12,732
<b>By Gender</b>		<b>按性別劃分</b>				
Male		男性		<b>9,427</b>	8,592	9,812
Female		女性		<b>2,969</b>	2,738	2,920
<b>By Age</b>		<b>按年齡劃分</b>				
30 and below		30歲及以下		<b>3,851</b>	3,740	5,037
31-40		31-40歲		<b>5,753</b>	5,137	5,475
41-50		41-50歲		<b>2,087</b>	1,820	1,690
51 and above		51歲及以上		<b>705</b>	633	530
<b>By Employment Contract</b>		<b>按合約類別劃分</b>				
Permanent Contract	長期合約	Male	男性	<b>4,363</b>	2,147	2,017
		Female	女性	<b>1,315</b>	746	687
Temporary/ Fixed-term Contract	臨時/定期合約	Mainland China	中國內地	<b>5,206</b>	2,434	2,159
		Hong Kong	香港	<b>75</b>	78	73
		Singapore	新加坡	<b>3</b>	4	4
		Vietnam	越南	<b>32</b>	32	17
		Poland	波蘭	<b>362</b>	345	451
		Male	男性	<b>5,070</b>	6,445	7,783
		Female	女性	<b>1,648</b>	1,992	2,245
		Mainland China	中國內地	<b>6,544</b>	8,270	9,988
		Hong Kong	香港	<b>0</b>	0	0
		Singapore	新加坡	<b>0</b>	0	0
Vietnam	越南	<b>52</b>	28	40		
Poland	波蘭	<b>122</b>	139	0		

		2022	2021	2020
<b>By employment type</b>	<b>按受聘類別劃分</b>			
Full-time	全職	12,396	11,330	12,732
Part-time	兼職	0	0	0
<b>By employee ranking</b>	<b>按員工職級劃分</b>			
Senior management	高級管理人員	509	501	465
Middle-level management	中層管理人員	2,148	1,866	1,697
General and technical staff	一般及技術員	9,739	8,963	10,570
<b>By location</b>	<b>按地區劃分</b>			
Mainland China	中國內地	11,750	10,704	12,147
Hong Kong	香港	75	78	73
Singapore	新加坡	3	4	4
Vietnam	越南	84	60	57
Poland	波蘭	484	484	451
Local Employees <sup>(19)</sup>	本地員工 <sup>(19)</sup>	9,103	8,317	9,620
Non-local Employees <sup>(19)</sup>	外地員工 <sup>(19)</sup>	3,293	3,013	3,112
<b>By ethnicity</b>	<b>按民族劃分</b>			
Chinese (Han)	中國人 (漢族)	11,554	10,507	11,908
Chinese (Ethnic minorities)	中國人 (少數族裔)	271	275	316
Singaporean (non-minority group)	新加坡人 (非少數族裔)	3	4	-
Vietnamese (non-minority group)	越南人 (非少數族裔)	84	60	57
Polish (non-minority group)	波蘭人 (非少數族裔)	484	484	451

## Employee Diversity

## 員工多元化

		2022	2021	2020
<b>Percentage of female employees by positions</b>	<b>按職位劃分的女性員工比率</b>			
All management positions	所有管理人員	18.22%	18.12%	16.70%
Senior management	高級管理人員	11.00%	11.98%	18.03%
Middle-level and junior management	中層及初級管理人員	19.93%	19.77%	11.83%
Management in revenue-generating functions	創收職能中的管理人員	10.97%	9.72%	17.49%
STEM-related positions	科學、科技、工程及數學相關職位	14.49%	15.70%	33.33%

		2022		2021		2020	
<b>Percentage of employees by ethnicity</b>	<b>按民族劃分的員工比率</b>						
		<b>All full-time employees</b>	<b>All management positions</b>	All full-time employees	All management positions	All full-time employees	All management positions
		所有全職員工	所有管理人員	所有全職員工	所有管理人員	所有全職員工	所有管理人員
Chinese (Han)	中國人 (漢族)	93.21%	93.44%	92.74%	91.51%	93.53%	97.22%
Chinese (Ethnic minorities)	中國人 (少數族裔)	2.19%	2.71%	2.42%	3.80%	2.48%	2.04%
Singaporean (non-minority group)	新加坡人 (非少數族裔)	0.02%	0.04%	0.04%	0.13%	-	-
Vietnamese (non-minority group)	越南人 (非少數族裔)	0.68%	0.08%	0.53%	0.04%	0.45%	0.05%
Polish (non-minority group)	波蘭人 (非少數族裔)	3.90%	3.73%	4.27%	4.52%	3.54%	0.69%

		2022	2021	2020
Percentage of employees with disabilities	殘疾員工比率	0.15%	0.15%	0.16%

New Hires and Employee Turnover

新聘及離職員工

		2022		2021		2020	
		Total Number	Percentage of employees in this category (%)	Total Number	Percentage of employees in this category (%)	Total Number	Percentage of employees in this category (%)
		總人數	佔該類別員工百分比	總人數	佔該類別員工百分比	總人數	佔該類別員工百分比
<b>Total Number of New Hires</b>	<b>新聘員工總數</b>	<b>1,136</b>	<b>9.16%</b>	738	6.51%	1,978	15.54%
<b>By Gender</b>	<b>按性別劃分</b>						
Male	男性	873	9.26%	547	6.37%	1,570	16.00%
Female	女性	263	8.86%	191	6.98%	408	13.97%
<b>By Age</b>	<b>按年齡劃分</b>						
30 and below	30歲及以下	602	15.63%	356	9.52%	1,155	22.93%
31-40	31-40歲	411	7.14%	281	5.47%	681	12.44%
41-50	41-50歲	100	4.79%	70	3.85%	119	7.04%
51 and above	51歲及以上	23	3.26%	31	4.90%	23	4.34%
<b>By Geographical Region</b>	<b>按地區劃分</b>						
Mainland China	中國內地	969	8.25%	602	5.62%	1,900	15.64%
Hong Kong	香港	6	8.00%	16	20.51%	10	13.70%
Singapore	新加坡	0	0%	1	25.00%	0	0%
Vietnam	越南	50	59.52%	15	25.00%	17	29.82%
Poland	波蘭	111	22.93%	104	21.49%	51	11.31%
Local Employees <sup>(19)</sup>	本地員工 <sup>(19)</sup>	728	8.00%	455	5.47%	1,486	15.45%
Non-local Employees <sup>(19)</sup>	外地員工 <sup>(19)</sup>	408	12.39%	283	9.39%	492	15.81%
<b>Total number of employee turnover (resignation/retirement)</b>	<b>員工流失(離職/退休)總數</b>	<b>1,526</b>	<b>12.31%</b>	2,296	20.26%	2,094	16.45%
<b>By Gender</b>	<b>按性別劃分</b>						
Male	男性	1,174	12.45%	1,900	22.11%	1,737	17.70%
Female	女性	352	11.86%	396	14.46%	357	12.23%
<b>By Age</b>	<b>按年齡劃分</b>						
30 and below	30歲及以下	629	16.33%	1,029	27.51%	1,011	20.07%
31-40	31-40歲	686	11.92%	1,012	19.70%	771	14.08%
41-50	41-50歲	138	6.61%	182	10.00%	230	13.61%
51 and above	51歲及以上	73	10.35%	73	11.53%	82	15.47%
<b>By Geographical Region</b>	<b>按地區劃分</b>						
Mainland China	中國內地	1,411	12.01%	2,191	20.47%	2,038	16.78%
Hong Kong	香港	10	13.33%	11	14.10%	5	6.85%
Singapore	新加坡	1	33.33%	1	25.00%	0	0%
Vietnam	越南	26	30.95%	11	18.33%	15	26.32%
Poland	波蘭	78	16.12%	82	16.94%	36	7.98%

## Training and Development

## 培訓及發展

		2022 Hours 小時	2021 Hours 小時	2020 Hours 小時
<b>Total Training Hours</b>	<b>總培訓時數</b>	<b>659,468.07</b>	904,951.92	875,520.98
<b>Average Training Hours Per Employee</b>	<b>人均培訓時數</b>	<b>53.20</b>	79.87	68.77
<b>By Gender</b>	<b>按性別劃分</b>			
Male	男性	<b>57.02</b>	90.82	61.87
Female	女性	<b>41.09</b>	45.53	91.95
<b>By Employee Ranking</b>	<b>按員工職級劃分</b>			
Senior management	高級管理人員	<b>64.94</b>	38.83	26.34
Middle-level management	中層管理人員	<b>49.31</b>	57.13	28.17
General and technical staff	一般及技術員工	<b>53.44</b>	86.90	77.15

## Health and Safety

## 健康與安全

		2022	2021	2020
<b>Employees</b>	<b>員工</b>			
Number of work-related fatalities	因工死亡個案	<b>0</b>	1	0
Rate of work-related fatalities <sup>(20)</sup>	因工死亡率 <sup>(20)</sup>	<b>0</b>	0.01	0
Number of occupational disease cases	職業病個案	<b>0</b>	0	0
Number of high-consequence work-related injuries (excluding fatalities) <sup>(21)</sup>	嚴重工傷個案 (不包括死亡個案) <sup>(21)</sup>	<b>0</b>	0	0
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(22)</sup>	嚴重工傷率 (不包括死亡個案) <sup>(22)</sup>	<b>0</b>	0	0
Number of work-related injuries <sup>(23)</sup>	工傷個案 <sup>(23)</sup>	<b>10</b>	16	10
Rate of work-related injuries <sup>(24)</sup>	工傷率 <sup>(24)</sup>	<b>0.08</b>	0.14	0.08
Days of absence from work due to work-related injury	因工傷缺勤日數	<b>434</b>	1,267	582
Lost-time injuries frequency rate (LTIFR) <sup>(25)</sup>	損失工作日事故頻率 <sup>(25)</sup>	<b>0.40</b>	0.70	0.40
<b>Third-Party Contractors and Sub-Contractors Working On-site</b>	<b>第三方承包商及分包商駐場工人</b>			
Number of work-related fatalities	因工死亡個案	<b>3</b>	0	1
Rate of work-related fatalities <sup>(20)</sup>	因工死亡率 <sup>(20)</sup>	<b>0.02</b>	0	0.01
Number of occupational disease cases	職業病個案	<b>0</b>	0	0
Number of high-consequence work-related injuries (excluding fatalities) <sup>(21)</sup>	嚴重工傷個案 (不包括死亡個案) <sup>(21)</sup>	<b>0</b>	0	0
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(22)</sup>	嚴重工傷率 (不包括死亡個案) <sup>(22)</sup>	<b>0</b>	0	0
Number of work-related injuries <sup>(23)</sup>	工傷個案 <sup>(23)</sup>	<b>9</b>	15	5
Rate of work-related injuries <sup>(24)</sup>	工傷率 <sup>(24)</sup>	<b>0.05</b>	0.07	0.04
Days of absence from work due to work-related injury	因工傷缺勤日數	<b>456</b>	808	175
Lost-time injuries frequency rate (LTIFR) <sup>(25)</sup>	損失工作日事故頻率 <sup>(25)</sup>	<b>0.25</b>	0.35	0.20

## Remuneration

## 薪酬

		2022	2021	2020
<b>Annual Remuneration and Ratio</b>	<b>年度總薪酬及比例數據</b>			
Total remuneration of the highest-paid individual (HK\$)	最高薪人士的薪酬總額 (港幣元)	<b>3,936,960.41</b>	6,450,468.15	6,112,130.99
The median of the total remuneration of all employees (excluding the highest-paid individual) (HK\$)	全體員工薪酬總額的中位數 (不包括最高薪人士) (港幣元)	<b>117,465.30</b>	123,383.46	107,844.48
Ratio of the total remuneration of the highest-paid individual to the median of the total remuneration of all employees (excluding the highest-paid individual)	最高薪人士的薪酬總額與全體員工 (不包括最高薪人士) 薪酬總額的中位數的比例	<b>33.52:1</b>	52.28:1	56.68:1
Ratio of the annual percentage change in total remuneration of the highest-paid individual to the median percentage change in annual total remuneration of all employees (excluding the highest paid individual)	最高薪人士薪酬總額的年度百分比變化與全體員工 (不包括最高薪人士) 薪酬總額中位數的年度百分比變化的比例	<b>-8.12:1</b>	0.38:1	-1.2:1 (re-stated) (經重列)
<b>Average Remuneration by Employee Ranking (HK\$)</b>	<b>各級員工職級的平均薪酬 (港幣)</b>			
<b>Senior Management</b>	<b>高級管理人員</b>			
Basic salary of senior management (male)	高級管理人員的基本工資 (男)	<b>326,869.67</b>	364,013.56	302,245.66
Basic salary of senior management (female)	高級管理人員的基本工資 (女)	<b>298,750.80</b>	366,055.55	307,199.02
Ratio of the basic salary of senior management (female) to the basic salary of senior management (male)	高級管理人員的基本工資 (女) 與高級管理人員的基本工資 (男) 的比例	<b>0.91:1</b>	1.01:1	1.02:1
Basic salary and bonus of senior management (male)	高級管理人員的基本工資和獎金 (男)	<b>457,711.51</b>	612,864.62	520,581.94
Basic salary and bonus of senior management (female)	高級管理人員的基本工資和獎金 (女)	<b>423,399.68</b>	626,390.66	562,143.08
Ratio of the basic salary and bonus of senior management (female) to the basic salary and bonus of senior management (male)	高級管理人員的基本工資和獎金 (女) 與高級管理人員的基本工資和獎金 (男) 的比例	<b>0.93:1</b>	1.02:1	1.08:1
<b>Middle-Level Management</b>	<b>中層管理人員</b>			
Basic salary of middle-level management (male)	中層管理人員的基本工資 (男)	<b>195,131.54</b>	205,789.47	196,558.08
Basic salary of middle-level management (female)	中層管理人員的基本工資 (女)	<b>165,647.71</b>	171,906.55	170,140.23
Ratio of the basic salary of middle-level management (female) to the basic salary of middle-level management (male)	中層管理人員的基本工資 (女) 與中層管理人員的基本工資 (男) 的比例	<b>0.85:1</b>	0.84:1	0.87:1
Basic salary and bonus of middle-level management (male)	中層管理人員的基本工資和獎金 (男)	<b>258,647.73</b>	315,088.88	291,846.48
Basic salary and bonus of middle-level management (female)	中層管理人員的基本工資和獎金 (女)	<b>222,600.48</b>	259,410.05	259,936.01
Ratio of the basic salary and bonus of middle-level management (female) to the basic salary and bonus of middle-level management (male)	中層管理人員的基本工資和獎金 (女) 與中層管理人員的基本工資和獎金 (男) 的比例	<b>0.86:1</b>	0.82:1	0.89:1
<b>General and Technical Staff</b>	<b>一般及技術員工</b>			
Basic salary of general and technical staff (male)	一般及技術員工的基本工資 (男)	<b>107,193.89</b>	112,588.59	95,261.21
Basic salary of general and technical staff (female)	一般及技術員工的基本工資 (女)	<b>91,450.58</b>	97,223.94	79,943.62
Ratio of the basic salary of general and technical staff (female) to the basic salary of general and technical staff (male)	一般及技術員工的基本工資 (女) 與一般及技術員工的基本工資 (男) 的比例	<b>0.85:1</b>	0.86:1	0.84:1
Basic salary and bonus of general and technical staff (male)	一般及技術員工的基本工資和獎金 (男)	<b>128,333.95</b>	153,232.34	120,472.38
Basic salary and bonus of general and technical staff (female)	一般及技術員工的基本工資和獎金 (女)	<b>111,744.67</b>	132,638.46	102,758.62
Ratio of the basic salary and bonus of general and technical staff (female) to the basic salary and bonus of general and technical staff (male)	一般及技術員工的基本工資和獎金 (女) 與一般及技術員工的基本工資和獎金 (男) 的比例	<b>0.87:1</b>	0.87:1	0.85:1

