

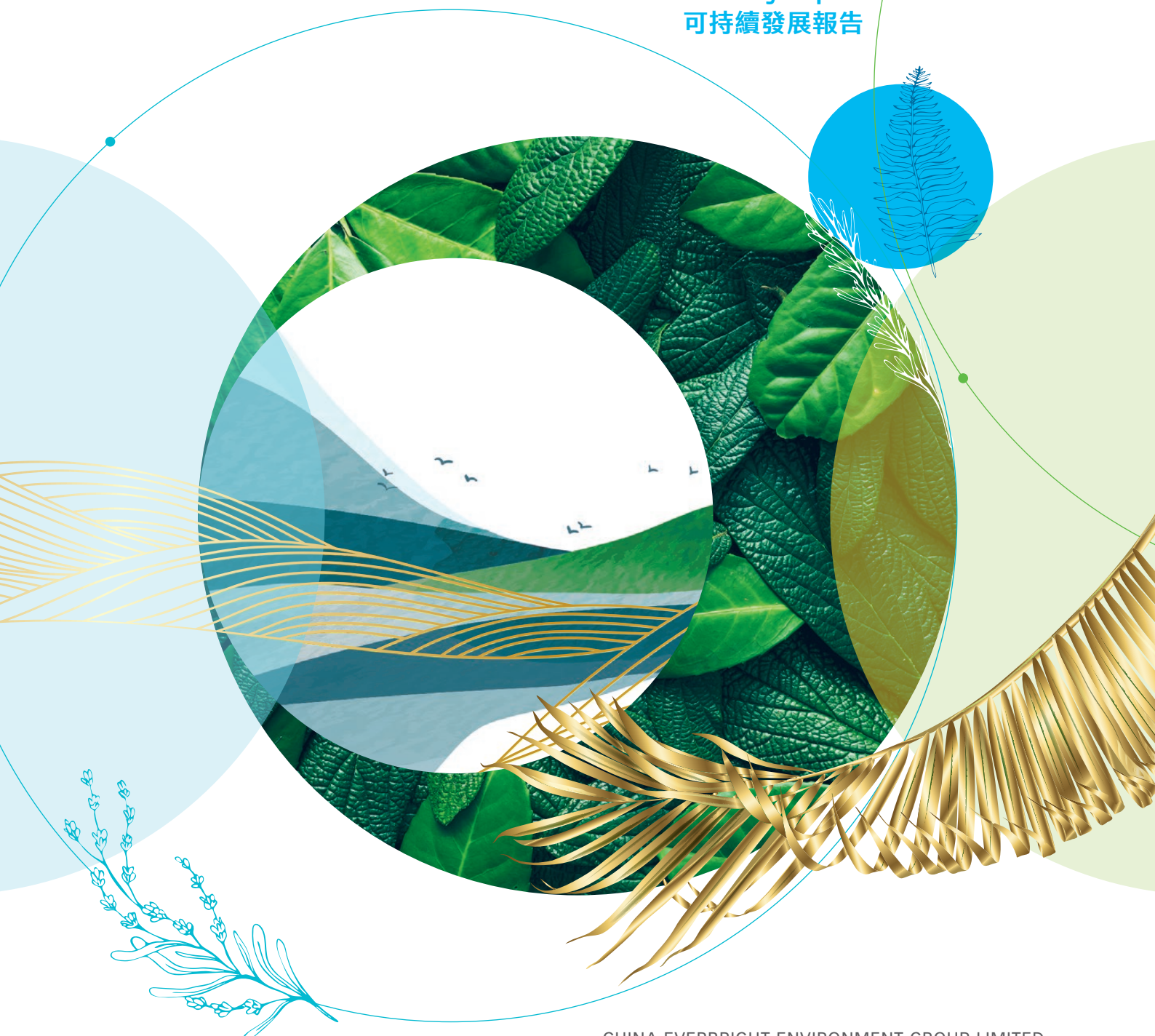


**光大環境**  
EVERBRIGHT ENVIRONMENT

(STOCK CODE 股份代號: 257)

Sustainability Report  
可持續發展報告

**2021**



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

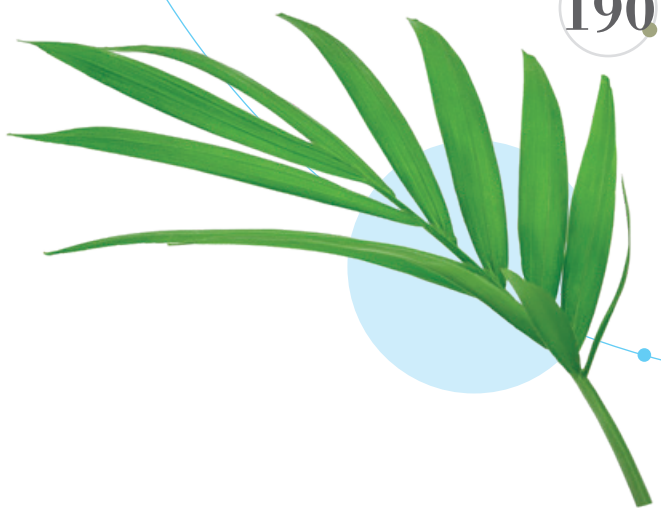
Devoted to Ecology and  
Environment  
for a Beautiful China

情繫 生態環境  
築夢 美麗中國



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## 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 backbone enterprise of China Everbright Group Ltd. (“Everbright Group”). 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 Main Board of 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 2021 (the “Report”) is the Group’s tenth standalone sustainability report, which covers the Group’s main sustainability initiatives and performance during 1 January 2021 to 31 December 2021 (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 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 2021 (the “Annual Report 2021”): 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」）為中國光大集團股份公司（「光大集團」）骨幹企業，香港聯合交易所有限公司（「聯交所」）主板上市公司（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>。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、亞洲環保領軍企業、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

二零二一年可持續發展報告（「本報告」）為本集團第十份獨立的可持續發展報告，涵蓋了本集團於二零二一年一月一日至二零二一年十二月三十一日（「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>。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二零二一年年報（「二零二一年年報」）中的財務報表附註。



We believe that quality reporting in terms of accuracy, balance, clarity, comparability, reliability and timeliness is the key to managing corporate sustainability. As a result, the Group defines the environmental, social and governance (“ESG”) content to be disclosed in this Report based on the following principles:

我們認為管理企業可持續發展的關鍵在於以準確性、平衡性、清晰度、可比性、可靠性和及時性方面進行高質量的披露報告。因此，本集團根據以下原則界定了本報告所披露的環境、社會和管治（「ESG」）內容：

**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.  
我們每年都會進行重要性評估，以確保已確定和優先考慮的ESG議題能夠可靠地反映我們和我們的持份者最深切關注的議題。

**Quantitative**  
量化

We strive to quantify data with the most accurate and precise standards, methodologies and assumptions possible for ease of comparing ESG performances.  
我們努力用最準確、最精確的標準、計算法和假設法來量化數據，以便於比較ESG表現。

**Consistency**  
一致性

We consistently compile our latest sustainability report in a familiar format as our past reports and publish it in a timely manner for our readers to make meaningful comparisons of our ESG performance before making any ESG-dependent decisions within the expected timeframe.  
我們一如既往地以熟悉的過往報告格式來編製最新的可持續發展報告，並及時發佈，以便讀者在預期時限內做出任何與ESG相關的決策之前，對我們的ESG表現進行有意義的比較。

**Stakeholder Inclusion**  
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, customers, employees, villagers, local communities, business partners, suppliers, media, investment analysts and non-governmental organisations.  
我們與廣泛的持份者合作，以確定最重大的議題，持份者組別包括投資者、股東、政府、客戶、員工、村民、當地社區、商業夥伴、供應商、媒體、投資分析師和非政府組織。

**Sustainability Context**  
可持續的脈絡

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。

**Completeness**  
完整性

We disclose both the positive and negative impacts of our business in a transparent manner to give a more balanced and complete overview of our ESG performance.  
我們以透明的方式披露我們業務所帶來的正面及負面影響，以更為我們的ESG表現提供更平衡和全面的概述。

## Reporting Standard and Assurance

This Report has been prepared in accordance with the GRI Standards: Comprehensive option<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, *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (2019 Revision) from the Intergovernmental Panel on Climate Change (“IPCC”), and specification of ISO 14064-1:2018 *Greenhouse Gases - Part 1: Specification with Guidance at the Organizational 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 already been disclosed in the Annual Report 2021<sup>(7)</sup>.

The Group has commissioned the Hong Kong Quality Assurance Agency as the third-party verification institution to conduct an independent audit and verification on the content and data of the Report, with the addition of auditing against the ISO14064-1 Standard this year, which is for the quantification and reporting of GHG emissions and removals at the organisation 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：全面選項<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當地指引及準則進行，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年改進版）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。除了二零二一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第三方核證審核機構，為本報告的內容及數據進行獨立審計及認證，並於今年新增針對組織層面溫室氣體排放和移除的量化及報告的ISO14064-1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一部份，確定了主要的ESG議題，並對該等議題的管理和監測進行了監督。

## 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 About This Report "Board Oversight of ESG and Climate Matters" on page 5 of this Report; 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) is provided in the "Sustainable Operations Management" on pages 38-55 of this Report; and 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" on pages 38-55 of this Report.

## Board Oversight of ESG and Climate Matters

The Board is 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 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, in aims 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報告第5頁之關於本報告「董事會對ESG及氣候變化事宜的監管」；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）的過程之討論載於本報告第38至55頁之「可持續的運營管理」；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載於本報告第38至55頁之「可持續的運營管理」。

## 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」）管理體系相關措施方面的績效和效力；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；並盡可能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，並在釐定本集團未來業務方向及策略時，加以考慮到ESG相關事宜。



## 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 2021, the Annual Report 2021 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 2021 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 22 projects undertaken by Everbright Environment under engineering, procurement and construction ("EPC") approach are owned by its customers, 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，若本報告和二零二一年年報有任何抵觸或不相符之處，應以二零二一年年報為準。

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，請參閱其等二零二一年的獨立可持續發展報告。
- (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（總共二十二個項目）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，數值可能加起來不等於100%。

2021 marked an impressive start of the 14th Five-Year Plan, where China was able to maintain its globally leading position in terms of economic development and anti-pandemic measures despite the continued attack brought about by the COVID-19 pandemic (the “Pandemic”), thus allowing China to build a moderately prosperous society in all aspects. Against the backdrop of a more complex and severe environment, Everbright Environment persisted in making the provision of quality environmental services as its primary mission, joining hands with all sectors to help implement China’s “Peaking Carbon Emissions” and “Achieving Carbon Neutrality” (“Dual Carbons”) commitment to the world. Looking back on the Reporting Period, in the face of new circumstances, new challenges and new opportunities, the Group adhered to Everbright Group’s “Four Three Three” strategic deployment of creating “Four World-leading”, “Three Domestic First-class”, and “Three Domestically Distinctive” Everbright companies within five to ten years; by first establishing the “Three Carbons” development targets and the action plan: “to become a carbon-negative enterprise”, “to develop zero-carbon plants”, and “to pursue low-carbon lifestyle”; then implementing the “Three Five Eight Seven” development strategy. The Group was committed to taking value creation as the core focus, emphasising the reduction of pollution and carbon emissions as well as conserving existing achievements while actively pursuing innovation. As the Group steadily pushed forward the strategic transformation and achieving growth in business scale and operating efficiency, the Group further enhanced its consolidated capabilities and solidified its leading position within the industry.

In the past year, despite the increasingly competitive market, the Group, with value creation as its core, pursued innovation with united effort. It recorded a revenue of HK\$49,895,384,000 during the Reporting Period, representing an increase of 16% over 2020. Under the Pandemic, “zero-infection plant-work area” remained our basic commitment, ensuring more its environmental protection projects across many cities in China were operating at full capacity. These projects in turn protected the environmental safety and public health of over 100 million residents by treating household waste and waste water, as well as enhancing the treatment and disposal of medical waste. The Group continued its commitment to the corporate pursuit of “Creating Better Investment Value and Undertaking More Social Responsibility” and progressed towards sustainable development by focusing on four major aspects, namely “Promoting Green Development”, “Excelling in Talent Management”, “Driving Technological Innovation”, and “Engaging Communities”.

二零二一年是「十四五」規劃的良好開局，在新型冠狀病毒引發的肺炎疫情（「新冠疫情」）的持續衝擊下，中國經濟發展和疫情防控仍然保持全球領先地位，讓國家全面建成小康社會。在更趨複雜嚴峻的外部環境下，光大環境堅持以提供優質環境服務為首要任務，與各界攜手抓緊落實國家對世界作出「碳达峰」、「碳中和」（「雙碳」）的莊嚴承諾。報告期內，面對新形勢、新挑戰和新機遇，本集團緊貼光大集團於未來五至十年，打造培育出「四個全球領先」、「三個中國一流」、「三個國內特色」的「四三三」戰略部署，透過確立「發展負碳企業」、「打造零碳工廠」、「追求低碳生活」（「三碳」）發展目標和行動計劃，深入落實「三五八七」發展戰略。本集團致力以「價值創造」為核心，聚焦「減污降碳」與「守成創新」，順勢而為、逆勢發力、攻堅克難，穩步推動戰略轉型，續寫規模效益雙增長的佳績，進一步增強綜合實力、鞏固行業領軍地位。

過去一年，在日趨激烈的競爭環境下，本集團以價值創造為核心、團結一心、敢於創新，於報告期內錄得綜合收益港幣49,895,384,000元，較二零二零年增長16%。面對新冠疫情，「零感染」工作廠區仍是我們的基本承諾，以確保國內眾多城市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，守護了過億居民的環境安全與健康。本集團亦沿承「創造更好投資價值，承擔更多社會責任」的企業追求，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」四大方針，向可持續發展竭力前行。

During the Reporting Period, Everbright Environment's effort in sustainable development were once again recognised by the industry, winning multiple national and international awards and honours, including being included in the S&P Global Sustainability Yearbook for the fourth time and was the only enterprise from mainland China and Hong Kong across the commercial services & supplies industry, being included the top among the "Top Ten Influential Solid Waste Treatment Enterprises in China" for the eleventh consecutive year, being included in the Hang Seng Corporate Sustainability Benchmark Index for eleven years straight, and in the Dow Jones Sustainability Indices for the sixth year running, as well as the top of the list among the "Top 50 Chinese Environmental Enterprises" for three consecutive years.

### Promoting Green Development

During the journey of becoming a "Carbon-Negative Enterprise", the Group continued its established development strategy, enhanced its policy, research, development and innovation related to peaking carbon emissions and achieving carbon neutrality, so as to further advance green and low-carbon development and contribute to national environmental protection causes.

During the Reporting Period, the Group processed approximately 43,452,000 tonnes of household waste, 7,964,000 tonnes of agricultural and forestry waste and 269,000 tonnes of hazardous and solid waste. The Group's projects generated around 22,271,602,000 kWh of green electricity and offset 20,893,834.20 tonnes of carbon dioxide (CO<sub>2</sub>) equivalent emissions. The Group also treated around 1,698,710,000 m<sup>3</sup> of waste water and 9,635,000 m<sup>3</sup> of leachate, approximately reducing 740,000 tonnes of chemical oxygen demand (COD) discharge.

在報告期內，光大環境再次在可持續發展領域上獲得業界肯定，取得多個國內外獎項和榮譽，包括第四次被選入標普全球可持續發展年鑒，為商業服務與用品行業中唯一來自中國內地及香港的企業；連續第十一年榮居「中國固廢行業十大影響力企業」的榜首；連續第十一年獲納入恒生可持續發展企業基準指數；連續第六年獲納入道瓊斯可持續發展指數；連續第三年在全國工商聯發佈「中國環境企業50強榜單」中名列首位。

### 推動綠色發展

在打造「負碳企業」征程中，本集團繼續其既定的發展戰略，加強與碳達峰和碳中和相關的政策、研究、發展及創新，進一步推進綠色低碳發展和為國家的環境保護作出貢獻。

報告期內，本集團處理了約43,452,000噸生活垃圾、7,964,000噸農林廢棄物及269,000噸危廢及固廢，項目合共產生綠色電量約22,271,602,000千瓦時，並抵銷了二氧化碳當量排放20,893,834.20噸。污水及滲濾液處理量分別為約1,698,710,000立方米及約9,635,000立方米，合共減少了約740,000噸化學需氧量(COD)排放。



While focusing on the high-quality development of its businesses including waste-to-energy, the Group proactively expanded its presence in new business areas such as waste sorting, resource recycling and energy-saving lighting. During the Reporting Period, the Group secured 69 new environmental protection projects and signed 2 supplementary agreements for the existing projects, commanding a total investment of approximately RMB13.248 billion. The Group's Nanyang Household Waste-to-energy Project commenced operation in 2021, which adopted a new environmentally friendly municipal waste processing model that promotes waste reduction, resource recycling and ecology, allowing residents to reap the benefits from the development of a ecological conservation. In addition, the Group's greenergy sector leveraged on its core product Everbright New Sodium Lamp to promote the green energy-saving lighting industry. During the Reporting Period, greenergy secured two Energy Management Contracts ("EMC"), namely the Tianjin Jinghai Project and Nanjing Jiangbei Project.

Furthermore, Everbright Water signed a framework agreement on the upgrading project of Qingdao Maida Waste Water Treatment Plant in the Shandong Province, in which the existing aboveground facilities will be moved underground while the emptied out area will be turned into a park open to the public. This agreement not only increases the plant's waste water treatment capacity but also transforms it into a benchmark project that integrates high quality waste water treatment process with a neighbourhood friendly park to harmonise the project's interaction with the local community.

## Excelling in Talent Management

Everbright Environment considers human resources management as one of the key components of corporate development success, so the Group continuously expand its coverage of diverse training opportunities through the Ecological Environment Institute and review its recruiting process to ensure that its employees' talents are put to good use by placing them in the appropriate ranking and department. The Group does not limit the source of talents, be it locally or overseas educated, and an experienced hire or a fresh graduate.

With the Pandemic still lingering, the Group diversified its recruitment and training processes with both online and offline options to have more flexibility and minimise any potential disruption to its operations. During the Reporting Period, the Group maintained a pool of 460 backup management personnel, who shall be well prepared to unleash their full potential as soon as they are called upon.

在推動垃圾發電等業務的高質量發展的同時，本集團亦積極擴展垃圾分類、資源再生利用、節能照明等新興業務，於報告期內共落實了69個新環保項目及簽署2份現有項目的補充協議，涉及總投資額約人民幣132.48億元。本集團的南陽生活垃圾發電項目於二零二一年正式建成投運後，開啟了城市垃圾處理減量化、資源化、生態化的環保新模式，更讓居民享受生態文明建設所帶來的福利。此外，本集團的光大照明板塊以光大新鈉燈為主打產品，推動綠色節能照明產業，報告期內，新增天津靜海及南京江北兩個合同能源管理(EMC)項目。

另外，光大水務簽署了山東青島麥島污水處理廠品質提升工程項目框架協議，不但進一步增強項目的水處理能力，由地上轉為地下的污水處理設施更會將部分封閉廠區變身為開放公園，為當地打造一個集高標準水處理、友好社區公園為一體的標竿水務項目，更好地與社區共融共處。

## 精於人才管理

光大環境視人力資源管理視為企業發展成功的關鍵元素之一，因此本集團不斷通過生態環境學院擴大提供各種培訓機會的覆蓋面。本集團亦不斷審核招聘流程，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。無論是擁有本地或海外學歷，還是資深員工或應屆畢業生，本集團都不會限制人才出處。

由於新冠疫情威脅持續，本集團透過線上和線下選項進行多樣化的招聘和培訓流程，以提高靈活性並減少對運營的任何潛在干擾。報告期內，本集團已有460名後備管理人員，作為未來企業發展的主力軍和生力軍。

## Driving Technological Innovation

In order to improve the enterprise's core competitiveness, Everbright Environment strives for innovation and technology and actively allocates resources to technological research and development ("R&D"). As of 31 December 2021, the Group was granted a total of 1,320 patents (including 978 utility patents, 184 software copyright licenses, 134 invention patents and 24 appearance patents) and published 72 major scientific essays, achieving R&D progress and results in several areas, including solid waste treatment, flue gas treatment, water treatment, intelligent control, biomass utilisation, waste sorting, smart cities and air purification.

During the Reporting Period, the Group reached a cooperation agreement with Hong Kong Science and Technology Parks Corporation to become strategic partners with each other, in an attempt to launch a green technology incubation and commercialisation platform in Hong Kong to support the development of start-ups in the industry, jointly fostering the development of green technological innovation in the city.

## Engaging Communities

The Pandemic had not prevented the Group from maintaining its full support for charitable activities across environmental protection education, anti-pandemic support, community care, ecological conservation, pandemic control and disaster relief. For pandemic prevention and control, during the Reporting Period, the Group worked closely with the local authorities and partners, as well as residents to donate funds and resources totalling RMB10.17 million worth of monetary donations and supplies to relevant anti-pandemic initiatives, charity foundations, medical care providers, specific individuals and institutions, etc.

The Group continued to promote the public opening of environmental protection facilities across all business sectors, remaining a leader of the opening-up initiative in the environmental protection industry in the PRC, as well as a role model showcasing high-quality project construction and operations. In case of any postponement or cancellation due to the Pandemic, the Group made flexible arrangements using its "Cloud Opening" online platform, allowing the public to conduct a "Cloud Visit", with aims of increasing relevant knowledge and raising environmental awareness among the public. During the Reporting Period, more than 80,000 domestic and foreign visitors in all sectors were received by the Group's projects.

## 推動科技創新

為提升企業的核心競爭力，光大環境持續推動科研創新，大力投放資源推動科研發展。截至二零二一年十二月三十一日，本集團共獲授權專利1,320項，包括實用型專利978項、軟件著作專利184項、發明專利134項、外觀專利24項，發表重要技術論文72篇；於固廢處置、煙氣處理、水處理、智能控制、生物質利用、垃圾分類、智慧城市及空氣淨化等領域均取得良好的科研進展和成果。

報告期內，本集團與香港科技園公司達成合作協議，成為戰略合作夥伴，攜手於香港推出綠色科技孵化及商業化平台，支持初創企業，共同培育城市綠色科技創新發展。

## 積極連繫社區

新冠疫情並未阻止本集團繼續積極支持各方面的慈善公益活動，包括環保教育、抗疫支援、社區關懷、生態保育及抗疫救災等。針對疫情防控，於報告期內，本集團與地方政府、合作夥伴和民眾上下齊心，積極籌措物資，向有關地區衛生防疫部門、慈善基金會、醫院、指定個別人士及單位等捐款捐物總計人民幣1,017萬餘元。

本集團堅持不懈地推動旗下各業務板塊環保設施向公眾開放的進程，持續成為中國環保行業公眾開放的領軍者、高品質項目建設運營的模範。雖然項目的實體公眾開放活動因新冠疫情放緩或者暫停，我們靈活調整，開展線上「雲開放」活動，增強公眾的環保知識及喚起其參與環保的自覺性。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8萬人次。

## Our Way Forward

In face of the severe challenges relating to changes unseen in a century and climate change, the Group will keep faith in its corporate aspiration and prioritising stability, especially in such a critical year for the implementation of China's 14th Five-Year Plan and our corporate transition. It will adhere to the national policies and seize every opportunity to take advantage of the momentum, which is a new "Four-in-One" development paradigm that emphasises on environment, resources, energy and climate.

As the Group promotes strategic transition and high quality and sustainable development, to continue to create value for the Company's shareholders and other stakeholders, its also aims to reach new heights on its journey to become the "world's leading ecological and environmental group".

**WANG TIANYI**  
*Chairman of the Board*

31 May 2022

## 展望將來

本集團面對百年變局和氣候變化的嚴峻挑戰，將堅定信念、保持初心、穩字當頭；在國家「十四五」規劃和企業轉型發展的關鍵之年，將緊跟國策、緊抓機遇、乘勢而上，圍繞環境、資源、能源、氣候的「四位一體」發展新格局。

本集團堅定推進戰略轉型、高質量與可持續發展，繼續為股東等各持份者創造良好價值，致力在成為「全球領先生態環境集團」的奮鬥征程中再攀高峰。

**王天義**  
*董事會主席*

二零二二年五月三十一日



## Economy 經濟

As at 31 December 2021  
截至二零二一年十二月三十一日

環保項目數目達**528**個  
**528** environmental protection projects

In 2021 二零二一年

Revenue amounted to HK\$**49,895,384,000**  
收益為港幣**49,895,384,000**元

Integrated biomass utilisation projects directly and/or indirectly created over **51,502** jobs and increased farmers' income by approximately RMB**2.476** billion, benefiting over **5.72** million farmers  
生物質綜合利用項目直接及／或間接提供工作崗位逾**51,502**個，帶動農民增收約人民幣**24.76**億元，令逾**572**萬名農民受益

## Environment 環境

In 2021 二零二一年

Environmental protection projects generated approximately **22,271,602,000** kWh of green electricity, offsetting approximately **20,893,834.20** tonnes of CO<sub>2</sub> equivalent emissions

環保項目合共產生綠色電量約**22,271,602,000**千瓦時，抵銷了二氧化碳當量排放約**20,893,834.20**噸

These projects treated approximately **1,698,710,000** m<sup>3</sup> of waste water and approximately **9,635,000** m<sup>3</sup> of leachate, reducing COD discharge by approximately **740,000** tonnes in total  
該等項目處理污水約**1,698,710,000**立方米及滲濾液約**9,635,000**立方米，合共減少了約**740,000**噸COD排放

## Employee 員工

As at 31 December 2021  
截至二零二一年十二月三十一日

員工總數為**11,330**人  
**11,330** employees in total

In 2021 二零二一年

Rate of work-related injuries: **0.14**  
(employees) and **0.07** (third-party contractors  
and subcontractors working on-site)  
工傷率：**0.14** (員工) 及  
**0.07** (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 / 工作總小時數) x 200,000)

## Community 社區

In 2021 二零二一年

Environmental protection projects received  
over **80,000** 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**8萬**人次

Donations amounted to HK\$**9,733,810**  
捐款總金額為港幣**9,733,810**元

As at 31 December 2021  
**138** environmental protection facilities had  
been opened up to the public  
截至二零二一年十二月三十一日  
已向公眾開放**138**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 **7,060** students  
安徽碭山縣第五中學 (前稱「光大環境愛心學  
校」) 已累計為**7,060**名學生提供教育機會

"Everbright Environmental Protection  
Charitable Fund" had accumulatively  
supported a total of **2,001** beneficiaries, with  
a total of over RMB**9.6** million delivered as  
ex-gratia funds and financial aids  
「光大環保愛心基金」已累計產生**2,001**名  
受益者，共計已發放超過人民幣**960**萬元  
慰問金及救助金

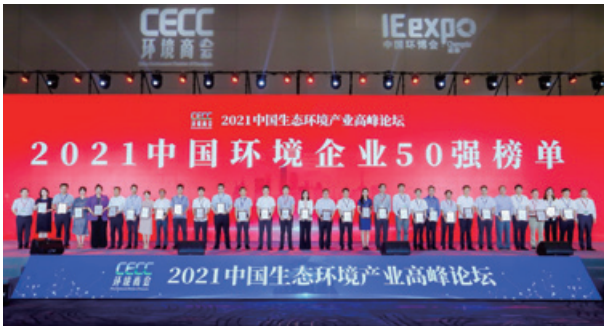
## 2021 Sustainability Highlights

### 二零二一年可持續發展摘要

In 2021, 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:

二零二一年，本集團在業務經營及ESG表現方面齊齊發力，滿載榮譽。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 third consecutive year)**

「中國環境企業50強」榜單榜首(連續第三年)

China Environment Chamber of Commerce  
全國工商聯環境商會

**First place in the "Top 10 Influential Solid Waste Treatment Enterprises in China" (the 11th consecutive year)**

「中國固廢十大影響力企業」榜單榜首(連續第十一年)

E20 Environmental Platform  
E20環境平台



**Shortlisted in Fortune China 500 list for the first time (ranking the 283<sup>rd</sup> place)**  
首次入選《財富》中國500強(位列第283位)

Fortune China  
《財富》(中文版)

#### ESG performance ESG表現

Member of  
**Dow Jones  
Sustainability Indices**

Powered by the S&P Global CSA

**Included in the Dow Jones Sustainability Indices  
(the sixth consecutive year)**

獲納入道瓊斯可持續發展指數系列(連續第六年)

S&P Dow Jones Indices  
標普道瓊斯指數

**Sustainability Yearbook**

Member 2021

**S&P Global**

**Included in the Sustainability Yearbook 2021 S&P  
Global (the fourth time)**

獲納入《2021年可持續發展年鑒》(第四次)

S&P Global  
標普全球





### Excellent ESG Enterprise of 2020-2021 2020-2021年度傑出ESG企業

“Excellent ESG Recognition Scheme” by Hong Kong Economic Times  
《香港經濟日報》「傑出環境、社會及企業管治表現嘉許計劃」

### Included in the Hang Seng Corporate Sustainability Benchmark Index (the eleventh consecutive year) 獲納入恒生可持續發展企業基準指數 (連續第十一年)

Hang Seng Indexes  
恒生指數

### Outstanding Enterprise in Fighting Against the Pandemic 抗疫傑出貢獻企業

China Charity Festival  
中國公益節

### Social Responsibility Brand of the Year (the seventh consecutive year) 年度責任品牌獎 (連續第七年)

China Charity Festival  
中國公益節



### Wang Tianyi, Chairman of the Board, recognised as “Asia’s Best CEO” (the fourth consecutive year) 董事會主席王天義獲評「亞洲最佳CEO」(連續第四年)

“The Asian Excellence Awards” by Corporate Governance Asia  
《亞洲企業管治》亞洲卓越獎



### Best Environmental Responsibility (the third consecutive year) 最佳環境責任獎 (連續第三年)

“The Asian Excellence Awards” by Corporate Governance Asia  
《亞洲企業管治》亞洲卓越獎

### Everbright Greentech and Everbright Water received “A Special Mention for ESG” (Small Market Capitalisation Category) 光大綠色環保、光大水務獲頒「ESG特別提名獎」(小市值類別)

“Best Corporate Governance and ESG Awards in 2021” by Hong Kong Institute of Certified Public Accountants  
香港會計師公會「2021年度最佳企業管治和ESG獎項」

“Best Corporate Governance and ESG Awards in 2021” by Hong Kong Institute of Certified Public Accountants  
香港會計師公會「2021年度最佳企業管治和ESG獎項」

香港會計師公會「2021年度最佳企業管治和ESG獎項」



### Everbright Water received “Award of Excellence in Corporate Governance” (Category for Newly-Listed Companies) and “Award of Excellence in ESG” (Category for Newly-Listed Companies) 光大水務獲得「公司管治卓越獎」(新上市公司類別) 及「環境、社會及管治卓越獎」(新上市公司類別)

光大水務獲得「公司管治卓越獎」(新上市公司類別) 及「環境、社會及管治卓越獎」(新上市公司類別)

Hong Kong Corporate Governance and ESG Excellence Awards 2021, jointly launched by organisations including the Chamber of Hong Kong Listed Companies  
香港上市公司商會等聯合舉辦的「香港公司管治與環境、社會及管治卓越獎2021」

About Everbright Environment

關於光大環境



Promoting  
Clean Energy and Implementing  
Low-carbon Development

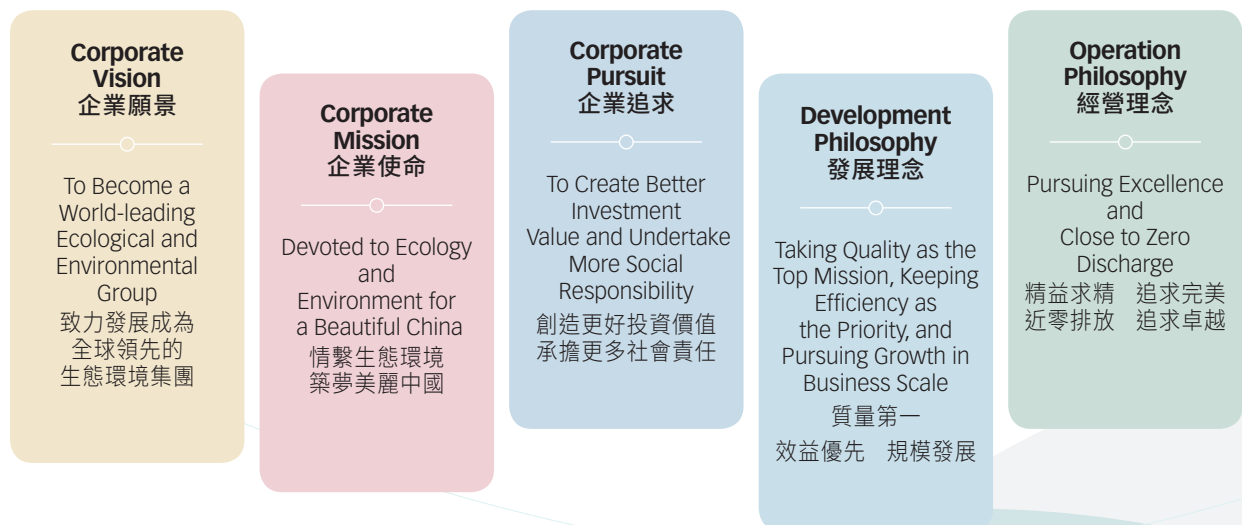
推動潔淨能源  
落實低碳發展

As the first one-stop integrated environmental solution provider in China, Everbright Environment focuses on four areas of environment, resources, energy and climate. Its main businesses cover waste-to-energy and integrated waste treatment, integrated biomass utilisation, hazardous and solid waste treatment, 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, R&D relating to green technologies, ecological and environmental planning and designing, as well as environmental protection industrial parks.

Everbright Environment is a strategic partner of the International Coalition for Green Development on the Belt and Road and the Ecological Protection and Green Development of the Yangtze River Economic Belt. The Company adheres to its corporate mission of being “Devoted to Ecology and Environment for a Beautiful China”, with recognitions of ranking the top among the “Top Ten Influential Solid Waste Treatment Enterprises in China” for 11 consecutive years, the top on the list of China’s Top 50 Environmental Enterprises for three consecutive years, and being included in the MSCI China Index for nine consecutive years. With the aspiration to “Create Better Investment Value and Undertake More Social Responsibility”, the Group was shortlisted among the Fortune China 500 list for the first time in 2021, as well as a constituent member of Dow Jones Sustainability Indices for 6 consecutive years, Hang Seng Corporate Sustainability Benchmark Index for 11 consecutive years, FTSE4Good Index for 5 consecutive years, and a member of S&P Global’s Sustainability Yearbook for multiple times.

光大環境是中國首個一站式、全方位的環境綜合治理服務商，在環境、資源、能源及氣候四大領域全面佈局，主營業務包括垃圾發電及協同處理、生物質綜合利用、危廢及固廢處置、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。

光大環境現為「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」的使命擔當，連續十一年穩居「中國固廢十大影響力企業」首位、連續三年蟬聯中國環境企業50強榜首、連續九年獲納入MSCI中國指數。與此同時，本集團以「創造更好投資價值，承擔更多社會責任」為企業追求，於二零二一年首次躋身《財富》中國500強榜單、連續六年獲納入道瓊斯可持續發展指數系列、連續十一年獲納入恒生可持續發展企業基準指數、連續五年獲納入富時社會責任指數、並曾多次入選標普全球《可持續發展年鑒》。



## Vitalised Development of the Eight Business Sectors 八大業務競相發展



### 1 Environmental Energy 環保能源

Waste-to-energy and integrated waste treatment, and environmental protection industrial parks  
垃圾發電以及協同處理和環保產業園



### 2 Greentech 綠色環保

Integrated biomass utilisation, hazardous and solid waste treatment, environmental remediation, solar energy and wind power  
生物質綜合利用、危廢及固廢處置、環境修復、光伏發電及風電



### 3 Environmental Water 環保水務

Raw water protection, water supply, municipal waste water treatment, industrial waste water treatment, reusable water, river-basin ecological restoration, and sludge treatment and disposal  
原水保護、供水、市政污水處理、工業廢水處理、中水回用、流域治理及污泥處理處置







## Equipment Manufacturing 裝備製造

4

Expanding equipment categories and integrating development with different business sectors of the Group  
擴大裝備產品類別，  
與本集團各業務板塊協同發展



## Eco-recycling 生態資源

5

Waste sorting, environmental sanitation integration, development of zero-waste cities and resource recycling  
垃圾分類、環衛一體化、  
無廢城市建設和資源循環利用



## Greenergy 光大照明

6

R&D and manufacturing of energy-saving streetlights, urban outdoor lighting projects and energy-saving lighting products  
節能路燈、城市亮化工程、  
節能照明產品研發及製造



## Envirotech 綠色科創

7

Analysis, testing and R&D relating to green technologies  
分析、檢測及綠色技術研發



## Environmental Planning 環境規劃

8

Ecological and environmental planning and designing  
生態環境規劃設計

## Business Footprint

As at 31 December 2021, the Group's 528 projects were located in over 210 locations across 25 provinces, municipalities, autonomous regions and a special administrative region in China, as well as Germany, Poland, Mauritius and Vietnam.

## 業務分佈

截至二零二一年十二月三十一日，本集團的528個項目分佈全國25個省(市)、自治區及特別行政區，遍及210多個區縣市，海外業務已涉足德國、波蘭、毛里求斯及越南。



Proportion of Investment by Business Sector  
按業務板塊劃分的投資額百分比



58.95%

Environmental Energy  
環保能源



21.57%

Greentech  
綠色環保



18.65%

Environmental Water  
環保水務

0.83%

Others  
其他

Total investment of approximately  
總投資約

RMB  
人民幣

152.455 billion  
十億元





## Environmental Energy 環保能源

### World's largest waste-to-energy investor and operator

As a core business sector of the Group, the environmental energy sector keeps the largest scale and makes up the Group's 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, the development of environmental protection industrial parks, among others. During the Reporting Period, the Group's environmental energy sector kept its leading position in the waste-to-energy industry.