Notes:

- (1) Represents other costs, share of profits of joint ventures and share of profits/losses of associates but excludes depreciation and amortisation for the year.
- (2) Represents current income tax and the under or over provision in prior years but excludes deferred tax for the year.
- (3) All donations in 2022 were made in cash.
- (4) These numbers were rounded to the nearest thousand to align with the numbers presented in Annual Report 2021.
- (5) Waste water treatment includes all operating municipal and industrial waste water treatment projects under environmental water.
- (6) Leachate treatment includes all operating waste-to-energy projects and integrated biomass utilisation projects.
- (7) Due to rounding, the numbers may not add up to total, and there may be a slight discrepancy between the items of the statistics table and the corresponding analysed data as shown in other chapters of this Report.
- (8) The calculation of GHG emissions and offset is referenced to CDM methodologies *ACM0022: Alternative Waste Treatment Processes (Version 2.0)*, *AM0080: Mitigation of Greenhouse Gases Emissions with Treatment of Wastewater in Aerobic Wastewater Treatment Plants (Version 1.0)*, *ACM0018: Electricity Generation from Biomass Residues in Power-Only Plants (Version 3.0)*, *ACM0006: Electricity and Heat Generation from Biomass (Version 14.0)* and *AMS-I.C.: Thermal Energy Production With or Without Electricity (Version 20.0)*.
- (9) GHG emissions (scope 1) from the incineration of household waste are calculated based on the fraction of fossil carbon in total carbon content of the household waste. The calculation principle was primarily based on CDM methodologies, however, some of the coefficients or emission factors that are more in line with China's situation were adopted, including the use of a higher default water content of household waste; the amount of such GHG emissions may substantially fluctuate from time to time due to the varying composition of the household waste received, which is beyond Everbright Environment's control.
- (10) GHG emissions from air travel are calculated by International Civil Aviation Organization's Carbon Emissions Calculator.
- (11) "GHG Emissions Offset" reveals an optimistic estimation of the total offset that could be potentially contributed by Everbright Environment's key operation (waste-to-energy and integrated biomass utilisation in particular) based on the referenced CDM methodologies. The actual contribution is dependent on the "without project" scenario of each location, which may vary case by case. The value is not a confirmation of GHG removal from the atmosphere and is for reference only.

附註：

- (1) 代表年度的其他成本、所佔合營企業盈利及所佔聯營公司虧損，但不包括年度的折舊及攤銷。
- (2) 代表本期所得稅及過往年度撥備過剩／撥備不足，但不包括本年度的遞延稅項。
- (3) 二零二二年所有捐款均為現金。
- (4) 數字經四捨五入調整至最接近的千位數，並與二零二一年年報中載列的數字保持一致。
- (5) 污水處理包括環保水務所有運營生活及工業污水處理項目。
- (6) 滲濾液處理包括所有運營垃圾發電項目及生物質綜合利用項目。
- (7) 由於捨入關係，數值加起來可能不等於總計，而表內個別項目的數字經分析計算後可能與本報告其他章節內的相關數據略有出入。
- (8) 溫室氣體的排放及抵銷的計算參照CDM方法《ACM0022：多選垃圾處理方式（2.0版）》、《AM0080：透過在有氧污水處理廠處理污水減少溫室氣體排放（1.0版）》、《ACM0018：純發電廠利用生物廢棄物發電（3.0版）》、《ACM0006：生物質熱電聯供（14.0版）》及《AMS-I.C.：電力或非電力用戶提供熱能（20.0版）》。
- (9) 生活垃圾焚燒引致的溫室氣體排放(範疇一)以生活垃圾中化石碳佔總碳的比例為計算基礎。我們的計算原則主要基於CDM方法，但採納了一些更符合中國國情的系數和排放因子，並根據運營經驗，應用了平均較高的預設生活垃圾含水量；生活垃圾成分的差異可對此溫室氣體排放不時造成大幅波動，這不屬於光大環境的控制範圍之內。
- (10) 飛機差旅的溫室氣體排放以國際民航組織的碳排放計算器計算得出。
- (11) 「溫室氣體排放抵銷」展示了光大環境基於參考CDM方法論，對其的主要業務(尤其是垃圾焚燒發電和生物質綜合利用)可能貢獻的總抵銷量的樂觀估算。實際貢獻取決於每個地點的「沒有項目」情境，而個別具體狀況可能會有所不同。該值並非從大氣中移除溫室氣體的確認值，數字僅供參考。

## Key Statistics

### 主要數據

- |  |   |
|--|---|
| <p>(12) GHG emissions reductions is GHG emissions offset minus total GHG emissions.</p>  | <p>(12) 溫室氣體減排量是指溫室氣體排放抵銷量減去溫室氣體排放總量。</p>   |
| <p>(13) Includes all projects of environmental energy and greentech sectors that involve combustion and incineration operations.</p>   | <p>(13) 包括環保能源及綠色環保板塊的所有燃燒和焚燒運營項目。</p>  |
| <p>(14) Relevant energy conversion factors from <i>China Energy Statistical Yearbook 2021</i> are adopted.</p>   | <p>(14) 能量轉換計算採用《中國能源統計年鑒2021》的相關能量轉換因子。</p>  |
| <p>(15) Environmental water's river-basin ecological restoration projects, raw water projection project, water supply projects and reusable water projects were excluded from the calculation of freshwater consumption. This is with due consideration that those projects' key objectives are to purify water for use by the public/clients, therefore the freshwater processed were not considered as consumed.</p> | <p>(15) 淡水消耗的計算並不包括環保水務旗下的流域治理項目、原水保護項目、供水項目及中水回用項目。這是考慮到這些項目的主要目標是淨化水資源供公眾／客戶使用，因此，涉及的淡水處理並不視為被消耗。</p> |
| <p>(16) Includes all operating environmental energy's waste-to-energy projects, greentech's integrated biomass utilisation projects and solid waste treatment projects, and environmental water's waste water treatment projects.</p>  | <p>(16) 包括環保能源所有的運營垃圾發電項目、綠色環保的生物質合利用項目和固廢處置項目，及環保水務所有的運營污水處理項目。</p>                                    |
| <p>(17) The total water consumption is calculated based on GRI 303: Water and Effluents 2018: Total water consumption = Total water withdrawal – Total water discharge.</p>  | <p>(17) 總耗水量按照《GRI 303：水資源與污水2018》計算：總耗水量 = 總取水 – 總排水量。</p>   |
| <p>(18) Data as at 31 December 2022.</p>   | <p>(18) 數據截至二零二二年十二月三十一日。</p>   |
| <p>(19) Employees hired from the same province in Mainland China are regarded as local employees, whereas the employees hired from other provinces in Mainland China are regarded as non-local employees.</p>  | <p>(19) 在中國內地同省受聘的員工被視為本地員工，而在中國內地外省受聘的員工則被視為外地員工。</p>  |
| <p>(20) Rate of work-related fatalities = (Total number of fatalities as a result of work-related injury/Total working hours) x 200,000.</p>   | <p>(20) 因工死亡率 = (因工傷所造成的死亡個案總計／工作總時數) x 200,000。</p>  |
| <p>(21) High-consequence work-related injuries (excluding fatalities) refer to work-related injuries that result in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months.</p>   | <p>(21) 嚴重工傷(不包括死亡個案)是指導致工作者無法或難於六個月內恢復至受傷前健康狀態的工傷。</p>   |
| <p>(22) Rate of high-consequence work-related injuries (excluding fatalities) = (Total number of high-consequence work-related injuries (excluding fatalities)/Total working hours) x 200,000.</p>   | <p>(22) 嚴重工傷率(不包括死亡個案) = (嚴重工傷個案總計(不包括死亡個案)／工作總時數) x 200,000。</p>                                       |
| <p>(23) Work-related injuries also include work-related fatalities and high-consequence work-related injuries.</p>   | <p>(23) 工傷亦包含因工死亡及嚴重工傷。</p>   |
| <p>(24) Rate of work-related injuries = (Total number of work-related injuries/Total working hours) x 200,000.</p>   | <p>(24) 工傷率 = (工傷個案總計／工作總時數) x 200,000。</p>   |
| <p>(25) LTIFR = (Number of lost-time injuries/Total working hours) x 1,000,000.</p>  | <p>(25) 損失工作日事故頻率 = (損失工作日事故總計／工作總時數) x 1,000,000。</p>  |





香港品質保證局

## VERIFICATION STATEMENT

### Scope and Objective

Hong Kong Quality Assurance Agency ("HKQAA") was commissioned by China Everbright Environment Group Limited ("Everbright Environment") to undertake an independent verification for the Sustainability Report 2022 (hereinafter called the "Report"). The Report stated the sustainability performance of Everbright Environment in the period of 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.

The aim of this verification is to provide reasonable assurance on the reliability of the report contents. The Report has been prepared in accordance with the Global Reporting Initiative's ("GRI") Standards 2021, as well as Rule 13.91 and Appendix 27 "Environmental, Social and Governance Reporting Guide ("ESG Reporting Guide") of the Main Board Listing Rules of The Stock Exchange of Hong Kong Limited.

### Level of Assurance and Methodology

The process applied in this verification was based on the "International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board. Our evidence-gathering process was designed to obtain a reasonable level of assurance as set out in the standard for the purpose of devising the verification conclusion. The extent of this verification process undertaken covered the criteria set in GRI Standards 2021 and the Main Board Listing Rules (Rule 13.91 and ESG Reporting Guide).

The verification process included verifying the mechanisms for collecting, calculating and reporting the sustainability performance information, reviewing relevant documented information, interviewing responsible personnel with accountability for preparing the Report and verifying selected representative samples of data and information. Raw data and supporting evidence of the selected samples were also thoroughly examined during the verification process.

### Independence

Everbright Environment is responsible for the collection and presentation of the information presented. HKQAA does not involve in the collection and calculation of data or the compilation of the reporting contents. Our verification activities are independent from Everbright Environment. There was no relationship between HKQAA and Everbright Environment that would affect the independence and impartiality of HKQAA for providing the verification service. HKQAA's Code of Conduct with regard to integrity, impartiality and confidentiality has been strictly followed.

### Conclusion

Based on the verification results, HKQAA has obtained reasonable assurance and is of the opinion that:

- The Report has been prepared in accordance with the GRI Standards 2021 and the Main Board Listing Rules (Rule 13.91 and ESG Reporting Guide);
- The Report illustrates the sustainability performance of Everbright Environment, covering all material aspects, in a balanced, comparable, clear, consistent and timely manner; and
- The data and information disclosed in the Report are accurate, reliable and complete.

Nothing has come to HKQAA's attention that the selected sustainability performance information and data contained in the Report have not been prepared and presented fairly and honestly, in material aspects, in accordance with the verification criteria. In conclusion, the Report reflects truthfully on Everbright Environment's sustainability performance that is commensurate with the sustainability context and materiality of the company.

### Signed on behalf of Hong Kong Quality Assurance Agency

Meico Cheong  
Assistant Director, Innovation Business  
19 April 2023



香港品質保證局

## 核實聲明

### 核實範圍及目的

香港品質保證局獲中國光大環境（集團）有限公司（「光大環境」）委託對其《可持續發展報告 2022》（下稱「報告」）的內容進行獨立驗證。該報告陳述了光大環境於 2022 年 1 月 1 日至 2022 年 12 月 31 日期間，有關可持續發展方面工作的表現。

此核實聲明的目的是對報告所記載之內容提供合理保證。報告是根據全球報告倡議組織（「GRI」）準則 2021 及香港聯合交易所有限公司（「香港聯合交易所」）《證券上市規則》第 13.91 條及附錄二十七《環境、社會及管治報告指引》的要求編製。

### 保證程度和核實方法

此次驗證工作是依據國際審計與核證準則委員會發布的《國際核證聘用準則 3000(修訂版)，歷史財務資料審計或審閱以外的核證聘用》執行。收集核實證據的幅度是參考國際準則所訂定進行合理保證的原則而制定以確保能擬定核實結論。此外，核實的內容是按照 GRI 準則 2021 及《證券上市規則》（第 13.91 條及附錄二十七《環境、社會及管治報告指引》）而定。

核實過程包括驗證了光大環境的可持續發展表現資料收集、計算和彙報的機制，檢閱有關文件資料，與負責編制報告的代表面談，選取具有代表性的數據和資料進行查核。相關原始數據和支撐證據亦於核實過程中經過詳細審閱。

### 獨立性

光大環境負責和陳述報告內容。香港品質保證局不涉及收集和計算數據或參與編撰報告內容。我們的核實工作是完全獨立於光大環境。就提供此核實服務而言，香港品質保證局與光大環境之間並無任何會影響香港品質保證局獨立性和公正性的關係。核實過程嚴格遵守香港品質保證局有關廉潔、公正和保密的紀律守則。

### 結論

基於是次的驗證結果，香港品質保證局對報告作出合理保證並總結：

- 報告是按照全球報告倡議組織 GRI 準則 2021 及《證券上市規則》（第 13.91 條及附錄二十七《環境、社會及管治報告指引》）的要求編制；
- 報告平衡、具比較性、清晰、一致和及時地闡述光大環境的可持續發展表現；及
- 報告內的數據和資料準確、可靠和完整。

根據核實準則，香港品質保證局沒有發現在報告內闡述的可持續發展表現資料和數據並非公平和如實地按照主要範疇作出披露。總括而言，報告如實地載述了光大環境的可持續發展承諾、推動和表現，並且清晰地披露與其可持續發展情況和重要性相稱的表現。

### 香港品質保證局代表簽署

蔣齊仲  
創新業務助理總監  
2023 年 4 月 19 日



14842055-OTH

## Verification Opinion

### Scope and Objectives

Hong Kong Quality Assurance Agency ("HKQAA") has been commissioned by China Everbright Environment Group Limited ("CEEGL") to conduct an independent verification of the Greenhouse Gases ("GHG") emissions inventory ("Emissions Inventory") for the period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022. The aim of this verification is to provide a reasonable assurance on the data consolidated in the Emissions Inventory compiled by CEEGL using the operational control approach against the requirements of ISO 14064-1:2018 'Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals'.

Based on the preparation of the "CEEGL Summary ISO14064 (The Inventory)" by CEEGL in accordance with the criteria of ISO 14064-1:2018, an opinion was concluded by the verification team from the verification activities, including:

- Offsite verification with the aid of Information Communication Technology (ICT) of the GHG emission data associated to mobile emissions, electricity consumption as well as GHG emissions from activities of waste treatment facilities and environmental operations; and
- Desk-top review for documentation and supporting evidence.

### Methodology

The verification was conducted in accordance with ISO 14064-3: 2019 'Specification with guidance for the verification and validation of greenhouse gas statements'. The process included the assessment of:

- reporting boundaries selected;
- quantification methodology and emission factors used;
- integrity of the historical activity data used;
- accuracy and completeness of the GHG calculations; and
- conformance with the requirements of the ISO 14064-1:2018.

Integrity and accuracy of the aggregated data was tested by tracing the sampled data to its sources. The underlying processes for data collection, aggregation, estimation, calculation and internal checking were reviewed and undergone reliability test. Materiality threshold of 5% was adopted for this verification. HKQAA verification team did not partake in the GHG data preparation process.

1

#### Remarks:

This verification opinion includes page <1> to page <5>



14842055-OTH

**Conclusion**

Total GHG emissions and removals of China Everbright Environment Group Limited in 2022:

2022 GHG Emissions and Removals	Tonnes (T) of CO <sub>2</sub> equivalent
Category a): Direct GHG emissions (excluding anthropogenic biogenic GHG emissions)	12,770,823.2
Anthropogenic biogenic GHG emissions	30,389.2
Category a): Direct GHG removals (excluding anthropogenic biogenic GHG removals)	19,477,372.9
Anthropogenic biogenic GHG removals	985,805.7
Indirect GHG emissions	718,454.4
Category b): Imported Energy	547,406.3
Category c): Transportation	146,743.1
Category d): Products used	/
Category e): Use of products	/
Category f): Other sources	24,305.0
Total (Direct + Indirect Emissions excluding anthropogenic biogenic GHG emissions)	13,489,277.6
Total (Direct + Indirect Emissions including anthropogenic biogenic GHG emissions)	13,519,666.8
Total (Direct + Indirect Removals excluding anthropogenic biogenic GHG removals)	19,477,372.9
Total (Direct + Indirect Removals including anthropogenic biogenic GHG removals)	20,463,178.6

Signed on behalf of Hong Kong Quality Assurance Agency:

Lead Verifier:

Assistant Director, Innovation Business:

Tommy Lo

Date of Issuance: 17 March 2023

Meico Cheong

Date of Issuance: 17 March 2023

Hong Kong Quality Assurance Agency  
19/F., K. Wah Centre, 191 Java Road, North Point, Hong Kong  
Contact detail [www.hkqaa.org](http://www.hkqaa.org)

2

Remarks:

This verification opinion includes page &lt;1&gt; to page &lt;5&gt;



14842055-OTH

### Verification Opinion (Continued)

#### Introduction:

HKQAA has been commissioned by China Everbright Environment Group Limited (“CEEGL”, address: Room 2703, 27/F., Far East Finance Centre, 16 Harcourt Road, Hong Kong) for the verification of its direct and indirect Greenhouse Gas emissions and removals in accordance with ISO14064-3: 2019 as provided by CEEGL in its GHG Statement in form of “CEEGL Summary ISO14064 (The Inventory)” covering GHG emissions and removals of the reporting period 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022.

#### Roles and responsibilities:

CEEGL is responsible for the organization’s GHG information system, the development and maintenance of records and reporting procedures in accordance with the system, including the calculation and determination of GHG emissions and removals information, and the reported GHG emissions and removals. HKQAA verification team is responsible for providing an independent GHG verification opinion on the GHG Statement provided by CEEGL for the reporting period.

HKQAA conducted a third-party independent verification of the provided GHG Statement against the requirements of ISO 14064-1:2018 from December 2022 to March 2023. The verification was based on the verification scope, objectives and criteria as agreed between CEEGL and HKQAA.

#### Detail of the Scope:

- The organizational boundary was established following the operational approach.
- The reporting boundaries were established including the identification of direct and indirect GHG emissions and removals associated with the following CEEGL’s operations of various waste treatment facilities and environmental operations.
- Title or description activities: Verification of GHG Inventory 2022 for CEEGL
- Location/boundary of the activities:
  - o Covers all overseas and local projects and offices with majority operational control across eight major sectors: Environmental Energy, Greentech, Environmental Water, Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech and Environmental Planning
  - o Over 87% of GHG emissions and 74% of GHG removals were contributed from subsidiary companies of China Everbright Environment Group Limited

3

#### Remarks:

This verification opinion includes page <1> to page <5>



14842055-OTH

- Physical infrastructure, activities, technologies and processes of the organization:
  - o Stationary combustion sources such as fuel combustion for generator set and machinery equipment, combustion of municipal solid waste
  - o Mobile combustion sources such as plant vehicles, mobile machines, transportation vehicles for municipal solid waste and biomass
  - o Indirect energy emissions from purchased energy
  - o Electricity generation from biomass and municipal solid waste
  - o Anthropogenic biogenic emissions from biomass combustion and wastewater treatment
  - o Contractor transportation of sludge generated from wastewater treatment facilities
  - o Air travel by employees
  
- GHG sources, sinks and/or reservoirs included: GHG sources as presented in the worksheets of “CEEGL Summary ISO14064 (The Inventory)”
  
- Types of GHGs included: CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, where NF<sub>3</sub>, SF<sub>6</sub>, HFCs and PFCs are either not used by CEEGL or not in significant amount.
  
- The data and information supporting the GHG Statement were hypothetical, projected and/or historical in nature.
  
- GWP adopted: 100-year global warming potentials (GWPs) identified in the IPCC’s Sixth Assessment Report.
  
- GHG information for the following period was verified: 1<sup>st</sup> January 2022 to 31<sup>st</sup> December 2022
  
- Intended user of the verification opinion: Stakeholders identified by CEEGL

4

Remarks:  
This verification opinion includes page <1> to page <5>



14842055-OTH

**Conclusion:**

CEEGL provided the GHG Statement in form of "CEEGL Summary ISO14064 (The Inventory)" based on the requirements of ISO14064-1:2018. The GHG information for the reporting period disclosing the total direct and indirect greenhouse gas emissions of 13,489,277.6 tonnes of CO<sub>2</sub> equivalent (excluding anthropogenic biogenic GHG emissions), and anthropogenic biogenic GHG emissions of 30,389.2 tonnes of CO<sub>2</sub> equivalent, direct greenhouse gas removals of 19,477,372.9 tonnes of CO<sub>2</sub> equivalent (excluding anthropogenic biogenic GHG removals), and anthropogenic biogenic GHG removals of 985,805.7 tonnes of CO<sub>2</sub> equivalent are verified by HKQAA to a reasonable level of assurance (within 5%), consistent with the agreed verification scope, objectives and criteria.

HKQAA adopted a risk-based approach for the verification. Our examination includes assessment of evidence relevant to the amounts and disclosures in relation to CEEGL's reported GHG emissions.

The verification team assessed the GHG Statement in form of "CEEGL Summary ISO14064 (The Inventory)" including the GHG information system and reporting protocol. This assessment covered the collection of supporting evidence of the reported data and verified the consistency and appropriateness of the provided protocol reference.

Based on the verification process and procedures conducted, there is no evidence that the GHG Statement in form of "CEEGL Summary ISO14064 (The Inventory)" prepared by CEEGL:

- is not materially correct and is not a fair representation of GHG data and information for the reporting period;
- has not been prepared in accordance with ISO 14064-1:2018 on GHG quantification, monitoring and reporting.

HKQAA shall be responsible, and shall remain authority to forthwith suspend or withdraw CEEGL's verification opinion under the scheme or reduce the scope of such verification or terminate the contract if CEEGL is unable to comply with the requirements of the "Terms and Conditions".

5

**Remarks:**

This verification opinion includes page <1> to page <5>

# Appendix I – Reporting Boundary

## 附錄I—報告邊界

### 環境數據

### Environmental Statistics

Operation Unit 運營單位	GHG Emissions 溫室氣體排放	GHG Emissions Offset 溫室氣體排放抵銷	Air Emissions 廢氣排放	Energy Consumption 能源消耗	Water Consumption and Discharge 耗水及排水	Hazardous Waste Generated 有害廢棄物產生			Non-Hazardous Waste Generated 無害廢棄物產生			
						Fly ash generated from waste-to-energy projects and integrated biomass utilisation projects (waste-to-energy) 垃圾發電項目和生物質綜合利用項目 (垃圾發電) 所產生的飛灰	Fly ash and bottom ash generated from hazardous waste incineration projects 危險廢棄物項目所產生的飛灰及爐渣	Furnace ash generated from integrated biomass utilisation projects (biomass) 生物質綜合利用項目所產生的爐灰	Bottom ash generated from waste-to-energy projects and integrated biomass utilisation projects 垃圾發電項目和生物質綜合利用項目所產生的爐渣	Sludge generated from waste water treatment projects, waste-to-energy projects and integrated biomass utilisation projects 污水處理項目、垃圾發電項目及生物質綜合利用項目所產生的污泥	General waste 一般廢物產生	Materials Consumption 物料使用
Waste-to-energy/ 垃圾發電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Food waste treatment 餐厨垃圾處理	✓	△		✓	✓						✓	✓
Sludge treatment and disposal 污泥處理設置	✓		△	✓	✓						✓	✓
Leachate treatment 滲濾液處理	✓	△	△	✓	✓					△	△	✓
Methane-to-energy 沼氣發電	✓	△	△	✓	✓					△	△	✓
Fecal treatment 糞便處理												
Fly ash landfill 飛灰填埋	✓			✓	✓						✓	✓
Medical waste treatment 醫療廢物處理				✓	✓						✓	✓
Solid waste 固廢處理	✓		△	✓	✓					△	△	✓
Environmental Planning <sup>8</sup> 環境規劃 <sup>8</sup>	✓			✓	✓						✓	✓
Eco-recycling <sup>9</sup> 生態資源 <sup>9</sup>	✓			✓	✓						✓	✓



Operation Unit 運營單位	Hazardous Waste Generated 有害廢棄物產生		Non-Hazardous Waste Generated 無害廢棄物產生		GHG Emissions 溫室氣體排放	GHG Emissions Offset 溫室氣體排放抵消	Air Emissions 廢氣排放	Energy Consumption 能源消耗	Water Consumption and Discharge 耗水及納水	Fly ash generated from waste-to-energy projects and integrated biomass utilisation projects (waste-to-energy) and hazardous waste incineration projects 垃圾發電項目和生物質綜合利用項目及危險廢棄物項目所產生的飛灰及爐渣	Furnace ash generated from integrated biomass utilisation projects (biomass) and hazardous waste incineration projects 生物質綜合利用項目(生物質)和危險廢棄物項目所產生的爐灰	Bottom ash generated from waste-to-energy projects and integrated biomass utilisation projects 垃圾發電項目和生物質綜合利用項目所產生的爐渣	Sludge generated from waste water treatment projects, waste-to-energy projects and integrated biomass utilisation projects 污水處理項目、垃圾發電項目及生物質綜合利用項目所產生的污泥	General waste 一般廢棄物產生	Materials Consumption 物料使用	Waste Recycling 廢棄物回收
	Fly ash generated from waste-to-energy projects and integrated biomass utilisation projects (waste-to-energy)	Fly ash and bottom ash generated from hazardous waste incineration projects	Furnace ash generated from integrated biomass utilisation projects (biomass)	Bottom ash generated from waste-to-energy projects and integrated biomass utilisation projects												
Municipal waste water treatment 市政污水處理	✓	✓	✓	✓	✓			✓	✓				✓	△	✓	✓
Industrial waste water treatment 工業廢水處理	✓			✓				✓	✓				✓	△	✓	✓
Reusable water 中水回用	✓			✓				✓	✓				✓	△	✓	✓
River-basin ecological restoration 流域治理	✓			✓				✓	✓				✓	△	✓	✓
Water supply 供水	✓			✓				✓	✓				✓	△	✓	✓
Waste water source heat pump 污水源熱泵	✓			✓				✓	✓				✓	△	✓	✓
Raw water protection 原水保護																
Leachate treatment 滲濾液處理	✓			✓			△	✓	✓					✓	✓	✓

Appendix I – Reporting Boundary  
附錄I—報告邊界

Operation Unit 運營單位	Hazardous Waste Generated 有害廢棄物產生				Non-Hazardous Waste Generated 無害廢棄物產生				Materials Consumption 物料使用	Waste Recycling 廢棄物回收	
	GHG Emissions 溫室氣體排放	GHG Emissions Offset 溫室氣體排放抵銷	Air Emissions 廢氣排放	Energy Consumption 能源消耗	Water Consumption and Discharge 耗水及排水	Fly ash and bottom ash generated from hazardous waste incineration projects 危險廢物項目 所產生的飛灰 及爐渣	Furnace ash generated from integrated biomass utilisation projects (biomass) 生物質綜合 利用項目 所產生的爐灰	Bottom ash generated from waste-to- energy projects and integrated biomass utilisation projects 垃圾發電項目 和生物質綜合 利用項目 所產生的爐渣			Sludge generated from waste water treatment projects, waste- to-energy projects and integrated biomass utilisation projects 污水處理項目、 垃圾發電項目及 生物質綜合利用 項目所產生的污泥
Greentech 綠色環保	Integrated biomass utilisation 生物質綜合利用	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hazardous waste and solid waste treatment 危險及固廢處置	✓		✓	✓	✓				✓	✓
	Leachate treatment 滲濾液處理	✓		△	✓	✓			△	✓	✓
	Environmental remediation 環境修復	✓			✓	✓			✓	✓	✓
	Solar energy 光伏發電	✓			✓	✓			✓	✓	✓
	Wind power 風電	✓			✓	✓			✓	✓	✓