### 全球最大垃圾發電投資運營商

作為本集團旗下規模最大、業務佔比最高的核心業務板塊，環保能源板塊業務包括垃圾發電、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。報告期內，本集團環保能源板塊於垃圾發電行業穩居領先地位。





As at 31 December 2021  
截至二零二一年十二月三十一日

- 152** Waste-to-energy projects  
垃圾發電項目
- 43** Food and kitchen waste treatment projects  
餐廚垃圾處理項目
- 9** 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
- 8** Fecal treatment/fly ash treatment/animal carcass treatment projects  
糞便處理／飛灰填埋／病死動物處理項目
- 4** Medical waste treatment projects  
醫療廢物處理項目
- 6** 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
- 1** Heat supply project  
供熱改造項目

### Total Designed Capacities 設計總規模

approximately 約 **50,789,750** tonnes 噸

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

approximately 約 **17,103,380,763** kWh 千瓦時

Annual electricity supplied  
年上網電量

approximately 約 **2,215,550** tonnes 噸

Annual food waste treatment capacity  
年處理餐廚垃圾量

approximately 約 **394,200** tonnes 噸

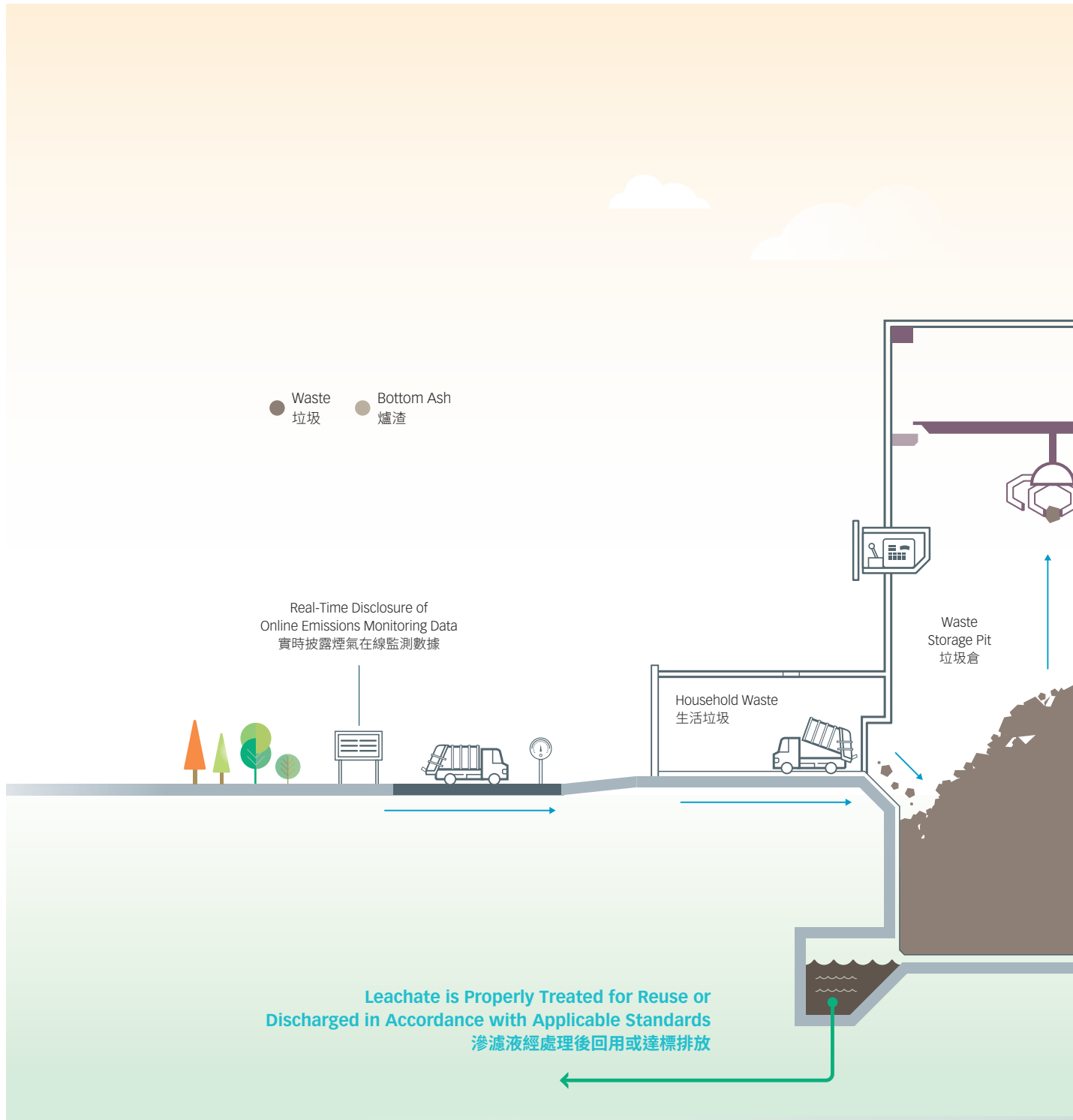
Annual sludge treatment capacity  
年處理污泥量

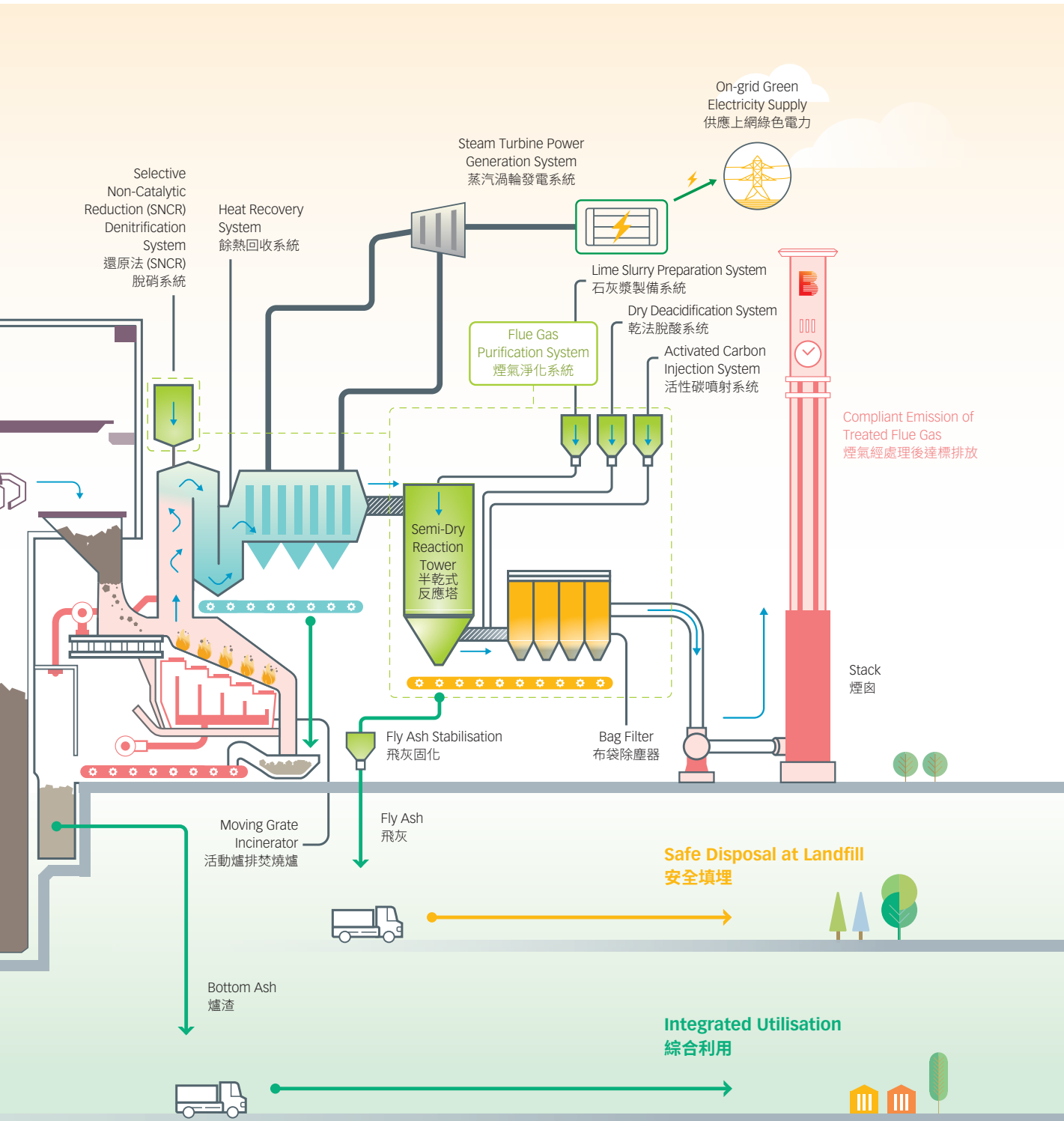
approximately 約 **12,775** tonnes 噸

Annual medical waste treatment capacity  
年處理醫療廢物量

**230** Total Invested Projects  
(In addition to undertaking 1 operation and management (“O&M”) project and 5 EPC projects)  
總投資項目  
(另承接1個委託運營項目及5個EPC項目)

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







## Greentech 綠色環保

**One of the China's leading investors and operators specialised in integrated biomass utilisation, harmless treatment of hazardous and solid waste**

As of 31 December 2021, the Group held a 69.7% stake in Everbright Greentech, which is listed on the Main Board of the Stock Exchange. Everbright Greentech focuses on hazardous and solid waste treatment, integrated biomass utilisation, environmental remediation, solar energy and wind power, among others. It positions itself as a leading intelligent energy supplier dedicated to achieving "Carbon Neutrality", as well as a prominent industrial hazardous waste treatment investor and operator in China.

**全國領先的生物質綜合利用、危廢及固廢無害化處置投資運營商之一**

截至二零二一年十二月三十一日，本集團持有光大綠色環保69.7%的權益。光大綠色環保為聯交所主板上市公司，專注於生物質綜合利用、危廢及固廢處置、環境修復、光伏發電及風電等業務領域，定位為中國領先的「碳中和」智慧能源供應商及工業危廢處置投資運營商。





As at 31 December 2021  
截至二零二一年十二月三十一日

4 Biomass direct combustion projects  
生物質直燃發電項目

12 Biomass electricity and heat cogeneration/  
heat supply projects  
生物質熱電聯供／供熱項目

37 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

43 Environmental remediation services  
環境修復服務

22 Solar energy and wind power projects  
光伏發電及風電項目

179 Total Secured Projects and  
Services  
總簽約項目及服務

### 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 **4,069,750** tonnes  
噸

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

approximately 約 **2,941,900** tonnes  
噸

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

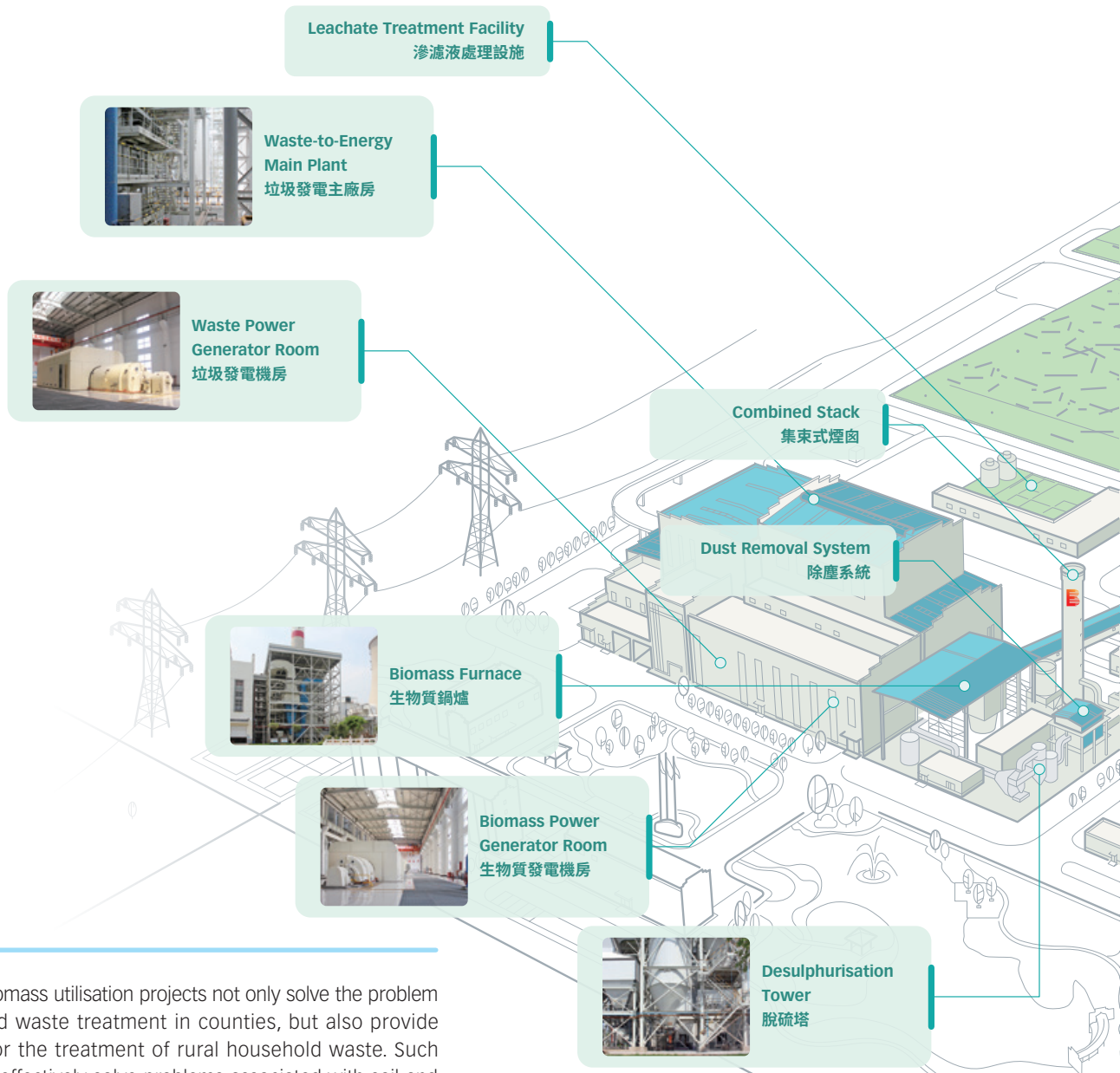
approximately 約 **6,960,034,055** kWh  
千瓦時

Annual electricity supplied  
年上網電量

approximately 約 **5,118,000** tonnes  
噸

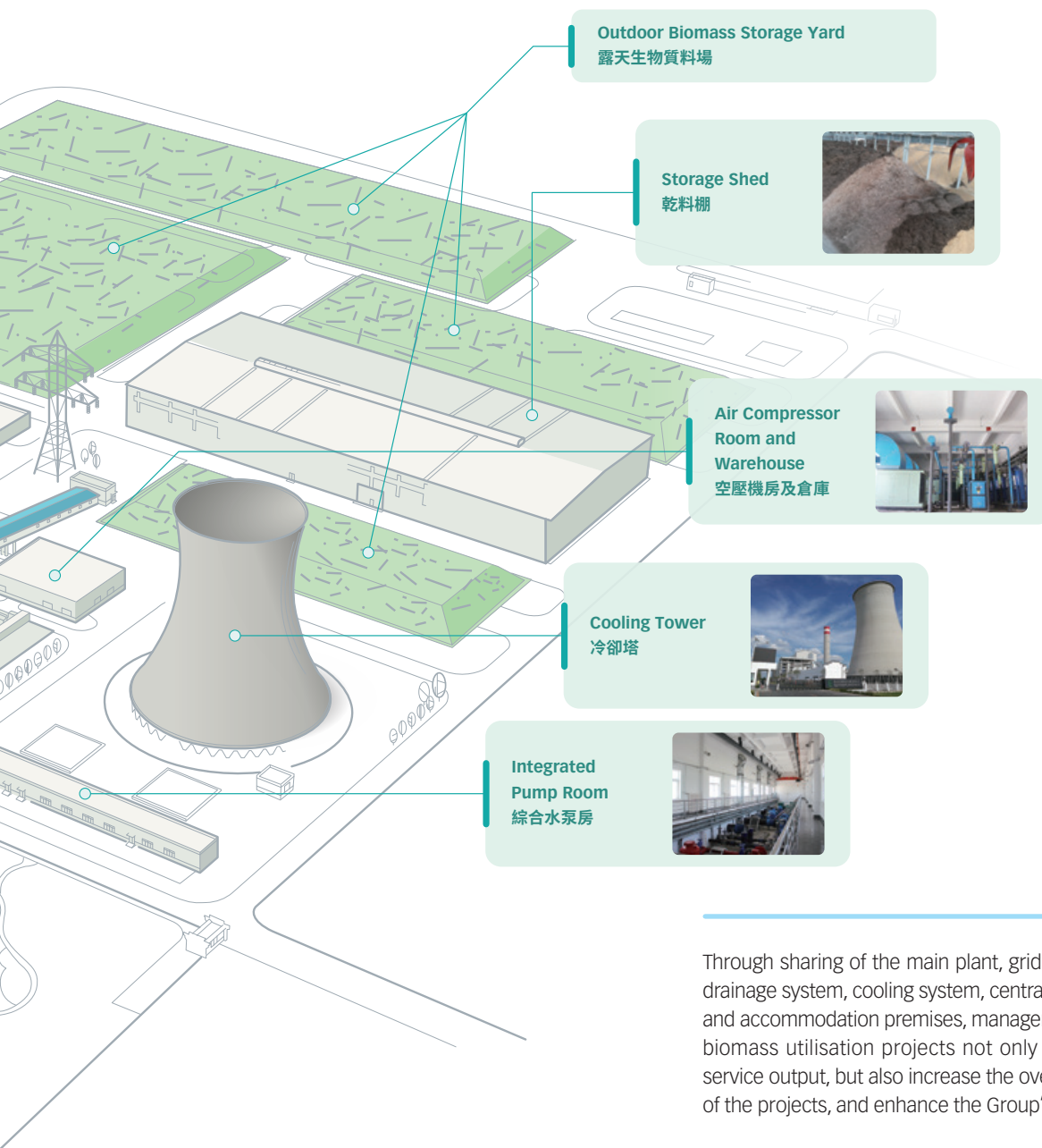
Annual steam supply capacity  
年供蒸汽量

## 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 household waste treatment in counties, but also provide a solution for the treatment of rural household waste. Such projects can effectively solve problems associated with soil and groundwater contamination caused by landfilling and leachate, and reduce the amount of land needed for landfills. At the same time, such projects have greatly changed the current practices of burning straw in open space and have reduced 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。



Through sharing of the main plant, grid system, water supply and drainage system, cooling system, centralised control system, office and accommodation premises, management team, etc., integrated biomass utilisation projects not only maximise environmental service output, but also increase the overall returns on investment of the projects, 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。



## Environmental Water 環保水務

### Water environment management integrated service provider

As of 31 December 2021, the Group held a 72.87% stake in Everbright Water. Everbright Water is listed on the Mainboard of the SGX and the Main Board of the Stock Exchange. As a leading water environment management service provider in China, Everbright Water has developed fully-fledged business coverage, which 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. It has also formed a full industry chain in the water business, including project investment, planning and design, technology R&D, engineering and construction and operations management, among others.

### 水環境治理綜合服務供應商

截至二零二一年十二月三十一日，本集團持有光大水務72.87%的權益。光大水務為新交所及聯交所的主板上市公司。作為中國一流的水環境綜合治理服務供應商，光大水務已實現原水保護、供水、市政污水處理、工業廢水處理、中水回用、流域治理、污泥處理處置等全業務覆蓋，精專於項目投資、規劃設計、科技研發、工程建設、運營管理等業務領域。





As at 31 December 2021  
截至二零二一年十二月三十一日

**118** Municipal waste water treatment projects  
市政污水處理項目

**14** 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

**2** Waste water source heat pump projects  
污水源熱泵項目

**1** Raw water protection project  
原水保護項目

**1** Leachate treatment project  
滲濾液處理項目

### Total Designed Capacities 設計總規模

approximately 約 **2,175,619,000** m<sup>3</sup> 立方米

Annual waste water treatment capacity  
年污水處理量

approximately 約 **91,469,000** 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

Area served by waste water source heat pump  
projects' heating and cooling supply  
污水源熱泵項目可提供供熱及製冷服務的面積

**295,000** m<sup>2</sup> 平方米

**153** Total Invested Projects  
(In addition to undertake 4 EPC projects and 3 O&M projects)  
總投資項目  
(另承接4個EPC項目及3個委託運營項目)

## Equipment Manufacturing

As China's backbone environmental protection equipment R&D and manufacturing provider, the Group's equipment manufacturing sector leverages Everbright Environmental Technical Equipment (Changzhou) Limited\* as the main platform to actively establish a new development structure that combines traditional and new business. The sector has also further solidified its industry-leading position.

Equipment manufacturing sector insisted on technological innovation and put emphasis on market demand and changes, and made a great effort to promote technology and product optimisation and innovative R&D, carrying out a number of technical projects and research. Equipment Manufacturing sector's self-developed water-cooled grate system for high-calorific-value industrial solid waste and the prototype of completed sets of equipment were manufactured for trial; the domestic selective catalytic reduction technology was optimised to ensure denitrification efficiency while meeting relevant emission standards; the distributed control system was adopted to realise the integration of grate furnace and gas control systems, with good operational outcome and marketing value; the membrane module of disc and tube type reverse osmosis was developed and manufactured with stable application parameters, and the Group started the self-developed external tubular ultrafiltration membrane to achieve a performance level similar to products imported from the overseas while significantly reducing the procurement cost of ultrafiltration membrane.

Apart from the Group's self-developed 1,000 tonnes/day grate furnace being successfully applied in the Group's Jiangsu Wujiang Waste-to-energy Project, the Everbright Electric Appliance Division was set up to launch a series of water purifier products during the Reporting Period.

## 裝備製造

作為中國骨幹環保裝備研發製造商，本集團裝備製造板塊依託光大環保技術裝備（常州）有限公司為主要平台，積極構建傳統及新業務相結合的新發展格局，該板塊進一步鞏固行業領先地位。

裝備製造板塊堅持科技創新引領，注重市場需求與變化，大力推動技術、產品的優化和創新研發，開展了多項技術工程和課題研究。裝備製造板塊自主研發的高熱值工業固廢水冷爐排系統及成套裝備首台樣機試製完成；對國產選擇性催化還原法技術進行優化，可同時確保脫硝效率和達標排放；採用分佈式控制體系實現爐排和煙氣控制系統一體化，運行效果良好，具有市場推廣價值；研發製造碟管式反滲透膜組件，項目應用參數穩定；開展超濾外置管式膜的自製，達到國外同類進口產品性能水平的同時，大幅降低超濾膜採購成本。

除了本集團自主研發的1,000噸／日爐排爐成功應用於本集團江蘇吳江垃圾發電項目外，更在報告期內成立了光大電器事業部，並推出了一系列的淨水器產品。

\* For identification purpose only

\* 僅供識別用途



## Eco-recycling

The Group's eco-recycling sector rides on the "Five Points in One Line" process model for waste sorting and the strategic plan of "One Body and Two Wings", with a focus on three main business areas, namely waste sorting and zero-waste cities, environmental sanitation integration, and resource recycling. It has positioned itself as a first-class investor and operator in waste sorting and resource recycling across China.

## 生態資源

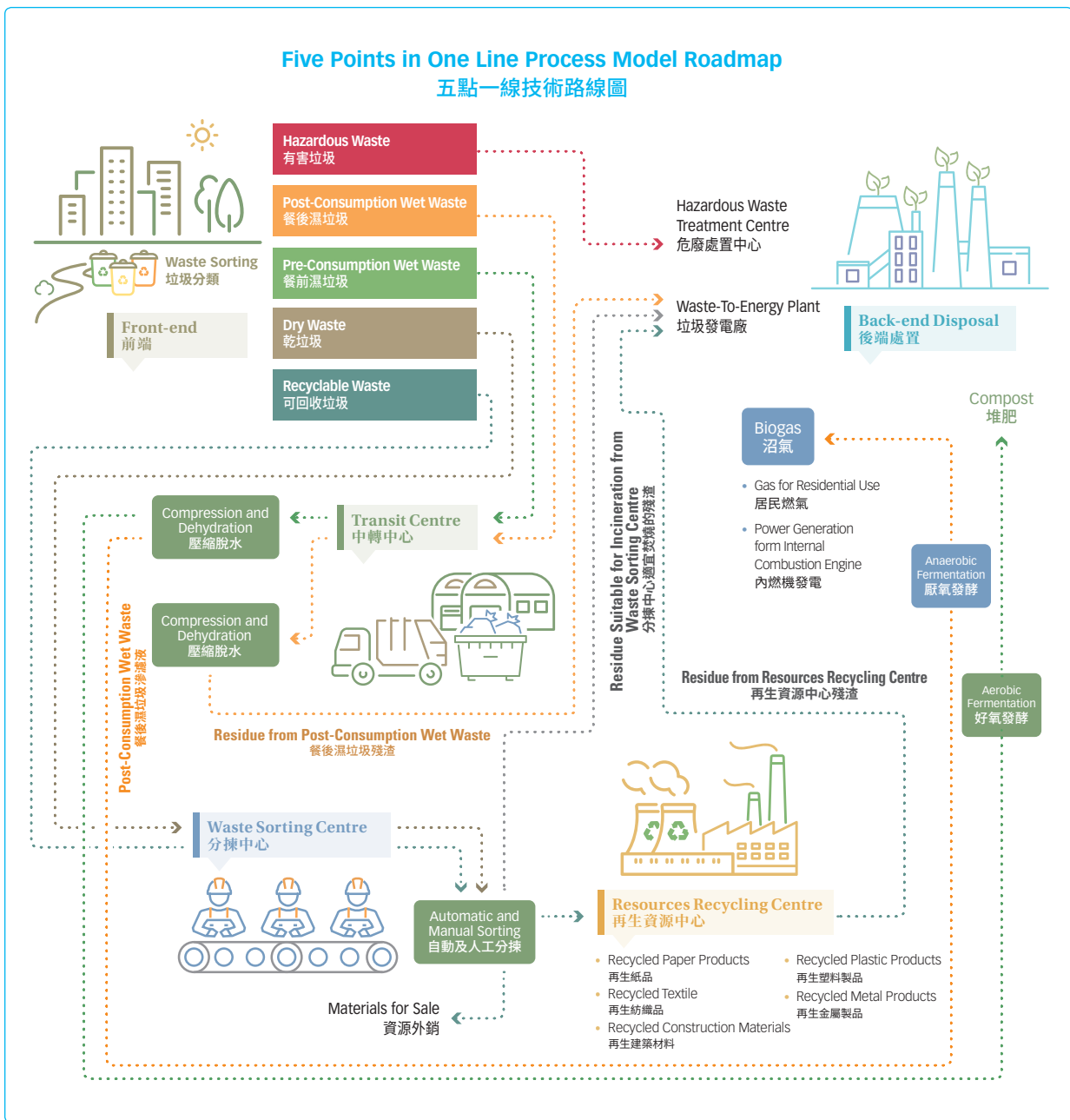
本集團生態資源板塊繼續圍繞垃圾分類「五點一線」技術路線以及「一體兩翼」戰略規劃，聚焦垃圾分類及無廢城市、環衛一體化、再生資源回收三大主營業務，定位為中國一流的垃圾分類與資源再生利用投資運營商。





During the Reporting Period, eco-recycling rode on the “Five Points in One Line” process model for waste sorting and innovated payment mechanism to explore and improve their capabilities to generate profit from the waste sorting business. It also actively responded to the synergistic demands of different sectors within the Group and explored research into phase change energy storage technology and the heat supply business to broaden the mindset of future business development.

於報告期內，生態資源圍繞垃圾發電「五點一線」技術路線，創新付費機制，探索和完善的垃圾分類業務賺取利潤的能力；積極響應本集團各板塊協同需求，探索相變儲能技術研究與供暖業務，拓寬未來業務發展思路。



## Greenergy

The Group's greenergy sector adheres to the development philosophy of "Green, Healthy and Intelligent" lighting. It focuses on the R&D, manufacturing and sales of energy-saving healthy lighting products, as well as software and hardware products relating to the development of smart cities that are based on greenergy's intelligent light poles. Greenergy aims to provide lighting services for different scenarios and purposes, including urban streets and tourism sites, in addition to solutions for the development of smart cities. The sector targets to become a leading integrated service provider specialised in energy-saving lighting and the development of smart cities in China.

In addition, greenergy actively promoted the R&D and optimisation of its lighting products, which laid a solid foundation to improve its product portfolio and expand the business scope. The achievements included completion of the development of the Everbright New Sodium Lamp products with low color temperature and full power models, which have obtained relevant verification reports from the National Quality Supervision Testing Center; completion of the development of several study desktop lamps and craft lamps; the intelligent light poles management platform has entered the testing stage with stable performance and has the preliminary ability to provide market-oriented services; the management software platform for intelligent industrial parks is at a fledgling stage of development; and sample production of the smart gateway themes, single lamp controller and prefabricated equipment compartment with independent intellectual property rights have been completed.

Moreover, greenergy's Shenzhen branch obtained the 3A Enterprise Credit Certification and 5A Energy Performance Contracting Certification; while the sector's Ji'nan Project obtained the qualification for Municipal Construction General Contracting Works as well as Grade III Qualification for Urban and Road Lighting Project and Nanjing branch obtained the "Three-System" Certification.

## 光大照明

本集團光大照明板塊以「綠色、健康、智慧」照明光源為發展理念，專注於節能健康照明光源產品及基於智慧燈柱的智慧城市建設核心軟硬件產品的研發、製造和銷售，光大照明旨在為城市道路、文旅景觀等不同場景照明以及智慧城市建設領域提供系統解決方案，致力成為國內領先的節能照明及智慧城市建設綜合服務商。

此外，光大照明積極推動旗下照明產品的研發與優化，為完善產品組合、拓寬業務範疇奠定良好基礎，其中包括：完成低色溫全部功率型號光大新鈉燈的產品開發，並取得國家級檢測中心報告；完成多款學習檯燈及工藝檯燈的產品開發；智慧燈柱管理平台已進入測試階段，表現平穩，初步具備面向市場提供服務的能力；智慧園區管理軟件平台亦具雛形；及具備自主知識產權的智能網關、單燈控制器及預製設備艙已完成樣品生產。

再者，光大照明旗下深圳公司取得企業信用3A級認證及合同能源管理5A級認證，濟南項目取得市政工程施工總承包和城市與道路照明工程三級資質，南京公司取得「三體系」證書。



## Envirotech

Being the Group's technology R&D and innovation engine, the envirotech sector has been leveraging its "Four-in-One" technological innovation and R&D layout with platforms in Hong Kong, Shenzhen, Nanjing and Qingdao, to foster and accelerate the Group's strategic transformation, structure optimisation and new business development. The sector aims to become a global platform dedicated to green technological innovation and conversion.

In 2021, envirotech strived to cater to the development of traditional business, new business and the future development needs, and to promote R&D work. By responding to the needs of the Group's other business sectors to facilitate their business development, envirotech completed many technical support services for system designs, covering grate furnace, flue gas purification, leachate treatment, control systems and others, so as to facilitate business development in various sectors. Additionally, envirotech was actively carrying out "Dual Carbons"- related theoretical and technical researches, achieving positive progress in many areas, such as optimisation of carbon calculation model(s), pilot programmes on onsite monitoring of greenhouse gas emissions.

During the Reporting Period, the Group reached a cooperation agreement with Hong Kong Science and Technology Parks Corporation to become strategic partners with each other, in an attempt to launch a green technology incubation and commercialisation platform in Hong Kong to support the development of start-ups in the industry, jointly fostering the development of green technological innovation in the city.

## 綠色科創

作為本集團科技研發創新的引擎，綠色科創板塊基於香港、深圳、南京、青島的「一院四城」研發體系，為本集團戰略轉型、結構優化、新興業務培育加速賦能，全力打造面向全球的綠色科技創新平台及技術轉化平台。

綠色科創於二零二一年重點聚焦「面向傳統業務、面向新業務、面向未來發展」三個方向推進研發工作，同時響應各業務板塊需求，完成焚燒爐、煙氣淨化、滲濾液處理、控制系統等多項系統設計的技術支持服務，助力各板塊業務發展。此外，綠色科創積極推進「雙碳」理論及技術研究，於碳核算模型優化、溫室氣體排放監測試點等多個方面取得良好進展。

於報告期內，本集團與香港科技園公司簽署合作協議，結成戰略合作夥伴攜手在港打造綠色科技孵化與商業化平台，支持在港相關初創企業發展，推動香港綠色科技創新發展進程。



**As at 31 December 2021**  
截至二零二一年十二月三十一日

The Group had been granted a total of **1,320** patents, including **134** invention patents, **978** utility patents, **184** software copyright licences and **24** appearance patents.

本集團獲授權專利合共**1,320**項，其中發明專利**134**項、實用專利**978**項、軟件著作專利**184**項及外觀專利**24**項。

## Environmental Planning

The Group's environmental planning sector leverages the Everbright Ecological and Environmental Planning and Design Institute (the "Institute") as the main platform, with a focus on the environmental protection and energy. It strives to build core technological capabilities, explore diversified business operations, enhance technical capabilities, and expand business scope and industry chain, with the aim of becoming a first-class planning and design institute in China.

In 2021, the Institute made an active effort to meet the needs of the Group's business sectors and undertake relevant services, while continuing to strengthen its effort to explore external business opportunities and carry out business planning. It signed a number of internal and external service contracts in the field of consulting and design, EPC and other fields, with a total contract value of approximately RMB143 million.

## 環境規劃

本集團環境規劃板塊以光大生態環境設計研究院（「環境設計院」）為主要平台，圍繞環保和能源兩個主要領域，積極打造核心技術能力，探索多元化經營，強化技術能力深度，拓展業務寬度，延伸產業鏈長度，定位一流國家級規劃設計院。

二零二一年，環境設計院積極配合本集團各板塊需求並承接相關服務，同時持續加強外部市場的探索和業務部署力度，先後簽署多個內外部服務合同，涉及諮詢設計、EPC等領域，合同總金額約人民幣1.43億元。



For details of the Group's corporate governance, risk management and internal controls, please refer to the Annual Report 2021.

有關本集團的企業管治、風險管理及內部監控的詳情，請參閱二零二一年年報。

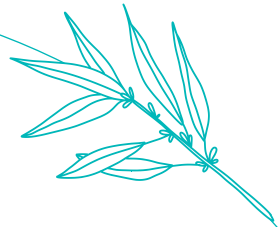
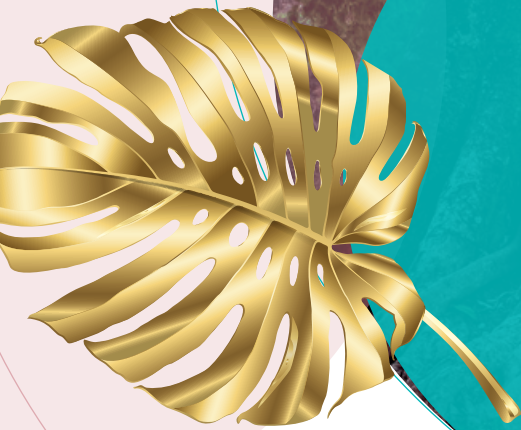
# Sustainable Operations Management

## 可持續的運營管理



Upholding  
Corporate Integrity  
and Fulfilling  
Social Responsibility

秉持企業誠信  
善盡社會責任



**A**dhering to the management philosophy of “Pursuing Excellence and Close to Zero Discharge” and the principle of “People-Oriented, Pragmatism, Creativity and Systematic Management”, the Group has maintained a mature organisational management structure and identified responsibilities and obligations of employees at all levels. Through the Management Decision Committee meetings, the Group summarises and reviews its business operations and management in a timely manner, so as to continuously improve its sustainable development capabilities.

The Group fully observes 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, sticks to ethics, and strives to strengthen and promote the corporate culture of sincerity. The Group has formulated and has been improving the *Employee Code of Conduct* to provide 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, so as to strengthen employees' awareness of 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 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 2021.

**本**集團秉承著「精益求精、近零排放」的管理理念，以及「以人為本、求務實、開拓創新、規範管理」的管理理念，建立了一套完善的組織管理架構，不僅明確了各職級責任與義務，更通過管理決策委員會會議及時總結檢討業務運營及管理情況，從而不斷提高集團可持續發展能力。

本集團全面遵守所有相關的國家和地方方法例、規則和標準，並積極承擔企業社會責任，努力緩解業務對環境和社會帶來的不良影響。

## 營商原則

本集團在各業務運作中始終貫徹落實誠信與務實的管理理念，堅守道德操守，致力於營造並推廣誠信為本的企業文化。為此，本集團制定並完善內部《員工守則》，在平等機會、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各方面為員工提供清晰的指引與說明，以增強員工的規則意識與道德規範，從而營造健康有序的良性企業氛圍。

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，可參閱本公司的二零二一年年報。



## 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 continues to provide 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 organised to further promote an atmosphere of morality and discipline of the Company, and to enhance 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 leading cadres at all levels and promote the spirit of sincerity. The Group also strives to strengthen the reform of relevant systems and regulation 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

The Group is committed to protecting the personal information and privacy of the third parties. In compliance with the laws and regulations, the *Privacy Policy* of the Group clearly sets out the privacy scope of the third parties, and strictly stipulates a series of procedures and standards for employees and suppliers in processing the privacy data, requiring employees to collect, possess, process, disclose and use personal data of the third parties in accordance with relevant laws. In addition, the *Privacy Policy* also contains the rules of preventing the infringement of intellectual property rights, devoted to protecting intellectual property rights and respecting knowledge and talents.

To effectively minimise the risk of divulgence of privacy and sensitive information, our efforts in maintaining information security is led by Head of the Information Management Centre, who is also a member of the executive management team. We will follow the Group's cybersecurity measures as clearly stipulated under the *Everbright Environment Information Security Management Policy*.

## 防止貪腐及反競爭行為

為深入推進反貪實踐、提高員工對利益衝突及誠信事宜的警覺性，本集團堅持為董事和員工提供各種形式的反貪腐培訓，如「廉政建設及執行力培訓」和「廉潔工作講座」等，並積極舉辦《員工守則》、企業文化、政策及管理體系的相關培訓，以進一步營造誠信守紀的公司氛圍，加強本集團誠信文化建設。

此外，本集團通過多種形式開展針對管理層的教育活動及培訓，促使各級領導幹部嚴格廉潔自律，弘揚清風正氣，同時亦努力強化相關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貫徹落實防止貪腐及反競爭行為的實踐。

## 保護第三方私隱及知識產權

本集團致力於保護相關第三方的個人資料及私隱。本集團的《私隱政策》在遵守法律規定的基礎上，清楚列明瞭相關第三方的私隱範圍，並嚴格規定了員工及供應商在處理相關資料時的一系列程序及標準，要求員工依法收集、管有、處理、披露及使用第三方個人資料。此外，《私隱政策》亦包含了防止侵犯版權的條款，致力保護知識產權，務求各方尊重知識、尊重人才。

為了有效降低私隱和敏感信息洩露的風險，我們把維護信息安全的工作交由執行管理團隊的成員兼任信息管理中心負責人。我們將根據《光大環境信息安全管理政策》執行本集團的網絡安全措施。



## Policy for Whistleblowing

The Group adheres to operating its businesses with transparency and integrity, continues to improve the accountability and supervision mechanism, striving to maintain a consistently high standard of corporate governance. In this connection, the Group has put in place the *Internal Whistleblowing and Investigation Policy* and *External Whistleblowing and Investigation Policy*, aiming at providing a safe, confidential and legal channels for employees and related persons to report the actual or suspected misconducts and illegal activities in corporate financial reporting, internal controls or other areas so that the Group could pay attention to and effectively investigate the related issues while ensuring that whistleblowers have no fear of retaliation. The valid whistleblowing approaches are posted on the Group's website.

The Group has set up email addresses to provide employees and related persons with an official whistleblowing channel to contact the Chairman of the Audit Committee directly. Whistleblowers are also able to contact the CEO directly through the CEO's email address which is available on the Company's website. The Group's whistleblowing channels operate 24/7 and employees are allowed to report anonymously. Without the whistleblower's consent, the identity of the whistleblower will not be disclosed unless it is a legal requirement, ensuring the whistleblower can actively defend the Company's moral standard. Employees can report any misconduct, malpractice and irregularities in relation to the Group in strict confidentiality while ensuring that employees have no fear of retaliation. All concerns or irregularities raised will be treated as confidential information and all efforts will be made to ensure that impartial and independent investigation is carried out and appropriate follow-up action is taken.

During the Reporting Period, the Company received 4 reports through the below whistleblowing channels and all such cases had been properly handled.

## 舉報政策

本集團始終堅持各項業務的透明廉潔運作，不斷完善問責監督體系，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》，旨在為員工及往來人士就本集團財務匯報、內部監控或其他各個方面實際或懷疑的不正當或不合法行為進行舉報提供安全、保密且合法的渠道，從而使本集團能夠關注事件並有效跟進調查，同時確保舉報人士毋須畏懼報復。有效之舉報方法已載列於本集團網站。

本集團設立了接收舉報的電子郵箱，旨在提供正式舉報渠道，讓員工及往來人士可以直接聯繫審核委員會主席。舉報人也可通過本公司總裁的電子郵箱（已在本公司網站上公佈）直接和他取得聯繫。本集團的舉報渠道24/7運作，並接受員工匿名舉報，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，以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。員工可在保密情況下舉報與本集團有關的任何不當、失職及違規行為，同時確保員工毋須畏懼報復。被提出的所有關注事項或違規行為都將被視為保密信息，本集團將確保妥善安排公平獨立的調查並作出適當跟進。

於報告期內，本公司通過以下舉報渠道收到4個個案報告，全部個案均已妥善處理。

### Whistleblowing Channels

#### 舉報方式

Chairman of the Audit Committee  
CEO

審核委員會主席  
總裁

ac@cebenvironment.com  
ceo@cebenvironment.com

## Sustainability Approach

The Group actively integrates the principles and considerations related to sustainability in the governance framework and daily operations, commits to creating long-term values and benefits for its stakeholders.