Operation Unit 運營單位	GHG Emissions 溫室氣體排放		GHG Emissions Offset 溫室氣體排放抵銷	Air Emissions 廢氣排放	Energy Consumption 能源消耗	Water Consumption and Discharge 耗水及納水	Hazardous Waste Generated 有害廢棄物產生		Non-Hazardous Waste Generated 無害廢棄物產生						
	GHG Emissions 溫室氣體排放	GHG Emissions Offset 溫室氣體排放抵銷					Fly ash generated from waste-to- energy projects and integrated biomass utilisation to-energy) 垃圾發電項目 和生物質綜合 利用項目 (垃圾發電)	Fly ash and bottom ash generated from hazardous waste incineration projects 危險廢棄項目 所產生的飛灰 及爐渣	Furnace ash generated from integrated biomass utilisation projects (biomass) 生物質綜合 利用項目 (生物質)	Bottom ash generated from waste-to- energy projects and integrated biomass utilisation projects 垃圾發電項目 和生物質綜合 利用項目 所產生的爐渣	Sludge generated from waste water treatment projects, waste- to-energy projects and integrated biomass utilisation projects 污水處理項目、 垃圾發電項目及 生物質綜合利用 項目所產生的污泥	General waste 一般廢棄物產生	Materials Consumption 物料使用	Waste Recycling 廢棄物回收	
Envirotech <sup>(2)</sup> 研究院 <sup>(2)</sup>	✓				✓	✓						✓	✓		✓
Equipment Manufacturing <sup>(3)</sup> 裝備製造	✓			Δ	✓	✓						✓	✓		✓
Greenergy <sup>(3)</sup> 光大照明 <sup>(3)</sup>	✓				✓	✓						✓	✓		✓
Headquarters and Representative Offices 總部及代表處	✓				✓	✓						✓	✓		✓

\* Under preparatory stage 在籌建階段

✓ Fully disclosed 全面披露

Δ Insignificant 不顯著

■ Not applicable 全面披露不適用

Notes:  
附註：

(1) In 2022, the Environmental Planning and Eco-recycling sectors were consolidated under the Environmental Energy sector.  
(1) 二零二二年内，環境規劃和生態資源板塊被併進環保能源板塊之中。

(2) In 2022, the Envirotech sector's Chinese name was renamed.  
(2) 二零二二年内，綠色科創板塊被重新命名為研究院。

(3) In 2022, the Greenergy sector was merged into the Equipment Manufacturing sector.  
(3) 二零二二年内，光大照明板塊被併進裝備製造板塊之中。

社會數據

Social Statistics

Operation Unit 運營單位	Employee Profile 員工概況 (total number of employees, new hires and employee turnover, employee eligible for retirement) (員工總數、新聘及離職員工、合資退休員工)				Health and Safety Statistics 健康與安全數據			Community Engagement 社會貢獻			Supply Chain 供應鏈		
	Employee turnover, new hires and employee eligible for retirement (員工總數、新聘及離職員工、合資退休員工)	Maternity/ Paternity Leave Statistics 產假/ 侍產假數據	Training Hours 培訓時數	Employees 員工	Third-party contractors and sub-contractors working on-site 第三方承包商及分包商駐場工人	Visitors received by our environmental protection projects 環保項目參觀人次	Volunteer services 義工總時數	Number of suppliers 供應商數目	Number of outsourced service workers 外判服務工人數目	Remuneration Statistics 薪酬數據			
Environmental Energy 環保能源	Waste-to-energy 垃圾發電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Food waste treatment 餐厨垃圾處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Sludge treatment and disposal 污泥處理處置	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Leachate treatment 滲濾液處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Methane-to-energy 沼氣發電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Fecal treatment 糞便處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Fly ash landfill 飛灰填埋	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Medical waste treatment 醫療廢物處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Solid waste 固廢處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Environmental Penning <sup>(1)</sup> 環場封閉 <sup>(1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Eco-recycling <sup>(1)</sup> 生態資源 <sup>(1)</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Operation Unit 運營單位	Employee Profile 員工概況 (total number of employees, new hires and employee turnover, employee eligible for retirement) (員工總數、新聘及離職員工、合資退休員工)				Health and Safety Statistics 健康與安全數據				Community Engagement 社會貢獻			Supply Chain 供應鏈			
	Training Hours 培訓時數	Maternity/ Paternity Leave Statistics 產假/待產假數據	Employees	Third-party contractors and sub-contractors working on-site 第三方承包商及分包商駐場工人	Visitors received by our environmental protection projects 環保項目參觀人次	Volunteer services 義工總時數	Number of suppliers 供應商數目	Number of outsourced service workers 外聘服務工人數目	Remuneration Statistics 薪酬數據	Health and Safety Statistics 健康與安全數據		Community Engagement 社會貢獻		Supply Chain 供應鏈	
										Employees	Third-party contractors and sub-contractors working on-site 第三方承包商及分包商駐場工人	Visitors received by our environmental protection projects 環保項目參觀人次	Volunteer services 義工總時數	Number of suppliers 供應商數目	Number of outsourced service workers 外聘服務工人數目
Municipal waste water treatment 市政污水處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industrial waste water treatment 工業廢水處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reusable water 中水回用	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
River-basin ecological restoration 流域治理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water supply 供水	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Waste water source heat pump 污水源熱泵	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Raw water protection 原水保護	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Leachate treatment 滲濾液處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Appendix I – Reporting Boundary  
附錄I—報告邊界

Operation Unit 運營單位	Employee Profile 員工概況				Health and Safety Statistics 健康與安全數據				Community Engagement 社會貢獻				Supply Chain 供應鏈			
	(total number of employees, new hires and employee turnover, employee eligible for retirement) (員工總數、新聘及離職員工、合資退休員工)	Training Hours 培訓時數	Maternity/ Paternity Leave Statistics 產假/侍產假數據	Employees 員工	Third-party contractors and sub-contractors working on-site 第三方承包商及 分包商駐場工人	Visitors received by our environmental protection projects 環保項目參觀人次	Volunteer services 義工總時數	Number of suppliers 供應商數目	Number of outsourced service workers 外聘服務工人數目	Remuneration Statistics 薪酬數據	Number of suppliers 供應商數目	Number of outsourced service workers 外聘服務工人數目	Remuneration Statistics 薪酬數據			
Greentech 綠色環保	Integrated biomass utilisation 生物質綜合利用	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Hazardous waste and solid waste treatment 危險及固廢處置	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Leachate treatment 滲濾液處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Environmental remediation 環境修復	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Solar energy 光伏發電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	Wind power 風電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Operation Unit 運營單位	Employee Profile 員工概況 (total number of employees, new hires and employee turnover, employee eligible for retirement) (員工總數、新聘及離職員工、合資退休員工)				Health and Safety Statistics 健康與安全數據			Community Engagement 社會貢獻			Supply Chain 供應鏈		
	Training Hours 培訓時數	Maternity/ Paternity Leave Statistics 產假/待產假數據	Employees 員工	Third-party contractors and sub-contractors working on-site 第三方承包商及 分包商駐場工人	Visitors received by our environmental protection projects 環保項目參觀人次	Volunteer services 義工總時數	Number of suppliers 供應商數目	Number of outsourced service workers 外聘服務工人數目	Remuneration Statistics 薪酬數據				
Envirotech <sup>(2)</sup> 研究院 <sup>(2)</sup>	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓
Equipment Manufacturing 裝備製造	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Greenery <sup>(3)</sup> 光太陽明 <sup>(3)</sup>	✓	✓	✓	✓									✓
Headquarters and Representative Offices 總部及代表處	✓	✓	✓	✓									✓

\* Under preparatory stage in construction phase

✓ Fully disclosed 全面披露

■ Not applicable 全面披露不適用

Notes:

附註：

(1) In 2022, the Environmental Planning and Eco-recycling sectors were consolidated under the Environmental Energy sector.

(1) 二零二二年内，環境規劃和生態資源板塊被整合於環保能源板塊之中。

(2) In 2022, the Envirotech sector's Chinese name was renamed.

(2) 二零二二年内，綠色科創板塊被重新命名為研究院。

(3) In 2022, the Greenery sector was merged into the Equipment Manufacturing sector.

(3) 二零二二年内，光太陽明板塊被整合於裝備製造板塊之中。

## Appendix II – Main Corporate Memberships

### 附錄II—主要企業會籍

#### Key Associations Joined by Everbright Environment 光大環境參與的主要協會

#### Key Activities in 2022 二零二二年重點活動

##### China Association of Urban Environmental Sanitation 中國城市環境衛生協會

###### Association's Ambition 協會抱負

To actively promote the scientific development of city appearance and environmental sanitation in cities across the country  
積極推進全國城市市容環境衛生事業科學發展。

- Participate in the meeting of the Specialised Committee on Garbage Leachate Treatment and give a speech  
參加垃圾滲濾液處理專業委員會會議並作報告
- Participate in the seminar on organic solid waste recycling technology and equipment  
參加有機固廢資源化處理技術與裝備研討會

##### E20 Environmental Platform – China Solid Waste Web E20 環境平台—中國固廢網

###### Association's Ambition 協會抱負

To utilise the platform to support the growth of environmental companies and to assist local governments to actively explore environmental solutions.  
利用平台的力量幫助環保企業成長，協助地方政府積極探索環境解決方案。

- Attended the annual Solid Waste Forum  
參與年度固廢論壇
- Recognised as the “Top Ten Most Influential Enterprises” in solid waste industry  
獲得固廢行業《十大影響力企業》
- Boluo WTE project was granted the award of “Intelligent Benchmark of Socialised WTE project in terms of construction and operation”  
博羅垃圾發電項目獲評《社會化垃圾焚燒發電廠建設運營智能化標杆》

**Total amount contributed in 2022: RMB180,000**  
二零二二年總貢獻金額：人民幣180,000元



**Key Associations Joined by  
Everbright Environment  
光大環境參與的主要協會**

**Key Activities in 2022  
二零二二年重點活動**

**E20 Environmental Platform  
– China Water Web  
E20 環境平台—中國水網**

- Recognised as the “Top Ten Most Influential Enterprises” in China’s water industry  
獲評中國水業《十大影響力企業》

**Total amount contributed in 2022: RMB300,000**  
二零二二年總貢獻金額：人民幣300,000元

**Association’s Ambition  
協會抱負**

To utilise the platform to support the growth of environmental companies and to assist local governments to actively explore environmental solutions.  
利用平台的力量幫助環保企業成長，協助地方政府積極探索環境解決方案。

**Chinese Society for  
Environmental Sciences  
中國環境科學學會**

- Attended the annual meeting  
參加年會
- Participated in technological appraisal  
參與科技鑒定工作
- Co-organised and participated in the eco-environmental interpreter contest  
協辦及參加生態環境講解員比賽
- Applied for the “Environmental Protection Technology Award”  
參加《環境保護科學技術獎》

**Association’s Ambition  
協會抱負**

To enhance the public’s scientific knowledge, and create positive scientific and cultural atmosphere for contribution to ecological civilisation and environmental protection.  
提高全民科學知識，營造良好科學文化氛圍，為生態文明建設和環保事業貢獻力量。

## Appendix III – GRI Content Index

### 附錄III—GRI內容索引



Everbright Environment has reported in accordance with the GRI Standards for the period 1 January 2022 to 31 December 2022. There are no GRI sector standards currently applicable to the Group. For the Content Index—Advanced Service, GRI Services reviewed that the GRI content index is clearly presented, in a manner consistent with the GRI Standards, and that the references for all disclosures are aligned with the appropriate sections in the body of this Report. The service was performed on the English version of this Report.

光大環境已根據GRI準則針對二零二二年一月一日至二零二二年十二月三十一日期間進行報告。目前沒有適用於本集團的GRI行業準則。GRI於本次內容索引—進階服務（Content Index—Advanced Service）確認GRI內容索引表達清晰，並與GRI準則保持一致，所有披露的參考項亦與本報告相應的章節相符。本次服務按本報告的英文版本進行。

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考/解釋	Page Number 頁數		
<b>GRI 1: Foundation 基礎 2021</b>				
<b>GRI 2: General Disclosures 一般披露 2021</b>				
<b>The Organization and its Reporting Practices 組織及其報告做法</b>				
<b>2-1</b>	Organizational details 組織詳細情況	About This Report 關於本報告  About Everbright Environment 關於光大環境  Annual Report 2022—Notes to the Financial Statements 二零二二年年報—財務報表附註	2-7  16-31  -	
	<b>2-2</b>	Entities included in the organisation's sustainability reporting 納入組織可持續發展報告的實體	About Everbright Environment 關於光大環境  Annual Report 2022—Notes to the Financial Statements 二零二二年年報—財務報表附註	16-31  -
		<b>2-3</b>	Reporting period, frequency and contact point 報告期、報告頻率和聯繫人	About This Report 關於本報告
<b>2-4</b>	Restatements of information 信息重述	Restated information are annotated clearly in this Report. 本報告對重述信息進行了明確的註釋。	-	
<b>2-5</b>	External assurance 外部鑑證	Verification Statements 審核聲明	215-221	
		The Board reviews this Report and the external assurance report before publication. 董事會在發佈前審查本報告和外部鑑證報告。		