## Sustainable Development Policies and Systems

The Group strives to reduce the impacts exerted on the environment and society by our operations through the *Environmental and Social Management System* ("ESMS") that is previously established in accordance with the *Safeguard Policy Statement* of the Asian Development Bank ("ADB") and other best practices worldwide. The ESMS covers the entire cycle of projects from early-stage planning and design till the final-stage operation and management, with specific requirements in place in relation to environmental and social impact screening and categorisation, resettlement, indigenous peoples, environmental impact assessment, information disclosure, consultation and participation, gender equality, grievance redress mechanism, due diligence and review, monitoring and reporting, etc. The system ensures the Group's operations comply with the international environmental and social safeguard principles and requirements. In addition, the Group's *Environmental Policy* and *Code of Practice* provide clear guidance on the generation and management process of exhaust gas and greenhouse gas emissions, effluent discharge into water and soil, hazardous and non-hazardous wastes, and the use of energy, water resources and other raw materials in connection with our operations, to strengthen and standardise the Group's environmental and social governance.

Since 2016, the Group has been implementing the ESHS Management System to continuously improve the implementation of supervision system in our operations. The system comprises management standards to provide procedural guidelines on significant ESHS issue identification, auditing, incident investigation and reporting, occupational injury treatment, and contractor ESHS management. The implementation of the system has not only promoted sustainable development within the Group, but also extended its safety culture and relevant policies to the whole supply chain. In addition, the Group has also implemented the *Points-Based ESHS Management Rules* to encourage employees and outsourced personnel to participate in safety management and supervise one another, so as to accelerate the standardisation of safety management and further improve the safety management proficiency.

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

## 可持續發展方針

本集團積極地將可持續發展原則及考慮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

本集團已根據亞洲開發銀行（「亞發行」）的《保障政策聲明》及國際良好慣例建立了一套完善的環境與社會管理制度（「ESMS」）。ESMS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。

本集團已於二零一六年起全面實施ESHS管理體系，以進一步完善監管體制在運營中的有效實踐。該體系包括重要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，不僅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，本集團亦積極推行《ESHS積分管理制度》，致力於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，進一步提升安全管理水平。

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. Besides, the Group's Safety and Environmental Management Committee led by Chairman of the Board under the Management Decision Committee, provides practical guidelines and support to the Group's sustainable development and ensures the appropriate decision-making and arrangement of sustainability strategies.

The Independent Non-executive Directors provide the Group with diversified expertise and experience. Apart from meeting 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 has not been employed by the Company in an executive capacity within the last year;
2. he has not been a partner or employee of the Company's external auditor during the last year;
3. he 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 has no conflict of interest that the Board itself determines to mean they cannot be considered independent;
5. he 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 has not been affiliated with a significant customer or supplier of the Company;
7. he has not entered into personal services contract(s) with the Company or a member of the Company's senior management;
8. he has not been affiliated with a not-for-profit entity that receives significant contributions from the Company;
9. he 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 FY2021.

Note:

<sup>(1)</sup> Other than those permitted by 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

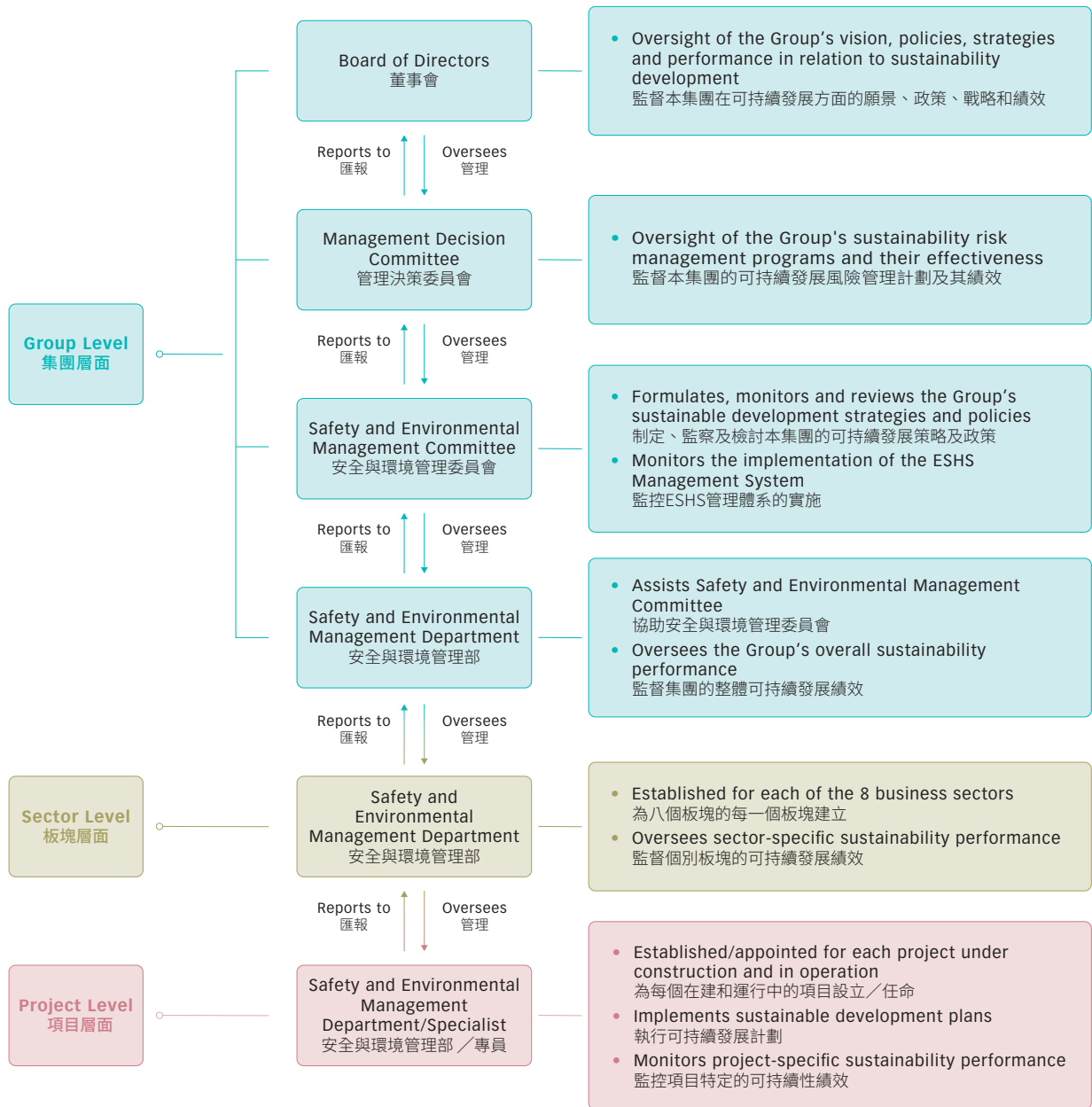
董事會負責審視及監督本集團可持續發展的計劃、活動及表現。本集團更於管理決策委員會下亦設有由董事會主席牽頭的安全與環境管理委員會，為企業的可持續發展工作提供領導和實質的支持，並確保本集團在可持續發展政策方面均作出適當的決策和部署。

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) 在過去一年內未曾以行政人員身份受僱於本公司；
- (二) 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) 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) 現時沒有任何董事會認為會影響其獨立性的利益衝突；
- (五) 現時非本公司或本公司高級管理人員的顧問或諮詢人（及任何有關聯的顧問或諮詢公司）；
- (六) 現時與本公司重要客戶或供應商並無關聯；
- (七) 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) 現時與從本公司獲得可觀的捐獻之非盈利性實體組織並無關聯；及
- (九) 於二零二一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> SEC規則4200定義所允許的除外，包括i)僅因投資本公司的證券而支付的款項；或ii)非裁量性慈善款捐款對等方案的款項；或iii)為董事會或董事會委員會服務的薪酬。



## Risk Management

The documents of the Group including the *Risk Management Policy*, *Risk Management Operation Manual* and the *Inside Information Reporting Policy* stipulate the Group's detailed workflows and specific implementation requirements of the risk management and internal controls. In order to improve the overall risk management of investment projects, all new investment projects will be evaluated by our Project Advisory Committee, consisting of both full-time and part-time committee members. We have also amended and issued the *Project Advisory Committee Organisation and Review Workflow*, in an effort to strengthen the risk management of investment projects.

During the Reporting Period, the Group continued to enhance major risk prevention and internal control compliance management, and revised the list of risk factors, aiming to constantly enhance the systematisation and normalisation level of risk management, at the same time improve the quality and efficiency of project review.

In addition, the Group conducts the identification and evaluation of its principal risks on an annual basis, and continuously analyses the effectiveness of control methods and follows up on specific control results.

## 風險管理

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》等規定了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。為加強投資項目的整體風險管控，我們的項目評審委員會通過項目評審專職委員及兼職委員評審制度，為所有新投資項目進行評審。本集團定期修訂並下發《項目評審委員會組織及評審流程》，以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，並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，更同時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，並對具體的管控成效持續跟進。

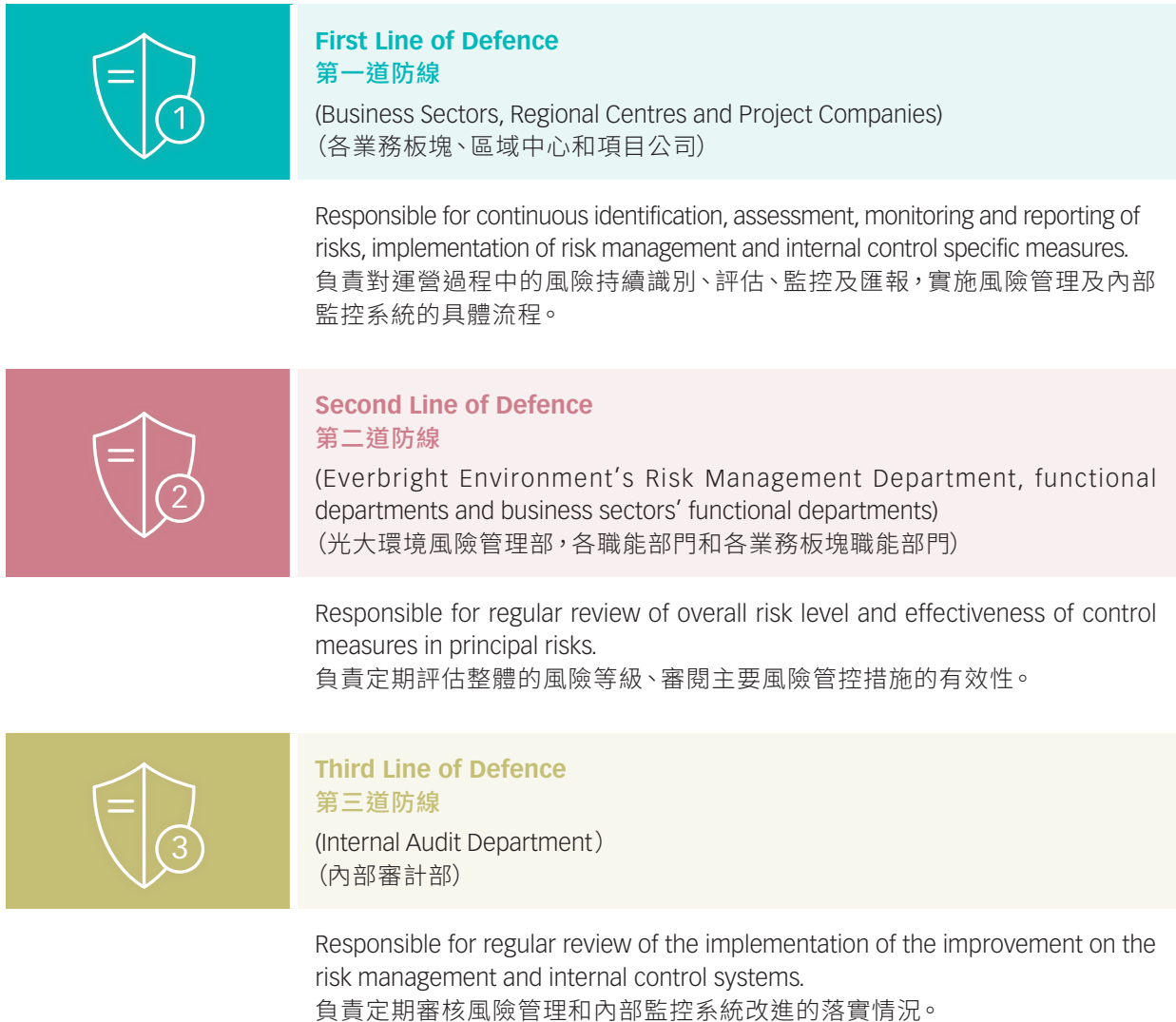


## Risk Management Framework

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

## 風險管治框架

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



Everbright Environment strives to strengthen all employees' risk awareness and considers the construction of risk management culture as a significant part of the Group's development strategies. The Group has established effective control measures that are responsive to all kinds of risks. Besides, through various forms of risk education through case studies and trainings on the Group's systems and procedures, we help employees consolidate a sound risk management conception which motivates them to follow a good code of conduct and ethics that facilitate the transformation of risk management awareness into conscious action, and encourage them to integrate such conception into daily work.

光大環境致力於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。本集團針對各項風險均制定了有效的管控措施，並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，幫助員工樹立正確的風險管理觀念，引導員工遵循良好的行為準則和道德規範，進一步將風險管理意識轉化為自覺行動，並將這種意識融入到日常工作當中。



For details of the Group's corporate governance, risk management and internal controls, please refer to the Annual Report 2021.

有關本集團的企業管治、風險管理及內部監控的詳情，請參閱二零二一年年報。

## 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. The Group has also made full use of its electronic transaction platform for tendering and procurement, starting a new mode of online bidding, strengthened the supervision and management of bidding, and strived to avoid violation of the rules and regulations.

## 供應鏈管理

本集團實施了嚴格的供應商選擇和管理制度，並與供應商緊密合作和溝通，以減輕採購風險及推動負責任採購，同時充分利用光大環境招標採購電子交易平台，開啟線上招標新模式，同時加強招投標監督管理，盡力杜絕違規違紀行為。

We actively extend the Group's excellent ESHS management practice to the whole value chain and make sure the ESG considerations can be applied fairly and thoroughly at different steps. The ESHS department of each regional centre conducts regular ESHS audits for the project companies under its respective regions, which review the project companies' supplier screening records for any violation of laws such as child labour and forced labour, and 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 audit results serve as the basis for the project companies to select suppliers in the coming year, and to choose environmentally and socially responsible suppliers as many as possible, such as suppliers of reusable and renewable products, contractors who adopt low-emissions construction processes, etc. Besides, the Group gives priority to suppliers in the same province when developing business all over the country in order to create employment opportunities for local communities and fulfill 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. The Company further improved and upgraded its electronic transaction platform for tendering and procurement. Based on the needs of the procurement business in aspects such as compliance management, prevention and control of bid rigging and collusive bidding, enhancement of efficiency, process optimisation, early warning of risks and sharing of information, over 1,000 functions have been developed and improved in the platform, which enabled it to successfully receive the "Triple Stars" certification, the highest level issued by the China Cybersecurity Review Technology and Certification Center. 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 115 external experts and approximately 15,600 registered suppliers in the system database. Major procurement includes equipment fitting, installation and construction.

\* For identification purpose only

我們更積極地將本集團優秀的ESHS管理實踐延伸到整條價值鏈，確保ESG的考慮能公平和貫徹地應用在不同的階段中。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，例如童工和強迫勞動，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。項目公司需要以審核結果作為來年選擇供應商的依據，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，以鼓勵供應商支持可持續發展。此外，本集團於全國各地發展業務時，會優先選用位於同省份的供應商合作，為當地創造就業機會，履行企業社會責任。

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。本公司招標採購電子交易平台持續優化提升，根據合規管理、圍標串標防控、效率提升、流程優化、風險預警、信息共享等方面的採購業務需求，累計完成1,000多項的功能開發與優化，並順利獲得中國網絡安全審查技術與認證中心頒發的國家最高級別的「三星」認證證書。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115名外部評審專家和約15,600家註冊供應商。主要採購包括裝備配置、建安工程等。

\* 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 at selecting enterprises who possess standardised management, complete qualifications and share similar corporate culture or value with Everbright Environment as partners. We conduct a strict screening and fully investigate the ability of performing contractual duties, environmental and social performance, service quality, management philosophy of the outsourced units at the early stage so as to establish sustainable partnership with the high-quality service providers.

Everbright Environment has specially formulated and applied the following supplier management guidelines covering all suppliers of the Group on environmental and social management in all processes of the supply chain:

## 供應商管理準則

本集團為供應商及承包商的選擇及管理訂立了公正和透明的守則，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，通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，經過嚴格篩選，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落實環境與社會管理：

### Code of Conduct for Suppliers 《供應商行為準則》

- Standardising the behaviour of suppliers in the economic, environmental and social fields in a systematic way, in order to encourage suppliers to fulfil and jointly improve the sustainability performance of the supply chain. The *Code of Conduct for Suppliers* also encourages the Group's suppliers to treat their subordinate suppliers with the same standards, so as to enhance the sustainability of the overall supply chain.  
以系統性的方式規範供應商在經濟、環境及社會領域的行為，旨在鼓勵供應商履行並共同提高供應鏈的可持續發展表現。《供應商行為準則》更鼓勵本集團的供應商以相同的標準對待他們的從屬供應商，以提升整體供應鏈的可持續性。
- In the economic aspect, suppliers are required to conduct business activities with ethics and integrity and are obliged to comply with relevant local and international laws; in the environmental aspect, suppliers are required to strengthen the supervision in their operations to minimise pollution and other adverse impacts on environment; in the social aspect, suppliers are required to comply with national labour policies and regulations, including avoiding any forms of slavery, forced and bonded labour, child labour and abusive employment practices. Suppliers are also obliged to safeguard human rights of their staff and take due considerations of public welfare.  
在經濟層面，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，當中包括避免任何奴役、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，並考慮公眾福利。
- All suppliers shall comply with the code of conduct when conducting business with the Group or participating in any activities related to the Group.  
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該行為準則。



### Supplier Management Measures

#### 《供應商管理辦法》

- Covers detailed regulations and requirements such as the responsibilities of various suppliers on equipment, main materials, construction units, design units and operation centres, ranking and evaluation of suppliers, engagement of new suppliers, ongoing management of suppliers, management of unqualified suppliers, and disciplinary actions on non-compliance.

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、新供應商的顧用、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。

- Suppliers are categorised into four grades, namely A, B, C, and D based on the continuous evaluation of their professional proficiency, financial status and compliance records. Business relationships may be terminated if the suppliers with the lowest grade fail to prove that they are capable of fulfilling the Group's requirements.

按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，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》

- Aims to identify and control the environmental, social and safety risks in the process of outsourcing by examining the contractors in the aspects of background, qualification, construction operation and environmental protection performances.

旨在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。

- Contractors need to fill in the *Contractor ESHS Questionnaire* and provide relevant ESHS information to assist the Group in sorting out the list of qualified contractors and ensuring 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.

承包商需要填寫「承包商ESHS問卷調查表」，提供相關的ESHS資料，以協助本集團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 to be submitted includes whether the contractor has ISO 14001 and other international environmental management standards certification, whether it has conducted ESHS training and assessment, whether it has provided appropriate protective equipment 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、是否進行ESHS培訓與考核、是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》等相關政策和制度亦進一步引領業務夥伴提升其可持續發展表現。

## Supply Chain Profile 2021

## 二零二一年供應鏈概況

		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	21,516	23,805,173,571	100%
Critical/Major Suppliers <sup>(1)</sup>	關鍵／主要供應商 <sup>(1)</sup>	5	2,904,231,176	12.2%

### By Business Sector 按業務板塊劃分

Environmental Energy	環保能源	12,427	19,933,243,369	83.7%
Greentech	綠色環保	3,267	1,008,213,358	4.2%
Environmental Water	環保水務	5,261	2,570,725,912	10.8%
Others	其他	561	283,990,932	1.2%

Note:

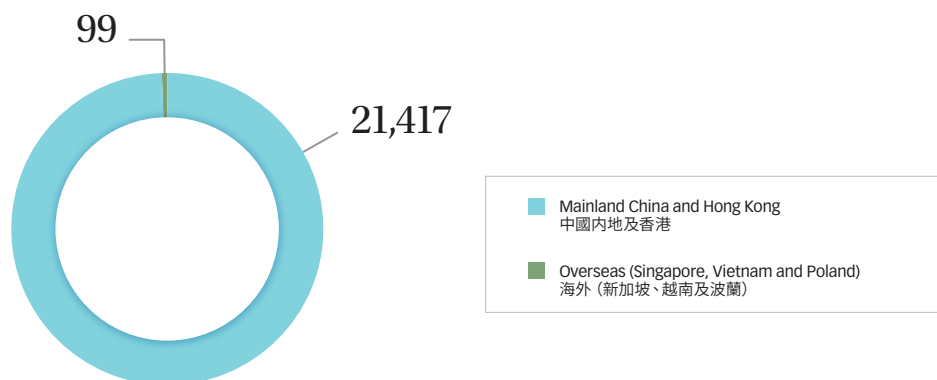
附註：

<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。

Sustainable Operations Management  
可持續的運營管理

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



Number of On-site Outsourced Workers in 2021  
二零二一年駐場外判工人數目

Unit: people  
單位：人

Environmental monitoring 環境監測	Equipment maintenance 裝備維護	Cleaning 清潔	On-site workers from third-party contractors and subcontractors 第三方承包商及分包商駐場工人
<b>2,934</b>	<b>8,395</b>	<b>4,371</b>	<b>25,919</b>
Security 保安	Landscaping 綠化	Catering 食堂	Others 其他
<b>2,379</b>	<b>1,272</b>	<b>1,252</b>	<b>1,025</b>
<b>Total 總數 47,547</b>			

## Supplier Sustainability Risk Assessment

The Group commissions a third-party independent consultant to conduct sustainability risk assessments for the Group's suppliers every year, in order to understand the ESHS performance of suppliers of all categories. In 2021, 744 suppliers (including all major suppliers), whose businesses cover 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 the qualifications of suppliers 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.

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. Achieving 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 56% of the surveyed suppliers had obtained the internationally certified ISO 9001 Quality Management System, ISO 14001 Environmental Management Systems and OHSAS 18001/ISO 45001 Occupational Health and Safety Management System, or were currently undergoing related certifying process. Around 52% had established occupational health and safety policies and provided related trainings for employees. None of the surveyed suppliers had any reported safety accident in the past 3 years. We did not identify any risks associated with child labour and forced labour in this risk assessment.

## 供應商可持續發展風險評估

本集團每年均會邀請第三方獨立顧問為集團供應商進行可持續發展風險評估，以了解各類型的供應商於ESHS方面的表現。二零二一年，共計744家供應商（當中包括所有主要供應商）受訪參與評估，其業務範圍涵蓋了電力裝備、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。

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）實現碳中和；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56%的受訪供應商已獲取國際認證的ISO 9001質量管理體系、ISO 14001系列的環境管理體系及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。約52%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。所有受訪供應商均表示在過去三年沒有發生過安全事故。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 2021 supplier sustainability risk assessment accounted for approximately 24.12% of the annual total purchasing amount of the Group.**

**參與二零二一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24.12%**



In order to review the implementation and performance of its suppliers on corporate social responsibility, the Group, according to the risk assessment results, categorised suppliers into low, medium and high risk levels. In this assessment, 60% 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 other to promote sustainable development along the supply chain.

### Customer Satisfaction

The Group adheres to the customer-oriented service principle and strives to integrate excellent customer services into daily operation and management, solve key problems of customer and industry development with the times, contribute to build a cleaner environment and more effective resource utilisation mode, so as to meet the needs of customers, facilitate the development of the industry, and benefit the whole society. As one of the Group's short-term goals in sustainable development at the social level, the Group commissioned a third-party consultant to conduct an annual customer satisfaction survey during the Reporting Period, aiming to collect customers' comments on our work and thus further improve our service quality.

### Results of the Customer Satisfaction Survey in 2021

#### 二零二一年客戶滿意度調查結果

A total of  
共收到

**150**

valid questionnaires were collected  
份有效問卷

Overall satisfaction rate  
整體滿意度

**9.82/10**

為了檢視供應商在企業社會責任方面的執行與表現，本集團以風險評估結果為參考，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，60%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，本集團對此積極調查其情況並提出建議，確保其風險可被有效控制。在未來，本集團會持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

本集團堅持以滿足客戶需求為中心的服務理念，致力於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乃至行業發展的關鍵問題，協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。作為集團在社會層面的可持續發展短期目標之一，報告期內，我們邀請了第三方獨立顧問為本集團進行年度客戶滿意度調查，旨在了解客戶對我們工作的評價，從而進一步提升我們的服務品質。

Percentage of satisfied customers  
(customers rated Everbright  
Environment's performance with  
an average score of 7 or above)  
滿意客戶百分比  
(給予光大環境表現平均分7分或  
以上的客戶)

**98.67%**



		<b>Average score</b> (out of 10) <b>平均分</b> (滿分10分)
Experience and professionalism of project teams	項目團隊的經驗及專業程度	9.80
Environmental and safety health risk management	環境及安全健康風險管理	9.81
Outcome and quality of work	工作成果及質量	9.82
Effectiveness and timeliness in communication	有效和及時的溝通	9.82
Adherence to agreed project schedules	遵守商定的項目進度	9.83
<b>Overall satisfaction rate</b>	<b>整體滿意度</b>	<b>9.82</b>

A total of 150 valid questionnaires were collected in this survey, with the overall customer satisfaction rate of 9.82 (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 98.67%. 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150份有效問卷，客戶整體滿意度達9.82分（滿分10分），滿意客戶（給予光大環境表現平均分7分及以上的客户）佔比98.67%。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。

The strong growth of the Group's market expansion each year depended on its exploration of and attention to new customers. Among 150 surveyed customers, 29 customers, accounting for 19.3%, were working with the Group for the first time. Among these new customers, 100% rated the Group with an average satisfaction score of 8 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.

本集團的市場拓展勢頭每年得以保持強勁增長有賴於本集團對新客戶的發掘和重視。在150個受訪客戶中，首次與本集團合作的客戶有29人，佔總受訪客戶的19.3%。其中，平均滿意度為8分及以上的客户佔100%。本集團會把客戶的肯定作為繼續前進的動力，在未來繼續秉承以客戶為中心的理念，最大程度發揮項目的附加價值，實現互利共贏。

## Stakeholder Engagement

持份者參與



We Draw on  
Collective Wisdom, Advice  
and Suggestions

·  
集思廣益  
建言獻策



Proactive and continuous communication with stakeholders is an essential part of our daily operations. In the life cycle of every project, we engage our stakeholders to voice their concerns through various channels, which enables us to formulate bespoke sustainable development strategies in order to address their comments more efficiently.

與持份者進行積極和持續的溝通是本集團日常運營中不可或缺的一部分。在每個項目的生命週期中，我們均透過不同途徑聆聽持份者的關注，從而幫助我們制定可持續發展策略，以便更有效地回應他們的意見。

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

本集團的業務廣泛涉獵多個持份者組別，包括投資者、股東、政府、客戶、員工、村民、當地社區、業務夥伴、供應商、媒體、投資分析員及非政府組織。本集團對持份者的識別基於以下五個原則：

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／或政策與本集團聯繫的持份者	Stakeholders with formal decision-making power or informal influence on the Group 對本集團具有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 在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 sectors that are closely connected with the Group 來自與本集團聯繫最緊密的業界代表的持份者



During the Reporting Period, we continued to maintain close communication with various stakeholders through diversified channels:

報告期內，我們繼續透過多元化的渠道與各持份者保持緊密聯繫：

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
<b>Investors, Shareholders</b> 投資者、股東 	Annual/extraordinary general meeting 股東週年／特別大會 Press release/announcement/circular 新聞稿／公告／通函 Results presentation 業績發佈會 Interim report/annual report 中期報告／年報 Roadshow 路演 Meeting/telephone conference/email 會議／電話會談／電郵聯系 Site visit 現場考察 Company's website 公司網站	Annually/as needed 每年／根據需要 Regularly/as needed 定期／根據需要 Half-yearly/annually 半年／每年 Half-yearly/annually 半年／每年 Regularly/as needed 定期／根據需要 Regularly/as needed/upon request 定期／根據需要／根據需求 As needed/upon request 根據需要／根據需求 As needed 根據需要
<b>Governments</b> 政府 	Progress report 進度報告 Site visit 現場考察 Meeting 會議 WeChat and QQ 微信及QQ Phone or email 電話或電郵聯系 Customer satisfaction survey 客戶滿意度調查	Weekly/monthly/quarterly 每週／月／季 Weekly/monthly/quarterly 每週／月／季 Weekly/monthly/quarterly 每週／月／季 As needed 根據需要 Weekly/monthly/quarterly 每週／月／季 Annually 每年

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／電郵聯系</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's 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>As 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
<b>Customers</b> 客戶 	Meeting 會議  Phone or email 電話或電郵聯繫  Customer satisfaction survey 客戶滿意度調查	Weekly/monthly/quarterly 每週/月/季  Weekly/monthly/quarterly 每週/月/季  Annually 每年
<b>Employees</b> 員工 	Work meeting/project meeting 工作會議/專題會議  Performance review meeting 表現評估會議  Internal publication 內部刊物  Charitable activity 公益活動  Face-to-face meeting/ telephone conference/email 當面會談/電話會談/電郵聯繫  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	Regularly 定期  Interim/year-end 年中/年末  Monthly 每月  As needed 根據需要  As needed 根據需要  As needed 根據需要
<b>Media</b> 媒體 	Project visit/site visit 項目參觀/現場考察  Press release/announcement 新聞稿/公告  Management interview 管理層採訪  Results presentation 業績發佈會  Company's website 公司網站	As needed/upon request 根據需要/根據需求  Regularly/as needed 定期/根據需要  Regularly/as needed/upon request 定期/根據需要/根據需求  Half-yearly/annually 半年/每年  As needed 根據需要
<b>Non-Governmental Organisations (NGOs)</b> 非政府組織 	Charitable activity 公益活動  Site visit 現場考察  Meeting 會議	As needed 根據需要  Regularly/as needed 定期/根據需要  As needed 根據需要



## Materiality Assessment

Each year, the Group conducts a comprehensive materiality assessment to set the scope and boundaries for the sustainability report through identifying and prioritising the most material economic, environmental and social issues, fostering the involvement of the Group's stakeholders in the process.

Our four-stage materiality assessment methodology remains unchanged in 2021 and has continued to guide the Group in its efforts to advance the sustainable development agenda. The four stages are as follows:

## 實質性評估

本集團每年均會進行一次全面的實質性評估，以識別最優先的經濟、環境和社會議題及確立可持續發展報告範圍和邊界，並促進本集團持份者在過程中的參與。

二零二一年，我們包含四個階段的重要性評估方法保持不變，並繼續指導本集團努力推進可持續發展議程。四個階段如下：

### Stage 1 第一階段

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

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

本集團委聘獨立可持續發展顧問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」）。這些議題乃透過廣泛來源所得，包括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，以確保識別出來的議題充分反映本集團的業務性質及以往與持份者溝通的結果。

### Stage 2 第二階段

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

A stakeholder engagement survey was conducted by the Group's independent sustainability consultant to obtain the order of priority of the material topics identified in Stage 1 from the 9 key stakeholder groups. The findings were then analysed by the consultant based on two parameters: perceived importance to the stakeholders and significance of impacts on Everbright Environment. These issues were quantitatively analysed based on materiality and the analysis results were expressed in the form of a matrix to identify the most important issues at two levels. The prioritised topics perceived by both the stakeholders and the Group with the highest importance become the focus of disclosure of the Report.

本集團的獨立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，依據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。顧問隨即根據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作量化分析，並將分析結果以矩陣形式表達，從而確定在兩個層面最為重要的議題。於持份者和本集團層面最為重要的議題即為本報告的披露重點。



Stage  
第三階段 3

Validation of  
Materiality  
Topics and  
Data Analysis  
驗證實質性議題  
及數據分析

The prioritised material topics and boundaries were validated by the Board to ensure the reasonableness, balance and completeness of the Report. Following this process, the Group's independent sustainability consultant reframed the material topics into the GRI Standards for reporting purpose. The established systematic data collection and monitoring mechanisms managed by the Operations Management Department of the Group ensures that all project companies provide accurate and comprehensive sustainability data on a regular basis.

董事會對經優先排序的實質性議題及其邊界作驗證，以確保本報告的合理性、平衡性及完整性。隨後，獨立可持續發展顧問將實質性議題轉換為GRI準則，方便報告之用。本集團運營管理部的專員透過系統式的數據收集和監測機制，確保所有項目公司定期提供準確、全面的可持續發展數據。

Stage  
第四階段 4

Materiality  
Review  
檢視實質性

Prior to the preparation of the Report, the Group reviewed the material topics and disclosure practices of its previous reports, and collected stakeholder opinions through the annual stakeholder survey on Everbright Environment's sustainability performance during the Reporting Period. All opinions and data were reported to the Board, and the Board reviewed and verified the material topics, so as to help stakeholders to participate more fully in the sustainable development management and disclosure process comprehensively, which is also beneficial to the Group in accomplishing long-term sustainable development goals.

在準備本報告之前，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，並通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，並由董事會檢視及核實實質性，以助持份者更全面地參與可持續發展的管理和披露過程，同時有利於本集團實踐長遠的可持續發展目標。



## List of Sustainability Topics

## 可持續發展議題列表

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

## Materiality Matrix

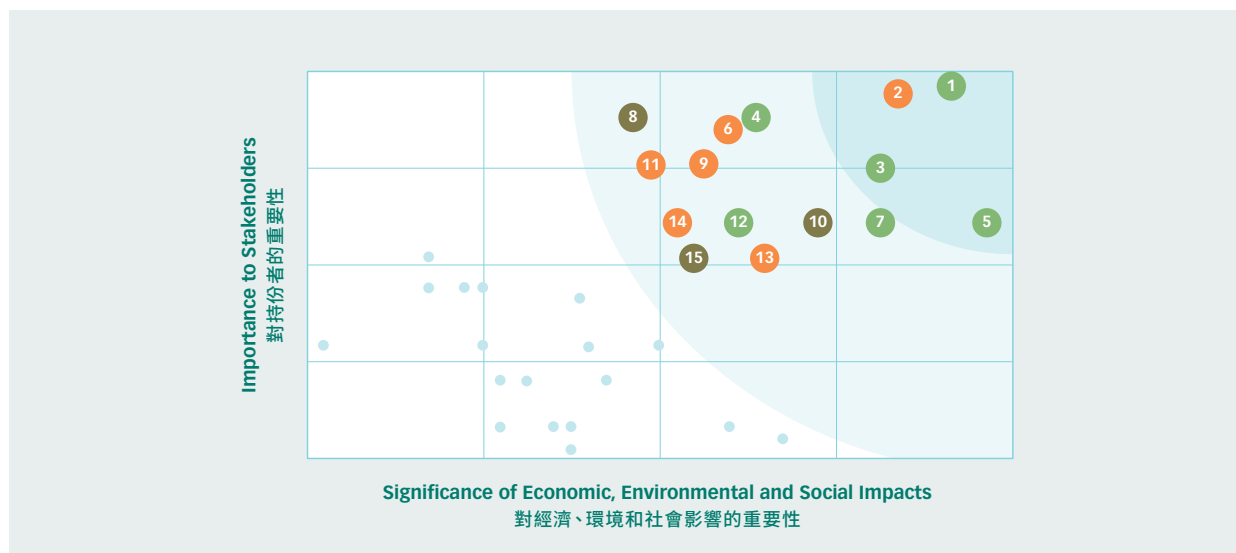
Based on the results of the materiality assessment, the material topics are ranked in the matrix below according to their priority, while impacts and boundaries of the concerned impacts, the corresponding GRI Standards as well as the SDGs that are most relevant to the Group are identified.

In 2021, we have identified three additional key topics through the materiality assessment: anti-corruption, staff training and usage of water resources.

## 實質性矩陣

我們基於實質性分析的結果，識別與本集團最具關連的重要議題，按優先次序按矩陣圖排列如下，並分辨相關議題的影響力及範圍、其相應的GRI準則及相關的聯合國可持續發展目標。

於二零二一年，我們通過實質性評估新確定了三個額外的重要議題：反貪腐、員工培訓和水資源使用。



Stakeholder Engagement  
持份者參與



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, 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	NGOs		
1 Environmental Compliance 環境合規	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GRI 307 Environmental Compliance 有關環境保護的法規遵循	16 PAUL ANDERSON INTEGRITY AND ETHICS
2 Occupational Health and Safety 職業健康與安全	✓	✓	✓						✓		GRI 403 Occupational Health and Safety 職業安全衛生	3 GOOD HEALTH AND WELL-BEING
3 Waste Management 廢物管理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GRI 306 Waste 廢棄物	15 LIFE ON LAND
4 Waste Water Treatment 污水處理	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GRI 303 Water and Effluents 水資源與污水	6 CLEAN WATER AND SANITATION 14 LIFE BELOW WATER
5 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	13 CLIMATE ACTION
6 Social Compliance 社會合規	✓	✓	✓	✓	✓	✓	✓	✓	✓		GRI 419 Socioeconomic Compliance 社會經濟法規遵循	16 PAUL ANDERSON INTEGRITY AND ETHICS
7 Energy Efficiency 能源效益	✓	✓			✓	✓					GRI 302 Energy 能源	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
8 Anti-corruption 反貪腐	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GRI 205 Anti-corruption 反貪腐	16 PAUL ANDERSON INTEGRITY AND ETHICS
9 Employee Training 員工培訓	✓	✓	✓		✓		✓	✓			GRI 404 Training and Education 訓練與教育	4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH
10 Economic Performance 經濟績效	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GRI 201 Economic Performance 經濟績效	8 DECENT WORK AND ECONOMIC GROWTH
11 Rights of Indigenous Peoples 原住民權利	✓	✓	✓	✓			✓	✓			GRI 411 Rights of Indigenous Peoples 原住民權利	10 REDUCED INEQUALITIES
12 Usage of Water Resources 水資源使用	✓			✓	✓					✓	GRI 303 Water and Effluents 水資源與污水	6 CLEAN WATER AND SANITATION 14 LIFE BELOW WATER
13 Child Labour and Forced Labour 童工及強制勞動	✓	✓							✓	✓	GRI 408 Child Labour 童工 GRI 409 Forced or Compulsory Labour 強迫或強制勞動	16 PAUL ANDERSON INTEGRITY AND ETHICS
14 Disaster and Emergency Planning and Response 災難及應急預案規劃	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Not Applicable 不適用	11 SUSTAINABLE CITIES AND COMMUNITIES
15 Technological R&D 技術研發	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Not Applicable 不適用	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

## Stakeholders' Feedback 持份者反饋

Average stakeholders' rating for the sustainable development performance of Everbright Environment in 2021

持份者對光大環境二零二一年可持續發展表現的平均評分：

**9.2** (out of 10)  
(10分為滿分)



Average stakeholders' rating for the Sustainability Report 2020 of Everbright Environment:

持份者對光大環境二零二零年可持續發展報告的平均評分：

**9.2** (out of 10)  
(10分為滿分)

Over  
超過

**94.4%**

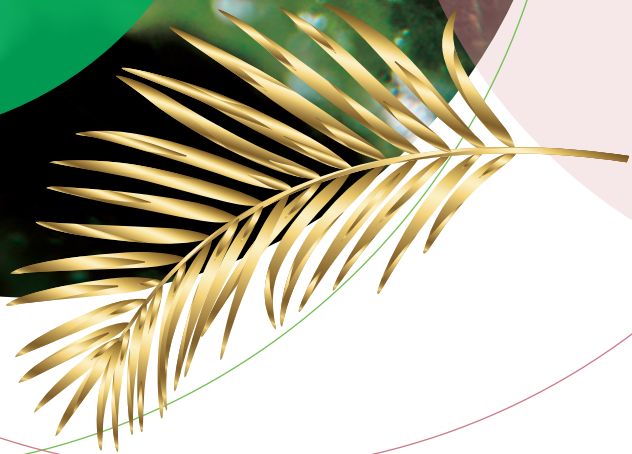
of stakeholders agreed that Everbright Environment has adequate engagement with them  
的持份者認同光大環境與他們保持足夠的聯繫



Responding to Climate Change  
應對氣候變化

Decarbonisation Blueprint  
for a New Green Chapter

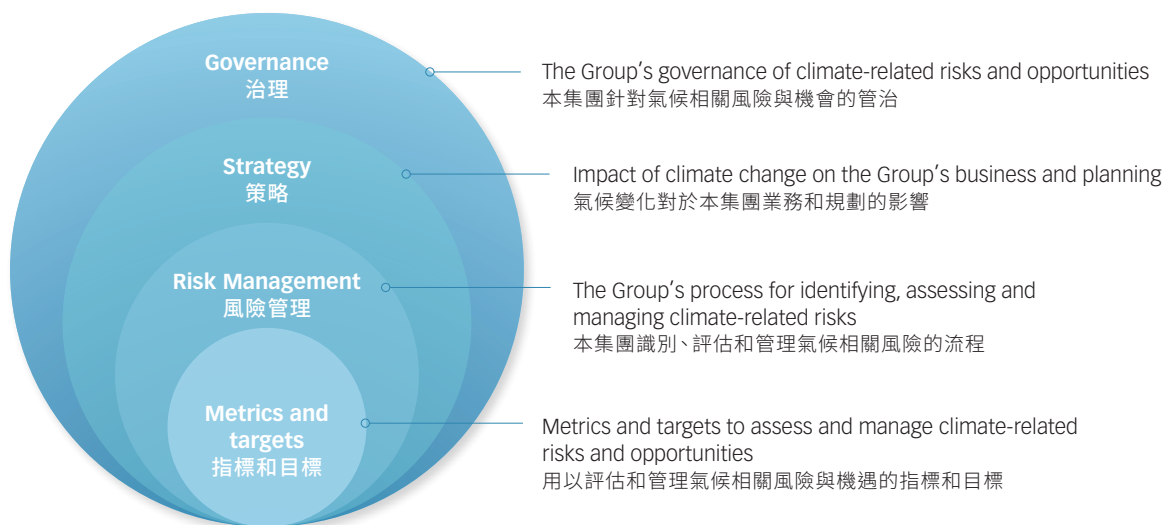
擘畫三碳藍圖  
續寫綠色篇章





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. In response to the new expectations from the investors, the Group is committed to disclosing transparent, reliable and consistent climate-related information to its stakeholders and the public, in accordance with the framework of the “Task Force on Climate-related Financial Disclosures” (“TCFD”). Everbright Environment signed up to become a TCFD Supporter in 2020, further demonstrating the Group’s commitment to supporting climate-related information disclosure.

由於可持續金融愈發重要，與氣候變化相關資訊的披露亦呈顯著上升趨勢，當中包括如何將氣候相關風險納入到企業的管理決策中。為回應投資者的新期望，本集團按照「氣候相關財務信息披露工作組」（「TCFD」）的框架，致力向持份者和公眾提供透明、可靠和一致的氣候相關信息。於二零二零年，光大環境簽署成為TCFD的支持機構，進一步體現了本集團對於氣候相關資訊披露的承諾。



### About TCFD

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

### 關於TCFD

TCFD 涵蓋了四個主要的資訊披露領域：治理、策略、風險管理、指標和目標。

## Governance

Everbright Environment has incorporated the governance of sustainable development into its corporate governance structure. This is to ensure that the climate change risks faced by the Group are included in the corporate agenda, and to encourage the Group to actively participate in the formulation, development and implementation of strategies to address climate risks.

### Board Level

The Board is the highest governance body of the Group and is the highest leading unit for managing climate change risks, formulating sustainable development strategic goals and supervising 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 achievement thereof.

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 Chairman of the Board. 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 in a top-down manner.

### 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 units, 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

光大環境已將可持續發展的管治納入其企業管治架構之中，以確保本集團所面對的氣候變化風險能納入公司議程，並促使本集團由上至下均積極參與制定和落實應對氣候風險的策略。

### 董事會層面

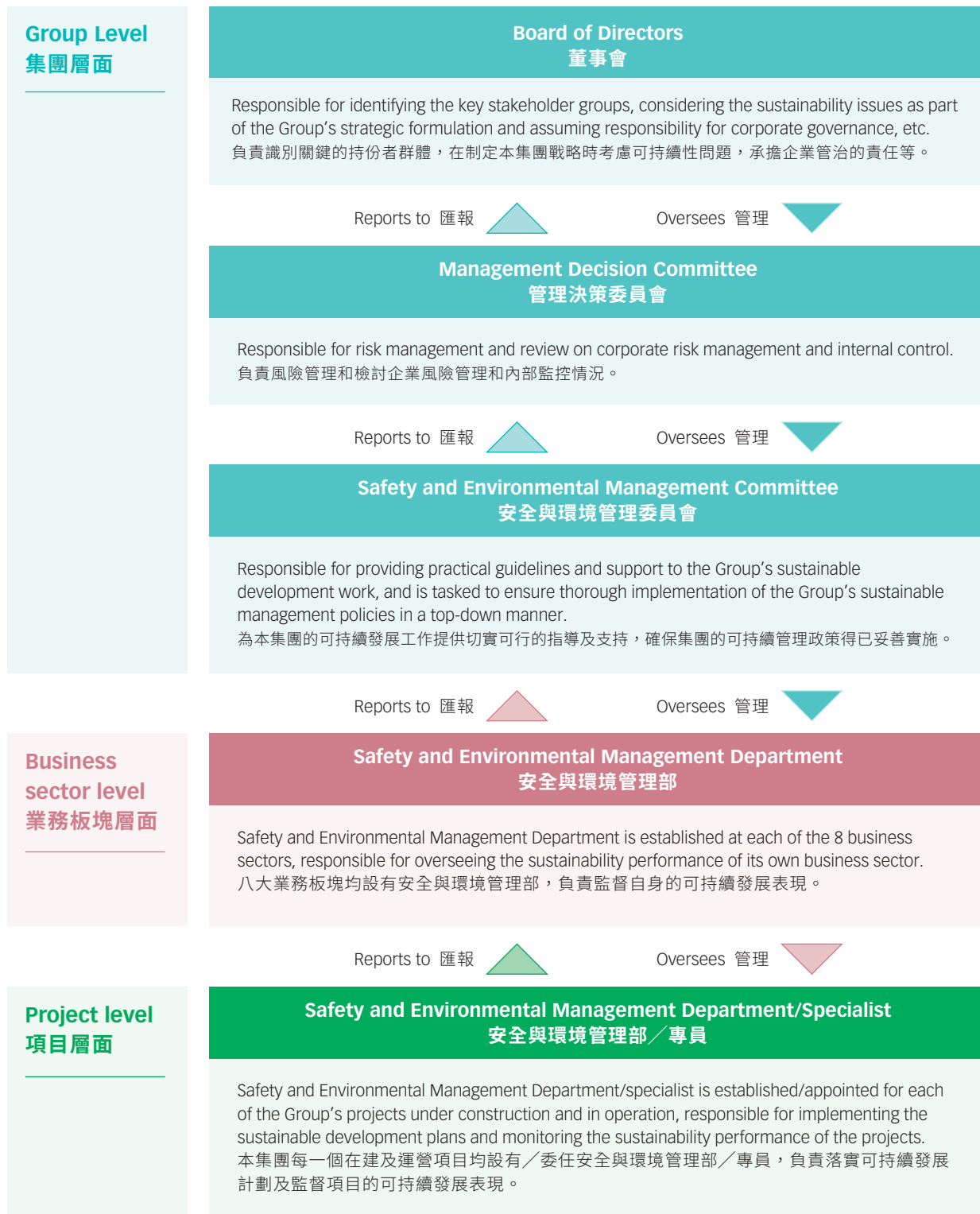
董事會為本集團的最高管治機構，是管理氣候變化風險、制定可持續發展戰略目標及監督相關目標有效落實的最高領導單位。董事會負責制定本集團的戰略方向，在制定戰略目標及發展方向時，把氣候變化相關議題及企業社會責任納入考量，並為管理層設定目標及監督目標的實現。

董事會在風險管理委員會的支持下，全權負責對光大環境風險管理活動的監管。董事會旗下的風險管理委員會負責風險管理，並每年至少兩次檢討企業風險管理和內部監控情況。

在管理決策委員會下，本集團目前設立了由董事會主席領導的安全與環境管理委員會。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及支持，確保集團的可持續管理政策得已妥善實施。

### 管理層面

氣候變化帶來的各種風險在本集團的議程中佔有重要的地位，因此本集團致力於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，當中整合了集團四個主要的層面，分別是：總部、所有業務板塊、區域中心和項目公司。該工作小組的負責人主要承擔領導職責，並每年制定、監視和審查安全與環境指標和目標。該負責人將堅決履行職責，並引導各個執行部門採取應對氣候風險的措施。



### Strategy

Everbright Environment understands that climate change will bring various risks to its business, such as physical risks such as water stress, floods and extreme weather, which will cause damage and negative impact on assets and supply chains; and transition risks such as reputation and policy changes, will also cause potential financial impact. Therefore, it is actively taking actions to address the impact of climate change. The Group is committed to reducing and offsetting greenhouse gas emissions, enhancing the resilience of the Group and its projects in response to climate change, and seizing relevant opportunities to build a cleaner environment.

Facing the continuous impact of climate change, Everbright Environment has established and implemented a series of strategies to deal with climate risks, re-positioning the Group in the ever-changing world, in order to enhance the city's climate change resilience and promote sustainable development. The Group has adopted the following three strategies to address climate change, and will strengthen its efforts and take more relevant actions to achieve the goal of carbon neutrality:

### 策略

光大環境深明氣候變化對本集團的業務帶來多種風險，如水資源壓力、洪水及極端天氣等實體風險，這些會對資產及供應鏈造成破壞和負面影響；政策變更及聲譽等轉型風險，亦會造成潛在的財務影響。光大環境積極採取行動應對氣候變化帶來的衝擊。本集團致力降低及抵銷溫室氣體排放、增強本集團及其旗下項目對氣候變化的適應力，並抓住相關機遇，務求建立更清潔的環境。

面對氣候變化帶來的持續影響，光大環境透過制定和落實一系列應對氣候風險的戰略，為本集團重新在不斷變化的世界中明確定位，為提升城市的氣候變化抵禦力及促進可持續發展作出貢獻。本集團已採取以下三大戰略應對氣候變化，並將加強力度，採取更多相關行動實現碳中和的目標：



### Understanding Climate Risks Through Climate Analysis

The TCFD divides the climate risks faced by companies into two categories: physical risks and transition risks. In order to gain an in-depth understanding of the significant climate risks faced by the Group, the Group establishes climate scenarios with reference to internationally recognised guidelines and evaluates the impact of future climate change trends to the business. The Group aims to assess the impact of climate change on Everbright Environment's assets in preparation, construction, commissioning and operation through climate scenario analysis.

### Physical Scenarios

According to the Sixth Assessment Report on Climate Change ("AR6") published by the Intergovernmental Panel on Climate Change ("IPCC") in 2021, the Group also considers a combination of "Shared Socioeconomic Pathways" ("SSPs") and "Representative Concentration Pathways" ("RCPs") to assess current climate conditions (applicable to water stress assessments) and acute and chronic climate risks faced by the Group in the 2040 climate change scenario. Considering the majority of projects are operated under a concession agreement for approximately 20 to 30 years, selection of year 2040 as the future assessment year is considered appropriate.

### 透過氣候情境分析了解氣候風險

TCFD把企業所面臨的氣候風險分為兩類：實體風險和轉型風險。為了深入了解本集團所面對的重大氣候風險，本集團參照國際認可的指引設立氣候情境，並評估未來氣候變化趨勢對業務的影響。本集團旨在透過氣候情境分析，評估氣候變化對光大環境所有在籌備、建設、投產以及運營中的資產之影響。

### 實體情境

本集團根據由「聯合國政府間氣候變遷專門委員會」(Intergovernmental Panel on Climate Change, 簡稱「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「SSPs」)與「代表濃度途徑」(Representative Concentration Pathways, 簡稱「RCPs」)的組合，以評估在當前氣候狀態(適用於水資源壓力評估)及二零四零年的氣候變化情境中，本集團所面對的急性和慢性氣候風險。考慮到大多數項目的特許運營年期為約20至30年，本集團認為以2040年作為未來評估年份是合適的。



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	By calculating the water stress level from 1960 to 2014, the ordinary least squares methods estimate the current water stress risk in the absence of climate anomalies. 使用普通最小平方法計算一九六零年至二零一四年的用水資源壓力程度，推算在沒有氣候異常狀態下現時的水資源壓力風險。
	SSP2 RCP4.5 (Optimistic scenario) SSP2 RCP4.5 (樂觀情境)	Representing a world with stable economic development – Carbon emissions will peak and fall by 2040, limited to about 650 ppm CO <sub>2</sub> before 2100 and the temperature should be maintained between 1.1 to 2.6°C. 代表一個經濟穩定發展的世界，在二零四零年前碳排放量將達到峰值並下降。於二一零零年前，二氧化碳的排放量必須限制在約650 ppm，溫度應保持在1.1至2.6°C之間。
	SSP2 RCP8.5 (Business-as-usual) SSP2 RCP8.5 (如常運作)	Representing a world with stable economic development and steady growth in global carbon emissions – CO <sub>2</sub> concentrations will reach around 1,370 ppm by 2100 and the global average temperature will rise by 2.6 to 4.8°C as compared with 1986 to 2005. 代表一個經濟發展穩定、全球碳排放穩定增長的世界，於二一零零年前CO <sub>2</sub> 濃度將達到約1,370 ppm，而全球的平均溫度相對於一九八六年至二零零五年將會上升2.6至4.8°C。
Coastal flooding risk <sup>3</sup> 沿海洪水風險 <sup>3</sup>	SSP2-4.5	Greenhouse gas emissions peak and decline around 2040. SSP2-4.5 represents a climate scenario for the middle path, which is almost in line with the total emission reductions committed by countries in the 2015 Paris Agreement. This scenario simulates that emissions stabilise by mid-century, and global temperatures are projected to be about 2.7°C above pre-industrial levels by 2100. 溫室氣體排放量大約在二零四零年達到峰值並下降。SSP2-4.5代表中間路徑的氣候情境，與二零一五年《巴黎協定》中各國承諾的總減排量大致相符。此情境模擬排放量在本世紀中葉穩定下來，預計到二一零零年全球氣溫將比工業化前水平高出約2.7°C。
	SSP5-8.5	Greenhouse gas emissions have increased rapidly for most of this century and will double in 2050. The climate scenario for this high emissions pathway simulates a global temperature of about 4.4°C above pre-industrial levels. 溫室氣體排放量在本世紀的大部分時間裡迅速增加，並在二零五零年達到雙倍排放量。此高排放路徑的氣候情境模擬全球氣溫將比工業化前水平高出約4.4°C。

Notes:

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

附註：

- 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》。
- 水資源壓力評估的模擬情境描述參考Aqueduct水風險評估工具的技術說明文件。
- 沿海洪水風險評估的模擬情境描述參考Climate Central的沿海洪水風險篩檢工具說明及IPCC AR6報告。

### Transition Scenarios

The Group has adopted the climate change scenarios in the *World Energy Outlook 2021* report released by the International Energy Agency to analyse the transition climate risks the Group is facing and the management approach for this implementation, so as to have a better plan of its corporate development. 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 2021* report to represent a 1.5°C warming scenario, and the "Stated Policies Scenario" to represent a future climate change scenario which is similar to current annual emissions.

### 轉型情境

本集團採納了國際能源署發佈的《2021年世界能源展望》報告中的氣候變化情境，以分析本集團正面臨的轉型氣候風險及該實施的管理方針，從而幫助本集團更好地規劃企業發展。本報告採納TCFD《非金融公司情境分析指南》的建議，採用一個1.5°C情境，在符合IPCC最新的科學研究同時，亦符合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《2021年世界能源展望》報告中的「2050淨零排放情境」以代表升溫控制在1.5°C的情境，並採用「既定政策情境」代表與現時年排放量相仿的未來氣候變化情境。

Scenario 情境	Scenario simulation 模擬情境
Net Zero Emissions by 2050 Scenario 2050淨零排放情境	By 2030, CO <sub>2</sub> emissions will be 45% lower than in 2010, net-zero emissions by 2050, and there is a 50% chance of limiting warming to 1.5°C. 到二零三零年，二氧化碳排放量比二零一零年低45%，二零五零年實現淨零排放，並且有50%的機會將升溫控制在1.5°C內。
Stated Policies Scenario 既定政策情境	The energy and climate measures that countries around the world have been put in place so far, and the specific policy measures that are being formulated. In this scenario, almost all of the net increase in energy demand until 2050 is covered by low-carbon sources; annual emissions will remain about the same as today; and by 2100, the global average temperature will rise to 2.6°C and will continue to rise. 為全球各國截至目前為止，已實際採取的能源及氣候措施、及正在制訂的具體政策措施。在此情境中，直至二零五零年，幾乎所有淨增加的能源需求都由低碳的排放源補足；年排放量仍將與今日的水平大致相同；到二二零零年，全球平均氣溫將攀升至2.6°C，並將持續攀升。

### Promote the Development of Renewable Energy

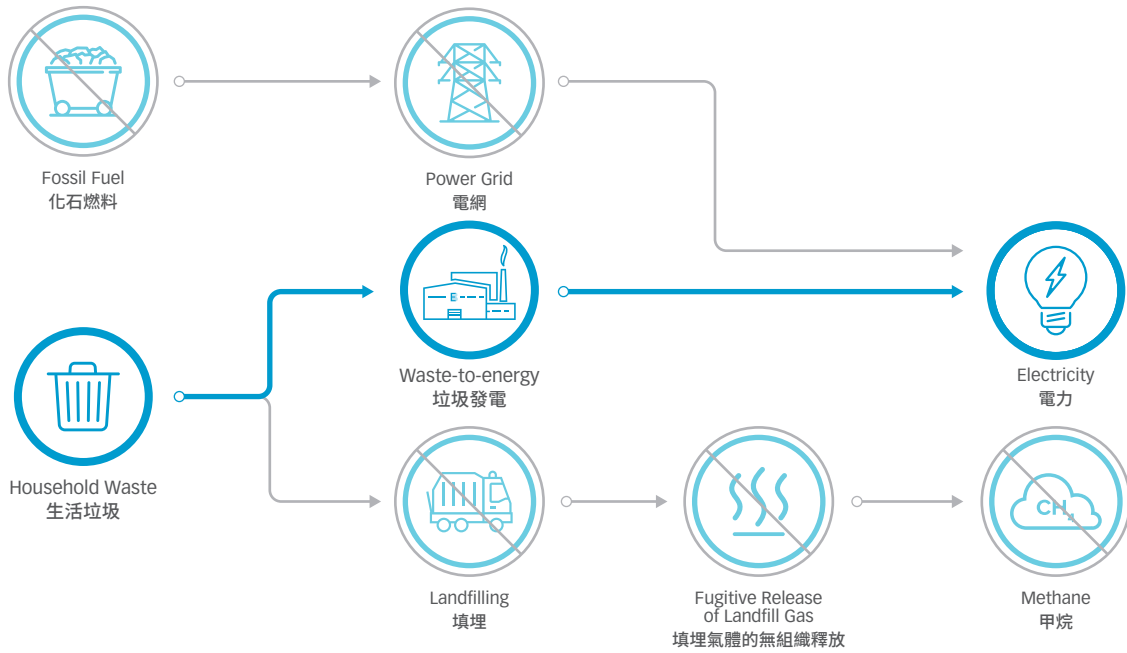
Towards the goal of "Dual Carbons", the issue of energy conservation and emission reduction in the environment management industry has attracted much attention. To reduce greenhouse gas emissions, promoting renewable energy is one of the Group's key strategies. The Group advocates the concept of green operation, and reduces the consumption of non-renewable energy by generating electricity from renewable energy sources such as waste, biomass, wind power and photovoltaics.

### 推動發展可再生能源

朝著「雙碳」的目標邁進，環境治理行業的節能減排問題備受關注。為降低溫室氣體排放，推動可再生能源是本集團的重點戰略之一。本集團倡導綠色運營的理念，透過垃圾和生物質發電、風電及廠內光伏等可再生能源發電，減少消耗非再生能源。

Advanced technologies to reduce carbon emissions

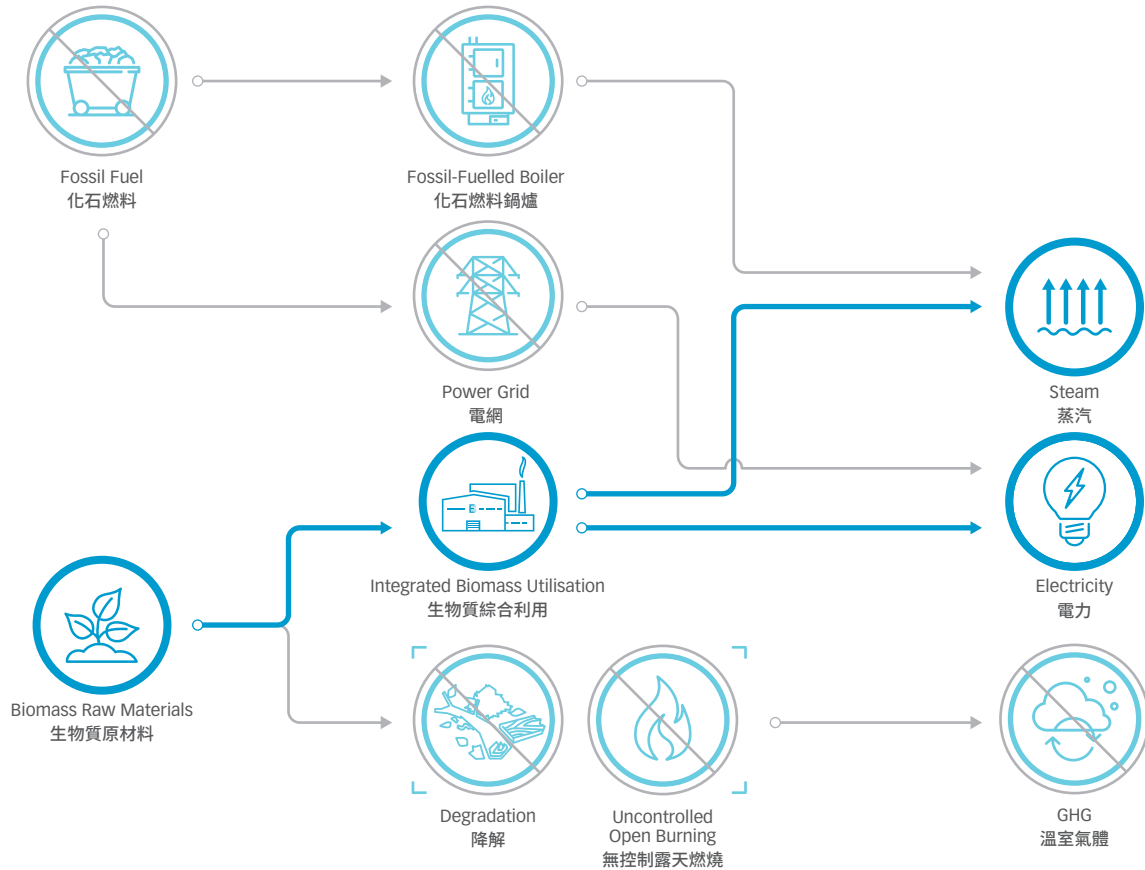
先進技術達致減碳



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，以生活垃圾焚燒所產生的熱量來發電，透過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

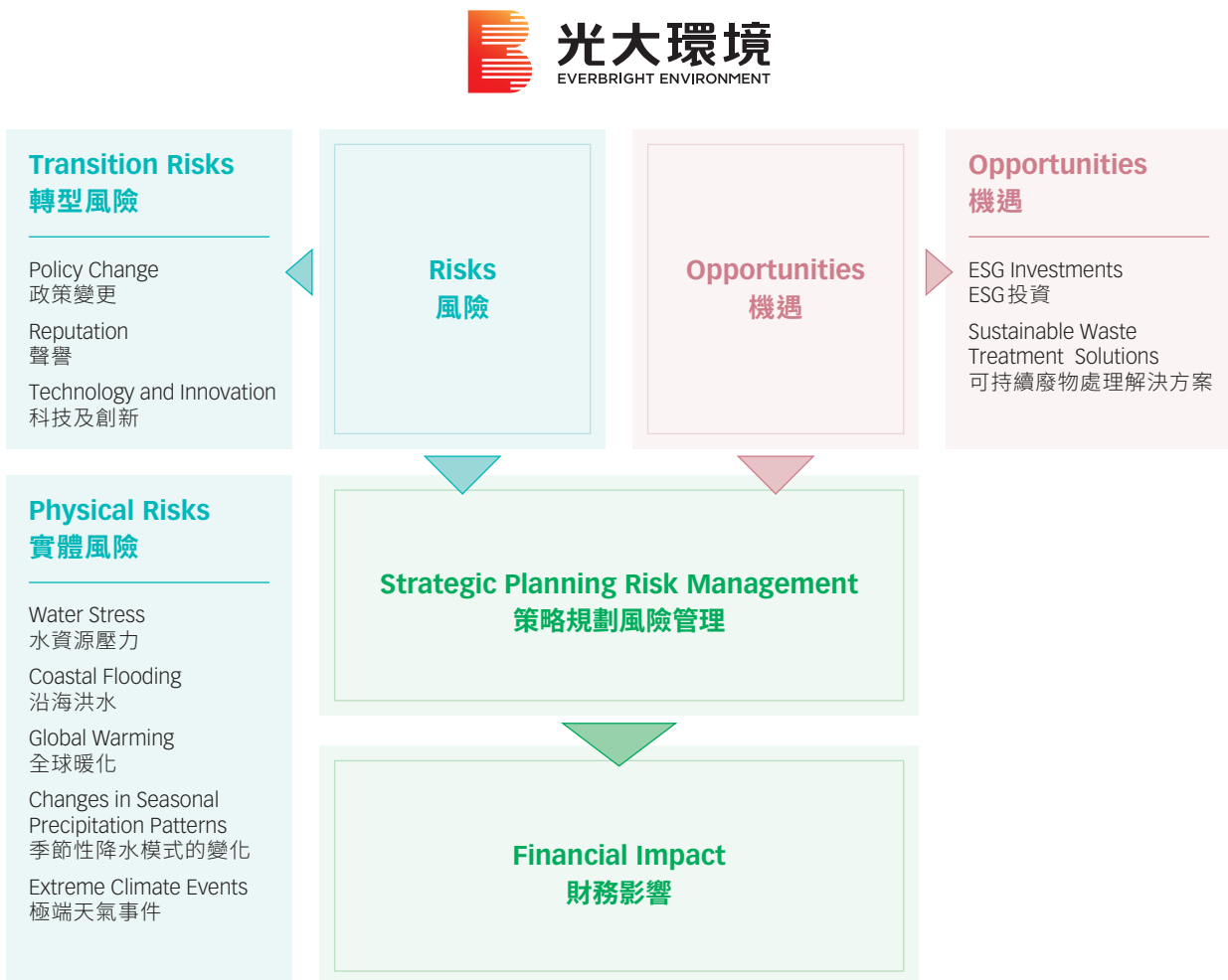
Everbright Environment aims to identify, assess and manage climate-related risks. The Group has been incorporating climate-risk, both physical and transition into its operation. The Group has listed out key climate risks according to the risk analysis framework of TCFD, including the development of climate risk parameters, the conduct of climate risk assessments, formulation and implementation of climate risk control measures, analysis of the effectiveness of control measures, and execution of risk audits.

An outline of the key climate-related risks and opportunities applicable to the Group is presented below.

## 風險管理

光大環境旨在識別、評估及管理與氣候相關的風險。本集團一直將氣候相關的實體風險和轉型風險納入其運營之中。本集團根據TCFD的風險分析框架列出了關鍵的氣候風險，包括制定氣候風險參數、進行氣候風險評估、制定和實施氣候風險控制措施、分析控制措施的有效性以及執行風險審計。

以下是適用於本集團主要氣候相關風險和機遇的概述。





## Risk Management Process

The risk management process of Everbright Environment is formulated and implemented in accordance with the Group's risk management plan to enable the Group to effectively identify potential risks faced by each project through sound risk management processes and systems, and to formulate and implement climate change risk management and control measures. These are to ensure that the Group can continue operating and developing stably under the influence of climate change.

## 風險管理流程

光大環境的風險管理流程是按照本集團的風險管理計劃而制定和執行，目標是透過健全的風險管理流程和系統，使本集團能夠有效地識別各個項目所面臨的潛在風險，並適時制定和落實氣候變化風險管控措施，以確保本集團在氣候變化的影響下能夠繼續穩健經營和發展。

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



Everbright Environment has completely implemented the identification, assessment and situational analysis of climate risks, and formulated corresponding mitigation measures according to the results of qualitative 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 to building a cleaner and environmentally friendly future. On the other hand, the Group strives to manage risks and opportunities imposed by climate change on its businesses.

#### *Physical Climate Scenario Analysis*

In 2021, the Group conducted an updated study based on the project-level modelling study launched in 2020. The study evaluates both the acute and chronic physical climate risks under climate scenarios that jointly consider SSPs and RCPs based on IPCC AR6 report. 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. Considering the majority of projects are operated under a concession agreement for approximately 20-30 years, selection of year 2040 as the future assessment year is considered appropriate.

光大環境全面落實氣候風險辨識、評估及情境分析工作，並針對風險質化評估和量化分析結果制定相應的緩解措施，把本集團所面臨的氣候風險減至最低。本集團按照TCFD建議，把氣候相關風險劃分為兩類，包括實體風險和轉型風險，並以情境分析評估重大風險。

### 策略

光大環境致力抵銷溫室氣體的排放，並建立一個更清潔及環保的未來。另一方面，本集團致力於管理氣候變化為其業務帶來的風險和機遇。

#### *實體氣候情境分析*

基於二零二零年啟動的項目層面模擬分析，本集團於二零二一年展開了一項更新的研究。該研究根據IPCC AR6報告，以綜合考慮SSPs及RCPs的氣候情境，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。該評估涵蓋了水資源壓力程度和沿海洪水風險對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之影響。考慮到大多數項目的特許運營年期為約20-30年，我們認為以2040年作為未來評估年份是合適的。

## Water Stress 水資源壓力情況

### Why assess water stress? 為什麼要評估水資源壓力程度?

A majority of the Group's projects, including waste-to-energy projects, integrated biomass utilisation projects, hazardous and solid waste treatment projects, etc., consume a considerable amount of water for cooling purposes. 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

Current state scenario, 2040 SSP2 RCP4.5 scenario (optimistic scenario) and 2040 SSP2 RCP8.5 scenario (business-as-usual scenario).

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

The Group's water stress assessment measures the ratio of total water withdrawals to available renewable surface and groundwater supplies<sup>(1)</sup>. Exposure to a higher risk of water stress indicates more competition among local users for freshwater.

本集團的水資源壓力程度評估量度了總取水量與可再生地表水和地下水供應量的比率<sup>(1)</sup>。水資源壓力程度風險越高，代表本地用戶之間對淡水的競爭越激烈。

### Findings 調查結果



#### 1. 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 to the Group's projects in the future. **49.06%** of the Group's investment in projects under preparation, construction, commissioning and operation, are categorised with high water stress or above under the current state scenario. The figures are increased to **62.09%** and **70.39%** respectively under optimistic scenario (SSP2 RCP4.5) and business-as-usual scenario (SSP2 RCP8.5) by 2040.

根據集團的分析，水資源壓力是未來集團項目中與氣候相關的主要風險。在當前狀態情境下，本集團在籌劃、建設、投產和運營中的項目投資中有**49.06%**屬於高水資源壓力或以上。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**62.09%**和**70.39%**。



#### 2. By Percentage of Number of Projects 按項目數目百分比

**43.95%** of the Group's projects under preparation, construction, commissioning and operation, are categorised with high water stress or above under the current state scenario. The figures are increased to **70.67%** and **70.87%** respectively under optimistic scenario (SSP2 RCP4.5) and business-as-usual scenario (SSP2 RCP8.5) by 2040.

在當前狀態情境下，集團籌備、建設、投產和運營中的項目中有**43.95%**屬於水資源壓力程度高或更高的級別。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**70.67%**和**70.87%**。

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。

Water Stress Assessment of the Group under the Current State Scenario, Optimistic Scenario (SSP2 RCP4.5, 2040) and Business-as-Usual Scenario (SSP2 RCP8.5, 2040):

在當前狀態情境、樂觀情境 (SSP2 RCP4.5, 二零四零年) 和如常運作情境 (SSP2 RCP8.5, 二零四零年) 下的本集團的水資源壓力評估：

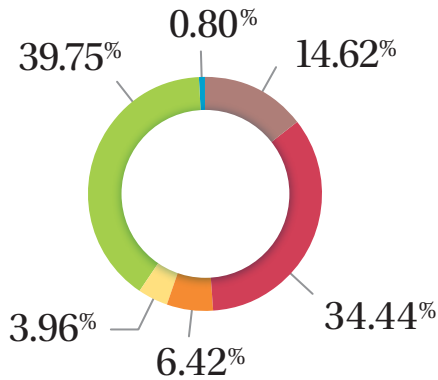
**By Percentage of Capital Investment in Projects**

**按項目資本投資的百分比**

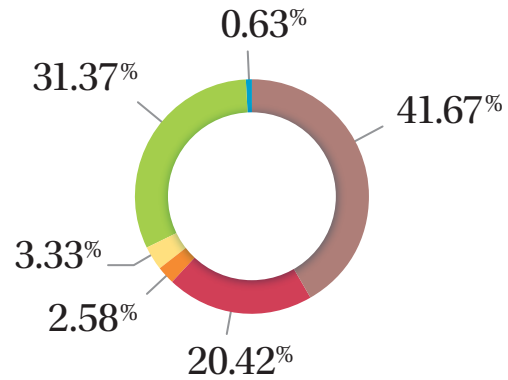
As of 31 December 2021, the total amount of investment was RMB152.455 billion.

截至二零二一年十二月三十一日，投資總額為人民幣1,524.55億元。

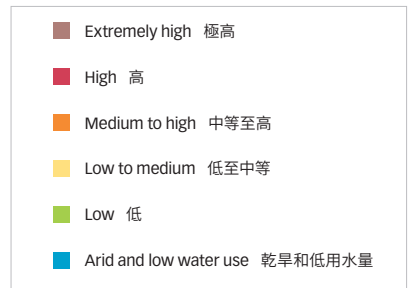
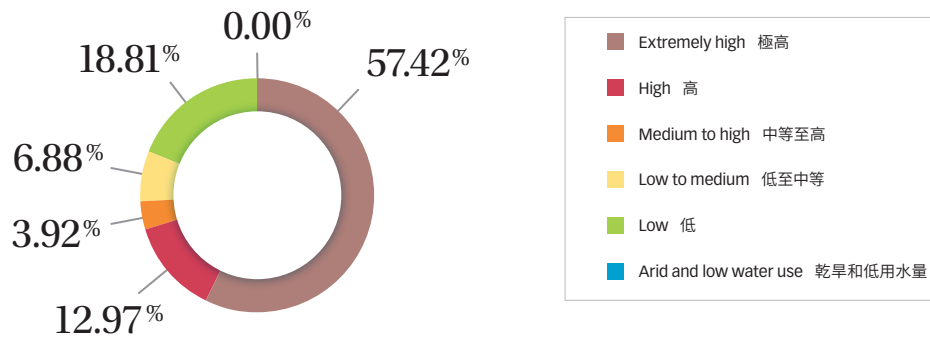
Water Stress Risk: Current State Scenario by % of Capital Investment in Projects  
水資源壓力風險：當前狀態情景，按項目資本投資的百分比



Water Stress Risk: Optimistic Scenario in 2040 (SSP2 RCP4.5) by % of Capital Investment in Projects  
水資源壓力風險：二零四零年樂觀情景 (SSP2 RCP4.5)，按項目資本投資的百分比



Water Stress Risk: Business-as-Usual Scenario in 2040 (SSP2 RCP8.5) by % of Capital Investment in Projects  
水資源壓力風險：二零四零年如常運作情境 (SSP2 RCP8.5)，佔項目資本投資的百分比



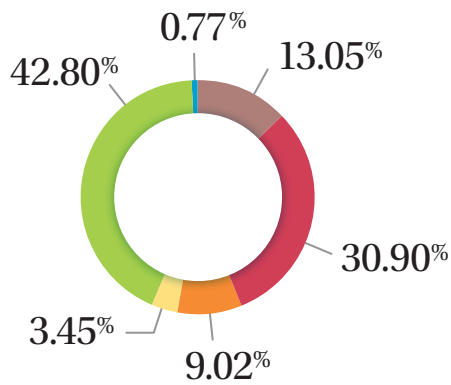
### By Percentage of Number of Projects

As of 31 December 2021, the total number of projects was 528.

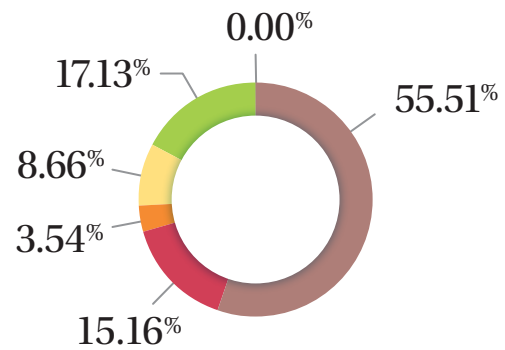
### 按項目的百分比

截至二零二一年十二月三十一日，項目總數為528。

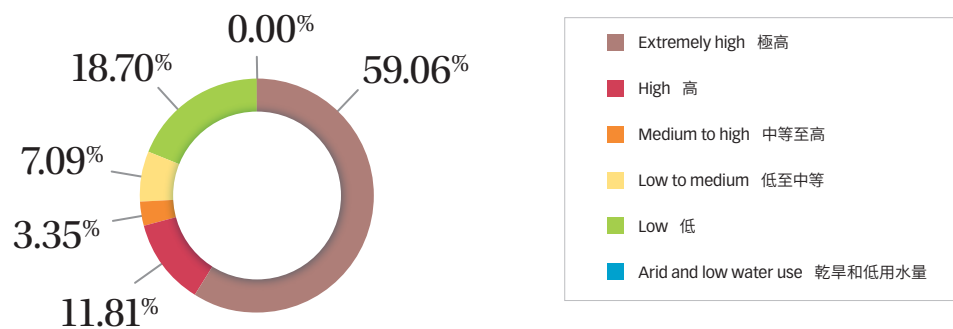
Water Stress Risk: Current State Scenario by % of Number of Projects  
水資源壓力風險：當前狀態情景，按項目數目百分比



Water Stress Risk: Optimistic Scenario in 2040 (SSP2 RCP4.5) by % of Number of Projects  
水資源壓力風險：二零四零年樂觀情景（SSP2 RCP4.5），按項目數目百分比



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 recycling 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

本集團提高了其回用水和循環水的技術水平以更好地管理用水壓力。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。出水經過超濾、納濾、反滲透等一系列處理後可達到冷卻水的使用標準。通過採用這種技術可以達到80%的水回收率。先進的廢水處理工藝支持我們實現到「全回用、零排放」的願景。

#### Re-circulating Water 循環水

Water is re-circulated within the waste water treatment system as far as practical to reduce the use of freshwater.

盡可能透過污水處理系統對水進行循環使用，以減少消耗淡水資源。

#### Reclaimed Water 再用水

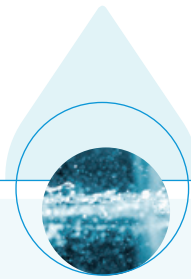
Reclaimed water refers to the effectively treated effluent which is clear and safe for general industrial use or non-potable uses such as street cleaning, vehicle washing, landscaping, toilet flushing, firefighting, etc.

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、環境優化、廁所沖洗、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.