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數	
<b>Activities and Workers 活動和工作</b>			
2-6	Activities, value chain and other business relationships 活動、價值鏈和其他業務關係	Message from the Chairman of the Board 董事會主席致辭	8-11
		About Everbright Environment 關於光大環境	16-31
		Sustainable Operations Management 可持續的運營管理	32-49
		Stakeholder Engagement 持份者參與	50-61
		Annual Report 2022 二零二二年年報	–
2-7	Employees 員工	Talent Development 人才發展	138-155
		Key Statistics 主要數據	203-214
2-8	Workers who are not employees 員工之外的工作者	Sustainable Operations Management 可持續的運營管理	32-49
<b>Governance 管治</b>			
2-9	Governance structure and composition 管治架構和組成	Sustainable Operations Management 可持續的運營管理	32-49
		Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–
		None of the members of the highest governance body is from an under-represented social group. 最高治理機構的成員都不是來自弱勢社會群體。	–
2-10	Nomination and selection of the highest governance body 最高管治機構的提名和遴選	Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–
2-11	Chair of the highest governance body 最高管治機構的主席	Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–
2-12	Role of the highest governance body in overseeing the management of impacts 在管理影響方面，最高管治機構的監督作用	Sustainable Operations Management 可持續的運營管理	32-49
		Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–
2-13	Delegation of responsibility for managing impacts 為管理影響的責任授權	Sustainable Operations Management 可持續的運營管理	32-49
		Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–
2-14	Role of the highest governance body in sustainability reporting 最高管治機構在可持續發展報告中的作用	Sustainable Operations Management 可持續的運營管理	32-49
		Annual Report 2022 – Corporate Governance Report 二零二二年年報 – 企業管治報告	–

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
2-15	Conflicts of interest 利益衝突	Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告
2-16	Communication of critical concerns 重要關切問題的溝通	Sustainable Operations Management 可持續的運營管理
	Stakeholder Engagement 持份者參與	32-49 50-61
	Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告	—
	During the Reporting Period, 4 whistleblowing cases were reported through the CEO's mailbox, 3 of which involved tender processes and 1 involved the conflict of interest of staff. 3 cases had been investigated and 1 case is currently under investigation, and the findings have been reported to the Audit Committee in March, 2023. 在報告期間，總裁信箱共收到了4宗舉報案件，其中3宗涉及招標程序，1宗涉及員工利益衝突。其中3宗案件已完成調查及1宗案件仍在調查中，調查結果已於二零二三年三月向審計委員會報告。	—
2-17	Collective knowledge of the highest governance body 最高管治機構的共同知識	Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告
2-18	Evaluation of the performance of the highest governance body 最高管治機構的績效評估	Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告
2-19	Remuneration policies 薪酬政策	Sustainable Operations Management 可持續的運營管理
	Annual Report 2022—Notes to Financial Statements 二零二二年年報—財務報表附註	32-49 —
	There is no difference in retirement benefits between the Senior Management and other employees of the Group. 本集團高級管理層和其他員工的退休福利並無不一樣。	—
2-20	Process to determine remuneration 確定薪酬的程序	Sustainable Operations Management 可持續的運營管理
	Annual Report 2022—Notes to Financial Statements 二零二二年年報—財務報表附註	32-49 —
	The Group seeks the opinions of the employee representative assembly in the formulation of remuneration policy. 本集團在制定薪酬政策時徵求職工代表大會的意見。	—
2-21	Annual total compensation ratio 年度總薪酬比率	Key Statistics 主要數據
	The main business of the Group and more than 90% of its employees are located in Mainland China. Therefore, we do not report compensation data broken down by region. 本集團的主要業務，以及超過90%的員工均位於中國內地，因此我們沒有匯報按地區劃分的薪酬數據。	203-214

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
<b>Strategy, Policies and Practices 戰略、政策和實踐</b>		
2-22	Statement on sustainable development strategy 關於可持續發展戰略的聲明	Message from the Chairman of the Board 董事會主席致辭 8-11
2-23	Policy commitments 政策承諾	Sustainable Operations Management 可持續的運營管理 32-49
		Environmental Protection 環境保護 96-137
		Talent Development 人才發展 138-155
		Safety Culture 安全文化 156-169
		Annual Report 2022—Sustainability Report 二零二二年年報—可持續發展報告 —  Everbright Environment’s ESG commitments are generally in line with relevant international initiatives including <i>UN Guiding Principles on Business and Human Rights</i> , <i>OECD Guidelines for Multinational Enterprises</i> , <i>OECD Due Diligence Guidance for Responsible Business Conduct</i> , and Principle 15 of the <i>Rio Declaration on Environment and Development</i> . 光大環境的ESG承諾與各相關國際倡議大體一致，包括《聯合國工商企業與人權指導原則》、《經濟合作暨發展組織跨國企業準則》、《經濟合作暨發展組織責任商業行為盡職調查指南》和《里約環境與發展宣言》第十五項原則。
2-24	Embedding policy commitments 融入政策承諾	Sustainable Operations Management 可持續的運營管理 32-49
2-25	Processes to remediate negative impacts 補救負面影響的程序	Sustainable Operations Management 可持續的運營管理 32-49  During the period of publicity of procurement bidding results, the public/customer can complain through the procurement platform; during the publicity period before the promotion of employees, employees can make complaints through email; after feedback on the performance appraisal results, employees can appeal through the EHR system or paper documents; Employees who have suggestions and any comments on the Group can provide feedback through the suggestion box or Everbright E-letter public platform. 採購招標結果公示期間，公眾／客戶可通過採購平台進行投訴；在員工晉升前的公示期內，員工可以通過郵件進行投訴；績效考核結果反饋後，員工可通過EHR系統或紙質文件進行申訴；員工對本集團有任何建議和意見，可通過意見箱或光大E信公眾平台進行反饋。
		Sustainable Operations Management 可持續的運營管理 32-49  Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告 —
2-26	Mechanisms for seeking advice and raising concerns 尋求建議和提出關切的機制	Sustainable Operations Management 可持續的運營管理 32-49  Annual Report 2022—Corporate Governance Report 二零二二年年報—企業管治報告 —
2-27	Compliance with laws and regulations 遵守法律法規	Sustainable Operations Management 可持續的運營管理 32-49
		Appendix V—Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 附錄V—對光大環境有重大影響的相關法律及規例的遵守情況 249-252  There were no significant instances of non-compliance with laws and regulations during the Reporting Period. 報導期間沒有發生重大違反法規的事件。
2-28	Membership associations 協會的成員資格	Appendix II—Main Corporate Memberships 附錄II—主要企業會籍 230-231

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
<b>Stakeholder Engagement 利益相關方參與</b>		
2-29	Approach to stakeholder engagement 利益相關方參與的方法	Stakeholder Engagement 持份者參與 50-61
2-30	Collective bargaining agreements 集體談判協議	There are no formal collective bargaining agreements in place within the Group. The Group and the individual employee sign a separate labour contract to stipulate the rights and obligations of both parties, and if there is a change in the policy related to the vital interests of the employee, it will also be communicated through the employee representative assembly. 本集團內部沒有正式的集體談判協議。本集團與職工個人另行簽訂勞動合同，約定雙方的權利和義務，如涉及職工切身利益的政策發生變化，也將通過職工代表大會進行溝通。 -
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-1	Process to determine material topics 確定實質性議題的過程	Stakeholder Engagement 持份者參與 50-61
3-2	List of material topics 實質性議題清單	Stakeholder Engagement – List of Sustainability Topics 持份者參與—可持續發展議題列表 50-61
	In 2022, topics including Anti-competitive Behaviour and Customer Privacy are newly considered to be material while topics including Environmental Compliance and Social Compliance are removed from consideration as their corresponding GRI Standards have been incorporated into GRI 2-27. 二零二二年，反競爭行為和災難及應急預案規劃與響應等主題被重新視為重要主題，而環境合規和社會合規等主題被排除，因為其相應的GRI準則已被納入GRI 2-27。	
<b>Economic Performance 經濟績效</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Message from the Chairman of the Board 董事會主席致辭 8-11
<b>GRI 201: Economic Performance 經濟績效 2016</b>		
201-1	Direct economic value generated and distributed 直接產生和分配的經濟價值	Key Statistics 主要數據 203-214
201-2	Financial implications and other risks and opportunities due to climate change 氣候變化帶來的財務影響以及其它風險與機遇	Response to Climate Change 應對氣候變化 62-95
201-3	Defined benefit plan obligations and other retirement plans 義務性固定福利計劃和其他退休計畫	Talent Development 人才發展 138-155
		Annual Report 2022—Report of the Directors 二零二二年年報—董事會報告 -
201-4	Financial assistance received from government 政府給予的財務補貼	Annual Report 2022—Notes to Financial Statements 二零二二年年報—財務報表附註 -
<b>Anti-corruption 反貪腐</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Sustainable Operations Management 可持續的運營管理 32-49
<b>GRI 205: Anti-corruption 反腐敗 2016</b>		
205-1	Operations assessed for risks related to corruption 已進行腐敗風險評估的運營點	Annual Report 2022—Audit Committee 二零二二年度報告—審核委員會 -
	The risk assessment and internal control carried out by the Group for all operating projects have included the risk of corruption. 本集團為所有運營項目進行的風險評估及內部控制已包含貪腐的風險。	

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
205-2	<p>Communication and training about anti-corruption policies and procedures 反貪敗政策和程序的傳達及培訓</p> <p>Talent Development 人才發展</p> <p>Number of employees participated in anti-corruption training: 已接受反貪腐培訓的員工數據：</p> <ul style="list-style-type: none"> <li>– Number of senior management (percentage): 509 (100%) – 高級管理人員 (百分比): 509 (100%)</li> <li>– Number of middle-level management (percentage): 2,148 (100%) – 中級管理人員 (百分比): 2,148 (100%)</li> <li>– Other employees (percentage): 9,739 (100%) – 其他員工人數 (百分比): 9,739 (100%)</li> </ul> <p>In 2022, all of the Directors of the Company received trainings on anti-corruption. 於二零二二年，本公司全體董事接受了反貪腐培訓。</p>	138-155
205-3	<p>Confirmed incidents of corruption and actions taken 經確認的腐敗事件和採取的行動</p> <p>Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 附錄V – 對光大環境有重大影響的相關法律及規例的遵守情況</p>	249-252
<b>Anti-competitive Behaviour 反競爭行為</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	<p>Management of material topics 實質性議題的管理</p> <p>Sustainable Operations Management 可持續的運營管理</p>	32-49
<b>GRI 206: Anti-competitive Behavior 不當競爭行為 2016</b>		
206-1	<p>Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices 針對不當競爭行為、反托拉斯和反壟斷實踐的法律訴訟</p> <p>Sustainable Operations Management 可持續的運營管理</p>	32-49
<b>Energy Efficiency 能源效益</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	<p>Management of material topics 實質性議題的管理</p> <p>Environmental Protection 環境保護</p>	96-137
<b>GRI 302: Energy 能源 2016</b>		
302-1	<p>Energy consumption within the organisation 組織內部的能源消耗量</p> <p>Environmental Protection 環境保護</p> <p>Key Statistics 主要數據</p> <p>Energy consumption within the organisation includes electricity consumption. The Group also sells steam; but no cooling is sold. 組織內部的能源消耗量包括電力消耗。本集團另有出售蒸汽；但沒有出售製冷。</p> <p>With waste-to-energy as our major business, the Group uses household waste as the major source of fuel to generate green electricity to supply to the grid. Due to the highly varying composition and heat content of household waste, it is not feasible to arrive at a meaningful calculation of total energy consumption within the organisation. 本集團以垃圾發電為主營業務，以生活垃圾為主要燃料，生產綠色電力供應電網。由於生活垃圾的成分和熱值差異很大，因此無法對組織內的總能源消耗進行有意義的計算。</p>	96-137 203-214
302-2	<p>Energy consumption outside of the organisation 組織外部的能源消耗量</p> <p>Environmental Protection 環境保護</p> <p>Key Statistics 主要數據</p> <p>Energy consumption outside the organisation includes the Group's supply of on-grid electricity and steam. 組織外部的能源消耗量包括本集團的上網電量及蒸氣供應量。</p>	96-137 203-214

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
302-3 Energy intensity 能源強度	Key Statistics 主要數據  Energy intensity only includes those within the organisation. 能源密集度只包括組織內部。	203-214
302-4 Reduction of energy consumption 減少能源消耗量	Environmental Protection 環境保護	96-137
302-5 Reductions in energy requirements of products and services 降低產品和服務的能源需求	Environmental Protection 環境保護	96-137
<b>Usage of Water Resources, Waste Water Treatment 水資源使用、污水處理</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3 Management of material topics 實質性議題的管理	Environmental Protection 環境保護	96-137
<b>GRI 303: Water and Effluents 水資源與污水 2018</b>		
303-1 Interactions with water as a shared resource 組織與水(作為共有資源)的相互影響	Environmental Protection 環境保護  The Group's operations in Mainland China make use of the municipal water supply, groundwater, surface water and reclaimed water. Among them, the main source of municipal water supply is surface water. Part of the waste water will be reused in the plant, and the rest will be discharged to public or private waste water treatment facilities, surface water and the ocean in accordance with applicable discharge permits and discharge standards. 本集團在中國內地的業務會使用市政供水、地下水、地表水及再用水。其中，市政供水主要源自地表水。部分污水會於廠內回用，其餘則按照適用的排放許可證及排放標準排放至公共或私有的污水處理設施、地表水及海洋。  The Vietnam operation of the environmental energy sector mainly uses surface water, followed by municipal water supply, where the local municipal water supply also mainly comes from surface water. The Poland operation of this sector uses municipal water supply and groundwater; according to the Polish National Water Agency, the local freshwater sources are mainly surface water, groundwater and from catchment areas. All water used in Vietnam and Poland is consumed and reused in-plant, thus there is no discharge. 環保能源板塊的越南業務主要使用地表水，其次為市政供水，而當地的市政供水亦主要源自地表水。該板塊位於波蘭的業務則使用市政供水及地下水；根據波蘭國家水務局，當地的淡水來源主要為地表水、地下水及集水區。越南及波蘭業務的所有用水均為廠內消耗及回用，因此沒有排放。  The Group's operation in Hong Kong uses water from the Water Supplies Department, including freshwater for potable use, cooling, washing, toilet and landscaping, and seawater for flushing. Hong Kong's two main sources of freshwater are rainfall from natural catchments and Dongjiang water from Guangdong Province. All effluents are discharged to public sewers and/or the sea in accordance with applicable discharge licences. 本集團在香港的業務所使用的水均來自水務署，包括用於飲用水、冷卻、洗滌、洗手間和澆灌的淡水，以及用於沖廁的海水。香港的兩個主要淡水來源是自然流域的降雨和廣東省的東江水。根據適用的排放許可證，所有廢水均排入公共污水收集系統和／或海洋。  The Group's operation in Singapore uses water from third-party water source(s) supplied by the Public Utilities Board ("PUB"). According to PUB, Singapore's water demand is currently met by water from local catchment areas, imported water, NEWater and desalinated water. The waste water from Singapore's operation is collected by public sewers. 本集團在新加坡的業務所使用的水均由公用事業局第三方水源提供。根據公用事業局，新加坡目前可透過使用當地集水區的水、進口水、「新生水」和化淡水來滿足對水的需求。新加坡的業務的污水均由公共污水收集系統收集。	96-137



Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
303-2	Management of water discharge-related impacts 管理與排水相關的影響	Environmental Protection 環境保護 96-137
303-3	Water withdrawal 取水	Environmental Protection 環境保護 96-137
		Key Statistics 主要數據 203-214
303-4	Water discharge 排水	Environmental Protection 環境保護 96-137
		Key Statistics 主要數據 203-214
303-5	Water consumption 耗水	Environmental Protection 環境保護 96-137
		Key Statistics 主要數據 203-214
<b>GHG Management and Climate Change Mitigation 溫室氣體管理及氣候變化的應對</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Responding to Climate Change 應對氣候變化 62-95
		Environmental Protection 環境保護 96-137
<b>GRI 305: Emissions 排放 2016</b>		
305-1	Direct (Scope 1) GHG emissions 直接 (範疇一) 溫室氣體排放	Responding to Climate Change 應對氣候變化 62-95
		Environmental Protection 環境保護 96-137
		Key Statistics 主要數據 203-214
		Calculations are based on the global warming potentials published in the IPCC AR6; calculation of GHG emissions include carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ) and nitrous oxides (N <sub>2</sub> O). Emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF <sub>6</sub> ) and nitrogen trifluoride (NF <sub>3</sub> ) are not significant. 計算參考IPCC AR6中發佈的相對全球變暖潛能；溫室氣體排放量的計算包括二氧化碳(CO <sub>2</sub> )、甲烷(CH <sub>4</sub> )及氧化亞氮(N <sub>2</sub> O)。氫氟碳化物(HFCs)、全氟化碳(PFCs)、六氟化硫(SF <sub>6</sub> )及三氟化氮(NF <sub>3</sub> )的排放並不顯著。
Scope 1 GHG emissions by biogenic/non-biogenic source: 按生物源／非生物源劃分的範疇1溫室氣體排放量： Biogenic emissions: 30,389.20 tonnes CO <sub>2</sub> equivalent 生物源排放量：30,389.20噸二氧化碳當量 Non-biogenic emissions: 12,770,823.20 tonnes CO <sub>2</sub> equivalent 非生物源排放量：12,770,823.20噸二氧化碳當量		
305-2	Energy indirect (Scope 2) GHG emissions 能源間接 (範疇二) 溫室氣體排放	Responding to Climate Change 應對氣候變化 62-95
		Environmental Protection 環境保護 96-137
		Key Statistics 主要數據 203-214

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
305-3 Other indirect (Scope 3) GHG emissions 其它間接(範疇三)溫室氣體排放	Responding to Climate Change 應對氣候變化	62-95
	Environmental Protection 環境保護	96-137
	Key Statistics 主要數據	203-214
	Calculations are based on the global warming potentials published in the IPCC AR6; calculation of GHG emissions include carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ) and nitrous oxides (N <sub>2</sub> O). Emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF <sub>6</sub> ) and nitrogen trifluoride (NF <sub>3</sub> ) are not significant. 計算參考IPCC AR6中發佈的相對全球變暖潛能；溫室氣體排放量的計算包括二氧化碳(CO <sub>2</sub> )、甲烷(CH <sub>4</sub> )及氧化亞氮(N <sub>2</sub> O)。氫氟碳化物(HFCs)、全氟化碳(PFCs)、六氟化硫(SF <sub>6</sub> )及三氟化氮(NF <sub>3</sub> )的排放並不顯著。  We do not have scope 3 biogenic emissions. 我們沒有範疇3生物源排放。	
305-4 GHG emissions intensity 溫室氣體排放強度	Environmental Protection 環境保護	96-137
	Key Statistics 主要數據	203-214
	Calculations are based on the global warming potentials published in the IPCC AR6; calculation of GHG emissions include carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ) and nitrous oxides (N <sub>2</sub> O). Emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF <sub>6</sub> ) and nitrogen trifluoride (NF <sub>3</sub> ) are not significant. 計算參考IPCC AR6中發佈的相對全球變暖潛能；溫室氣體排放量的計算包括二氧化碳(CO <sub>2</sub> )、甲烷(CH <sub>4</sub> )及氧化亞氮(N <sub>2</sub> O)。氫氟碳化物(HFCs)、全氟化碳(PFCs)、六氟化硫(SF <sub>6</sub> )及三氟化氮(NF <sub>3</sub> )的排放並不顯著。	
305-5 Reduction of GHG emissions 溫室氣體減排量	Environmental Protection 環境保護	96-137
	Key Statistics 主要數據	203-214
305-6 Emissions of ozone-depleting substances (ODS) 臭氧消耗物質(ODS)的排放	The Group's operations do not involve emissions of significant ozone-depleting substances (ODS). 本集團的運營並不涉及顯著的臭氧消耗物質(ODS)排放。	–
305-7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions 氮氧化物(NO <sub>x</sub> )、硫氧化物(SO <sub>x</sub> )，和其它重大氣體排放	Environmental Protection 環境保護	96-137
	Key Statistics 主要數據	203-214
	The Group monitors emissions of heavy metals and dioxins by sampling. Thus, there is no data on total emissions. Nevertheless, all emissions are lower than the threshold as stated in the <i>Standard for Pollution Control on the Municipal Solid Waste Incineration</i> (GB 18485-2014), complying with national standards. 本集團以採樣檢驗的方式監測重金屬和二噁英的排放，因此未有排放總量的數據。然而，所有排放均低於《生活垃圾焚燒污染控制標準》(GB 18485-2014)中所列的限值，符合國家標準。  We could not quantify fugitive emissions, such as volatile organic compounds (VOCs) and odour pollutants. Nonetheless, we ensure all emissions comply with all applicable local standards. 我們未能量化無組織氣體，例如揮發性有機化合物及惡臭污染物的排放。儘管如此，我們確保排放符合所有適用的當地標準。	
<b>Waste Management 廢物管理</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3 Management of material topics 實質性議題的管理	Environmental Protection 環境保護	96-137

	Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
<b>GRI 306:</b>	<b>Waste 廢棄物 2020</b>		
	<b>306-1</b> Waste generation and significant waste-related impacts 廢棄物的產生及廢棄物相關重大影響	Environmental Protection 環境保護	96-137
	<b>306-2</b> Management of significant waste-related impacts 廢棄物相關重大影響的管理	Environmental Protection 環境保護	96-137
	<b>306-3</b> Waste generated 產生的廢棄物	Environmental Protection 環境保護  Key Statistics 主要數據	96-137  203-214
	<b>306-4</b> Waste diverted from disposal 從處置中轉移的廢棄物	Environmental Protection 環境保護  Key Statistics 主要數據	96-137  203-214
	<b>306-5</b> Waste directed to disposal 進入處置的廢棄物	Environmental Protection 環境保護  Key Statistics 主要數據	96-137  203-214
<b>Occupational Health and Safety 職業健康與安全</b>			
<b>GRI 3:</b>	<b>Material Topics 實質性議題 2021</b>		
	<b>3-3</b> Management of material topics 實質性議題的管理	Safety Culture 安全文化	156-169
<b>GRI 403:</b>	<b>Occupational Health and Safety 職業健康與安全 2018</b>		
	<b>403-1</b> Occupational health and safety management system 職業健康安全管理體系	Safety Culture 安全文化  The Group's ESHS management system was formulated in accordance with the <i>Labour Law of the PRC</i> , <i>Work Safety Law of the PRC</i> , <i>Criminal Law of the PRC</i> , <i>Social Insurance Law of the PRC</i> , <i>Occupational Health and Safety Management Systems—Requirements with Guidance for Use</i> (GB/T 45001-2020), <i>Environmental Management Systems—Requirements with Guidance for Use</i> (GB/T 24001-2016), etc. 本集團的ESHS管理體系乃依據《中國勞動法》、《中國安全生產法》、《中國刑法》、《中國社會保險法》、《職業健康安全管理體系要求及使用指南》(GB/T 45001-2020)、《環境管理體系要求及使用指南》(GB/T 24001-2016)等編製。	156-169
	<b>403-2</b> Hazard identification, risk assessment, and incident investigation 危害識別、風險評估及事件調查	Safety Culture 安全文化	156-169
	<b>403-3</b> Occupational health services 職業健康服務	Safety Culture 安全文化	156-169
	<b>403-4</b> Worker participation, consultation, and communication on occupational health and safety 職業健康安全事務：工作者的參與、協商和溝通	Safety Culture 安全文化	156-169
	<b>403-5</b> Worker training on occupational health and safety 工作者職業健康安全培訓	Safety Culture 安全文化	156-169
	<b>403-6</b> Promotion of worker health 促進工作者健康	Talent Development 人才發展  Safety Culture 安全文化	138-155  156-169
	<b>403-7</b> Prevention and mitigation of occupational health and safety impacts directly linked by business relationships 預防和減輕與商業關係直接相關的職業健康安全影響	Safety Culture 安全文化	156-169

Disclosure Number 披露編號		Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
403-8	Workers covered by an occupational health and safety management system 職業健康安全管理體系適用的工作者	The Group's ESHS management system covers all employees of the Group, third-party contractors and subcontractors working onsite. 本集團的ESHS管理體系覆蓋了集團所有員工、第三方承包商及分包商駐場工人。  The Group conducts annual internal audit for the ESHS system, but has not yet conducted external audits. 本集團每年對ESHS體系進行內部審核，但暫未進行外部審核。	–
403-9	Work-related injuries 工傷	Safety Culture 安全文化  Key Statistics 主要數據  The major risks of work-related injury in the waste to energy and integrated biomass utilisation industries include musculoskeletal injuries, fractures, and ocular trauma; while that of the water utility industry include slip and fall, and hearing loss. 垃圾發電及生物質綜合利用行業的主要工傷風險包括肌肉骨骼損傷、骨折、及穿透性眼外傷；水務行業的主要工傷風險則包括滑倒、跌倒、及聽力損害。  During the Reporting Period, 3 work-related fatalities involving on-site third-party contractors and subcontractors were recorded, in which one worker died from getting hit by a rebounded pipe wrench after the motor was powered up; and the other two workers died from inhaling harmful gas while repairing the groundwater drainage pipeline at a landfill. The third-party contractors and subcontractors have compensated the families of the deceased after amicable negotiations. 報告期內錄得3宗涉及第三方承包商及分包商駐場工人的工傷死亡事故，其中一名工人在電機通電後被反彈的管鉗擊中而死亡；而另外兩名工人在填埋場修復地下水排水管道時吸入有害氣體而死亡。第三方承包商及分包商經與死者家屬友好協商後進行了賠付。	156-169  203-214
403-10	Work-related ill health 工作相關的健康問題	Safety Culture 安全文化  Key Statistics 主要數據  The major risks of work-related ill health in the waste to energy and integrated biomass utilisation industries include skin and gastrointestinal disorders, and exposure to concerning substances, such as respirable quartz dust, dioxins, bioaerosols and carcinogens; while that of the water utility industry include waterborne disease, airborne infection, and skin ailments. 垃圾發電及生物質綜合利用行業的主要職業病風險包括皮膚和腸胃疾病、以及由接觸有害物質，例如石英粉塵、二噁英、生物氣溶膠和致癌物等而引發的疾病；水務行業的主要職業病風險包括水源性疾病、空氣傳播疾病、及皮膚病。	156-169  203-214
<b>Employee Training 員工培訓</b>			
<b>GRI 3:</b>	<b>Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Talent Development 人才發展	138-155
<b>GRI 404:</b>	<b>Training and Education 培訓與教育 2016</b>		
404-1	Average hours of training per year per employee 每名員工每年接受培訓的平均小時數	Talent Development 人才發展  Key Statistics 主要數據	138-155  203-214
404-2	Programs for upgrading employee skills and transition assistance programs 員工技能提升方案及過渡協助方案	Talent Development 人才發展	138-155
404-3	Percentage of employees receiving regular performance and career development reviews 定期接受績效和職業發展考核的員工百分比	Talent Development 人才發展  Key Statistics 主要數據	138-155  203-214

Disclosure Number 披露編號	Relevant Chapter(s) or Other Reference/Explanation 相關章節或其他參考／解釋	Page Number 頁數
<b>Child Labour and Forced Labour 童工與強制勞工</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Sustainable Operations Management 可持續的運營管理  Talent Development 人才發展
		32-49  138-155
<b>GRI 408: Child Labor 童工 2016</b>		
408-1	Operations and suppliers at significant risk for incidents of child labor 具有重大童工事件風險的運營點和供應商	Sustainable Operations Management 可持續的運營管理  Talent Development 人才發展
		32-49  138-155
<b>GRI 409: Forced or Compulsory Labor 強迫或強制勞動 2016</b>		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor 具有強迫或強制勞動事件重大風險的運營點和供應商	Sustainable Operations Management 可持續的運營管理  Talent Development 人才發展
		32-49  138-155
<b>Rights of Indigenous Peoples 原住民權利</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Community Care 社區關懷
		170-187
<b>GRI 411: Rights of Indigenous Peoples 原住民權利 2016</b>		
411-1	Incidents of violations involving rights of indigenous peoples 涉及侵犯原住民權利的事件	The Group has no incidents of violations involving rights of indigenous peoples in 2022. 本集團於二零二二年沒有涉及侵害原住民權利的事件。
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<b>Customer Privacy 客戶隱私</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Sustainable Operations Management 可持續的運營管理
		32-49
<b>GRI 418: Customer Privacy 客戶隱私 2016</b>		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data 侵犯客戶隱私和丟失客戶資料有關經證實的投訴	The Group has no substantiated complaints concerning breaches of customer privacy and losses of customer data in 2022. 本集團於二零二二年沒有經證實侵犯客戶隱私或遺失客戶資料的投訴。
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<b>Disaster and Emergency Planning and Response 災難及應急預案規劃</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Safety Culture 安全文化
		156-169
<b>Technological R&amp;D 技術研發</b>		
<b>GRI 3: Material Topics 實質性議題 2021</b>		
3-3	Management of material topics 實質性議題的管理	Environmental Protection 環境保護
		96-137