中水回用是指通過環保水務的中水回用項目淨化的水。中水回用項目根據《城市污水再生利用工業用水水質》(GB/T 19923-2005)或相等標準處理污水處理廠的出水。中水回用項目產生的回用水可用於發電廠和一般工業用途，從而減少城市的淡水需求。



## 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 would pose threats to the Group's assets and employees' safety.  
沿海洪水風險將威脅本集團資產和員工安全。

**Methodology**  
方法

The Group's coastal flood risk assessment measures the percentage of Group's projects by (1) capital investment and (2) number of projects in coastal cities that would be below the projected water level plus the added height of a local annual flood by 2040. Coastal flood risk assessment was conducted for all of the Group's projects under preparation, construction, commissioning and operation<sup>(1)</sup>.

本集團的沿海洪水風險評估通過(1)資本投資和(2)沿海城市中低於水平面預測的項目數量與到二零四零年當地每年洪水增加的高度來衡量本集團項目相加的百分比。沿海洪水風險的評估涵蓋了本集團所有正在籌備、建設、投產和運營的項目<sup>(1)</sup>。

## Climate Scenario 氣候情境

2040 SSP2-4.5 scenario (optimistic scenario) and SSP5-8.5 scenario (business-as-usual scenario)  
二零四零年SSP2-4.5情境(樂觀情境)和SSP5-8.5情境(如常運作情境)

**Findings**  
調查結果



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

From the Group's analysis, **16.08%** of the investments of the Group's projects under preparation, construction, commissioning and operation are in coastal cities.

根據本集團的分析，正在籌備、建設、投產和運營的集團項目中，有**16.08%**的投資是位於沿海城市。

By 2040, **45.37%** of such investments will be below the projected water level plus the added height of a local annual flood in both SSP2-4.5 scenario (optimistic scenario) and SSP5-8.5 scenario (business-as-usual scenario).

於樂觀情境(SSP2-4.5)和如常運作情境(SSP5-8.5)下，兩者都有**45.37%**的項目將位於二零四零年當地預測水平面及年度洪水疊加水位之下。



### 2. By Percentage of Number of Projects 按項目數目百分比

From the Group's analysis, **24.38%** of the number of Group's projects under preparation, construction, commissioning and operation are located in coastal cities.

根據本集團的分析，正在籌備、建設、投產和運營的集團項目中，有**24.38%**的項目是位於沿海城市。

By 2040, **46.61%** of such projects will be below the projected water level plus the added height of a local annual flood in both SSP2-4.5 scenario (optimistic scenario) and SSP5-8.5 scenario (business-as-usual scenario).

於樂觀情境(SSP2-4.5)和如常運作情境(SSP5-8.5)下，兩者都有**46.61%**的項目將位於二零四零年當地預測水平面及年度洪水疊加水位之下。

Note:

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

附註：

<sup>(1)</sup> 沿海洪水風險計算方法利用Climate Central, Inc. 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 greenery area in total, providing aesthetically pleasing landscapes while incorporating flood retention designs.

針對沿海洪水風險的緩解措施

洪水管理

內置防洪措施的項目

本集團的項目擁有逾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。

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**  
礪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)



**Jiangyin 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)



**Jínan 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)

### 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.

### 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

本集團的海綿城市項目旨在透過建立城市控制表面徑流和防洪排澇的渠道，使城市對雨水的吸納、蓄滲、緩釋和淨化能力得以提升，並加強城市生態系統功能，從而實踐了藍綠建設的概念。海綿城市項目中包括一系列雨水調蓄池、雨水泵站、排澇管道、污水處理設施以及生態修復工程。



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.

### 流域治理

為保護集水區範圍內的水源，本集團已經在更大範圍內展開流域治理項目。流域治理（或生態河道治理）是指在河道陸域控制線內，在滿足防洪、排澇及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，構建健康、完整、穩定的河道水生生態系統。



Climate-Related Physical Risk Matrix

Based on the physical climate scenario analysis, the Group created a risk matrix in the current state scenario and under different scenarios in 2040.

Key Findings:

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

與氣候相關的實體風險矩陣

根據實體氣候情境分析，本集團建立了二零四零年在當前狀態及二零四零年不同氣候變化情境下的風險矩陣。

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 (如常運作情境) 下，沿海洪水對本集團的項目均產生了中度影響。

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	SSP5-8.5
Water Stress Risk 水資源壓力風險	M	M	M	/	/
Coastal Flood Risk 沿海洪水風險	/	/	/	M	M

**L** Low impact  
低度影響  
 $<25\%$   
of project investments impacted with high risk or above  
的項目投資與高風險或以上影響

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

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

Note:

(1) For coastal flood risk, Group's projects that would be below the projected water level plus the added height of a local annual flood in 2040 were categorised as high risk.

附註：

(1) 在沿海洪水風險方面，本集團所有位於預測在2040年的海平面加上年度洪水的增加高度之下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 Impacts 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 environment 因環境溫度升高而增加的氣味影響</li> </ul>
Changes 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*.

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 an anticipated extreme weather event, all relevant projects 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 front-line employees of the workshop teams are conducted to enhance their capabilities in emergency response.

## 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.

## 1. 應急反應

本集團加強了針對突發事件的快速反應和恢復的應急準備，包括暴雨、洪水、颱風、雷暴、沙塵暴等。在應對汛期和極端天氣事件的發生方面，本集團預先做好部署，下發了《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》、《關於認真做好汛期及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》及《關於做好暴雨雷電大風等惡劣天氣防範應對工作的通知》等制度。

在項目層面上，為確保時刻安全運行，所有項目公司須定期檢測惡劣天氣相關的保護措施並實行通信、物流支援、應急物資保障工作。在預計發生極端天氣事件的前幾天，所有相關的項目公司已額外提早部署應急準備工作，當中包括儲備應急物資、加強後備電源、進一步加強前線應急成員單位的資訊交流以及工作聯繫等。

本集團亦對潛在危害進行了專門的調查和修正工作，以確保採取充分的預防措施。此外，我們安排了應急準備演習以提高員工的事故預防和處理能力。演習針對重點場所和重點崗位，制定現場處置方案和重點崗位應急處置演練活動，尤其是對於車間班組一線員工操作式、實戰化的初期應急處置演練，提高其應急反應能力。

## 2. 健全的預防性維修計劃

為維持基礎設施在氣候變化的影響下的操作性能，本集團實施了全方位的預防性維修計劃，針對關鍵系統進行定期、頻繁的維修活動，以減少故障的變化並延長正常運行時間。該計劃使項目公司可以在問題出現之前解決所有問題。

### 3. Sustainable Financing

In July 2021, Everbright Greentech, a subsidiary of the Group, successfully issued the nation's first Green Medium-Term Notes relating to Carbon Neutrality and Rural Vitalisation, with an issue size of RMB1 billion, which was oversubscribed by institutional investors in Mainland China and Hong Kong by 2.25 times. The projects supported by the notes are all green and low-carbon projects like agriculture, forestry and biomass, which not only help to improve the environmental benefits of carbon emissions reduction, but also have practical significance and far-reaching impact on improving the quality of life and industrial development of the local residents. This medium-term note received an AAA rating from China Lianhe Credit Rating Co., Ltd.

### 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.

### 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.

### 3. 可持續融資

二零二一年七月，本集團旗下的光大綠色環保已成功發行全國首單碳中和及鄉村振興綠色熊貓中期票據，當中規模達人民幣10億元，更獲中國內地及香港的機構投資者超額認購2.25倍。票據的募投項目均為農林生物質類綠色低碳產業項目，不僅有助提升碳減排環境效益，也對改善項目當地居民的生活品質及產業發展有著至關重要的現實意義和深遠影響。該中期票據經聯合資信評估股份有限公司評定為AAA信用評級。

### 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。

### 轉型風險

低碳經濟轉型趨勢加快，為企業帶來一系列的轉型風險。為實現減碳目標，各國政府及監管機構的相關政策措施都相繼出台，推動各行業進行綠色低碳轉型。企業在邁向低碳運營時所採用的創新科技，會為企業運營增添不確定性。隨著投資者對氣候變化議題更加重視，企業亦面臨來自投資者及同行業其他競爭對手的壓力，需透過制定低碳轉型戰略及加強溫室氣體核算和披露，以提升企業的聲譽。

**Transition Risk Scenario Analysis and Management Policy** 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「2050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成碳中和。</p> <p>Under the “Net Zero Emissions by 2050 Scenario”, more stringent policies will be applied. 在「2050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 renewables) 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. 在「2050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
<b>Reputation Risk</b> 聲譽風險	<p><b>Relationship with ESG Investors</b> <b>與ESG投資者的關係</b></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 renewables.</p> <p>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.</p> <p>在「2050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 of waste-to-energy projects and their contributions in offsetting GHG emissions through replacement of the use 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 emissions 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>
<b>Technology and Innovation Risk</b> 科技與創新風險	<p><b>Technological advancement required</b> <b>科技發展需求</b></p> <p>More advanced technologies are needed to meet the increasingly stringent decarbonisation requirements.</p> <p>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.</p> <p>在「2050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 brings technical expertise, commence independent R&amp;D, 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 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係數，更大的溫差以及增加的雪荷載來。

### 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 opportunities 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。

**Construction**  
施工

**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 emissions.  
於在建項目及設備中使用生物柴油，以減少碳排放。

**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 considerations 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 潛在財務及／或 運營影響	Management Approach in the Next Five Years 未來五年管理方針
Corporate Reputation 企業商譽	<p><b>ESG investments</b> <b>ESG投資</b></p> <p>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。</p>	<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>
Market Change 市場轉變	<p><b>Sustainable waste treatment solutions</b> <b>可持續的廢棄物處理方案</b></p> <p>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。</p>	<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。

## 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係數和排放因子，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 – Referred to *Household Waste Incineration Engineering Technology* published by Bai Liangcheng for the related emissions of household waste incineration, which uses the relevant data of the carbon content of various types of wastes that are more in line with China's situations. A higher default water content of household waste as per our operational experience was also applied; scope 2 – Referred to the *Regional Baseline Grid Emissions Factor for Emission Reduction Projects in China 2019*, which is more updated and more in line with the local operational situations, for the emissions related to purchased non-renewable energy electricity; in addition, the weighted average of the operating margin (OM) and build margin (BM) as stated in the CDM *Methodological Tool – Tool to Calculate the Emission Factor for an Electricity System* has been adopted; the methane conversion factor (MCF), the fractions of degradable organic carbon (DOCj) and the decay rate (Kj) of various types of wastes, instead of the CDM default values, are adopted for the emission offset related waste-to-energy projects to be more in line with actual national situations.

The emissions factors used to calculate emissions related to energy combustion correspond to data in the 2006 IPCC Guidelines (*2006 IPCC Guidelines for National Greenhouse Gas Inventories*). 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.

## GHG Emissions and Offset

Everbright Environment discloses the Group's GHG emissions in scope 1 to 3, as well as its GHG emissions offset, during the Reporting Period. The major sources of scope 1 GHG emissions include fuel consumption by operation of facilities and incineration of household waste; scope 2 emissions are emissions caused by the consumption of purchased non-renewable electricity; scope 3 emissions mainly originate from transportation by third parties and air travel by employees. The Group achieved GHG emissions offset through means including waste-to-energy, integrated biomass utilisation and waste water treatment.

Data on the Group's GHG emissions and offset is available in the chapter of "Environmental Protection" in this Report.

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中國實際情況的甲烷轉換因子(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二零零六年政府間氣候變化專門委員會(IPCC)指南(《二零零六年IPCC國家溫室氣體清單指南》)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》。

## 溫室氣體排放和抵銷

光大環境披露了本集團於報告期內範疇一至三的溫室氣體排放，以及其溫室氣體抵銷。範疇一溫室氣體排放的主要來源為設施運營的燃料消耗、生活垃圾焚燒等；範疇二排放為外購非再生能源電力引致的排放；範疇三排放主要來自第三方運輸及員工飛機差旅。本集團透過垃圾發電、生物質綜合利用及污水處理等方式達到溫室氣體抵銷。

本集團溫室氣體排放及抵銷的數據可在本報告的「環境保護」章節中取得。

Environmental Protection

環境保護



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 more than a decade. It has gradually set up a development layout that focuses on the four areas of environment, resources, energy and climate, with main businesses covering waste-to-energy and integrated waste treatment, integrated biomass utilisation, hazardous and solid waste treatment, 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, R&D relating to green technologies, ecological and environmental planning and designing, as well as environmental protection industrial parks.



自

二零零三年本公司定立以環保為主營業務方向後，透過光大環境十多年的潛心耕耘，已逐步構建環境、資源、能源及氣候「四位一體」的發展格局，主營業務涉足垃圾發電及協同處理、生物質綜合利用、危廢及固廢處置、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。



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. As a “Carbon-negative Enterprise”, 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 construction of an ecological civilisation, achieving green and low-carbon development, as well as contributing to national environmental protection initiatives.

在環境業務發展的同時，光大環境亦積極採取各項措施減低運營對環境及天然資源造成的影響。作為一家「負碳企業」，我們將繼續既定的發展戰略，加強與「碳達峰」和「碳中和」相關的政策、研究、開發和創新，同時通過與社會各界各方合作，更加努力地應對氣候變化，從而致力於生態文明建設，實現綠色低碳發展，為國家環保倡議作出貢獻。

## 2021 Highlights

## 二零二一年亮點

### Everbright Environment Included in Dow Jones Sustainability Indices for Sixth Consecutive Year 光大環境連續第六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

Everbright Environment has been included in the Dow Jones Sustainability Emerging Markets Index for the sixth consecutive year, on the back of its sustained excellent performance. It is one of the three companies from mainland China that have been included in the Index this year. Over the past six years, no more than three 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，連續第六年入選道瓊斯可持續發展新興市場指數，為入選的三家中國內地企業之一，也是過去六年每年一至三家入選的中國內地企業之一。



Everbright Environment Quzhou Waste-to-energy Project Received the Luban Award  
光大環境衢州垃圾發電項目榮獲魯班獎



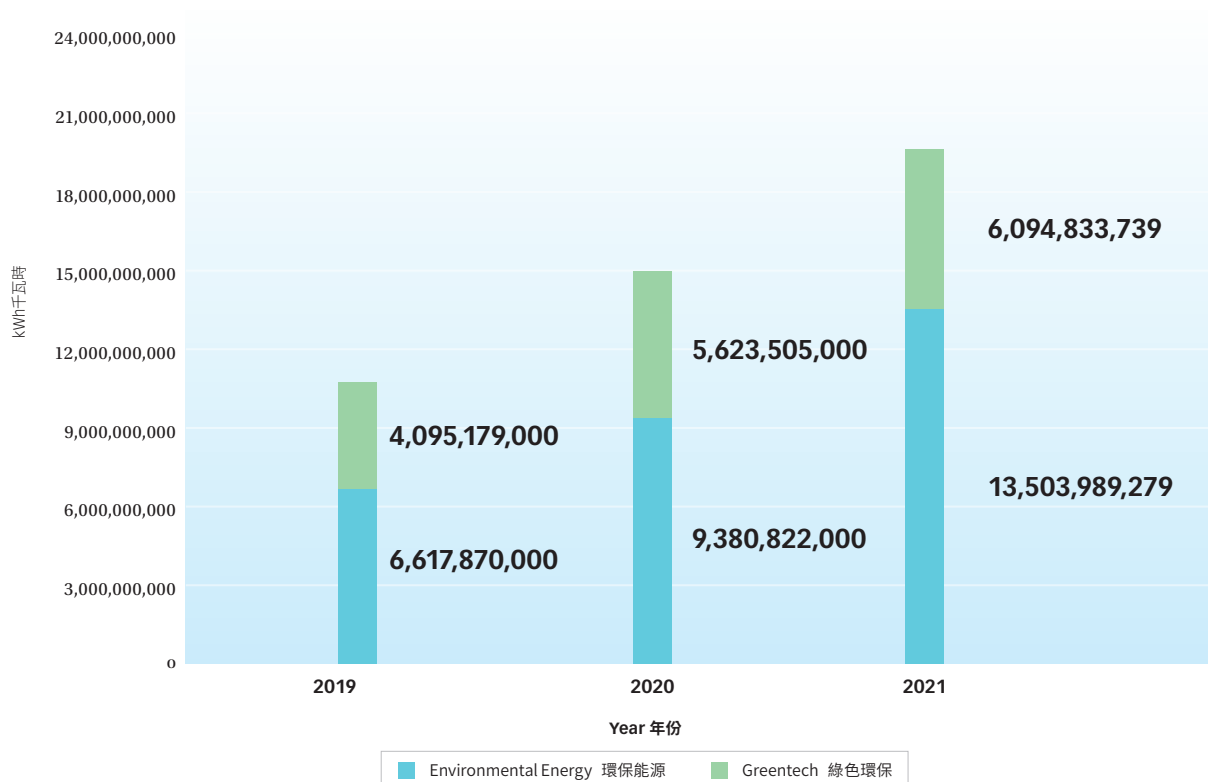
In 2021, the Quzhou project won the Luban Award, the highest award in the national construction industry. It is also the third waste-to-energy project after the Ji'nan, Shandong and Hangzhou, Zhejiang projects of the Group to receive this prestigious honour. This honour recognises the Group's and the environmental energy sector's outstanding expertise in the field of environmental protection engineering, construction and management.

衢州項目於二零二一年內獲得國家建築行業最高獎項魯班獎，成為繼山東濟南項目、浙江杭州項目後，本集團第三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 Business Sector  
按業務板塊分類的綠色上網電量





### 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. We have also developed various procedural documents, including *Notice on Further Enhancing Environmental Management, Eliminating Operational Risk and Improving Operational Quality*, *Notice on Improving Relevant Information of Operating Projects Disclosed on the Online Environmental Monitoring Platform*, *Regulations on the Filing and Assessment Management of Safety and Environmental Management Institutions and Personnel*, *Regulations on the Management of Safety, Environmental Accidents and Incidents*, *Internal Reporting System for Environmental and Safety Accidents and Incidents*, etc., in order to standardise environmental management performance at the operation level.

### 環境管理概覽

本集團以「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，高度重視企業運營所帶來的環境影響，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環境影響。本集團亦制定了多項程序文件，包括《關於進一步強化環境管理，化解運營風險，提升運營品質的通知》、《關於完善運營項目環保線上監控平台相關資訊的通知》、《關於安全與環境管理機構及人員備案、考核管理的規定》、《關於安全、環境事故事件管理規定》與《環境、安全事故事件內部報告制度》等，進一步規範運營層面的環境管理表現。

### 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



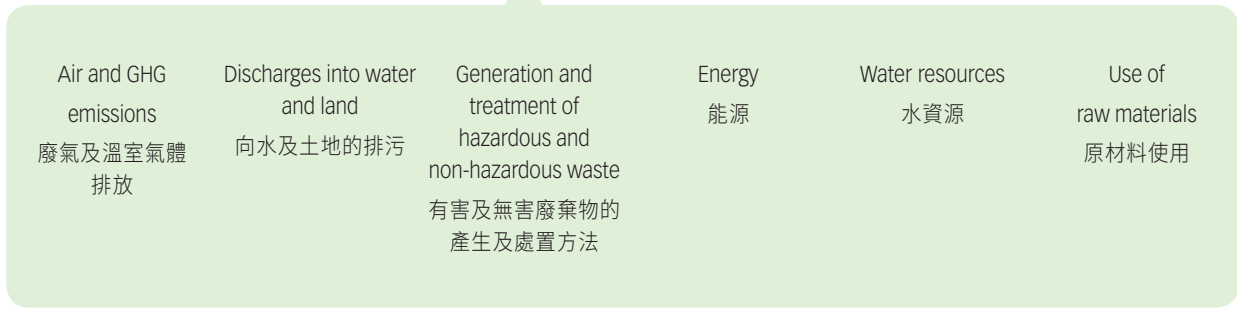
**Health and safety**  
健康和安全



**Supply chain management**  
供應商管理



**Monitoring and communication**  
監測和溝通



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 the entire 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 business sectors of the Group.

重點規範、監督、督導本集團各業務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.

採用「互聯網+」和「資訊化、智慧化」的管理新模式，以雲計算、物聯網、大數據等新技術，建設全新的線上環境管理資訊化平台；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.

此外，本集團在投資項目前，均會篩查其環境及社會風險，並確保施工前獲得所需的許可證及環評報告。在建築期間及建成投運後，所有項目均需根據相關環境法律及規例接受當地環保部門監管，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 incineration 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 reclaimed water for non-potable uses. On the other hand, the equipment manufacturing sector focuses on providing a full-process service system that covers R&D, manufacturing and maintenance of a series of products; the eco-recycling sector commits to waste sorting and resource recovery and reuse, helping to construct zero-waste cities; the greenergy sector strives to contribute to energy conservation and urban outdoor lighting projects through R&D and manufacturing of energy-saving street lamps; the envirotech sector promotes the strategic plan of pursuing development that is driven by technology and innovation, and ensures the commercialisation of the technology R&D results; and the environmental planning sector strives to construct a first-class national planning and design institute.

The phased-in roll-out of the "zero-waste cities" development pilot programmes, the transformation and upgrade of the green economy in the Guangdong-Hong Kong-Macau Greater Bay Area and the further implementation of the ecological and environmental protection plan for the Yangtze River Economic Belt have created new opportunities for the industry. Everbright Environment has now established a systematic development model with the development of "zero-waste cities" as its core mission. The Group is actively exploring a unique model relating to the development of "zero-waste cities" that covers waste sorting, reduction of waste from source, recycling and harmless treatment at the back end.

## 打造環保業務

本集團的環保能源業務，透過綠色焚燒城市的生活垃圾，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气污染。這兩項業務通過增加可中國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，裝備製造板塊專注提供從研發、製造和維護一系列產品的全流程服務；生態資源業務，致力從事垃圾分類及資源回收利用，協建無廢城市；光大照明板塊透過研發和製造節能路燈，致力作出節能貢獻，建造城市亮化工程；綠色科創板塊，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；而環境規劃板塊，則致力打造一流國家級規劃設計院。

逐步展開「無廢城市」建設試點項目、粵港澳大灣區綠色經濟轉型升級、進一步落實長江經濟帶生態環境保護規劃，為行業帶來新的發展機遇。光大環境目前已形成以「無廢城市」建設為核心的系統性發展格局。本集團積極探索「無廢城市」建設的獨有模式，涵蓋垃圾分類、源頭減量、資源回用、末端無害化處置，從而發展光大環境「無廢城市」建設的獨有模式。

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 12 waste-to-energy projects are located in Suzhou, Nanjing, Wujiang, Changzhou, Changzhou Xinbei, Ningbo, Sanya, Boluo, Weifang, Rizhao, Yiyang and Ma'anshan have been awarded the "National AAA-Rated Waste-to-Energy Plants", signifying the Group's unwavering pursuit in quality enhancement and environmental performance.

### GHG Emissions

Everbright Environment discloses all three carbon emissions scopes in absolute figures and intensities. In 2021, the Group generated 0.81 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 in 2021 to include indirect emissions due to transportation of biomass and wastes by third parties to project companies under environmental energy and greentech sectors.

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、益陽及馬鞍山等十二個垃圾發電項目，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。

### 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。二零二一年，本集團每提供一度上網綠色電力便產生0.81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，我們更於二零二一年擴大了範疇三排放的匯報範圍，納入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 (in tonnes of CO<sub>2</sub>e)

溫室氣體排放 (噸二氧化碳當量)

		2021	2020	2019
Scope 1 (Direct Emissions)	範疇一 (直接排放)	<b>15,242,857.68</b>	10,717,354.60	8,992,913.41 (re-stated) (經重列)
– Incineration of household waste <sup>(1)</sup>	– 生活垃圾焚燒 <sup>(1)</sup>	<b>15,044,641.21</b>	10,548,374.40	8,852,663.65 (re-stated) (經重列)
– Other sources	– 其他來源	<b>198,216.46</b>	168,980.20	140,249.76 (re-stated) (經重列)
Scope 2 (Energy Indirect Emissions)	範疇二 (能源引致的間接排放)	<b>519,975.72</b>	454,575.00	344,331.55 (re-stated) (經重列)
Scope 3 (Other Indirect Emissions)	範疇三 (其他間接排放)	<b>149,597.88</b>	42,076.01	13,554.36
Total GHG Emissions	溫室氣體排放總量	<b>15,912,431.28</b>	11,214,005.61	9,350,799.32 (re-stated) (經重列)
Total 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>0.81</b>	0.75	0.87 (re-stated) (經重列)
GHG Emissions Offset <sup>(2)</sup>	溫室氣體排放抵銷量 <sup>(2)</sup>	<b>20,893,834.20</b>	15,273,840.27	10,561,808.35 (re-stated) (經重列)
GHG Emissions Reductions <sup>(3)</sup>	溫室氣體減排量 <sup>(3)</sup>	<b>4,981,402.92</b>	4,059,834.66	1,211,009.03

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) Due to revision of the calculation method, there may be some discrepancies between the data reported and those stated in our Annual Report 2021.
- (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) 由於估算方法的修訂，部分數據與我們的二零二一年年報內所註或有出入。
- (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 2021 by Business Sector

## 二零二一年按業務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：

**15,242,857.68** tonnes CO<sub>2</sub>e  
噸二氧化碳當量

Operation Unit 運營單位	Emissions Sources 排放來源	2021 (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>14,054,104.76</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>1,140,768.99</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>43,188.72</b>
<b>Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Office, Offices and Management Centres</b> 裝備製造、生態資源、 光大照明、綠色科創、 環境規劃、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>4,795.21</b>

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

**519,975.72** tonnes CO<sub>2e</sub>  
噸二氧化碳當量

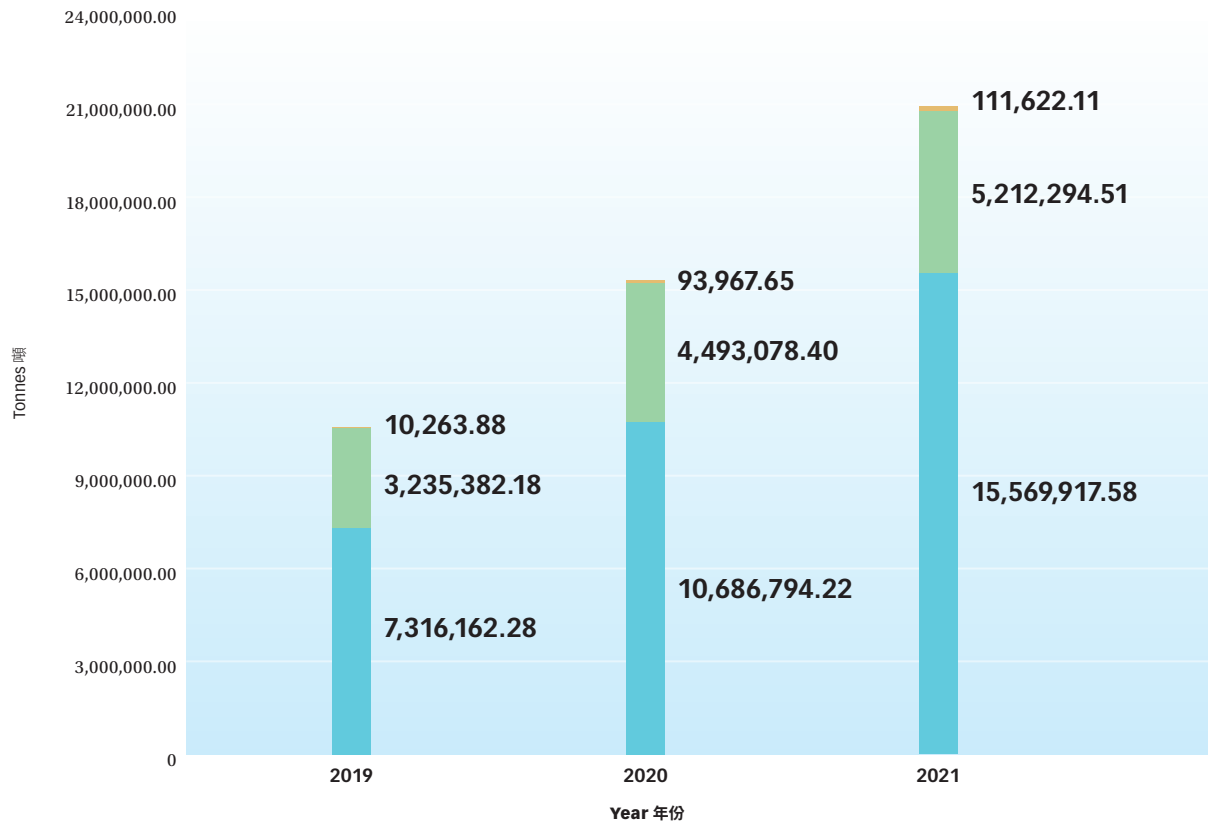
Operation Unit 運營單位	Emissions Sources 排放來源	2021 (tonnes CO <sub>2e</sub> ) (噸二氧化碳當量)
<b>Environmental Energy</b> 環保能源	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	<b>58,290.80</b>
<b>Greentech</b> 綠色環保	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	<b>56,185.16</b>
<b>Environmental Water</b> 環保水務	Consumption of purchased non-renewable electricity 消耗的外購非再生能源電力	<b>392,120.35</b>
<b>Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Office, Offices and Management Centres</b> 裝備製造、生態資源、 光大照明、綠色科創、 環境規劃、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	<b>13,379.42</b>

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

**149,597.88** tonnes CO<sub>2</sub>e  
 噸二氧化碳當量

Operation Unit 運營單位	Emissions Sources 排放來源	2021 (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>97,080.93</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>26,848.01</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>25,119.95</b>
<b>Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Office, Offices and Management Centres</b> 裝備製造、生態資源、 光大照明、綠色科創、 環境規劃、總部、 代表處、辦事處及 管理中心	Air travel by employees 員工飛機差旅	<b>549.00</b>

GHG Emissions Offset by Business Sector  
按業務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)
- Greentech (2018-2021: Integrated Biomass Utilisation, Solar Energy and Wind Power)  
(2020-2021: Reducing N<sub>2</sub>O Released from Effluent through Waste Water Treatment)  
綠色環保 (二零一八至二零二一年: 生物質綜合利用、光伏發電及風電)  
(二零二零至二零二一年: 減少從出水中釋放的氧化亞氮)
- Environmental Water: (2018-2021: Sludge Methane-to-energy)  
(2020-2021: Reducing N<sub>2</sub>O Released from Effluent through Waste Water Treatment)  
環保水務 (二零一八至二零二一年: 污泥沼氣發電) (二零二零至二零二一年: 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 odorous gases are properly collected and treated.

### 大氣及溫室氣體排放管理

面對空氣污染對社會帶來的新挑戰，光大環境將進一步踐行更多社會責任，推動國內環境品質的改善及可持續發展，致力減低氣體排放對環境造成的影響。

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* (GB18485-2014), 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》(GB18485-2014)、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* (GB13223-2011), 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》(GB13223-2011)、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* (GB18485 - 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 ground-breaking 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》(GB18485-2014)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。

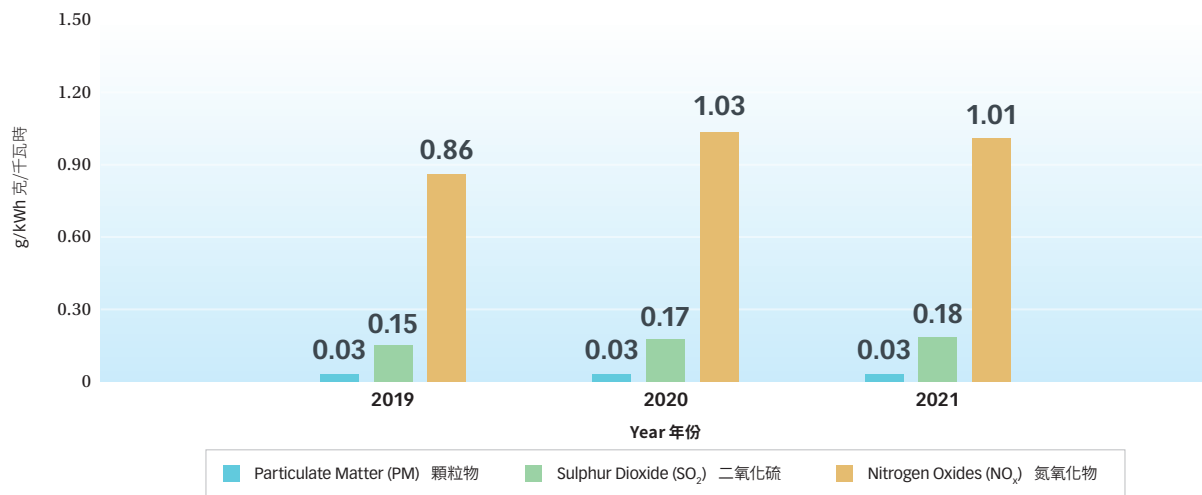
### Key Air Emissions in 2021

#### 二零二一年主要煙氣排放量

Particulate Matter (PM) 顆粒物 <b>559.41</b> tonnes 噸	Sulphur Dioxide (SO <sub>2</sub> ) 二氧化硫 <b>4,003.39</b> tonnes 噸	Nitrogen Oxides (NO <sub>x</sub> ) 氮氧化物 <b>22,467.59</b> tonnes 噸
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### 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 business 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業務板塊設定相關的減排目標。我們目前正在制定具體目標中，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，集團的各項目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.

為了確保妥善的能源和庫存管理，本集團每月都會詳細記錄各項目公司的能源和主要物料使用量，並由區域管理中心協調整合工作。透過所收集的數據，本集團能夠清楚了解業務發展過程中的資源利用狀況，繼而對能源和物料使用作出相應的分配及調整。數據紀錄亦有利於集團制定長遠的資源管理策略，減少資源浪費。

## 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 Three-phase Distribution Transformer* (GB20052-2013)
- 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* (GB24790-2009)
- 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《三相配電變壓器能效限定值及能效等級》(GB20052-2013)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》(GB24790-2009)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 2021, the Group's electricity consumption was **2,627,286,190.40** kWh; the proportion of self-generated electricity consumption was **81%**.

二零二一年，本集團的電力消耗為**2,627,286,190.40**千瓦時；自發用電量比例為**81%**。

In addition, the Group's greenery sector leverages on its core product 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. Replacing the existing high-pressure sodium lamps with Everbright New Sodium Lamps improves the quality of street lighting and reduces the energy consumption with a saving of up to 50%.

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 435 million kWh per year.

The green PPP projects that meet the standards are nominated through the combination of the review and recommendation of the Provincial Development and Reform Commission as well as public engagement, and then entrusted to the experts at the PPP Research Centre of Tsinghua University to conduct the review. Among the 16 projects selected for this typical case, 3 of those belong to Everbright Environment, which was the enterprise with the largest number of nominated projects.

此外，本集團光大照明板塊依託其核心產品光大新鈉燈，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，節能高達50%。

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。這三個項目透過廢物回收發電，每年總共可提供綠色電力約4.35億千瓦時。

此次評選通過省級發展改革委審核推薦與社會公開徵集相結合的方式，徵集符合標準的綠色PPP項目，並委託清華大學PPP研究中心組織專家進行評審。在入選該典型案例的16個項目中，光大環境佔據三個席位，為此次入選典型案例項目數最多的企業。

## Energy Consumption Statistics in 2021

## 二零二一年能源消耗統計

Unit: GJ 單位：吉焦

Operation Unit 運營單位	Diesel 柴油	Gasoline 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
<b>Environmental Energy</b> 環保能源	1,164,374.34	1,322,520.14	201,017.39	0.25	368,583.94	8,405,637.84
<b>Greentech</b> 綠色環保	553,723.20	92,682.30	93,792.87	0.16	479,353.32	3,031,069.54
<b>Environmental Water</b> 環保水務	1,151.60	39,193.70	-	0.45	2,290,657.61	41,224.17
Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Offices, Offices and Management Centres 裝備製造、生態資源、光大照明、 綠色科創、環境規劃、總部、 代表處、辦事處及管理中心	-	3,634.75	38.15	0.79	15,218.68	-
<b>Total</b> 總計	<b>1,719,249.14</b>	<b>1,458,030.90</b>	<b>294,848.41</b>	<b>1.65</b>	<b>3,153,813.54</b>	<b>11,477,931.55</b>

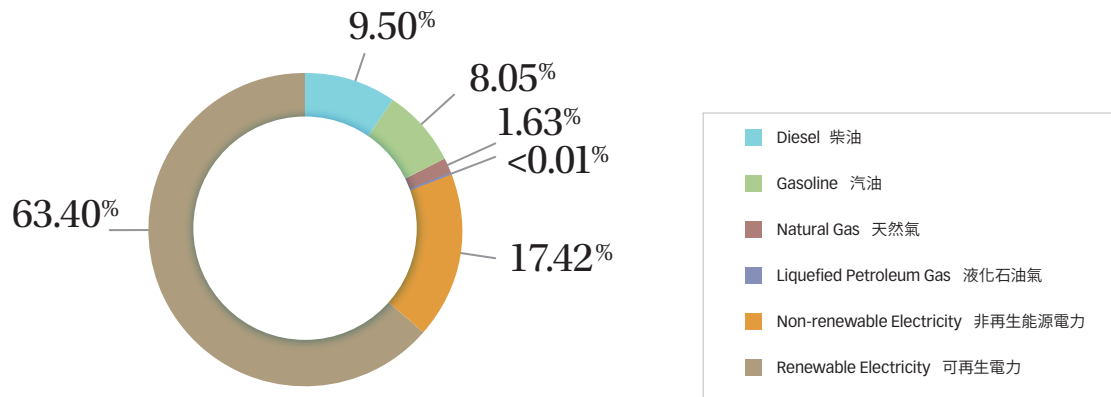
Note:

附註：

<sup>(1)</sup> Relevant energy conversion factors from *China Energy Statistical Yearbook 2020* are adopted.

<sup>(1)</sup> 能源單位根據《中國能源統計年鑒2020》的參考系數作換算。

Energy Consumption Statistics of Projects under Construction and in Operation in 2021  
二零二一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 **18,103,875.19** GJ 吉焦

## Key Production Materials Consumption in 2021

## 二零二一年主要生產物料使用統計

Unit: Tonne 單位：噸

## Environmental Energy

## 環保能源

Lime 石灰 <b>373,313.74</b>	Activated carbon 活性碳 <b>14,368.00</b>	Ammonia water 氨水 <b>79,157.31</b>	Acetylene 乙炔 <b>87,567.27</b>	
Industrial sulphuric acid 工業硫酸 <b>1,225.33</b>	Industrial hydrochloric acid 工業鹽酸 <b>15,649.21</b>	Scale inhibitor 阻垢劑 <b>1,056.39</b>	Bactericide 殺菌劑 <b>765.08</b>	
Cationic polyacrylamide (CPAM) 陽離子聚丙烯醯胺 <b>1,000.93</b>	Anionic polyacrylamide (APAM) 陰離子聚丙烯醯胺 <b>4.13</b>	Sodium hydroxide 氫氧化鈉 <b>120.72</b>	Sodium hypochlorite 次氯酸鈉 <b>650.54</b>	
Liquid alkali 液堿 <b>1,209.72</b>	Citric acid 檸檬酸 <b>21.66</b>	Disodium phosphate 磷酸氫二鈉 <b>4.61</b>	PAC 聚合氯化鋁 <b>741.71</b>	Reducing agent (sodium bisulphite) 還原劑 (亞硫酸氫鈉) <b>94.40</b>

## Greentech

## 綠色環保

Lime 石灰 <b>75,117.59</b>	Activated carbon 活性碳 <b>1,266.38</b>	Ammonia water 氨水 <b>53,005.74</b>	Chelating agent 螯合劑 <b>3,063.38</b>
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## Environmental Water

## 環保水務

pH adjustment 酸鹼調整 <b>33,699.78</b>	Coagulant & flocculant 凝結劑及絮凝劑 <b>177,801.56</b>	Disinfectant 消毒劑 <b>26,283.50</b>	Chemical oxidiser 化學氧化劑 <b>33,230.93</b>
Carbon source 碳源 <b>191,300.15</b>	Biological treatment 生物處理 <b>369.94</b>	Others 其他 <b>465,175.08</b>	

## Office Materials and Packaging Materials Consumption in 2021 二零二一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)
<b>Environmental Energy</b> 環保能源	243.79	
<b>Greentech</b> 綠色環保	1.95	—
<b>Environmental Water</b> 環保水務	28.50	
<b>Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Offices, Offices and Management Centres</b> 裝備製造、生態資源、光大照明、綠色科創、環境規劃、總部、代表處、辦事處及管理中心	27.26	9.52
<b>Total</b> 總計	<b>301.50</b>	<b>9.52</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。





## Environmental Protection

### 環境保護

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.