## Appendix IV – SEHK ESG Reporting Guide Content Index

### 附錄IV – 聯交所《環境、社會及管治報告指引》內容索引

ESG Aspects ESG層面	Description 描述	Relevant Chapter(s) of the Report and/or Other Explanation(s) 報告章節及/或其他說明
<b>Governance Structure</b> 管治架構	A statement from the board containing the following elements: (i) a disclosure of the board's oversight of ESG issues; (ii) the board's ESG management approach and strategy, including the process used to evaluate, prioritise and manage material ESG-related issues (including risks to the issuer's businesses); and (iii) how the board reviews progress made against ESG-related goals and targets with an explanation of how they relate to the issuer's businesses. 由董事會發出的聲明，當中載有下列內容： (i) 披露董事會對環境、社會及管治事宜的監管； (ii) 董事會的環境、社會及管治管理方針及策略，包括評估、優次排列及管理重要的環境、社會及管治相關事宜（包括對發行人業務的風險）的過程；及 (iii) 董事會如何按環境、社會及管治相關目標檢討進度，並解釋它們如何與發行人業務有關連。	About this Report, Sustainable Operations Management 關於本報告、可持續的運營管理
<b>Reporting Principles</b> 匯報原則	A description of, or an explanation on, the application of the following Reporting Principles in the preparation of the ESG report: Materiality, Quantitative and Consistency. 描述或解釋在編備環境、社會及管治報告時如何應用下列匯報原則：重要性、量化、一致性。	About this Report 關於本報告
<b>Reporting Boundary</b> 匯報範圍	A narrative explaining the reporting boundaries of the ESG report and describing the process used to identify which entities or operations are included in the ESG report. If there is a change in the scope, the issuer should explain the difference and reason for the change. 解釋環境、社會及管治報告的匯報範圍，及描述挑選哪些實體或業務納入環境、社會及管治報告的過程。若匯報範圍有所改變，發行人應解釋不同之處及變動原因。	About this Report, Stakeholder Engagement 關於本報告、持份者參與
<b>“Comply or Explain” Provisions「不遵守就解釋」條文</b>		
<b>A. Environmental 環境</b>		
<b>Aspect A1: Emissions 層面A1：排放物</b>		
<b>General Disclosure</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste. 有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生等的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Environmental Protection, Appendix V – Compliance with Relevant Laws and Regulations that Have a significant impact on Everbright Environment 環境保護、附錄V—對光大環境有重大影響的相關法律及規例的遵守情況
<b>KPI A1.1</b>	The types of emissions and respective emissions data. 排放物種類及相關排放數據。	Environmental Protection, Key Statistics 環境保護、主要數據  <b>Air Emissions<sup>(1)</sup>:</b> <b>煙氣排放量<sup>(1)</sup>:</b>  Particulate Matter (PM): 641.08 tonnes 噸 顆粒物 (PM):  Sulphur Dioxide (SO <sub>2</sub> ): 4,430.37 tonnes 噸 二氧化硫 (SO <sub>2</sub> ):  Nitrogen Oxides (NO <sub>x</sub> ): 20,077.28 tonnes 噸 氮氧化物 (NO <sub>x</sub> ):  Hydrochloric Acid (HCl): 1,152.51 tonnes 噸 鹽酸 (HCl):  Carbon Monoxide (CO): 868.82 tonnes 噸 一氧化碳 (CO):  The Group monitors other emissions by sampling. Thus, there is no data on total emissions. Nevertheless, all emissions outstripped prevailing statutory standards. 本集團以採樣檢驗的方式監測其他排放物，因此未有排放總量的數據。然而，所有排放均優於現行的法定標準。
<b>KPI A1.2</b>	Direct (Scope 1) and energy indirect (Scope 2) greenhouse gas emissions (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). 直接（範圍1）及能源間接（範圍2）溫室氣體排放量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）。	Environmental Protection, Key Statistics 環境保護、主要數據
<b>KPI A1.3</b>	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). 所產生有害廢棄物總量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）。	Environmental Protection, Key Statistics 環境保護、主要數據
<b>KPI A1.4</b>	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility). 所產生無害廢棄物總量（以噸計算）及（如適用）密度（如以每產量單位、每項設施計算）。	Environmental Protection, Key Statistics 環境保護、主要數據

Note 附註：

- <sup>(1)</sup> Includes all operations that involve incineration of household and hazardous waste; and combustion of agricultural and forestry waste.  
涵蓋所有生活垃圾及危廢焚燒，及農林廢棄物的燃燒運營。

ESG Aspects ESG層面	Description 描述	Relevant Chapter(s) of the Report and/or Other Explanation(s) 報告章節及/或其他說明
KPI A1.5	Description of emissions target(s) set and steps taken to achieve them. 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。	Environmental Protection, Together for the Sustainable Development Goals 環境保護、攜手邁向可持續發展目標
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, and a description of reduction target(s) set and steps taken to achieve them. 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。	Environmental Protection, Together for the Sustainable Development Goals 環境保護、攜手邁向可持續發展目標  Hazardous waste is mainly composed of fly ash generated from the incineration of household waste. The amount of fly ash generated is highly dependent on the quantity and composition of household waste received, which are beyond Everbright Environment's control 有害廢棄物主要包括焚燒生活垃圾所產生的飛灰。飛灰的數量主要取決於接收生活垃圾的數量及成分，而這些因素均不在光大環境的控制範圍之內。
<b>Aspect A2: Use of Resources 層面A2：資源使用</b>		
<b>General Disclosure 一般披露</b>	Policies on the efficient use of resources, including energy, water and other raw materials. 有效使用資源(包括能源、水及其他原材料)的政策。	Environmental Protection 環境保護
KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility) by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility) 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(如以每產量單位、每項設施計算)。	Environmental Protection, Key Statistics 環境保護、主要數據
KPI A2.2	Water consumption in total and intensity (per unit of production volume, per facility) 總耗水量及密度(如以每產量單位、每項設施計算)。	Environmental Protection, Key Statistics 環境保護、主要數據  The Group's total freshwater consumption and freshwater consumption intensity in 2022 were 68,677,293.96 m <sup>3</sup> and 0.003 m <sup>3</sup> /kWh respectively. 本集團2022年的淡水消耗總量及淡水消耗強度分別為68,677,293.96立方米和0.003立方米/千瓦時。
KPI A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them. 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。	Environmental Protection, Together for the Sustainable Development Goals 環境保護、攜手邁向可持續發展目標
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them. 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。	Environmental Protection, Together for the Sustainable Development Goals 環境保護、攜手邁向可持續發展目標  Regarding water sourcing, all of the Group's projects under construction and operation have obtained the respective environmental impact assessment approvals and water-drawing permits. There are no issues related to sourcing water that is fit for purpose. 在取水方面，本集團的所有在建及運營項目均已獲得相關的環評批覆及取水證，本集團在獲得適用水源上沒有發現任何問題。
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced. 製成品所用包裝材料的總量(以噸計算)及(如適用)每生產單位佔量。	The primary products of the Group are clean energy and clean effluent, no packaging materials are used. 本集團的主要產出物為清潔能源及潔淨出水，並不使用包裝物料。
<b>Aspect A3: The Environment and Natural Resources 層面A3：環境及天然資源</b>		
<b>General Disclosure 一般披露</b>	Policies on minimising the issuer's significant impact on the environment and natural resources. 減低發行人對環境及天然資源造成重大影響的政策。	Environmental Protection 環境保護
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources. 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。	Environmental Protection 環境保護
<b>Aspect A4: Climate Change 層面A4：氣候變化</b>		
<b>General Disclosure 一般披露</b>	Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer. 識別及應對已經及可能會對發行人產生影響的重大氣候相關事宜的政策。	Responding to Climate Change 應對氣候變化
KPI A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them. 描述已經及可能會對發行人產生影響的重大氣候相關事宜，及應對行動。	Responding to Climate Change 應對氣候變化

ESG Aspects ESG層面	Description 描述	Relevant Chapter(s) of the Report and/or Other Explanation(s) 報告章節及/或其他說明
<b>B. Social 社會</b>		
<b>Employment and Labour Practices 僱傭及勞工常規</b>		
<b>Aspect B1: Employment 層面B1：僱傭</b>		
<b>General Disclosure 一般披露</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare. 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： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Talent Development, Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 人才發展、附錄V—對光大環境有重大影響的相關法律及規例的遵守情況
<b>KPI B1.1</b>	Total workforce by gender, employment type (for example, full- or part-time), age group and geographical region. 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。	Talent Development, Key Statistics 人才發展、主要數據
<b>KPI B1.2</b>	Employee turnover rate by gender, age group and geographical region. 按性別、年齡組別及地區劃分的僱員流失比率。	Talent Development, Key Statistics 人才發展、主要數據
<b>Aspect B2: Health and Safety 層面 B2: 健康與安全</b>		
<b>General Disclosure 一般披露</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards. 有關提供安全工作環境及保障僱員避免職業性危害的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Safety Culture, Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 安全文化、附錄V—對光大環境有重大影響的相關法律及規例的遵守情況
<b>KPI B2.1</b>	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year. 過去三年(包括匯報年度)每年因工亡故的人數及比率。	Safety Culture, Key Statistics 安全文化、主要數據
<b>KPI B2.2</b>	Lost days due to work injury. 因工傷損失工作日數。	Safety Culture, Key Statistics 安全文化、主要數據
<b>KPI B2.3</b>	Description of occupational health and safety measures adopted, and how they are implemented and monitored. 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。	Safety Culture 安全文化
<b>Aspect B3: Development and Training 層面B3：發展及培訓</b>		
<b>General Disclosure 一般披露</b>	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities. 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。	Talent Development 人才發展
<b>KPI B3.1</b>	The percentage of employees trained by gender and employee category (e.g. senior management, middle management). 按性別及僱員類別(如高級管理層、中級管理層等)劃分的受訓僱員百分比。	Male: 100% 男： Female: 100% 女： Senior management: 100% 高級管理層： Middle level management: 100% 中級管理層： General and technical staff: 100% 一般員工：
<b>KPI B3.2</b>	The average training hours completed per employee by gender and employee category. 按性別及僱員類別劃分，每名僱員完成受訓的平均時數。	Talent Development, Key Statistics 人才發展、主要數據
<b>Aspect B4: Labour Standards 層面B4：勞工準則</b>		
<b>General Disclosure 一般披露</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour. 有關防止童工或強制勞工的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Talent Development, Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 人才發展、附錄V—對光大環境有重大影響的相關法律及規例的遵守情況
<b>KPI B4.1</b>	Description of measures to review employment practices to avoid child and forced labour. 描述檢討招聘慣例的措施以避免童工及強制勞工。	Talent Development 人才發展  The Group regularly reviews its employment practice to ensure compliance with applicable laws and regulations in preventing child and forced labour. 本集團定期檢討其招聘措施以確保遵守適用於有關避免童工及強制勞工的法律及規例。



ESG Aspects ESG層面	Description 描述	Relevant Chapter(s) of the Report and/or Other Explanation(s) 報告章節及/或其他說明
<b>KPI B4.2</b>	Description of steps taken to eliminate such practices when discovered. 描述在發現違規情況時消除有關情況所採取的步驟。	The Group has zero tolerance towards such practice. Violations are subject to internal disciplinary actions or handled by relevant authorities. 本集團並不容忍此違規情況。如有發現，將進行內部處分或送官究治。
<b>Operating Practices 運營慣例</b>		
<b>Aspect B5: Supply Chain Management 層面B5：供應鏈管理</b>		
<b>General Disclosure 一般披露</b>	Policies on managing environmental and social risks of the supply chain. 管理供應鏈的環境及社會風險政策。	Sustainable Operations Management 可持續的運營管理
<b>KPI B5.1</b>	Number of suppliers by geographical region. 按地區劃分的供應商數目。	Sustainable Operations Management 可持續的運營管理
<b>KPI B5.2</b>	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored. 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。	Sustainable Operations Management 可持續的運營管理
<b>KPI B5.3</b>	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored. 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。	Sustainable Operations Management 可持續的運營管理
<b>KPI B5.4</b>	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored. 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。	Sustainable Operations Management 可持續的運營管理
<b>Aspect B6: Product Responsibility 層面B6：產品責任</b>		
<b>General Disclosure 一般披露</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress. 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： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Sustainable Operations Management, Environmental Protection, Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 可持續的運營管理、環境保護、附錄VI—對光大環境有重大影響的相關法律及規例的遵守情況  The Group has not identified material concerns in its operations regarding advertising and labelling matters, thus dedicated policies are not in place. 本集團並未發現運營中有關廣告及標籤事宜的重大問題，故此，本集團並無相關專門政策。  There are no laws and regulations that have a significant impact on the Group regarding advertising and labelling matters relating to products and services provided by the Group. 本集團並無有關廣告及標籤事宜的相關法律及規例對其構成重大影響。
<b>KPI B6.1</b>	Percentage of total products sold or shipped subject to recalls for safety and health reasons. 已售或已運送產品總數中因安全與健康理由而須回收百分比。	The Group had no products recalled for safety and health reasons in 2022. 本集團於二零二二年沒有因安全與健康理由而須回收產品。
<b>KPI B6.2</b>	Number of products and service related complaints received and how they are dealt with. 接獲關於產品及服務的投訴數目以及應對方法。	Community Care 社區關懷
<b>KPI B6.3</b>	Description of practices relating to observing and protecting intellectual property rights. 描述與維護及保障知識產權有關的慣例。	Sustainable Operations Management 可持續的運營管理
<b>KPI B6.4</b>	Description of quality assurance process and recall procedures. 描述質量檢定過程及產品回收程序。	Sustainable Operations Management, Environmental Protection 可持續的運營管理、環境保護  The majority of the Group's business is integrated environmental solutions and there are no specific product quality assurance process and recall procedures applicable. 本集團的主要業務為綜合環境解決方案，並無適用的特定產品質量保證程序和召回程序。
<b>KPI B6.5</b>	Description of consumer data protection and privacy policies, how they are implemented and monitored. 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。	Sustainable Operations Management 可持續的運營管理

Appendix IV – SEHK ESG Reporting Guide Content Index  
附錄IV – 聯交所《環境、社會及管治報告指引》內容索引