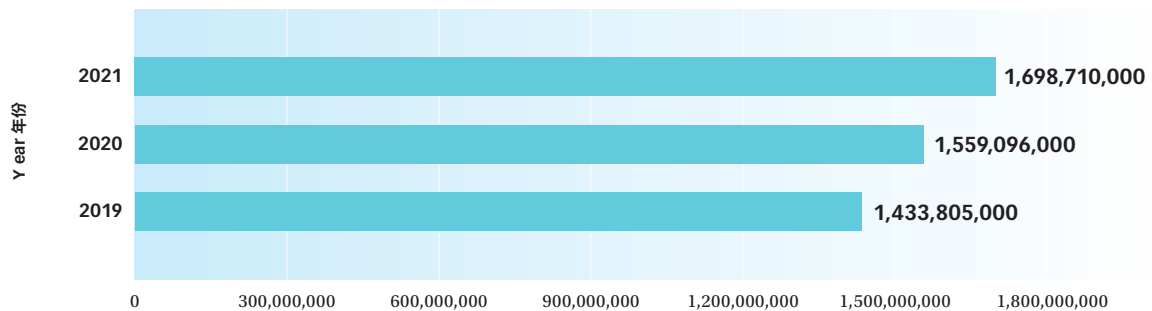
Through the network of environmental water’s project companies across the country and a series of water environment treatment services including municipal and industrial waste water treatment and reusable water, the Group continues improving the environmental and hygiene conditions of water bodies in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

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。

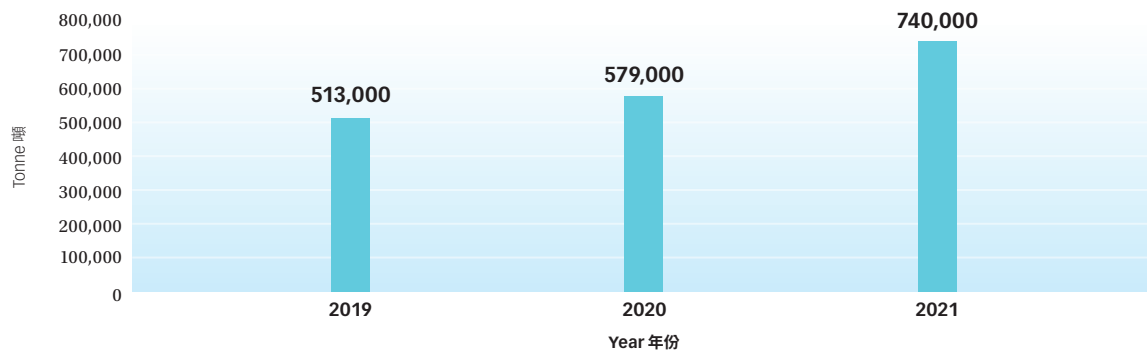
此外，通過環保水務遍佈全國的項目公司分佈網絡，利用市政及工業污水處理、中水回用等一系列的水環境綜合治理服務，本集團持續改善中國水體狀況的環境及衛生標準，大幅度降低污水排放造成的環境損害，保障公眾的健康和福祉。

### 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 18921-2002) 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* (GB18918-2002). 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 18921-2002)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》(GB18918-2002)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、可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游使用者（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 2021, around 75% 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 2021, 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 at 405°C, 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 floor-washing 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.

## 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。二零二一年，本集團經處理的滲濾液回用比例超過約75%。

## 節約用水

本集團各項目公司自行制定了針對二零二一年的節水措施、建立節水管理制度、以至設立專門的節水領導小組等；在面對高水資源壓力的地區，措施亦相應更嚴謹。透過多方面的行動，務求達至善用珍貴的水資源、提升水資源使用效率。重點措施詳列如下：

### 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405°C，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。
- 將高溫蒸餾廢水、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。

**Jiangsu Zhenjiang Sponge City Project Landed on Top 5 of UNECE's  
"Building Back Better Infrastructure Award" in 2021**  
江蘇鎮江海綿城市建設入圍聯合國歐經會二零二一年「更好重建」基礎設施獎項評選五強

United Nations Economic Commission for Europe ("UNECE") launched the "Building Back Better Infrastructure Award" in 2021, aiming at evaluating projects over 22 assessment criteria including stakeholder and community empowerment, poverty and inequality, women's empowerment, environmental sustainability, climate change and adaptation, etc. The Zhenjiang Sponge City Project has solved the problem of local waterlogging through green infrastructure development, ensuring that flooding and stormwater pollution could be prevented Zhenjiang even in the face of an one-in-50-year rainstorm. The development will greatly improve the convenience and livability of the local communities. Amongst the 100 evaluation criteria, the project successfully stood out from 66 projects across 25 countries, and finally ranked in the top five.

聯合國歐洲經濟委員會（「歐經會」）於二零二一年首次推出「更好重建」基礎設施獎項評選，旨在針對持份者與社區賦權、貧困及不平等、女性賦權、環境的可持續性、氣候變化和適應性等22個評估基準對項目進行全面評估。「鎮江海綿城市項目」通過綠色基礎設施解決了當地的積水問題，確保鎮江即使面對五十年一遇的暴雨天氣，也不會發生洪澇災害和初雨污染，大大提升了當地居民日常生活的便利性和宜居性。項目在100項評估指標中，成功從25個國家的66個項目中突圍而出，最終位列五強。

In 2021, the Group mainly withdrew fresh water from municipal water supplies or other water facilities, followed by rivers, lakes and groundwater.

二零二一年，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 2021

二零二一年按來源劃分的取水量

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
<b>Environmental Energy</b> 環保能源	28,313,534.99	1,460,359.10	30,488,310.63
<b>Greentech</b> 綠色環保	8,462,076.92	946,967.08	2,344,039.74
<b>Environmental Water</b> 環保水務	1,743,476.00	255,474.00	1,213,182.97
<b>Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Office, Offices and Management Centres</b> 裝備製造、生態資源、 光大照明、綠色科創、 環境規劃、總部、代表處、 辦事處及管理中心	–	207.0	79,529.14
<b>Total</b> 總計	<b>38,519,087.91</b>	<b>2,663,007.18</b>	<b>34,125,062.48</b>

Total Freshwater Withdrawn  
淡水取用總量

**75,307,157.57** m<sup>3</sup>  
立方米



Effluent Discharge by Destination in 2021

二零二一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 Reclaimed Water and/or Reusable Water 供應至第三方作 再生水及/或 回用水使用
Environmental Energy 環保能源	1,343,603.00	-	-	4,811,096.23	-
Greentech 綠色環保	814,744.52	-	-	765,551.67	-
Environmental Water 環保水務	815,093,175.16	16,000.00	205,824,676.00	78,394,014.00	25,448,959.00
Equipment Manufacturing, Eco-recycling, Greenergy, Envirotech, Environmental Planning, Headquarters, Representative Office, Offices and Management Centres 裝備製造、生態資源、光大照明、 綠色科創、環境規劃、總部、 代表處、辦事處及管理中心	-	-	-	74,882.93	-
<b>Total 總計</b>	<b>817,251,522.68</b>	<b>16,000.00</b>	<b>205,824,676.00</b>	<b>84,045,544.83</b>	<b>25,448,959.00</b>

Total Effluent Discharges  
總排水量

**1,132,586,702.51** m<sup>3</sup>  
立方米

## 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.



On the other hand, the eco-recycling sector of Everbright Environment, with major businesses consisted 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游承辦商或回收商，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。



另一方面，光大環境之生態資源板塊，並以垃圾分類及無廢城市、城鄉綜合環衛服務、再生資源回收利用為三大主營業務，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的產生，並鼓勵資源利用及回收。在項目產廢方面，本集團致力將運營中的副產物在多個領域循環利用，對綠色建設及城市綠化等方面作出積極貢獻。我們垃圾發電項目產生的爐渣被循環再用於製磚，以支持綠化建設；生物質燃燒產生的爐灰可用於製作肥料，而生活污水處理中產生的污泥在經處理後則可用於製作堆肥，從而支持園景綠化。

**Bottom ash  
generated from  
waste-to-energy  
projects**  
can be used  
for making bricks

—○—  
垃圾發電項目產生的  
爐渣可用於製磚

**Furnace ash  
produced from  
biomass combustion**  
can be used for  
producing fertilisers

—○—  
生物質燃燒產生的  
爐灰可用於製作肥料

**Sludge generated  
from municipal waste  
water treatment**  
can be used for  
producing compost  
(for horticultural use)

—○—  
生活污水處理產生的  
污泥可用於製作堆肥  
(作園藝用途)

Fly Ash<sup>(1)</sup> and Furnace Ash Generated and Processed in 2021 二零二一年飛灰<sup>(1)</sup>及爐灰產生量及處置方式  
2021

Unit: Tonne 單位：噸

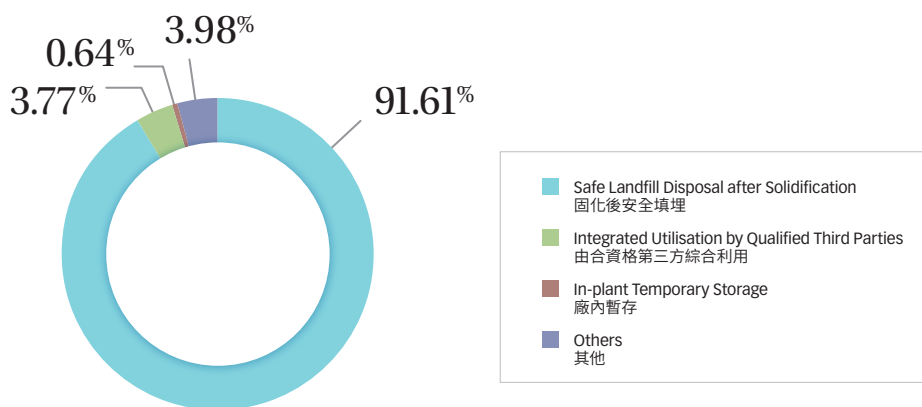
Operation Unit 運營單位		Safe Landfill Disposal after Solidification 固化後安全填埋	Integrated Utilisation 綜合利用	In-plant Temporary Storage 廠內暫存	Others 其他
<b>Fly Ash</b> 飛灰					
<b>Environmental Energy</b> 環保能源	Waste-to-energy Projects 垃圾發電項目	1,226,102.42	-	11,805.24	73,223.67
<b>Greentech</b> 綠色環保	Integrated Biomass Utilisation Projects (Waste-to-energy) 生物質綜合利用項目 (垃圾發電)	240,902.47	-	-	-
	Hazardous Waste Incineration Projects 危廢焚燒項目	5,511.14	-	-	-
<b>Furnace Ash</b> 爐灰					
<b>Greentech</b> 綠色環保	Integrated Biomass Utilisation Projects (Biomass) 生物質綜合利用項目 (生物質)	213,779.85	69,409.36	-	-
<b>Total</b> 總計		<b>1,686,295.88</b>	<b>69,409.36</b>	<b>11,805.24</b>	<b>73,223.67</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



Total Fly Ash and Furnace Ash Generated  
飛灰及爐灰產生總量

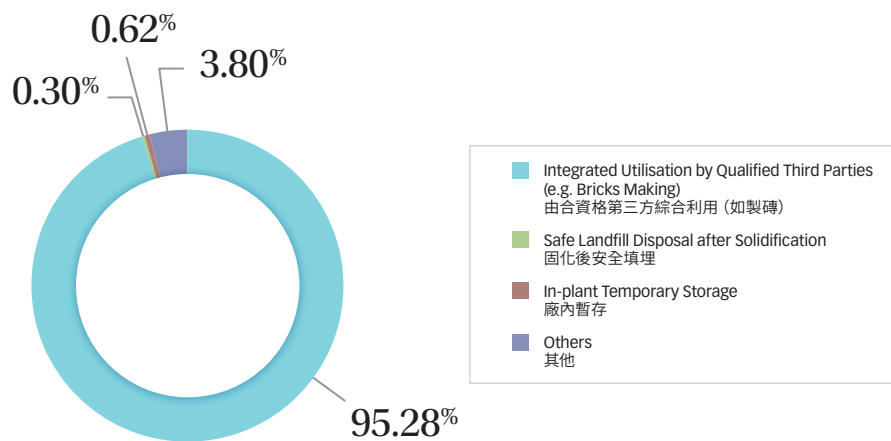
**1,840,734.15** tonnes  
噸

Bottom Ash Generated and Processed in 2021

二零二一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	In-plant Temporary Storage 廠內暫存	Others 其他
<b>Environmental Energy</b> 環保能源	Waste-to-energy Projects 垃圾發電項目	8,204,414.31	-	61,101.00	373,940.96
<b>Greentech</b> 綠色環保	Integrated Biomass Utilisation Projects 生物質綜合利用項目	1,172,442.15	-	-	-
	Hazardous Waste Incineration Projects 危廢焚燒項目	-	29,141.02	-	-
<b>Total</b> 總計		<b>9,376,856.46</b>	<b>29,141.02</b>	<b>61,101.00</b>	<b>373,940.96</b>



Total Bottom Ash Generated  
爐渣產生總量 **9,841,039.45** tonnes  
噸



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 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。

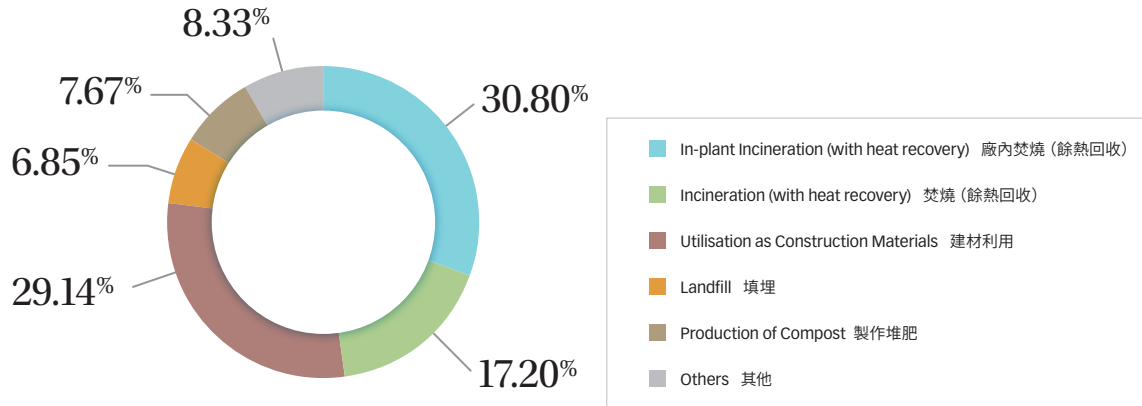
### Amount and Methods of Disposal of Sludge Generated in 2021

### 二零二一年污泥產生量及處置方式

Unit: Tonne 單位：噸

Operation Unit 運營單位		In-plant Incineration (with Heat Recovery) 廠內焚燒 (餘熱回收)		Utilisation as Construction Materials 建材利用	Anaerobic Digestion 厭氧消化	Landfill 填埋	Production of Compost 製作堆肥	Others 其他
		Incineration (with Heat Recovery) 焚燒 (餘熱回收)	Incineration (with Heat Recovery) 焚燒 (餘熱回收)					
Environmental Energy 環保能源	Waste-to-energy Projects 垃圾發電項目	493,919.01	47,031.60	-	-	-	-	-
Greentech 綠色環保	Integrated Biomass Utilisation Projects 生物質綜合利用項目	2,110.68	-	-	-	-	-	-
	Solid Waste Treatment Projects 固廢處置項目	377.35	-	-	-	33.65	-	-
Environmental Water 環保水務	Waste Water Treatment Projects 污水處理項目	-	230,246.00	469,679.06	-	110,334.51	123,666.00	134,281.46
<b>Total 總計</b>		<b>496,407.03</b>	<b>277,277.60</b>	<b>469,679.06</b>	<b>-</b>	<b>110,368.16</b>	<b>123,666.00</b>	<b>134,281.46</b>

Ultimate Treatment/Disposal Methods of Sludge Generated in 2021  
二零二一年所產生的污泥最終處理/處置的方式



Total Sludge Generated  
污泥產生總量

**1,611,679.32** tonnes  
噸

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.

本集團從生產設施及辦公室和宿舍等全面執行廢棄物回收以及重用政策，回收的廢棄物包括紙張、金屬、塑料和廚餘等；我們亦呼籲員工支持資源回收。所有一般廢物均由專責的外部廢物收集商和回收商處理，以杜絕非法棄置廢物。

General Waste Recycling Statistics in 2021

二零二一年一般廢棄物回收量統計

Unit: kg 單位：公斤



**31,591.62**

Waste Paper  
廢紙



**437,275.68**

Metal  
金屬



**34,111.10**

Plastics  
塑料



**10,536.60**

Glass  
玻璃



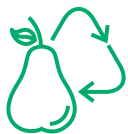
**2,214.40**

Electrical Appliances  
電器



**82,724.50**

Rechargeable Batteries  
充電電池



**1,944,657.54**

Food Wastes  
廚餘



**6,108.19**

Old Clothes  
舊衣物



**37,631.56**

Others  
其他

Total General Waste Recycled  
一般廢棄物回收總量

**2,586,851.19** kg 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 Standard for Pollution Control on the *Security Landfill Site for Hazardous Wastes* (GB18598-2001) and the *Pollution Control Standard for Hazardous Wastes Incineration* (GB18484-2001)<sup>(1)</sup>. The Group did not import or export any hazardous waste from/to foreign countries in 2021.

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.

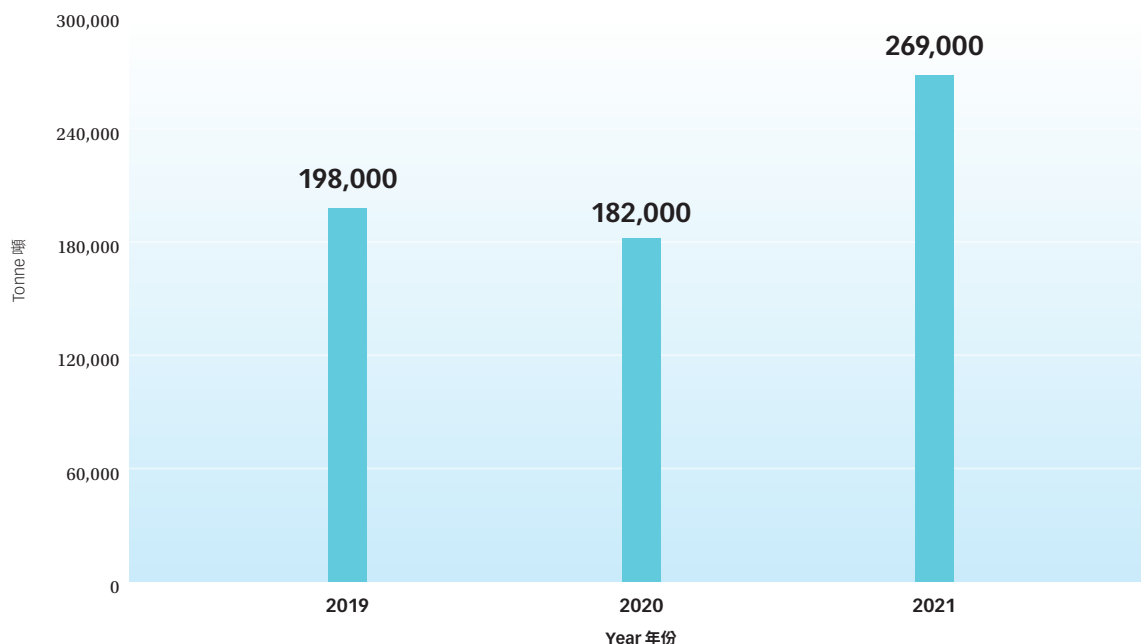
危廢及固廢處置

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》(GB18598-2001)及《危險廢物焚燒污染控制標準》(GB18484-2001)<sup>(1)</sup>等國家標準的相關要求運營。本集團於二零二一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進行作業時，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 cooperation 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.

此外，在我們的《環境和社會管理體系》下，所有項目都進行定期監測活動，以確保在集團的層面全面遵守生物多樣性和森林相關法規和強制性標準。為了把我們的努力擴展至整個供應鏈，我們承諾與供應商和業務夥伴合作，以管理和減輕生物多樣性和森林砍伐風險。

### 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。

光大環境從規劃到運營階段都積極實踐生態環境保育，在建設新項目前充份評估當地生態環境及生物多樣性，盡量避免在自然棲息地及高度生態敏感地區附近興建項目設施；本集團的項目項目設有生態緩衝區，以減低項目對當地生態環境的影響。



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 76% of the Group's projects are not located in or adjacent to any protected area; around 13% and 4% of the Group's projects are recognised to be located within 50 km to 1 and 2 protected areas, respectively. Only around 7% 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	76.24%
1	12.53%
2	4.44%
3	0.52%
4	2.09%
≥5	4.18%
	100%

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 29% and 8% of the Group's projects are recognised to be located within 50 km to 1 and 2 key biodiversity areas, respectively. Around 18% 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76%本集團旗下的項目並不位於或鄰近保護區；約13%及4%項目的50公里範圍內有一至兩個保護區。我們只有約7%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29%及8%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18%鄰近於三個或以上的生物多樣性關鍵區域。

### Number of Key Biodiversity Areas within 50 km of Projects, by % of Number 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 Areas within 50 km 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	44.39%
1	29.24%
2	8.36%
3	8.88%
4	3.39%
≥5	5.74%
	100%

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 technological innovation, enhancing endogenous power and core competitiveness are the unswerving goals of Everbright Environment, while investment in technology R&D must be sustained.

堅持科技創新、增強內生動力和核心競爭力，是光大環境堅定不移的努力目標，科技研發投入必須持之以恆。

In 2021, Everbright Environment further promoted the optimisation and adjustment of our structure in technology R&D, and clarified the important role of technology R&D in leading and driving the Group's development.

二零二一年，光大環境進一步推動自家技術研發結構的優化和修整，並明確技術研發在引領和推動本集團發展的重要角色。

In the future, Everbright Environment will continue to focus on the development and breakthrough of technology R&D, promoting the China Everbright Green Technology Innovation Research Institute as a "Four-in-One" technological innovation and R&D layout with platforms in Hong Kong, Shenzhen, Nanjing and Qingdao cities, so as to construct a world-class green technology innovation and transformation centre, promoting corporate development and environmental protection.

未來，光大環境將以科技研發為持續發力點和著重突破點，推進中國光大綠色技術創新研究院在香港、深圳、南京、青島的「一院四城」科技研發體系佈局，建設世界級綠色技術創新及技術轉化中心，進一步推動企業發展及環境保護。

Scientific Research Breakthrough 科研突破

**Environmental water project received the 2020 National Science and Technology Progress Award (Second Class)**

**光大水務項目獲二零二零年度國家科學技術進步獎二等獎**



In 2021, the project “Key Technologies and Applications of Intelligent Monitoring and Optimal Operation of Urban Sewage Treatment Plants”, with Everbright Water (Shenzhen) Co., Ltd., a subsidiary of Everbright Environment, as one of the main completion units, was awarded the second class prize of the 2020 National Science and Technology Progress Award.

二零二一年，以光大環境旗下的光大水務（深圳）有限公司為主要完成單位之一的「城鎮污水處理廠智慧監控和優化運行關鍵技術及應用」項目獲頒二零二零年度國家科學技術進步獎二等獎。

The project was completed by the University of Science and Technology of China as the main entity, and cooperated with Xi’an University of Architecture and Technology, Anhui Guozhen Environmental Protection and Energy Saving Technology Co., Ltd., Everbright Water (Shenzhen) Co., Ltd. and other partnering entities. The project breaks through the core technologies of real-time monitoring of microbial activity, microbial multidimensional breathing map, intelligent optimization control, etc., and builds an urban sewage treatment technology system integrating optimised design, real-time monitoring, intelligent control and intelligent operation, which upgrades sewage treatment from experience-dependent extensive operation to data-driven intelligent operation, and improves the operational efficiency, economy and stability of sewage treatment plants.


此項目由中國科學技術大學作為第一單位，與西安建築科技大學、安徽國禎環保節能科技股份有限公司、光大水務（深圳）有限公司等合作單位完成。項目突破了微生物活性即時監測、微生物多維呼吸圖譜、智慧優化控制等核心技術，構建了集優化設計、即時監測、智慧控制與智慧運行為一體的城鎮污水處理技術體系，將污水處理由經驗依賴的粗放運營提升為資料驅動的智慧運營，提高了污水處理廠的運行效率、經濟性和穩定性。

**Qingdao Research Institute Achieved Good Results Again in the Dioxin Laboratory Competition**  
**青島研究院參加二噁英實驗室比賽再創佳績**

In January 2021, results from the ninth national environmental dioxin laboratory competition organised by the National Environmental Analysis and Testing Center were announced, and the Everbright Qingdao Research Institute participated in all three kinds of environmental sample comparison tests, including fly ash, soil and standard solution, and the evaluation results were “satisfactory”. This is after the Qingdao Research Institute successfully passed the two international comparisons of dioxins in 2020, once again successfully passed the domestic dioxin testing competition, indicating that the quality of dioxin testing of Qingdao Research Institute has always been at a higher level.

二零二一年一月，由國家環境分析測試中心組織的第九次國家級環境二噁英實驗室比賽結果公佈，光大青島研究院參加了全部三種，包括飛灰、土壤和標準溶液的環境樣品比對測試，評價結果均為「滿意」。這是繼二零二零年青島研究院順利通過兩次二噁英國際比對以來，再一次順利通過國內二噁英比賽，表明青島研究院的二噁英檢測質量始終處於較高水準。

Talent Development  
人才發展



Caring  
Our People and Creating  
the Path to Success

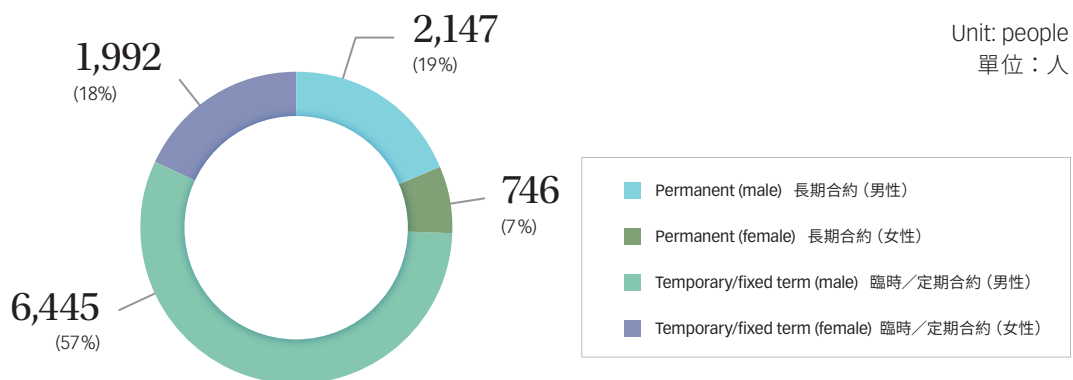
·  
關懷員工  
共創成功之路

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.

### Our Professional Team

The Group’s continuous business growth is attributed to our driven professional team. As at 31 December 2021, the Group had a total of 11,330<sup>(1)</sup> employees, who give a full play to their abilities in different areas.

#### 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.

大環境秉承「以人為本」的管理理念，致力於打造一個公平、和諧及健康的工作環境，為員工提供盡可能的專業培訓及事業發展機會，讓員工發揮更大的潛力，收穫更多成長。

### 我們的專業團隊

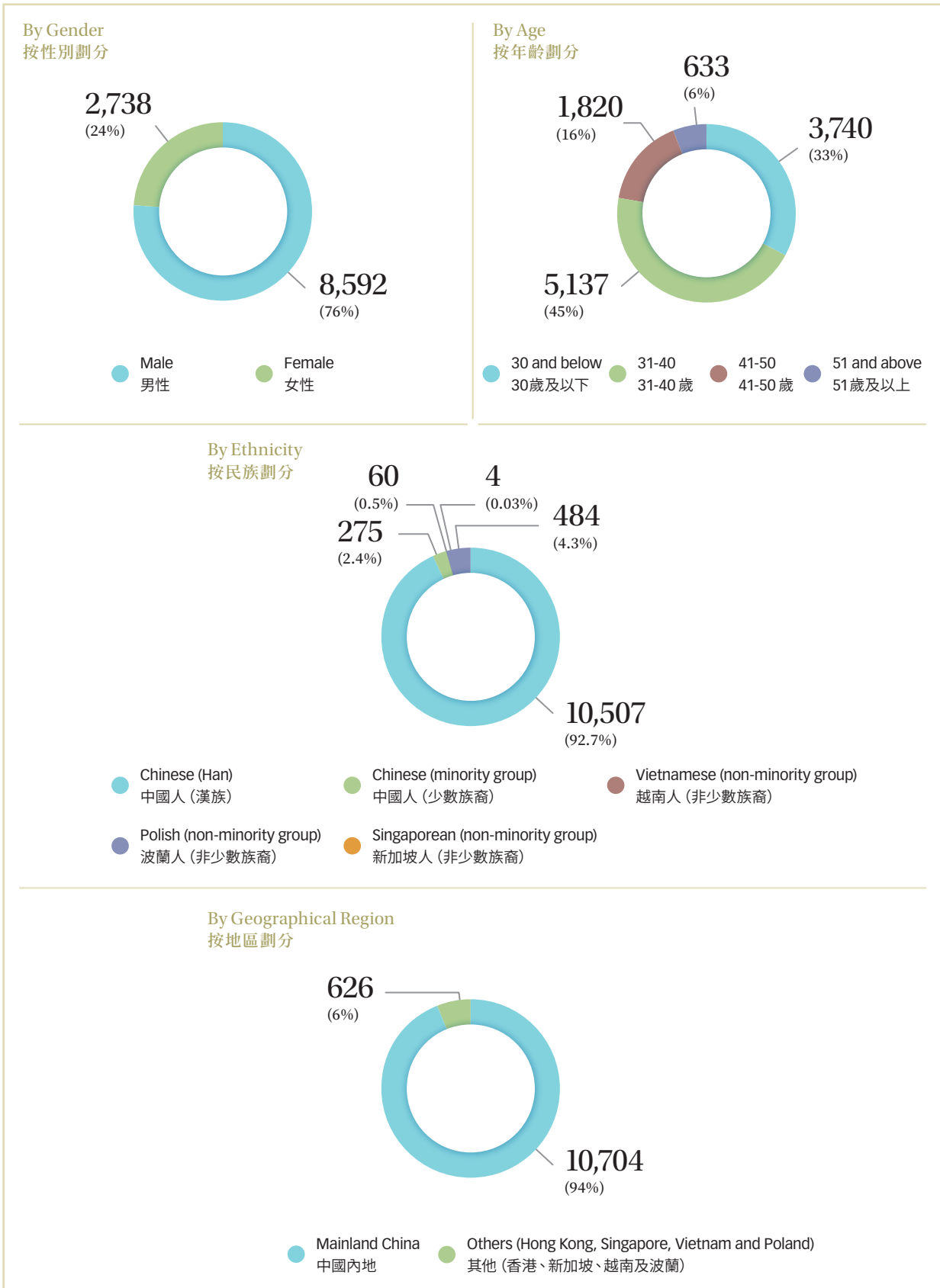
本集團的穩步業務發展與我們精益求精的專業團隊有著密不可分的關係。截至二零二一年十二月三十一日，本集團共有11,330<sup>(1)</sup>名員工於不同領域群策群力，各展所長。

附註：

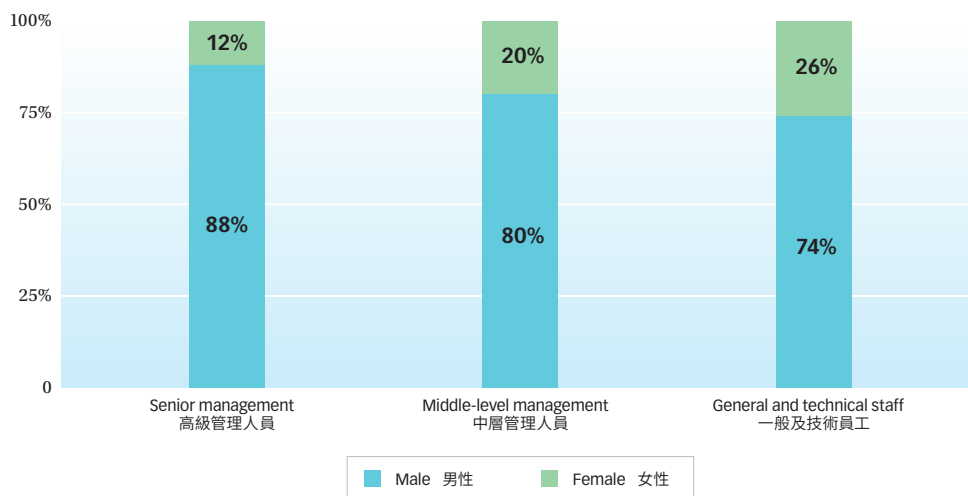
<sup>(1)</sup> 所有員工均為全職員工。



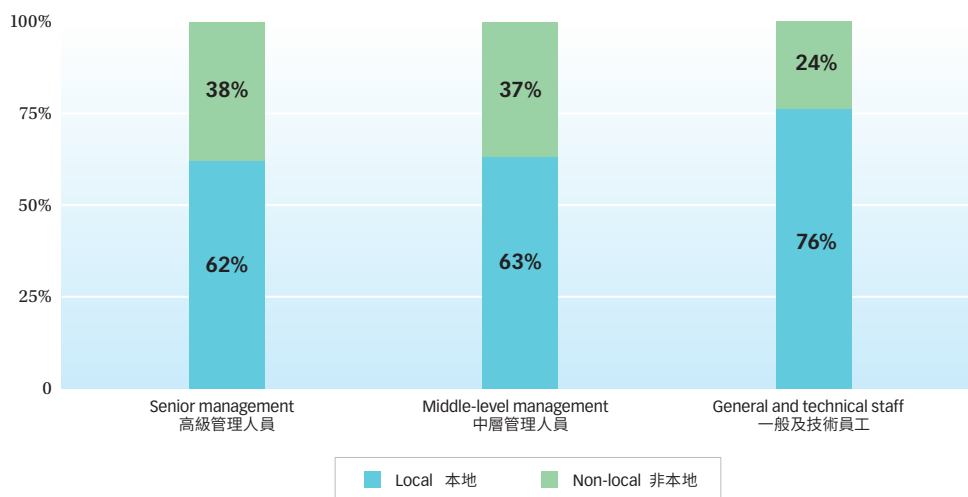
Unit: people  
單位：人



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。

## 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 Organization. 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 cash 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.

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 did not have any case relating to violation of the *Employee Code of Conduct*.

## 人權與道德

本集團制定了《人權政策》，以支持所有有關人權的國際規範和準則，包括「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規定。該政策維護人權，並為多樣性和包容性、平等機會、合理工作時間、性別平等薪酬、工作場所健康和 safety、結社自由以及集體僱員－僱主協商制定了具體指導方針。該政策涵蓋本集團所有員工，包括但不限於婦女、外地勞工等群組。同時，本集團對於童工、強迫勞動及人口販運採取零容忍的態度，嚴格按照主要人權宣言及勞動法規的要求用工，杜絕任何聘用童工和強制勞工的行為。本集團致力為員工提供足夠生活保障，員工工資水平高於當地工資水平，另考慮醫療開支直接影響員工生活水平，本集團向員工提供額外醫療保險、身體檢查、意外保險等，本集團亦設有員工健康基金，為因意外或得到重疾員工提供額外現金支援，協助應付大額醫療支出。此外，本集團可能考慮在未來承諾生活工資，以確保本集團員工能得到生活上的保障。

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。

本集團高度重視員工的道德、個人及專業操守準則，並要求所有員工須嚴格遵循本集團所制定的《員工守則》，內容包括避免利益衝突、歧視和性及非性騷擾、以及賄賂（包括任何形式的通行費）、勒索、欺詐及洗黑錢等違法行為。員工的道德表現亦被視為績效評估的考慮因素之一，以確保本集團的運營合乎社會及商業道德標準。另外，本集團採取零容忍政策，依法嚴肅處理歧視行為和騷擾、洩露機密及貪污受賄者。為確保員工確切了解這些重要議題，本集團定期向所有員工提供有關反歧視、反騷擾、保密義務和反腐敗的培訓，當中包括應有行為、事件報告程序／升級程序和紀律處分。

於報告期內，本集團並沒有任何違反《員工守則》的個案。

## 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.



## 平等及共融

本集團的《員工手冊》涵蓋了關於薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、防止童工及強制勞動、以及其他待遇及福利等議題，杜絕在招聘及人才管理方面出現任何因性別、年齡、種族、國籍、婚姻狀況、宗教等而引致的歧視，從而為所有應聘者及員工提供一個公平開放的職業環境。



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.

本集團實施公平及具競爭力的薪酬福利制度，根據資歷、經驗、工作性質、表現以及市場情況計算釐定薪酬，並締造平等的就業機會。有鑑於從事能源和工程相關行業的人力資源分佈側重於男性，本集團特別關注性別平等與薪酬待遇等議題，務求減少性別因素對薪酬水平及結構的影響。此外，本集團致力於維護弱勢員工的權利，包括給予懷孕員工充足的產假，以及給予男員工待產假等。本集團為在產假／待產假中的員工保留崗位，鼓勵他／她們再次投入工作，並確保其職業發展和薪酬不會因而受影響。

## Employee Maternity/Paternity Leave Statistics in 2021

## 二零二一年產假／待產假數據



Female  
女



Male  
男

Number of female and male employees who took maternity/paternity leave in 2021	二零二一年放產假／待產假的男女員工數目	169	379
Number of employees who returned to work after maternity/paternity leave in 2021	二零二一年產假／待產假結束後重返工作崗位的員工數目	164	367
Number of employees who returned to work after maternity/paternity leave ended in 2020 and still employed by the end of 2021	二零二零年產假／待產假結束後重返工作崗位並於二零二一年底仍在職的員工總數	117	269
<b>Percentage of employees who returned to work after maternity/paternity leave ended in 2021</b>	<b>二零二一年產假／待產假結束後重返崗位的員工比例</b>	94.95%	96.70%
<b>Percentage of employees who returned to work after maternity/paternity leave ended in 2020 and still employed by the end of 2021</b>	<b>二零二零年產假／待產假結束後並於二零二一年底仍在職的員工比例</b>	89.31%	88.78%

## Employees' Benefits

The Group has a comprehensive welfare and safeguard system, official employees are provided with life insurance, medical insurance, disability and critical illness coverage, maternity leave and paternity leave, 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 labour relations, human rights, workplace harassment and discrimination, etc., provide employees a platform to lodge their grievances, share their views, and express their concerns on corporate governance.

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.

## 員工福利

本集團擁有完善的福利和保障制度，正式員工皆享有人壽保險、醫療保險、傷殘及疾病保障、產假及待產假等福利。本集團亦會酌情為表現優異的員工派發獎勵花紅。此外，除了提供法律規定的強制性養老保險，本集團更為合資格員工貼心製訂了補充養老制度作為額外的退休福利。

為有助於員工的身心健康，本集團每年均為員工提供免費的身體檢查及職業病防範檢查服務，內容包括體格檢查、血液檢查、腎臟功能檢查、肝臟功能檢查等項目。二零一九年開始，前線工人除了享有免費身體檢查，亦能獲得後續的支持，有助於身體健康得到保障。

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，本集團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，讓員工可專心為本集團長期服務。

## 雙向溝通

為建立一個讓員工成長的理想工作環境，本集團積極主動地與員工進行溝通。本集團透過定期舉辦員工大會、進行員工滿意度問卷調查等途徑，讓員工表達對本集團的想法。本集團更歡迎員工透過電郵與總裁及／或審核委員會主席直接溝通，讓他們在舒適和私隱度高的環境下表達意見。而本集團所設立的申訴機制覆蓋勞資關係、人權、職場騷擾及歧視等多個方面，為員工提供申訴、發表意見及提出對本集團企業管治的關注的平台。

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。



## 2021 Collection of Employee 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 2021, there were more than 80 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.