ESG Aspects ESG層面	Description 描述	Relevant Chapter(s) of the Report and/or Other Explanation(s) 報告章節及/或其他說明
<b>Aspect B7 :Anti-corruption 層面B7：反貪污</b>		
<b>General Disclosure 一般披露</b>	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering. 有關防止賄賂、勒索、欺詐及洗黑錢的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。	Sustainable Operations Management, Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 可持續的運營管理、附錄V – 對光大環境有重大影響的相關法律及規例的遵守情況  No loyalty payment was made to any governments in 2022. 本集團於二零二二年沒有向任何政府支付任何特許權費用。
<b>KPI B7.1</b>	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases. 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。	In 2022, there was no confirmed case of non-compliance in relation to corrupt practices that would have a significant impact on the Group. 二零二二年並沒有任何與反貪污相關並對本集團有重大影響的已確認違規事件。
<b>KPI B7.2</b>	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored. 描述防範措施及舉報程序，以及相關執行及監察方法。	Sustainable Operations Management 可持續的運營管理
<b>KPI B7.3</b>	Description of anti-corruption training provided to directors and staff. 描述向董事及員工提供的反貪污培訓	Sustainable Operations Management 可持續的運營管理
<b>Community 社區</b>		
<b>Aspect B8 :Community Investment 層面B8：社區投資</b>		
<b>General Disclosure 一般披露</b>	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests. 有關以社區參與來了解運營所在社區需要和確保其業務活動會考慮社區利益的政策。	Community Care 社區關懷
<b>KPI B8.1</b>	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport). 專注貢獻範疇 (如教育、環境事宜、勞工需求、健康、文化、體育)。	Community Care 社區關懷
<b>KPI B8.2</b>	Resources contributed (e.g. money or time) to the focus area. 在專注範疇所動用資源 (如金錢或時間)。	Community Care, Key Statistics, Appendix II – Main Corporate Memberships 社區關懷、主要數據、附錄II – 主要企業會籍

## Appendix V – Compliance with Relevant Laws and Regulations that Have a Significant Impact on Everbright Environment 附錄V—對光大環境有重大影響的相關法律及規例的遵守情況

### SEHK ESG Reporting Guide Subject Area

#### Aspect A1: Emissions

In order to protect and improve the environment, prevent pollution and other public hazards, safeguard public health, promote the development of ecological civilisation, and promote sustainable economic and social development, China has enacted a vast amount of laws and regulations to protect environmental resources. Key laws and regulations applicable to the Group's business include the *Environmental Protection Law of the PRC*, *Law of the PRC on Environmental Impact Assessment*, *Water Pollution Prevention and Control Law of the PRC*, *the Marine Environment Protection Law of the PRC*, *Law of the PRC on Prevention and Control of Noise Pollution*, *Atmospheric Pollution Prevention and Control Law of the PRC*, *Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste*, *Wetlands Conservation Law of the PRC*, *Yangtze River Protection Law of the PRC*, *Yellow River Protection Law of the PRC*, *Provisions on the Compensation for Ecological and Environmental Damage*, *Measures for the Disclosure of Environmental Information by Enterprises*, *Measures for the Administration of Permit for Operation of Dangerous Wastes*, *Measures for the Administration of the Transfer of Dangerous Wastes*, *Regulation on Medical Wastes Management*, *Measures for the Administration of Environmental Surveillance*, *Measures for the Administration of Automatic Monitoring of Pollution Sources*, *Measures for the Administration of the List of Key Units of Environmental Supervision*, *Regulation on the Administration of Permitting of Pollutant Discharges*, *Administrative Measures for Urban Household Waste*, *Provisions on the Administration of Urban Construction Waste and Regulation on Urban Drainage and Sewage Treatment*. These laws and regulations provide clear requirements on air and GHG emissions, discharges into water and land, and generation of hazardous and non-hazardous waste. The Group understands the importance of complying with these statutory obligations as violation of any applicable environmental laws and regulations may result in penalties, suspension of operation, and/or legal action against the Group imposed by regulatory authorities.

In 2022, there was no confirmed case of non-compliance in relation to environmental protection that would have a significant impact on the Group. Please refer to the "Environmental Protection" chapter of the Report on how Everbright Environment ensures compliance with applicable environmental laws and regulations.

### 聯交所《環境、社會及管治報告指引》範疇

#### 層面A1：排放物

為保護和改善環境，防治污染和其他公害，保障公眾健康，推進生態文明建設，促進經濟和社會的可持續發展，中國制定實施了大量環境資源保護的法律及法規。適用於本集團的主要法律及規例包括《中華人民共和國環境保護法》、《中華人民共和國環境影響評價法》、《中華人民共和國水污染防治法》、《中華人民共和國海洋環境保護法》、《中華人民共和國噪聲污染防治法》、《中華人民共和國大氣污染防治法》、《中華人民共和國固體廢物污染環境防治法》、《中華人民共和國濕地保護法》、《中華人民共和國長江保護法》、《中華人民共和國黃河保護法》、《生態環境損害賠償管理規定》、《企業環境信息依法披露管理辦法》、《危險廢物經營許可證管理辦法》、《危險廢物轉移管理辦法》、《醫療廢物管理條例》、《環境監測管理辦法》、《污染源自動監控管理辦法》、《環境監管重點單位名錄管理辦法》、《排污許可管理條例》、《城市生活垃圾管理辦法》、《城市建築垃圾管理規定》及《城市排水與污水處理條例》。該等法律及規例對廢氣及溫室氣體排放、向水及土地的排污以及有害及無害廢棄物的產生等方面提供了明確要求。本集團深明履行該等法定義務的重要性，因為違反任何適用的環境法律和法規均可能會導致監管機構對本集團作出罰款、勒令停運及／或採取法律行動。

二零二二年並無任何與環境保護相關並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境遵守相關環境法律法規的情況，請參閱本報告的「環境保護」一章。

## Aspect B1: Employment

*The Labour Law of the PRC, Labour Contract Law of the PRC, Labour Union Law of the PRC, Regulation on the Implementation of the Labour Contract Law of the PRC, Regulation on Work-Related Injury Insurances, Regulation on Paid Annual Leave for Employees, Regulation on Labour Security Supervision, Special Provision on Labour Protection of Female Employees and the Employment Ordinance of Hong Kong stipulate the legal obligations and responsibilities of employers to provide employment protection and benefits covering compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare. The Social Insurance Law of the PRC is formulated for the purpose of regulating sickness insurance, occupational injury insurance, maternity insurance, medical insurance, retirement insurance and death insurance, and also clarifies the legal liabilities of the employers. The Regulation on the Management of Housing Provident Fund of the PRC is formulated for the purpose of maintaining the lawful rights and interests of housing provident fund owners. These laws and regulations provide relevant protection for the Group's employees and safeguard their lawful rights. The Group will continue to comply with all relevant employment laws and regulations to protect the Group's most valuable asset – employees.*

In 2022, there was no confirmed case of non-compliance in relation to the Group's employment practices that would have a significant impact on the Group. Please refer to the "Talent Development" chapter of the Report on how Everbright Environment ensures compliance with applicable employment laws and regulations.

## 層面B1：僱傭

《中華人民共和國勞動法》、《中華人民共和國勞動合同法》、《中華人民共和國工會法》、《中華人民共和國勞動合同法實施條例》、《工傷保險條例》、《職工帶薪年休假條例》、《勞動保障監察條例》、《女職工勞動保護特別規定》及香港《僱傭條例》提供了全面的僱傭保障和福利，涵蓋對薪酬及解僱、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方面的要求，明確了僱主的法定義務和責任。《中華人民共和國社會保險法》規定了疾病、工傷、生育、醫療、退休及死亡保險，並釐清了僱主的相關法律責任。《住房公積金管理條例》則維護了住房公積金所有者的合法權益。以上法律和規例為本集團的員工提供相關保障，保護員工的合法權利。本集團將繼續遵守所有相關的僱傭法律法和規例，保障本集團最寶貴的財富—員工。

二零二二年並無任何與僱傭相關並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境遵守相關僱傭法律法規的情況，請參閱本報告的「人才發展」一章。

## Aspect B2: Health and Safety

*The Labour Law of the PRC, Work Safety Law of the PRC, Law of the PRC on the Prevention and Treatment of Occupational Diseases and Criminal Law of the PRC* commit to the protection of occupational safety and health and industrial safety, and require production and business units and employers to provide a safe working environment and protect employees from occupational hazards. The *Social Insurance Law of the PRC* is formulated for the purpose of regulating sickness insurance, occupational injury insurance, maternity insurance, medical insurance, retirement insurance and death insurance, and also clarifies the legal liabilities of the employers. Compliance with these laws and regulations is paramount as workplace safety is of critical importance to each and every employee of the Group. As a socially responsible enterprise, the Group complies with relevant health and safety laws and regulations to provide employees with a safe workplace and suitable insurance.

In 2022, there was no confirmed case of non-compliance in relation to health and safety that would have a significant impact on the Group. Please refer to the “Safety Culture” chapter of the Report on how Everbright Environment ensures compliance with applicable laws and regulations relating to health and safety.

## Aspect B4: Labour Standards

*The Labour Law of the PRC, Provisions on the Prohibition of Using Child Labour and the Employment Ordinance of Hong Kong* set out clear rules for preventing child labour and forced labour, and elaborate on the legal liabilities of employers who violate the relevant laws and regulations. Everbright Environment highly values human rights and aims to demonstrate its “People-Oriented” corporate spirit through compliance with the relevant labour standards.

In 2022, there was no confirmed case of non-compliance in relation to labour standards that would have a significant impact on the Group. Please refer to the “Talent Development” chapter of the Report on how Everbright Environment ensures compliance with applicable laws and regulations relating to labour standards.

## 層面B2：健康與安全

《中華人民共和國勞動法》、《中華人民共和國安全生產法》、《中華人民共和國職業病防治法》及《中華人民共和國刑法》旨在維護勞動安全健康及工業安全，要求生產經營單位及僱主提供安全工作環境及保障僱員避免職業性危害。《中華人民共和國社會保險法》則規定了疾病、工傷、生育、醫療、退休及死亡保險，並釐清了僱主的相關法律責任。遵守這些法律法規是本集團的首要任務，因為工作場所的安全對本集團每一位員工都十分重要。為員工提供安全工作環境及合適保險是本集團作為良心企業的實踐，本集團會嚴守相關健康與安全法律和規例。

二零二二年並無任何與健康與安全相關並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境遵守相關健康與安全法律法規的情況，請參閱本報告的「安全文化」一章。

## 層面B4：勞工準則

《中華人民共和國勞動法》、《禁止使用童工規定》及香港《僱傭條例》對防止童工或強制勞動列有明確規定，並詳細地闡述違反相關法律及規例的僱主的法律責任。光大環境高度重視人權，透過遵守相關勞工準則，充分反映其「以人為本」的企業精神。

二零二二年並無任何與勞工準則相關並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境遵守相關勞工準則法律法規的情況，請參閱本報告的「人才發展」一章。

## Aspect B6: Product Responsibility

Relevant laws and regulations applicable to the Group mainly include the *Civil Code of the PRC* (Tort Liability Book), *Patent Law of the PRC*, *Criminal Law of the PRC*, *Product Quality Law of the PRC*, *Environmental Protection Law of the PRC*, *Atmospheric Pollution Prevention and Control Law of the PRC*, *Water Pollution Prevention and Control Law of the PRC*, *Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste and Administrative Penalty Law of the PRC*. These laws and regulations provide clear requirements on health and safety, and remedial methods relating to products and services provided. It is the Group's core value to abide by these rules in providing safe and reliable products and services.

In 2022, there was no confirmed case of non-compliance in relation to product responsibility that would have a significant impact on the Group. Please refer to the "Sustainable Operations Management" and "Environmental Protection" chapters of the Report on how Everbright Environment ensures compliance with applicable laws and regulations relating to product responsibility.

## Aspect B7: Anti-Corruption

The *Anti-Unfair Competition Law of the PRC*, *Criminal Law of the PRC*, *Anti-Money Laundering Law of the PRC*, and the *Prevention of Bribery Ordinance* of Hong Kong set out clear rules on preventing bribery, extortion, fraud and money laundering. These laws and regulations aim to maintain social integrity and fairness, prevent unfair competition, and protect the legal rights of service providers and customers. The Group firmly believes that misconduct such as corruption has significant negative impact to the business development. Therefore, the Group strictly complies with relevant anti-corruption laws and regulations to maintain a good reputation and enhance its competitiveness.

It is the Group's policy to avoid making any kind of political contribution. In 2022, the Group did not make payment to any lobbying, interest representation, or political campaigns or organisations.

In 2022, there was no confirmed case of non-compliance in relation to anti-corruption practices (including any form of facilitating payment) that would have a significant impact on the Group. Please refer to the "Sustainable Operations Management" chapter of the Report on how Everbright Environment ensures compliance with applicable laws and regulations relating to anti-corruption practices.

## 層面B6：產品責任

與本集團相關的法律法規主要包括《中華人民共和國民法典》(侵權責任編)、《中華人民共和國專利法》、《中華人民共和國刑法》、《中華人民共和國產品質量法》、《中華人民共和國環境保護法》、《中華人民共和國大氣污染防治法》、《中華人民共和國水污染防治法》、《中華人民共和國固體廢物污染環境防治法》及《中華人民共和國行政處罰法》。該等法律及規例對產品和服務的健康與安全、以及補救方法提供了明確的要求。在符合這些規則的前提下提供安全可靠的產品和服務是本集團的核心價值。

二零二二年並無任何與產品責任相關並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境確保遵守相關產品責任法律法規的情況，請參閱本報告的「可持續的運營管理」及「環境保護」章節。

## 層面B7：反貪污

《中華人民共和國反不正當競爭法》、《中華人民共和國刑法》、《中華人民共和國反洗錢法》及香港《防止賄賂條例》對防止賄賂、勒索、欺詐及洗黑錢行為提供了明確的規定，旨在維護社會廉潔公平，制止不正當競爭行為，保護服務提供者和消費者的合法權益。本集團深信貪污等不當行為對業務發展百害而無一利，因此嚴格遵循相關的反貪污法律法規，致力維持本集團良好的聲譽及提升競爭力。

本集團政策是避免作出任何形式的政治捐款。在二零二二年，本集團沒有向任何遊說、利益代表和政治活動或組織支付款項。

二零二二年並無任何與反貪污相關(包括支付任何形式的通行費)並對本集團有重大影響的已確認違規事件。如欲了解更多光大環境確保遵守相關反貪污法律法規的情況，請參閱本報告的「可持續的運營管理」一章。

CHINA EVERBRIGHT ENVIRONMENT GROUP LIMITED

中國光大環境(集團)有限公司

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2022

SUSTAINABILITY REPORT

可持續發展報告



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