## 二零二一年員工意見徵集

為鼓勵員工發表意見，除了日常會議交流外，本集團在內聯網設立「建言獻策」平台，讓全體員工隨時隨地提出意見或建議。二零二一年超過80項意見及建議，內容涵蓋薪酬福利、日常運作流程、環境法規、市場拓展、雙碳策略、信息化管理等，本集團安排專人逐一反饋，其他員工亦可以隨時查閱相關內容並進行交流。通過公開透明的交流平台，本集團在檢討其政策與制度時可充分考慮員工的建議，在公司與員工利益間取得更好平衡。

### Everbright Environment Held Symposiums for Employees

#### 光大環境召開員工代表座談會

In January 2021, Everbright Environment held eight forums in Ji'nan, Nanjing and Shenzhen. The symposiums were held in a hybrid mode of on-site and virtual meetings. Everbright Environment headquarters' relevant department heads, researchers, youth cadres, new and old employees, female employee representatives, etc., attended the symposiums. The main agenda of the symposiums was to publicise and learn about the agenda of the Fifth Plenary Session of the 19th CPC Central Committee, and communicate and listen to the opinions and suggestions of employees. Members of Everbright Environment's leadership team conducted an in-depth exchange with the employee representatives, where they listened to the comments and suggestions on strengthening the formation of the leadership team, advancing corporate reform, understanding the work situations and major demands of the basic level employees, and patiently answering general questions on work and living shared by most employees.



Members of Everbright Environment's leadership team conducted an in-depth exchange with the employee representatives, where they listened to the comments and suggestions on strengthening the formation of the leadership team, advancing corporate reform, understanding the work situations and major demands of the basic level employees, and patiently answering general questions on work and living shared by most employees.

二零二一年一月，光大環境在濟南、南京、深圳分別召開八場座談會。座談會以現場會議和視頻連線相結合形式召開。光大環境總部相關部門負責人，系統內科研人員、青年幹部、新老員工和女職工代表等參加會議。座談會主要內容為宣講、學習十九屆五中全會精神，認真聽取員工意見和建議並開展溝通交流。光大環境領導班子成員與員工代表深入交流學習，認真聽取有關加強領導班子建設、推進公司改革發展的意見和建議，細緻了解基層工作情況和主要訴求，並就員工普遍關心的工作、生活問題進行了耐心解答。

## 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 2021, the hiring costs per full-time employee was HK\$4,678.10.

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 2021, 45.37% 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 recent outbreak 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

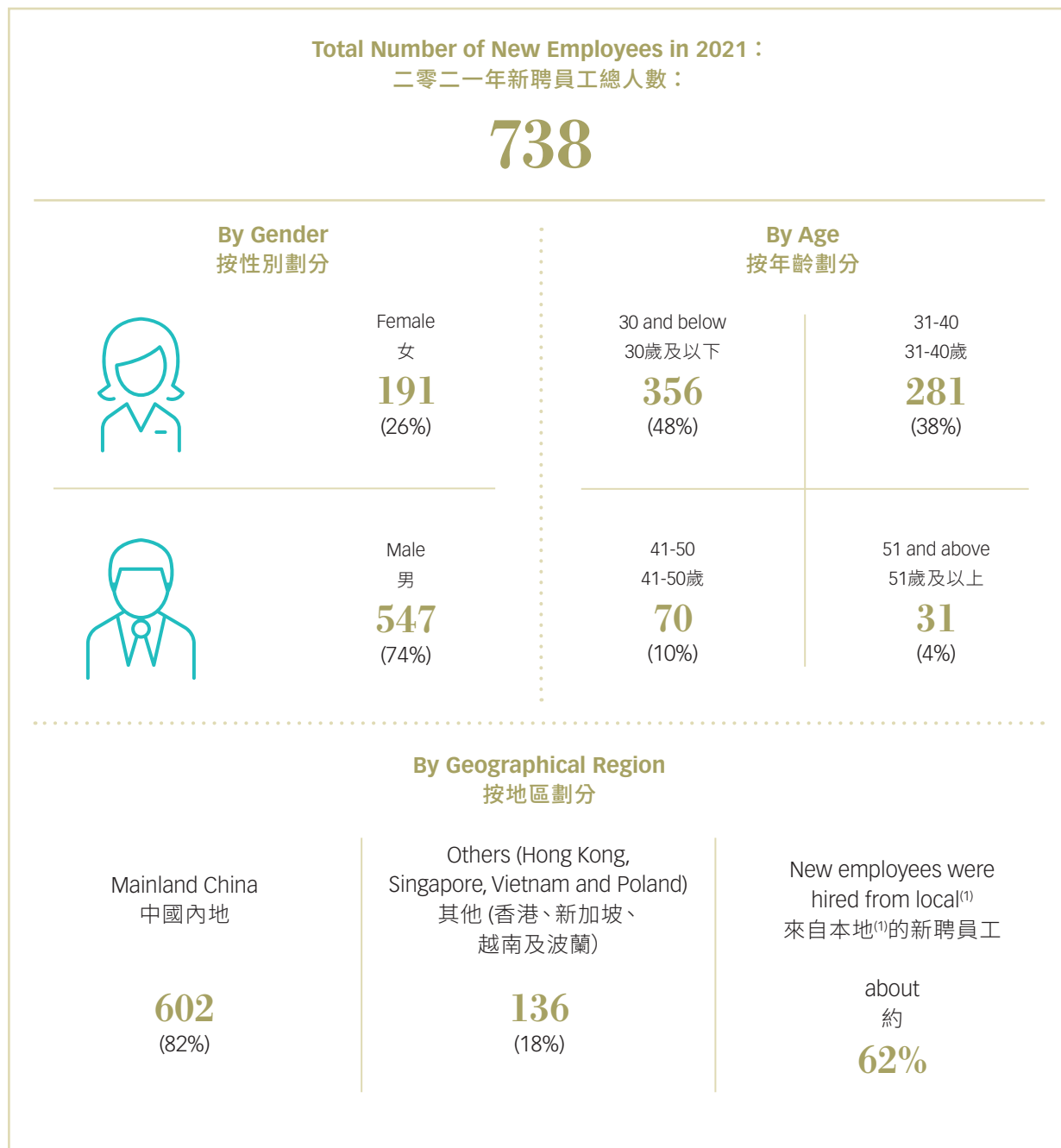
光大環境的項目管理團隊皆由在項目規劃、採購、施工、運營及研發方面具有廣泛及深入經驗的資深成員組成。本集團一直通過社會招聘、海外招聘、校園招聘及自身培養等方式不斷加強人才隊伍建設，吸納及培養專業化和國際化的人才。本集團已制訂了《內部員工推薦外部人才管理及獎勵辦法》，鼓勵員工引薦合適人員加入本集團發揮所長，從更多途徑招賢納士。為了配合本集團「科技引領發展」的策略，集團近年更透過產學合作、收購技術公司等方式，積極引進技術研發的管理及技術專才。二零二一年，每名全職員工的招聘成本為4,678.10港元。

本集團致力提供公開而平等的就業機會與平台，將應徵者的能力和資質視為於招聘過程中最關鍵的考核要素，確保應徵者的就業機會絕不會受到性別、年齡、種族等因素影響。同時，本集團亦致力協助促進當地經濟發展和就業機會，積極在偏遠地區的項目聘用本地人才。二零二一年，有45.37%的空缺職位由內部申請人填補。

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。

除一般年假外，本集團為員工提供額外有薪事假，讓員工處理各種緊急事件，亦會主動關心員工需要，提供及時支援。面對近年新冠疫情的爆發，本集團除了做好辦公環境清潔消毒外，亦為員工提供不同抗疫支援，如提供防疫物資、正確防疫知識、為確診員工及家屬提供物資、安排員工居家辦公、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。

**Total Number of Employee Turnover (Resignation/Retirement) in 2021:**  
二零二一年流失員工 (離職/退休) 總人數：

**2,296**

**By Type**  
按類型劃分

Resigned  
離職  
**2,259**  
(98%)

Retired  
退休  
**37**  
(2%)

**By Gender**  
按性別劃分



Female  
女  
**396**  
(17%)



Male  
男  
**1,900**  
(83%)

**By Age**  
按年齡劃分

30 and below  
30歲及以下  
**1,029**  
(45%)

31-40  
31-40歲  
**1,012**  
(44%)

41-50  
41-50歲  
**182**  
(8%)

51 and above  
51歲及以上  
**73**  
(3%)

**By Geographical Region**  
按地區劃分

Mainland China  
中國內地  
**2,191**  
(95%)

Others  
(Hong Kong, Singapore,  
Vietnam and Poland)  
其他  
(香港、新加坡、  
越南及波蘭)  
**105**  
(5%)

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，所以我們每年均會透過統計即將合資格退休的員工數目，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	10.38%	21.96%
Middle-level management	中層管理人員	3.05%	9.32%
General and technical staff	一般及技術員工	2.78%	5.40%

### 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. The Group established the Eco-Environmental Academy in 2019. 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 2021, the average resources allocated to each full-time employee was HK\$5,137.09.

企業發展關鍵是人才。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。本集團於二零一九年設立了生態環境學院，針對本集團業務發展需要，統一安排合適培訓，亦先後舉辦了各類培訓班，讓管理層及員工持續進修，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，頒發了《培訓講師及課程管理》。此外，各項目公司亦會按照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。二零二一年，投放至每名全職員工的平均資源為5,137.09港元。




During the Reporting Period, in response to the Pandemic, the Group adjusted its training arrangements by conducting hybrid on-site and virtual trainings. The Group also held trainings related to safety and environmental management, "Peaking Carbon Emissions" and "Achieving Carbon Neutrality" as well as procurement management and corporate culture, in order to further enhance the comprehensive capabilities of management and employees. A number of project companies of the Group made good use of technology during the Pandemic, provided employees with online training such as system-wide correspondents, and set up online assessments to ensure the effectiveness of the training. There are also some project companies that continue to hold offline training under the premise of improving the Pandemic situation and ensuring the safety of employees to strengthen employees' learning awareness.

The Group has established a comprehensive and assessable staff appraisal system to enhance the work quality, competitiveness and motivation of its staff. In 2021, 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.

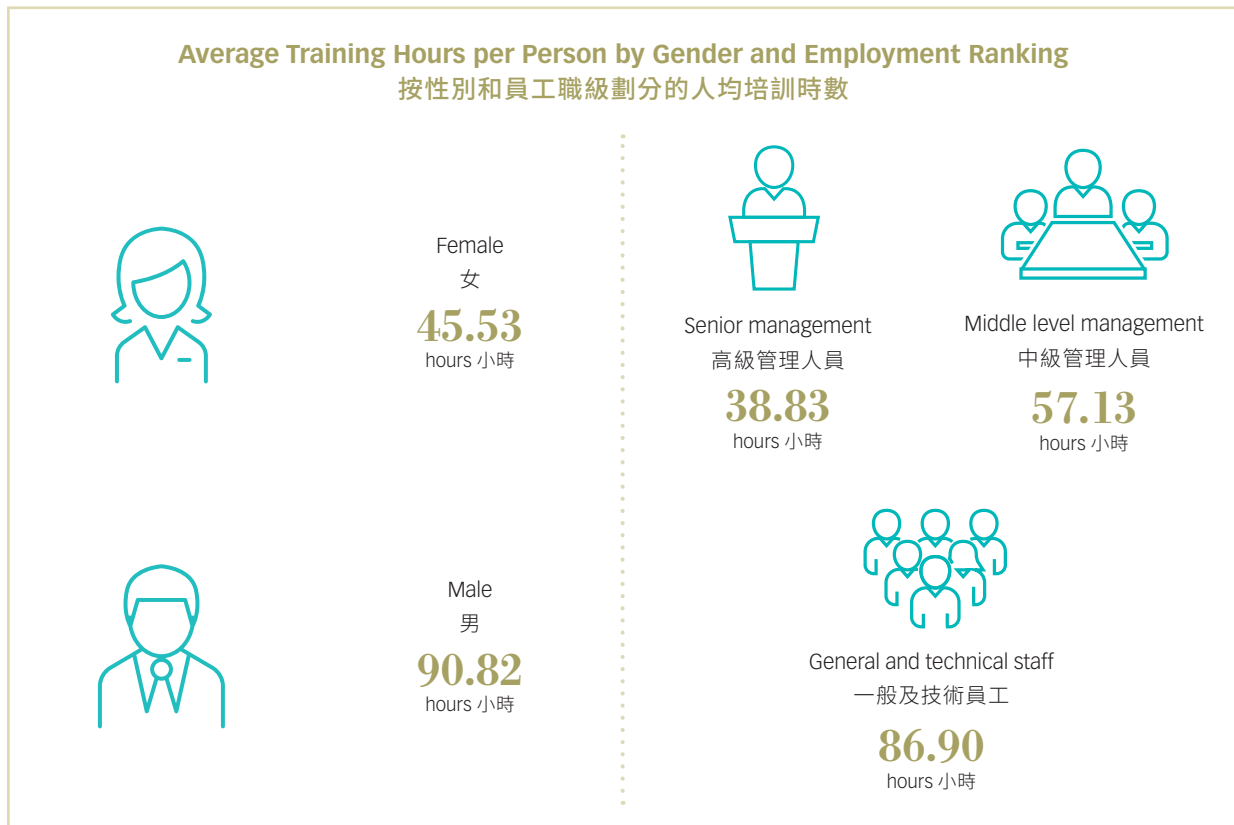
報告期內，本集團應對新冠疫情，調整了培訓安排，改為現場及視頻培訓，先後舉辦了有關安全與環境管理、「碳達峰、碳中和」、採購管理及企業文化等培訓，進一步提升管理層及員工綜合能力。本集團多間項目公司在新冠疫情下善用科技，為員工提供全系統通訊員等線上培訓，並且設置線上考核，確保培訓效果。亦有部分項目公司為讓新冠疫情好轉、保障員工安全的前提下繼續舉行線下培訓，加強員工的學習意識。

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。二零二一年，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。

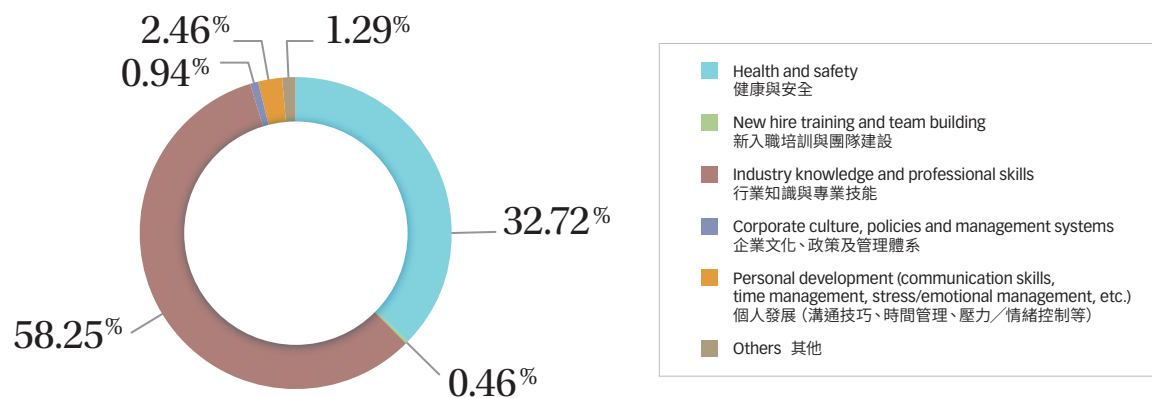


In 2021, total training hours of employees in Everbright Environment were **904,952** hours. Average training hours per employee were **79.87** hours. Amongst which, staff training rate of 100% was attained and the trainings covered the topics of anti-corruption, anti-harassment and anti-discrimination.

二零二一年，光大環境的員工培訓總時數為**904,952**小時，人均培訓時數為**79.87**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。



Percentage of Training by Category  
培訓類別的百分比



### Everbright Environment organised the Safety and Environmental Management Qualification Exam 2021

#### 光大環境組織舉辦二零二一年安環管理資格認證考試

On 26 September 2021, Everbright Environment's Safety and Environmental Management Qualification Exam, the first large-scale formal examination within Everbright Environment, was held simultaneously in Shenzhen, Nanjing and Ji'nan. Four of Everbright Environment's departments, namely the Supervision Department, Human Resources Department, Internal Audit Department, and Safety and Environmental Management Department, set up a joint task force to proctor and review the exam papers. A total of 300 employees participated in the examination, including the department heads and assistant manager grade or above employees from the Safety and Environmental Management Department of each business sector, and the responsible persons of each project company as well as the engineering department. This examination aims to assess the performance of combined self-learning and centralised training in the early stage, and also to test the ability of relevant personnel to perform safety and environmental related duties, with aims of enhancing unified mentality, raising awareness, strengthening educational trainings, and promoting the continuous improvement of the Group's safety and environmental management standard.



二零二一年九月二十六日，光大環境的安環管理資格認證考試，為光大環境系統內部第一次大規模正規考試，分別在深圳、南京、濟南三地設考場同時進行。光大環境監察部、人力資源部、內審部、安全與環境管理部四部門成立聯合工作組全程監考及閱卷。此次考試共300人參加，包括各板塊的安環分管領導、安環管理部總經理助理以上人員，各項目公司和工程指揮部主要負責人等。此次安環管理資格認證考試活動是對前期自學和集中培訓效果的檢驗，也是對相關人員安環履職能力的考核，旨在進一步統一思想，提高認識，加強安全與環境管理教育培訓，推動光大環境安環管理水平不斷提升。

### 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 8 business sectors of the Group. There are currently 460 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.

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 of senior management, the regulation of appointed directors and supervisors of subsidiary, the regulations of overseas travel, etc.

### 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八大業務板塊的後備管理人員庫。本集團目前共有460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。

本集團亦透過在人才庫中公開發佈招聘訊息，以自願報名及由下至上推薦等形式提供內部選聘的機會，培養選拔優秀管理人員，讓有能力、有理想的員工有更大的成長和發展空間。同時，本集團亦頒發了一系列人力資源管理辦法，提升人力資源管理效率，其中包括職務任免工作流程、派出董事、監事管理辦法、因公出國（境）管理辦法。

As at 31 December 2021  
截至二零二一年十二月三十一日



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

**460** people  
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

**48** people  
人



Number of back-up management personnel promoted to the new projects' 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

**29** people  
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

本集團注重人力資源的內部交流和承傳。為促進青年員工成長成才，本集團推行「師帶徒」培訓計劃，藉助自身人力資源的優勢，促進經驗豐富或綜合素質較強的員工與新員工成立師徒協議，有助於培養公司內部傳師學藝的良性學習氛圍。師父們以「傳幫帶」的方式傳授知識技能、幫助徒弟融入工作環境、以積極的態度對待學習和工作，最終達致薪火相傳。

## 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，並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

本集團的項目公司皆為員工提供了舒適且配套完善的宿舍，包括設有運動場、健身房、棋牌室及圖書館等休閒設施，讓員工可適時放鬆、舒緩工作壓力。本集團亦鼓勵員工保持身心健康的生活方式，每年舉辦及參與多項文娛休閒及體育活動，包括游泳比賽、趣味運動會、籃球友誼比賽及生日慶祝活動等，以促進員工健康發展，實現企業和員工雙贏。

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 2021, the employees of the Group actively participated in environmental protection activities in their spare time, joined hands with their relatives, friends and community groups to protect the environment and build a greener and better future for the next generation.

## 身體力行參與環保

作為環保行業的領軍企業，本集團積極推動員工在工作和日常生活中踐行環保，從身邊小事做起，培養良好的環保意識。二零二一年，本集團的員工積極地在工餘時間參與環保活動，攜手身邊親朋好友、社區群體一起保護環境，為下一代建設更綠色美好的未來。

### Everbright Environment's Project Companies Organised Voluntary Tree Planting Activities 光大環境多個項目組織開展義務植樹活動



In light of the 43<sup>rd</sup> Arbour Festival, Everbright Environment's project companies all over the country proactively organised voluntary tree planting activities, including the Changzhou Waste-to-energy Project, Suzhou Waste-to-energy Project, Huangshi Hazardous Waste Landfill Project, etc. This event not only increased employee participation rates in greening activities but also raised the morale and unity for contributing to "Peaking Carbon Emissions" and "Achieving Carbon Neutrality".

在第四十三個植樹節到來之際，光大環境遍佈於全國各地的多個項目積極組織開展義務植樹活動，包括常州垃圾發電項目、蘇州垃圾發電項目、黃石危廢填埋項目等。此次集體義務植樹活動不僅提高了員工參與綠化建設的積極性，更提升了士氣與凝聚力，為「碳達峰、碳中和」和貢獻力量。

Safety Culture  
安全文化



Upholding  
Safety Operation,  
Enhancing  
Quality Of Services

堅守安全運營  
提升服務品質

## Safety Culture

Safety is the premise and foundation for stable corporate operations. The Group attaches great importance to 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, establish dual-layered protection, and successfully prevent safety issues before they occur.

## Full Implementation of the ESHS Management System

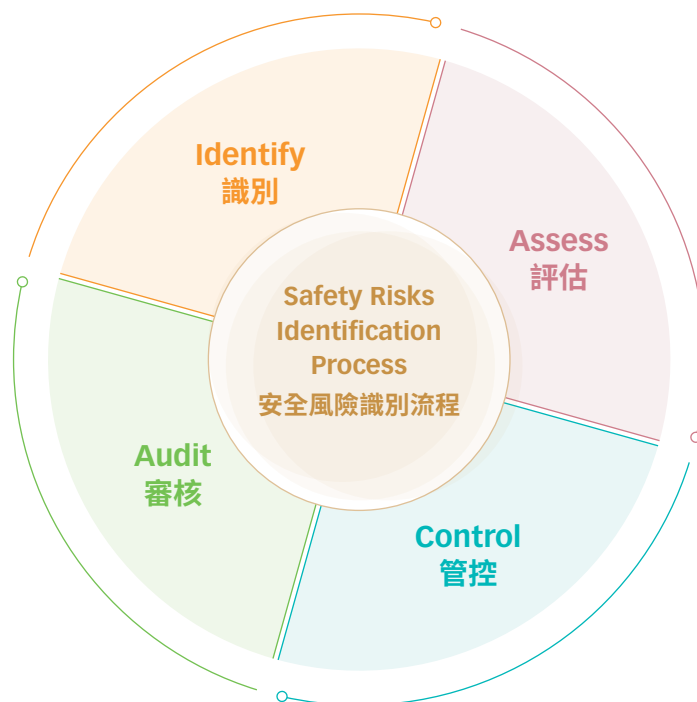
The Group fully implements the ESHS Management System to enhance the effectiveness of the regulatory mechanism's implementation in our operations. The system includes ESHS related management procedures on identification, audit, incident investigation and reporting, work-related injury, contractors' ESHS management, etc., thus extending the safety culture and related policies to throughout the 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.

## 安全文化

安全是企業穩健運營的前提和基礎。本集團高度重視員工及公眾的健康與安全，堅決落實安全管理體系，致力為員工提供安全的工作環境。此外，我們亦積極推廣安全教育與宣傳以提高員工的安全意識，建立雙重保障，真正達到防患於未然。

## 全面實施ESHS管理體系

本集團全面實施ESHS管理體系，以進一步完善監管機制在運營中的有效實踐。該體系內容包括重要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，將安全文化和相關政策延伸到整個供應鏈中。所有項目均根據ESHS管理體系規定建立了標準操作流程和現場工作檢查表，以確保工作環境及公眾的安全、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。



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

在ESHS管理體系結構方面，為進一步提升管理效能，本集團在總部、業務板塊、區域中心及轄屬項目公司四個主要層面建立了安全與環境管理委員會和管理部，搭建「四位一體」的管理體系。



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、督導集團各業務板塊環境及安全工作的實施，並每年定期召開會議檢討本集團的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. The system also protects safety risk whistle-blowers from retaliation to prevent any safety incidents due to non-reporting.

同時，我們更鼓勵各階級的員工隨時向上級提出對ESHS管理體系、以及對現有的安全制度及措施的改善建議。體系亦保障舉報安全風險的舉報者毋須畏懼報復，以確保不會因知情不報的情況引致安全事故。



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.

Apart from 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 reported to Everbright Environment's Safety and Environmental Management Committee, which is responsible for overseeing the investigation; the remaining accidents must be reported to the Operation and Environmental Management Department of the respective business 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 and 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, all units 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》為指導，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。除了光伏發電及風電項目每兩年進行一次內部ESHS現場審核外，本集團旗下所有其他的運營及在建項目均會每年進行一次內部ESHS現場審核以及不定期現場考核。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，我們修定了《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。一級至三級事故必須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；其餘事故則須上報至所屬業務板塊的運營及環境管理部，其後由該部門向光大環境安全與環境管理部提交調查報告。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。

本集團堅持以高標準運營每一環保項目，員工工作安全及健康尤為重要，項目在投運後，各單位均積極申報各項認證，如職業健康認證。



## Implementation of Safety Policies

Meanwhile, the project companies in each business sector have 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 improve the level of safety management by strictly establishing preventive mechanisms and standardising production practices.

The Group has always insisted on designing and constructing projects with the highest safety standards, advancing and implementing 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

In 2021, under the normalised Pandemic prevention and control trend, the Group has determined Pandemic prevention and control a daily priority. Existing prevention measures are remains in effect and employees are irregularly reminded to mind their personal hygiene and health situation. 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. Our management and department heads meet from time to time to review all prevention measures, ensuring the safety and health of employees and full-scale productivity for all projects.

## 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。應急方案亦會按評估機制定期按照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、嚴格建立預防機制，規範生產行為，全面提升安全管理水平。

本集團一直堅持以最高的安全標準設計及建設項目，推進及落實合法合規手續辦理工作，確保各項目合法施工建造。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。本集團現有完善的工程建設規章制度，通過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。本集團更與施工單位簽訂「施工單位安全責任書」，提倡「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

二零二一年，在新冠疫情防控常態化趨勢下，本集團已將新冠疫情防控作為日常重點工作，繼續維持各項防疫措施，不時提醒員工注意個人衛生，留意健康狀況。本集團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疫苗，管理層與部門負責人不時召開專題會議研究各項防疫工作，保障了員工安全健康及各項目正常生產。

In terms of daily operations, the Group fully considers various Pandemic risks, and prevention and control measures, and continues to maintain zero infection in the plant workplace with the concerted efforts of the management and staff. During the Reporting Period, the Group's projects under construction or in operation have returned to normal, with the corporate performance on the rise. In view of the rebound of Pandemic cases across provinces and cities in China in the second half of the year, 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.

本集團在日常運營方面充分考慮各項新冠疫情風險及防控措施，在廣大管理層及員工的努力下，繼續維持工作廠區「零感染」。報告期內，本集團項目建設和運營兩個方面已全面恢復正常，業績持續上升。針對後半年新冠疫情於國內多個省市反彈的局勢，本集團嚴格要求各單位按各地政府要求及工作實際情況，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，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、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將「安全穩定運營、達標排放」作為基本原則，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」，狠抓安全管理，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。

**Safety Culture**  
安全文化

The Group has fully promoted the construction execution information system, allowing relevant functional modules to 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. We also organise emergency drills regularly to improve the staff's overall emergency handling capability.

本集團全面推進工程執行資訊系統，相關功能模塊全線上線運行；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。我們亦定期舉辦應急演練，務求全面提高員工應對危機時的處理技巧。

**Key Safety Actions**

**安全行動重點**



Emergency Drills 事故應急演練

Laiwu Waste-to-energy Project – Accident Drill  
萊蕪垃圾發電項目舉行反事故演習

On 19 January 2021, Laiwu Waste-to-energy Project's operation department held an anti-incident drill to train the operators' ability to manage machinery-related accidents and equipment abnormalities, and to improve their comprehensive operation skillset and accident handling standard. Project company's management team, the safety and environmental management department, technical department, maintenance company, operation department leaders and off-duty employees all participated in the drill. In the process, the team members were resolute and decisive when executing the orders, made an accurate judgement of the source of fault and handled the situation appropriately. This exercise showed clear overall thought process, smooth handling and improved on-duty employees' emergency response to accidents.

萊蕪垃圾發電項目運營部於二零二一年一月十九日舉行了反事故演習，以鍛煉運行人員處理機組事故和設備異常的能力，提高運行人員的綜合業務技能和反事故水平。項目公司領導、安環部、技術部、檢修公司，運行部領導及非當值全體人員共同參加。過程中，班組成員執行命令時堅決果斷，對故障判斷基本正確，處理基本得當。此次演習總體思路清晰、過程流暢，提高了班值事故應變能力。



Yangxin Waste-to-energy Project – Disaster Drill  
陽信垃圾發電項目開展應急演練

12 May 2021 is the National Disaster Prevention and Mitigation Day. In order to increase the safety awareness among the employees and enhance the corresponding safety protection skills, Yangxin Waste-to-energy Project organised a safety event with the theme of disaster prevention and mitigation.

Prior to this emergency drill, the managers had participated in a corresponding training and lecture on the entire emergency response plan and made detailed deployment and division of labour. During the drill, the participants reported to their respective areas of duty in a timely manner and the drill was carried out orderly, marking this drill a complete success. In order to ensure that employees truly grasped the training content to improve their emergency response ability in emergency situations, the project company also organised an emergency fire drill with the theme set to "waste warehouse fire".



二零二一年五月十二日為全國「防災減災日」。為增加員工的安全防護意識，提高相應的安全防護技能，陽信垃圾發電項目開展了以「防災減災」為主題的安全活動。

本次應急演練開始前，組織管理人員對整個應急預案提前進行了相應的培訓和講解，並對本次演練作了詳細的部署與分工。活動中，參與人員及時到各自負責的區域進行值守，整個演練有序開展，最終取得圓滿成功。為確保員工真正掌握培訓內容，提高緊急情況下的應急處置能力，項目公司還組織了以「垃圾倉起火」為主題的消防應急演練。



### Weifang Waste-to-energy Project – Safety and Environmental Warning Education Forum 濰坊垃圾發電項目開展「安全、環保警示教育座談會」

On 21 January 2021, Weifang Waste-to-energy Project organised the “Safety and Environmental Warning Education Forum”, which conducted an in-depth analysis of typical safety accident and environmental incident cases. Through the analysis of the causes behind these cases, the fact that these cases happened in the first place was examined, to further improve the management process and prevent safety and environmental risks.

二零二一年一月二十一日，濰坊垃圾發電項目組織開展了「安全、環保警示教育座談會」，就典型的安全事故與環保事件案例展開了深入分析，通過分析事故原因，檢視自身存在的問題，進一步完善管理流程，防範安全與環保風險。



### Safety Trainings

The Group continuously improves employees' knowledge on safety management and strengthens their mentality on safe production through various training activities that are rich in content, with aims of ensuring safe, systematic work. 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.

### 安全培訓

本集團通過組織形式多樣、內容豐富的培訓活動，不斷提升員工對安全管理工作的認知，加強安全生產意識，確保安全工作有序開展。個別項目建立有安全教育體驗區，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：

		
<p>Health and Safety Laws and Regulations 健康與安全方面的 法律法規</p>	<p>ESHS Management System ESHS管理體系</p>	<p>Safe Use of Equipment 設備裝置的安全使用</p>
		
<p>Identification and Control of Sources of Hazards 危險源的辨識和 控制措施</p>	<p>Risk Control and Troubleshoot by Risk Levels 風險分級管控和 隱患排查</p>	<p>Procurement and Storage of Hazardous Items 採購及貯存危險物品</p>
		
<p>Accident Contingency Plan 事故應急管理</p>	<p>Occupational Health Management 職業健康管理</p>	<p>First Aid 急救</p>

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。

Safety Culture  
安全文化

Total working hours  
工作總時數

Employees of Everbright Environment 光大環境員工 <b>23,218,640</b> hours 小時	On-site third-party contractors and subcontractors 第三方承包商及分包商駐場工人 <b>41,521,152</b> hours 小時
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Employees  
員工

Number of work-related fatalities 因工死亡個案 <b>1</b>	Rate of work-related fatalities <sup>(1)</sup> 因工死亡率 <sup>(1)</sup> <b>0.01</b>	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> <b>0</b>
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(3)</sup> 嚴重工傷率 (不包括死亡個案) <sup>(3)</sup> <b>0</b>	Number of work-related injuries <sup>(4)</sup> 工傷個案 <sup>(4)</sup> <b>16</b>	Rate of work-related injuries <sup>(5)</sup> 工傷率 <sup>(5)</sup> <b>0.14</b>
Days of absence from work due to work-related injury 因工傷缺勤日數 (天) <b>1,267</b>	Number of occupational disease cases 職業病個案 <b>0</b>	Rate of occupational disease-related fatalities 因職業病死亡個案 <b>0</b>

### On-site Third-Party Contractors and Subcontractors<sup>(6)</sup> 第三方承包商及分包商駐場工人<sup>(6)</sup>

Number of work-related fatalities 因工死亡個案 <b>0</b>	Rate of work-related fatalities <sup>(1)</sup> 因工死亡率 <sup>(1)</sup> <b>0</b>	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> <b>0</b>
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(3)</sup> 嚴重工傷率 (不包括死亡個案) <sup>(3)</sup> <b>0</b>	Number of work-related injuries <sup>(4)</sup> 工傷個案 <sup>(4)</sup> <b>15</b>	Rate of work-related injuries <sup>(5)</sup> 工傷率 <sup>(5)</sup> <b>0.07</b>
Days of absence from work due to work-related injury 因工傷缺勤日數 (天) <b>808</b>	Number of occupational disease cases 職業病個案 <b>0</b>	Rate of occupational disease-related fatalities 因職業病死亡個案 <b>0</b>

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.
- (6) Excludes construction workers of projects under construction.

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。
- (6) 不包括在建項目的建築工人。

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 adheres to the corporate pursuit of “To Create Better Investment Value and Undertake 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 in terms of quality education, community engagement, poverty alleviation and climate action, etc., constantly attending to the needs of various social groups and establishing friendly ties with the community. We are 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.

光 大環境堅持貫徹「創造更好投資價值，承擔更多社會責任」的企業追求，通過落實《環境與社會管理制度》，積極履行良好企業公民的責任。

報告期內，本集團在優質教育、社區共融、扶貧濟困、氣候行動等方面組織了一系列社區公益活動，不斷關注社會各社群的需求，與社區建立友好紐帶。我們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，加強社區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

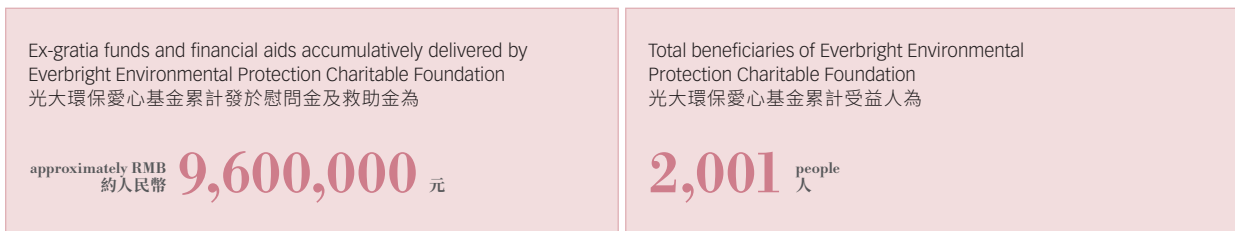
Since 2017

自二零一七年起



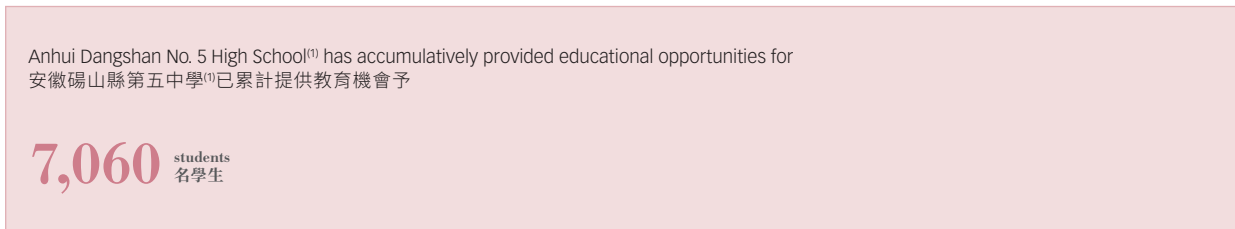
Since 2013

自二零一三年起



Since 2011

自二零一一年起



Since 2010

自二零一零年起



Note:

附註：

<sup>(1)</sup> The School was formerly known as “Everbright Environment True Love School”.  
該學校前稱「光大環境愛心學校」。

## Key Activities 重點活動里程碑



Notes:  
附註:

- (1) The school has been renamed as Anhui Dangshan No. 5 High School. 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 Disaster

Despite the continued global impact from the Pandemic in 2021, Everbright Environment has fully utilised its competitive edge in the industry to make sure all project companies maintained normal operations, so as to treat municipal and medical waste while protecting the public's health and safety.

In July 2021, there was an outbreak at the Nanjing Lukou International Airport and four employees from the Lianyungang Hazardous Waste Incineration Project arrived in Nanjing volunteered to support the transportation and transshipment of medical waste. At the same time, the Nanjing Waste-to-energy Project Company adhered to the national and local pandemic prevention and control requirements in safely handling medium to high risk waste from the quarantined zones, providing significant support to battling against the Pandemic.

Henan flood disaster occurred in July 2021 and the Group had made a donation. Meanwhile, all staff of the local projects' companies actively organised flood control work, successfully maintained the provision of local solid waste and waste water treatment service, etc.

## 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 resources to education over the years to nurture the next generation. 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 7,060 students in rural areas. During the Reporting Period, our 18th and 19th batches of teacher volunteers provided teaching support at the school for underprivileged students to give them access to better educational opportunities and supports.

## 抗疫抗災前線

儘管新冠疫情於二零二一年繼續衝擊全球各國，光大環境仍充分發揮自身行業優勢，各項目公司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。

二零二一年七月，南京祿口機場發生新冠疫情，連雲港危廢項目四名員工抵達南京，參加醫療廢物運輸和轉運的義務支援工作。同時，南京垃圾發電項目公司按照國家、地方政府疫情防控要求，安全處理中高風險隔離區垃圾，為抗擊新冠疫情提供有力援助。

二零二一年七月河南水災，本集團除了捐款救災外，本集團駐豫項目人員積極組織防汛工作，保障了當地生活垃圾處理、污水處理等城市公共服務功能正常運作。

## 優質教育

為青少年提供的優質教育是培養他們成為國家未來棟樑的關鍵。因此，光大環境持續多年來投入資源於教育工作，致力栽培出色的下一代。與此同時，我們積極普及環保知識、推廣綠色科技，為祖國的可持續發展貢獻一份力量。

### 捐助安徽碭山縣第五中學

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碭山縣第五中學，累計已為7,060名偏遠地區的學生提供教育機會。報告期內，我們的第十八批及第十九批由熱心員工組成的義務教師赴學校提供教學支援，為山區的孩子們提供更多的教育資源及幫助。

### 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 aims to promote sustainable development and green lifestyle to youngsters and the general public.

The public opening-up events cover primary and secondary schools, universities, local and international market peers, environmental protection organisations and communities. To further enhance the visiting procedures and quality, each project company has formulated policies including *Etiquette Guideline for Visits and 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.

In 2021, in view of the recurrence of the Pandemic, the Group adopted 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 80,000 domestic and foreign visitors from all social circles visited the projects.

### 推動公眾開放，普及環保教育

光大環境持續利用項目公司於各地的設施作為環保教育基地和科普教育體驗中心，增進年輕人和普羅大眾對可持續發展和綠色生活方式的認識。

公眾開放的宣傳面覆蓋中小學生、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流程化、標準化水平，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。

二零二一年，有鑒於新冠疫情反覆，本集團採取綫上綫下相結合的宣傳模式對外進行環保設施的開放，向公眾推廣及宣傳環境保護、可持續發展等議題。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八萬人次。

In 2021  
二零二一年

Our projects received over  
我們的項目共接待超過

**80,000** visitors  
名參觀人士

Exceeded  
超過

**5,400** batches of visitors  
批次參觀人士

A total of  
共有

**19**  
projects were recognised as  
“Environmental Education Hubs”  
or “Science Education Hubs”  
項目獲得「環境教育基地」或  
「科普教育基地」的稱號

In 2021  
二零二一年

The Group had opened up to the public  
本集團已向公眾開放

**138** 個  
environmental protection facilities  
環保設施





Case Studies 個案分享

Promote Opening Up of Environmental Facilities  
促進公眾開放

Changzhou Waste-to-energy Project – Speak for the Earth  
常州垃圾發電項目為地球發聲



On 26 March 2021, the Changzhou Waste-to-energy Project launched the “Little Guardians of Environmental Protection together with Everbright, Speak for the Earth” event, leading teachers and students of Yaoguan Middle School to visit the entire plant area, such as the Environmental Protection Science Museum, the Hoisting Control Room, and the Central Control Room, etc. The students were able to further understand the green development concept of “harmonious coexistence between man and nature” and gain their first actual impression of “green electricity”. After the visit, the plant representatives gave a lecture on environmental protection and the students enthusiastically shared their views on environmental protection. The plant representatives and the students interacted harmoniously throughout the event.

二零二一年三月二十六日，常州垃圾發電項目開展「環保小衛士與光大一起，為地球發聲」活動，帶領遙觀中學的師生參觀整個廠區，如環保科普館、吊控室、中控室等。學生們得以進一步了解「人與自然和諧共生」的綠色發展理念，對「綠色電力」有了首次直觀印象。參觀結束後公司代表進行了環保宣講，學生們也踴躍分享自己對環保的看法，活動氣氛融洽。

## Case Studies 個案分享

### Suzhou Waste-to-energy Project – Waste to Treasure

#### 蘇州垃圾發電項目的「變廢為寶」科普教育

On 29 May 2021, Suzhou Experimental Primary School and Everbright Environmental Energy (Suzhou) Co., Ltd. jointly launched the World Environment Day themed event, allowing the children to observe the waste processing equipment, experience VR waste sorting, and listen to the lecture on waste sorting.

二零二一年五月二十九日，蘇州市實驗小學、光大環保能源（蘇州）有限公司共同開展世界環境日主題活動，帶領孩子們近距離參觀垃圾處理設備，體驗VR垃圾分類，聆聽垃圾分類講座。

The Suzhou Waste-to-energy Project and the Suzhou Municipal Waste Sorting Department jointly organised the “Ecological Research and Low-carbon Living” exploration tour on waste. On 5 June, students from the Experimental Primary School No. 2 in Suzhou Industrial Park became the first batch of visitors to experience the tour. Through professional and vivid science lectures, as well as content-be consistent rich, interactive and immersive experience throughout the on-site visits, allowed more students to understand the flow of waste from disposal to transfer station and then to the waste processing terminal, and gain a deeper understanding of waste sorting.

蘇州垃圾發電項目更與蘇州市垃圾分類主管部門聯合策劃了「生態研學·低碳生活」垃圾探秘之旅。六月五日，來自蘇州工業園區第二實驗小學的學生成為首批體驗者。活動通過專業生動的科普講座、豐富有趣的互動體驗和全流程沉浸式的現場參觀，讓更多的學生了解垃圾從投放到中轉運輸再到終端處置的過程，更深入地認識到垃圾分類的重要意義。



Case Studies 個案分享

Xiangyin Waste-to-energy Project – Youngest Visitors  
湘陰垃圾發電項目迎來年齡最小參觀者



On 5 June 2021, the Xiangyin Waste-to-energy Project received student representatives from primary schools in Xiangyin. Through the visits and animation-led lectures on environmental protection, the students realised that the harmless treatment process for municipal waste can help reduce pollution and improve the resource utilisation rate, thereby raising awareness of waste sorting. The staff also distributed environmental souvenirs to the students to encourage them to explore the field of environment protection.

二零二一年六月五日，湘陰垃圾發電項目接待了來自湘陰各小學的學生代表。通過參觀學習及以動畫為主導的環保知識講座，學生們認識到生活垃圾無害化處理可以減少環境污染，提高資源利用率，從而提升了垃圾分類的意識。工作人員還為學生們發放了環保紀念品，以鼓勵他們對環保的探索。



Case Studies 個案分享

Laiwu Waste-to-energy Project – Visitors from Shandong Jianzhu University  
山東建築大學師生參觀萊蕪垃圾發電項目



On 9 July 2021, 107 teachers and students from the Department of Thermal Engineering of Shandong Jianzhu University visited Laiwu Waste-to-energy Project. The facilities tour included the waste warehouse, master control room, boilers, steam turbines, power grid, and flue gas treatment systems. Through this visit, students were able to see the knowledge from textbooks applied at the power plant, and gain a deeper and more visual understanding of the sorting process and processing flow.

二零二一年七月九日，山東建築大學熱能工程系的107名師生來到萊蕪垃圾發電項目進行參觀學習。參觀設施包括垃圾倉、主控室、鍋爐、汽輪機、電網及煙氣處理系統等。通過本次參觀，學生們得以從課本走向廠房，對垃圾的分類和處理流程有了更深刻更具象的理解。

## Community Engagement

Everbright Environment has been upholding its corporate pursuit of “Creating Better Investment Value and Undertaking More Social Responsibility” towards the road of 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 the local residents when the projects have job openings, in order to improve the environment and facilitate industrial upgrading locally and in the surrounding areas.

To guarantee the Group’s projects in compliance 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 2021, the Group had not received any complaints on our products and services.

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.

## 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。本集團不但致力確保項目安全穩定運行、環保達標排放，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。本集團於二零二一年沒有接獲關於產品及服務的投訴。

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，更積極接待社會各界代表團實地參觀考察，透過不斷健全公眾開放、推廣工業旅遊、鼓勵循環經濟，為當地社區帶來最佳的經濟與社會效益。



### Five Key Elements of Everbright Environment's Benchmark Environmental Protection Projects 光大環境環保項目的五大要素



## Housing and Urban-Rural Construction Department of Hainan Province sent Everbright Environment a Letter of Gratitude 海南省住房和城乡建设廳向光大環境發來感謝信



In early 2021, Housing and Urban-Rural Construction Department of Hainan Province sent a letter of gratitude to Everbright Environment, to express their sincere appreciation of the joint efforts with Everbright Environment in promoting sustainable development in Hainan Province through Everbright Environment's successful investment, construction and operation management of five domestic waste-to-energy projects in Sanya, Lingshui, Dongfang, Danzhou and Tunchang, all taking place in a timely and satisfactory manner.

二零二一年年初，海南省住房和城乡建设廳向光大環境發來感謝信，就光大環境在海南省投資、建設、運營管理的三亞擴建、陵水、東方、儋州、屯昌五座生活垃圾發電項目按時按質圓滿點火運營，共同推動海南省綠色健康發展表達誠摯謝意。

With the impact of the Pandemic since the beginning of 2021, Everbright Environment has faced the difficulties head-on, strictly implemented various construction safety measures, and overcame challenges such as labour difficulties, tight construction periods, typhoon and inclement weather, and cross-operation of multiple work types. The Sanya project has won many awards such as the AAA-level waste-to-energy plant and green development benchmarking enterprise, and has become a signature hallmark of the Hainan International Tourism Island and Sanya Environmental Protection Eco-tourism New Concept City.

二零二一年年初以來，面對新冠疫情影響，光大環境迎難而上，嚴格落實各項安全施工舉措，努力克服了用工困難、工期緊張、颱風天氣、多個工種交叉作業等困難和挑戰。建成後的三亞項目榮獲AAA級垃圾焚燒發電廠及綠色發展標杆企業等諸多殊榮，已成為海南國際旅遊島和三亞環保生態旅遊新概念城市的新名片。

## 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 villages. In addition, the Group’s Changzhou Waste-to-energy Project opened up its project area borders, following the Group’s Hangzhou Waste-to-energy 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 actively responds to the national policies on targeted poverty alleviation and is committed to creating a better living environment for urban and rural residents. We strongly promote volunteer work, disaster relief efforts and charitable activities to enhance the engagement with the community, and provide employees with multiple volunteering platforms to encourage them to actively participate in community activities.

## Poverty Alleviation Industry Chain

The Group consistently encourages and promotes effective public and resident partnerships to address local problems. 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」

本集團的生物質綜合利用項目呼應中央政府推進鄉村綠色發展的方向，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了基礎。另外，我們藉鑑常州垃圾發電項目的做法，開放其他合適廠房的邊界，為這些區域配備公共設施，成為向市民開放的「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

光大環境積極響應國家有關精準扶貧的政策，致力於為城鄉居民打造更好的生活環境。我們大力推動義務工作、災難救濟及慈善活動，務求與社區融和交流，同時為僱員提供多個義工平台，以鼓勵他們積極參與社區活動。

## 扶貧產業鏈

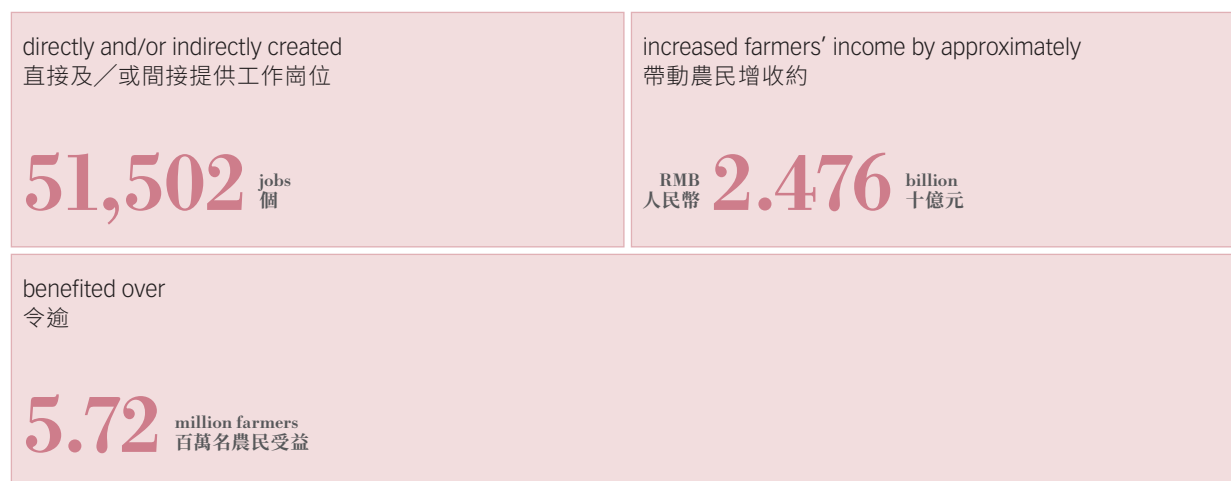
本集團透過不斷鼓勵和發展有效的公共和公民社會合作，解決當地問題。本集團通過生物質綜合利用項目燃料收儲體系的建立和完善，打造「農民增收、企業發展、多方共贏」的戰略，直接和間接帶動農村經濟，幫助人口脫貧。政府透過此模式組織貧困戶收集生物質原料出售予本集團的運營項目，為人們提供額外收入的同時有助解決當地的廢物處理問題，開創環境、社會和經濟效益三豐收的新格局。

In addition, the Group's Xinhua Waste-to-energy Project ("Xinhua Waste-to-energy Project") is a poverty alleviation project receiving major support by the Group and also a featured Everbright Environment project for fulfilling industrial poverty alleviation. Apart from 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 the Xinhua Waste-to-energy Project as an example, its construction has not only helped facilitate local economic developments and lift local residents from poverty by offering more employment but also improved the environmental condition and ensure environmental health and safety, playing a dual role in targeted poverty alleviation and pollution prevention.

此外，本集團的新化垃圾發電項目（「新化垃圾發電項目」）是本集團重點部署支持的脫貧攻堅項目，也是光大環境實施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。新化垃圾發電項目的建設，不但有助於促進地方經濟發展，幫助當地居民脫貧就業，且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 2021, Integrated Biomass Utilisation Projects of Everbright Environment

二零二一年，光大環境的生物質綜合利用項目



### 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 2021, the Fund had supported over 2,001 beneficiaries, to whom a total of RMB9.6 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。截至二零二一年底，該基金已累計產生2,001名受益者，共計已發放超過人民幣960萬元慰問金及救助金。

Overview of Charity Work in 2021  
二零二一年慈善公益活動概覽

Participated in 參與	Volunteer services 義工總時數
<b>19</b> charitable activities 次慈善公益活動	<b>2,836</b> hours 小時
Volunteers' paid working hours amounted to 義工有薪工時為	
HK\$ <b>97,540</b> 元 港幣	
Total charitable donation (cash) 捐款總金額 (現金) 為	In-kind giving 物資捐贈為
HK\$ <b>9,733,810</b> 元 港幣	HK\$ <b>437,699</b> 元 港幣
Management overheads 管理費用為	
HK\$ <b>3,190,480</b> 元 港幣	



## 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.

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 environment. In 2021, "Everbright Environment Charitable Foundation" supported the construction of the solar dome at the Island House in Yuen Chau Tsai, Taipo, Hong Kong, and already in operation. The facility would serve as a sustainability educational facility for Hong Kong students and other groups to promote the concepts and knowledge relating to renewable energy, sustainable development and ecological conservation.

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.

Furthermore, the Group signed a Memorandum of Understanding with the ADB on the eve of World Oceans Day 2021, focusing on strategic partnership relating to circular economy and reducing marine pollution. The partnership entails strengthening solid waste management system in the Asian region, reducing marine debris originating from land and promote ocean-friendly businesses. The event's 2021 theme was "Our Planet, Our Business", urging business leaders and the general public to make changes and decisions based on the concepts of sustainable development and zero-carbon living, and to create an ecological future for mankind. Everbright Environment will continue to actively promote opening up our environmental facilities across all sectors to the public in response to large-scale environmental protection initiatives, and to support a series of environment protection event such as World Water Day and World Environment Day on 5 June. By organising tours for the public at our plants, we can promote and advocate important sustainability topics such as ecological and environmental protection, and circular economy.

## 氣候行動

光大環境繼續深耕環境、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。

從二零一四年至二零二零年，光大環境公益基金會連續七年支持世界自然基金會香港分會「地球一小時」大型環保活動，呼籲人們改變生活方式以避免不必要及過度的消費，拯救地球環境。二零二一年，本集團透過旗下光大環境公益基金會支持世界自然基金會香港分會建造的太陽能溫室穹頂於香港大埔元州仔自然環境保護研究中心落成並投入使用；該設施已作為可持續教育基地，面向香港學生等各界群體，宣傳可再生能源、可持續發展、生態保育等理念和知識。

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。

此外，本集團於二零二一年世界海洋日前夕，與亞發行簽署諒解備忘錄，圍繞循環經濟和減少海洋污染達成戰略合作，透過加強亞洲地區固廢管理水平，減少來自陸地的海洋垃圾，推動海洋健康事業。二零二一年活動以「企業有備，地球無患」為主題，促請企業領袖及大眾做出改變，基於可持續發展及零碳生活的理念做出決策，為人類造就生態未來。光大環境亦繼續積極推動旗下各業務板塊環保設施向公眾開放，響應「世界水日」及「六·五」世界環境日等大型環保宣傳倡議，更好地向公眾推廣和宣傳生態環保、循環經濟等重要生態環境議題。

June 5th World Environment Day Events 「六·五」世界環境日系列活動

### Changzhou Waste-to-energy Project 常州垃圾發電項目



On 3 June 2021, the Economic Development Zone Branch of Changzhou Environmental Protection Bureau held the launching ceremony of the “Beautiful China, I am the One who Takes Action” and “5 June Environment Day” themed event at Everbright Environmental Energy (Changzhou) Co., Ltd. More than 70 people attended the event, including leaders of the Changzhou Environmental Protection Bureau and its Economic Development Zone Branch; responsible personnel of environmental protection work in various towns and streets within the Economic Development Zone; representatives of teachers and students of the Yaoguan Primary School Education Group in the Wujin district of Changzhou; and representatives of the Heyuan community of Qishuyan Street town, Everbright Environmental Energy (Changzhou) Co., Ltd. and other Economic Development Zone entrepreneurs.

二零二一年六月三日，常州市生態環境局經開區分局在光大環保能源（常州）有限公司舉行「美麗中國，我是行動者」及「六五環境日」主題活動啟動儀式。常州市生態環境局、經開區生態環境分局有關領導出席活動，經開區各鎮、街道生態環境工作分管領導、負責人，常州市武進區遙觀中心小學教育集團師生代表，戚墅堰街道河苑社區代表，常州能源公司代表及經開區其他企業家代表共70餘人參加本次活動。

In order to promote green commute and low-carbon lifestyle, the Environmental Protection Bureau’s Economic Development Zone Branch also developed the “small step challenge” mini program, which was officially launched on 5 June 2021, and Changzhou Waste-to-energy Project actively participated in it. On the same day, the Ministry of Ecology and Environment, the Central Civilisation Office and the People’s Government of Qinghai Province jointly hosted the national “Harmonious Coexistence between Man and Nature” and the “5 June Environment Day” event in Qinghai, China. Changzhou Waste-to-energy Project was invited to participate as one of the top ten open-to-public environmental facilities in 2021.

為提倡綠色出行、低碳生活風尚，經開區生態環境分局還設計開發了「集步挑戰」小程序，活動於二零二一年六月五日正式開始，常州垃圾發電項目公司積極參與其中。同日，生態環境部、中央文明辦及青海省人民政府在中國青海共同舉行了「二零二一年人與自然和諧共生」及「六五環境日」國家主場活動。常州垃圾發電項目作為二零二一年十佳環保設施開放單位受邀參加。

### Xintai Waste-to-energy Project 新泰垃圾發電項目

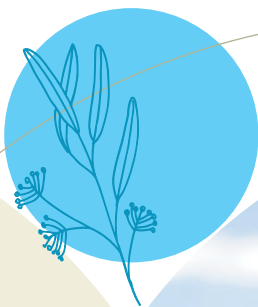


On 4 June 2021, Xintai Waste-to-energy Project's employees actively participated in the World Environment Day advocacy activities organised by the Xintai Branch of the Tai'an Bureau of Ecology and Environment with the theme of "Harmonious Coexistence between Man and Nature". On the day of the event, while Xintai Waste-to-energy Project's employees took to the streets hanging up slogans and distributing company profiles, they also explained enthusiastically to the passers-by about Everbright Environment's main social responsibilities by detailing the overall process of household waste incineration and kitchen waste treatment. The citizens gained an in-depth understanding of where daily waste ended up and the subsequent green treatment process, as well as how to protect nature and live a green life on a daily basis. This activity was warmly received by the public and inspired a welcoming atmosphere of environmental care and protection.

二零二一年六月四日，新泰垃圾發電項目職工積極參加了由泰安市生態環境局新泰分局組織的以「人與自然和諧共生」為主題的世界環境日宣傳活動。活動當天，新泰能源職工走上街頭，在懸掛宣傳標語和發放公司簡介的同時，熱心向市民講解了光大環境的主要社會職責，詳細介紹了生活垃圾焚燒和餐廚垃圾處理基本工藝流程，讓市民深入了解日常生活垃圾的去向和綠色處理方式，以及如何在日常生活中保護自然、綠色生活。這次活動得到了市民的熱烈回應，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



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.

## Environment

### SDG 可持續發展目標



#### 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

##### 3.9

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。

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。

光大環境懷著邁向全球領先生態環境集團的宏願，全力支持聯合國可持續發展目標，致力攜手緩解世界上最迫切的環境、社會和經濟議題。

## 環境

### Our Contribution 我們的貢獻

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* (GB18485-2014) 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* (GB13223-2011). 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.

本集團的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》(GB18485-2014)，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》(GB13223-2011)。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，大大減低大眾的健康風險。

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* (GB18918-2002).

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》(GB18918-2002)的一級A標準。



**SDG**  
可持續發展目標



**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

**6.4**

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。

**Our Contribution**  
我們的貢獻

Our 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.  
我們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，以協助舒緩水質和衛生問題。

The Group treated a total of 1,698,710,000 m<sup>3</sup> of waste water and produced 28,530,000 m<sup>3</sup> of reusable water in 2021.  
二零二一年，本集團共處理了約1,698,710,000立方米的污水和生產了約28,530,000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

**7.1**

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。

We generate clean energy by utilising household waste and agricultural and forestry waste, thus relieving pressure on landfills and saving precious land resources.  
我們利用生活垃圾、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。

Our greenery sector leverages on its core product 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. Greenergy provides integrated lighting solutions to users based on three major business models, namely EMC, EPC and direct sales.  
我們的光大照明板塊以光大新鈉燈為核心產品，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



**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

**9.4**

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。

**Our Contribution**  
我們的貢獻

We 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.

我們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以構建更穩固的生態環境從而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



**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

**11.6**

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。

**Our Contribution**  
我們的貢獻

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中面臨最逼切的环境問題之一。本集團的垃圾發電項目透過熱處理有效地減少生活垃圾體積，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.

本集團透過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

**12.2**

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 eco-recycling sector is committed to expanding 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.

本集團的生態資源板塊主要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



**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

**13.1**

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。

**Our Contribution**

**我們的貢獻**

Our 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.

我們的垃圾發電項目及生物質綜合利用項目透過避免生活垃圾和生物質原材料的降解所引致的無組織甲烷釋放及產生綠色電力以替代化石燃料能源的使用，從而抵銷溫室氣體排放。

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 20,893,834.20 tonnes of CO<sub>2</sub> equivalent emissions in 2021.

此外，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，本集團於二零二一年的運營共抵銷了20,893,834.20噸二氧化碳當量排放。

The Group has also included climate change risk into its Risk Management System in order to formulate more comprehensive emergency and natural disaster contingency plans.

本集團更將氣候變化風險納入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



**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

**14.1**

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。

**Our Contribution**  
我們的貢獻

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. 我們的項目選址均符合嚴格的環評準則，防止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

Our 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.

我們的垃圾發電項目以無害環境的方式應對垃圾問題，避免了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

We have been partnering with institutions such as ADB, China Development Bank, etc., to collaboratively promote clean energy and environmental protection.

我們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

### SDG 可持續發展目標



#### End poverty in all its forms everywhere

在全世界消除一切形式的貧困

##### 1.2

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。

## 社會

### Our Contribution 我們的貢獻

Our biomass utilisation business not only solve the pollution problems caused by the burning of local agricultural and forestry straws, but also create jobs opportunities for local farmers and increase their sources 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.

我們的生物質業務除了解決當地農林秸稈焚燒帶來的污染問題，更通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

##### 2.1

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 2,215,550 tonnes.

我們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2,215,550噸餐廚及廚餘垃圾。

**SDG**  
可持續發展目標



**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

**3.9**

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。

**Our Contribution**  
我們的貢獻

In order to cope with the ongoing Pandemic situation in 2021, the Group had zero infection cases in the plant workplace 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. 針對二零二一年疫情的嚴峻形勢，本集團實現工作廠區零感染，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



**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

**4.4**

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。

**Our Contribution**  
我們的貢獻

The Group's environmental protection projects have been selected as environmental 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 80,000 domestic and foreign visitors from all social circles.

我們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八萬人次。

In 2021, multiple project companies of the Group had carried 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.

二零二一年，我們的項目公司積極透過「線上」平台展開公眾開放活動，打破新冠疫情限制。這些虛擬活動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 2021, the Group's "Dangshan No. 5 High School" in Anhui Province had accumulatively provided educational opportunities for 7,060 students.

截至二零二一年十二月三十一日，我們在安徽省的「碭山縣第五中學」累計已為7,060名學生提供教育機會。

**SDG**  
可持續發展目標



**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

**5.1**

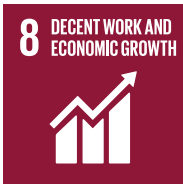
End all forms of discrimination against women and girls everywhere.

在全球消除對婦女和女童一切形式的歧視。

**Our Contribution**  
我們的貢獻

We ensure that its human resources management structure, including compensation, training opportunity, career prospect, etc., is not affected by gender biases, thus achieving gender equality.

我們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

**8.2**

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, we drive the development of upstream waste collection industries as well as downstream metal and bottom ash recycling industries, completing a sustainable waste management industry chain.

我們透過投資、建造及運營先進的垃圾發電設施帶動了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。

Our 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，我們特別關顧本地人才，報告期內聘請的許多新員工均來自本地。

**SDG**  
可持續發展目標



**Reduce inequality within  
and among countries**  
減少國家內部和國家之間的不平等

**10.2**

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。

**Our Contribution**  
我們的貢獻

We implement 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.

我們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。

We also pay 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.

我們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

**16.5**

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。

**16.10**

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公眾監督的重要性，我們向大眾公佈各垃圾發電運營項目的煙氣排放數據，從而倡導環境正義。

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，我們遵循亞發行的要求，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.

我們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》禁止我們的工作環境內出現貪污、受賄（包括任何形式的疏通費）、利益衝突和歧視等不道德問題。

## Long-term Targets of the Group

## 集團的長期目標

Material Topics 實質性議題	Targets 目標	Progress as at 31 December 2021 截至二零二一年 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 RMB1.041 billion (i.e. target already achieved). 累計投放科研及開發資金達人民幣10.41億元 (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 2021, the Group's environmental protection facilities received over 80,000 domestic and foreign visitors from all social circles. 於二零二一年，本集團環保設施共接待國內外各界人士參觀考察超過80,000人次。  Due to the Pandemic, the number of visitors received during the Reporting Period was unable to meet the target. 受限於新冠疫情，本年度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。	The rate of work-related injuries of employees was 0.14 in 2021. 二零二一年員工工傷率為0.14。	

## Review of 2021 Targets

## 二零二一年目標回顧

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 previous year 較去年增長10%	✓
	Air emissions (PM, SO <sub>2</sub> , NO <sub>x</sub> ) per kWh of green electricity supplied 每千瓦時綠色上網電量的主要煙氣(顆粒物、二氧化硫和氮氧化物)排放量	not more than the average of the past seven years 不高於過往七年的均值	✓
	Energy consumption intensity 能源消耗強度	not more than the average of the past three years 不高於過往三年的均值	✓
	<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	30% more than last year 較去年增長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

		2021 HK\$'000 港幣千元	2020 HK\$'000 港幣千元	2019 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	<b>49,895,384</b>	42,926,426	37,557,635
Other Income <sup>(1)</sup>	其他收益 <sup>(1)</sup>	<b>917,338</b>	717,493	765,649
Other Income and gains/(losses), net	其他收入及收益／(虧損) 淨額	<b>(623,055)</b>	(621,614)	(30,211)
<b>Economic Value Distributed</b>	<b>分配的經濟價值</b>			
Staff Costs	員工開支	<b>3,956,078</b>	2,874,560	2,484,700
Other Costs <sup>(1)</sup>	其他成本 <sup>(1)</sup>	<b>31,196,852</b>	27,282,060	24,840,127
Finance Costs	財務費用	<b>3,079,448</b>	2,279,149	1,830,798
Dividends	股息	<b>2,088,611</b>	1,842,893	1,597,174
Taxes <sup>(2)</sup>	稅項 <sup>(2)</sup>	<b>955,370</b>	924,496	644,192
Profit attributable to non-controlling interests	非控股權益應佔盈利	<b>1,316,244</b>	1,211,097	1,164,871
Charitable donations <sup>(3)</sup>	慈善捐款 <sup>(3)</sup>	<b>9,734</b>	14,184	10,772
<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	<b>7,587,330</b>	6,593,866	5,720,439

Operational Performance

運營表現

		Unit 單位	2021	2020	2019
<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	<b>19,598,823,018</b>	15,004,327,000	10,713,049,000
Steam supplied	蒸汽供應量	Tonne 噸	<b>2,154,671</b>	1,344,000	819,000
Household waste processed	生活垃圾處理量	Tonne 噸	<b>43,452,000</b>	31,545,000	24,739,000
Biomass raw materials processed	生物質原材料處理量	Tonne 噸	<b>7,964,000</b>	6,708,000	4,636,000
Hazardous waste and solid waste processed	危廢及固廢處置量	Tonne 噸	<b>269,000</b>	182,000	198,000
Waste water treated <sup>(4)</sup>	污水處理量 <sup>(4)</sup>	m <sup>3</sup> 立方米	<b>1,698,710,000</b>	1,559,096,000	1,433,805,000
Leachate treated <sup>(5)</sup>	滲濾液處理量 <sup>(5)</sup>	m <sup>3</sup> 立方米	<b>9,635,000</b>	7,094,000	5,210,000
COD reduction	COD減排量	Tonne 噸	<b>740,000</b>	579,000	513,000
Average on-grid green electricity supplied per tonne of waste (Environmental Energy – waste-to-energy projects)	平均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	<b>333.15</b>	320.46	302.75
<b>Project Overview</b>	<b>項目概覽</b>				
Total number of projects	項目總數	No. 個	<b>528</b>	458	399

## Environmental Performance (6)

## 環境表現(6)

		Unit 單位	2021	2020	2019
<b>GHG Emissions<sup>(7)</sup></b>		<b>溫室氣體排放<sup>(7)</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>15,242,857.68</b>	10,717,354.60	8,992,913.41 (re-stated) (經重列)
— incineration of household waste <sup>(8)</sup>	— 生活垃圾焚燒 <sup>(8)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>15,044,641.21</b>	10,548,374.40	8,852,663.65 (re-stated) (經重列)
— other sources	— 其他來源	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>198,216.46</b>	168,980.20	140,249.76 (re-stated) (經重列)
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>519,975.72</b>	454,575.00	344,331.55 (re-stated) (經重列)
Scope 3 (other indirect emissions) <sup>(9)</sup>	範疇三 (其他間接排放) <sup>(9)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>149,597.88</b>	42,076.01	13,554.36
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>15,912,431.28</b>	11,214,005.61	9,350,799.32 (re-stated) (經重列)
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>0.81</b>	0.75	0.87 (re-stated) (經重列)
GHG emissions offset	溫室氣體排放抵銷量	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>20,893,834.20</b>	15,273,840.27	10,561,808.35 (re-stated) (經重列)
GHG emissions reductions <sup>(10)</sup>	溫室氣體減排量 <sup>(10)</sup>	Tonne CO <sub>2</sub> e 噸二氧化碳當量	<b>4,981,402.92</b>	4,059,834.66	1,211,009.03
<b>Key Air Emissions<sup>(11)</sup></b>		<b>主要煙氣排放<sup>(11)</sup></b>			
Particulate matter	顆粒物	Tonne 噸	<b>559.41</b>	457.09	330.13
Sulphur dioxide (SO <sub>2</sub> )	二氧化硫	Tonne 噸	<b>4,003.39</b>	2,595.33	1,658.34
Nitrogen oxides (NO <sub>x</sub> )	氮氧化物	Tonne 噸	<b>22,467.59</b>	15,463.35	9,337.01
<b>Energy Consumption<sup>(12)</sup></b>		<b>能源消耗<sup>(12)</sup></b>			
Natural gas	天然氣	GJ 吉焦	<b>294,848.41</b>	1,032,927.88	123,653.59
Diesel	柴油	GJ 吉焦	<b>1,719,249.14</b>	850,165.78	651,514.50
Gasoline	汽油	GJ 吉焦	<b>1,458,030.90</b>	367,534.63	85,336.74
Liquefied Petroleum Gas	液化石油氣	GJ 吉焦	<b>1.65</b>	253.50	70,197.29
Biogas	沼氣	GJ 吉焦	<b>0</b>	104.56	235,576.41
Non-renewable electricity	非再生能源電力	GJ 吉焦	<b>3,153,813.54</b>	4,897,377.95	2,090,069.26
Renewable electricity	可再生電力	GJ 吉焦	<b>11,477,931.55</b>	8,653,699.65	7,351,678.61
Total non-renewable energy consumed	非再生能源消耗總量	GJ 吉焦	<b>6,625,943.64</b>	4,897,377.95	3,020,771.38
Non-renewable energy intensity	非再生能源消耗強度	kJ/kWh 千焦/千瓦時	<b>338.08</b>	326.40	281.97
Total energy consumed	總能源消耗量	GJ 吉焦	<b>18,103,875.19</b>	13,551,077.61	10,608,026.40
Energy intensity	能源強度	kJ/kWh 千焦/千瓦時	<b>923.72</b>	903.14	990.20



		Unit 單位	2021	2020	2019
<b>Water Consumption</b>		<b>耗水</b>			
Total freshwater consumed	淡水消耗總量	m <sup>3</sup> 立方米	<b>75,307,157.57</b>	61,859,696.87	45,317,154.05
Freshwater intensity	淡水消耗強度	m <sup>3</sup> /kWh 立方米/千瓦時	<b>0.004</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>1,552,033.80</b>	891,953.08	678,567.40
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>34,652.16</b>	85,919.91	8,077.69
Total hazardous waste generated	有害廢棄物產生總量	Tonne 噸	<b>1,586,685.96</b>	977,872.99	686,645.09
Hazardous waste intensity	有害廢棄物強度	Tonne/MWh 噸/兆瓦時	<b>0.08</b>	0.07	0.06
<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>283,189.21</b>	362,950.97	100,485.23
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>9,811,898.42</b>	6,891,301.07	4,835,991.34
Sludge generated from waste water treatment projects, waste-to-energy projects and integrated biomass utilisation projects <sup>(13)</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>(13)</sup>	Tonne 噸	<b>1,611,679.32</b>	1,808,958.91	1,158,264.40
General waste generated	一般廢物產生量	Tonne 噸	<b>5,708.16</b>	3,248.78	3,230.45
Total non-hazardous waste generated	無害廢棄物產生總量	Tonne 噸	<b>11,712,475.10</b>	9,066,459.73	6,097,971.42
Non-hazardous waste intensity	無害廢棄物強度	Tonne/MWh 噸/兆瓦時	<b>0.60</b>	0.60	0.57

## Water Withdrawal, Discharge and Consumption Performance

## 取水、排水及耗水表現

		2021	
		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>38,519,087.91</b>	<b>12,892,286.29</b>
	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	38,519,087.91	12,892,286.29
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體	–	–
	<b>Groundwater (total)</b> 地下水 (總量)	<b>2,663,007.18</b>	<b>877,197.60</b>
	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	2,663,007.18	877,197.60
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體	–	–
	<b>Seawater (total)</b> 海水 (總量)	<b>–</b>	<b>–</b>
	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	–	–
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體	–	–
	<b>Produced water (total)</b> 產出水 (總量)	<b>32,210,018.00</b>	<b>8,450,490.00</b>
	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	32,210,018.00	8,450,490.00
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體	–	–
	<b>Third-party water (total)</b> 第三方的水 (總量)	<b>1,732,835,062.48</b>	<b>1,518,017,505.52</b>
	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	1,732,835,062.48	1,518,017,505.52
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體	–	–
	<b>Total third-party water withdrawal by withdrawal source</b> 依取水來源劃分第三方的 總取水量		
	Surface water 地表水	33,379,422.51	12,053,219.41
	Groundwater 地下水	8,254.00	8,254.00
	Seawater 海水	–	–
	Waste Water <sup>(1)</sup> 污水 <sup>(1)</sup>	1,698,710,000.00	1,505,361,738.00
Produced water 產出水	737,385.97	594,294.11	
<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>1,806,227,175.57</b>	<b>1,540,237,479.41</b>

<sup>(1)</sup> For completeness in water withdrawal disclosures, the Group has started inclusion of the amount of waste water received in this table in 2021.

<sup>(1)</sup> 為完整披露取水量，本集團從二零二一年開始將其接收的污水量納入此表格。

		2021	
		All areas 所有地區	Areas with water stress 具水資源壓力 的地區
<b>Water consumption</b> 耗水量			
<b>Total freshwater consumption (m<sup>3</sup>)</b> 淡水消耗總量 (立方米)		<b>75,307,157.57</b>	26,425,250.30
<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	817,251,522.68	675,083,047.00
	Groundwater 地下水	16,000.00	16,000.00
	Sea 大海	205,824,676.00	197,909,514.00
	Third-party water (total) 第三方的水 (總量)	109,494,503.83	106,818,928.50
	Third-party water sent for use by other organisations 供其他組織使用的第三方的水	25,448,959.00	25,448,959.00
	<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>1,132,586,702.51</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)	≤1,000 mg/L Total Dissolved Solids ≤1,000 mg/L總溶解固體	1,132,586,702.51	979,827,849.50
	>1,000 mg/L Total Dissolved Solids >1,000 mg/L總溶解固體		

## Social Performance

## 社會表現

Employee Profile <sup>(14)</sup>員工概況<sup>(14)</sup>

				2021	2020	2019		
<b>Total number of employees</b>		<b>員工總數</b>		<b>11,330</b>	12,732	13,250		
<b>By gender</b>		<b>按性別劃分</b>						
Male		男性		<b>8,592</b>	9,812	10,292		
Female		女性		<b>2,738</b>	2,920	2,958		
<b>By age</b>		<b>按年齡劃分</b>						
30 and below		30歲及以下		<b>3,740</b>	5,037	5,828		
31-40		31-40歲		<b>5,137</b>	5,475	5,124		
41-50		41-50歲		<b>1,820</b>	1,690	1,742		
51 and above		51歲及以上		<b>633</b>	530	556		
<b>By Employment Contract</b>		<b>按合約類別劃分</b>						
Permanent contract	長期合約	Male	男性	<b>2,147</b>	2,017	1,694 (re-stated) (經重列)		
			Female	<b>746</b>	687	599 (re-stated) (經重列)		
		Mainland China	中國內地	<b>2,434</b>	2,159	1,886		
			Hong Kong	<b>78</b>	73	68		
			Singapore	<b>4</b>	4	4		
			Vietnam	<b>32</b>	17	3		
			Poland	<b>345</b>	451	332		
		Temporary/fixed-term contract	臨時/定期合約	Male	男性	<b>6,445</b>	7,783	8,595 (re-stated) (經重列)
					Female	<b>1,992</b>	2,245	2,358 (re-stated) (經重列)
				Mainland China	中國內地	<b>8,270</b>	9,988	10,808
					Hong Kong	<b>0</b>	0	0
					Singapore	<b>0</b>	0	0
					Vietnam	<b>28</b>	40	46
					Poland	<b>139</b>	0	99

		2021	2020	2019
<b>By employment type</b>	<b>按受聘類別劃分</b>			
Full-time	全職	11,330	12,732	13,249
Part-time	兼職	0	0	1
<b>By employee ranking</b>	<b>按員工職級劃分</b>			
Senior management	高級管理人員	501	465	574
Middle-level management	中層管理人員	1,866	1,697	1,579
General and technical staff	一般及技術員工	8,963	10,570	11,097
<b>By location</b>	<b>按地區劃分</b>			
Mainland China	中國內地	10,704	12,147	12,695
Hong Kong	香港	78	73	71
Singapore	新加坡	4	4	4
Vietnam	越南	60	57	49
Poland	波蘭	484	451	431
Local Employees <sup>(15)</sup>	本地員工 <sup>(15)</sup>	8,317	9,620	9,965
Non-local Employees <sup>(15)</sup>	外地員工 <sup>(15)</sup>	3,013	3,112	3,285
<b>By ethnicity</b>	<b>按民族劃分</b>			
Chinese (Han)	中國人 (漢族)	10,507	11,908	12,458
Chinese (Ethnic minorities)	中國人 (少數族裔)	275	316	312
Singaporean (non-minority group)	新加坡人 (非少數族裔)	4	-	-
Vietnamese (non-minority group)	越南人 (非少數族裔)	60	57	49
Polish (non-minority group)	波蘭人 (非少數族裔)	484	451	431

## Employee Diversity

## 員工多元化

		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	18.12%	16.70%
Senior management	高級管理人員	11.98%	18.03%
Middle-level and junior management	中層及初級管理人員	19.77%	11.83%
Management in revenue-generating functions	創收職能中的管理人員	9.72%	17.49%
STEM-related positions	科學、科技、工程及數學相關職位	15.70%	33.33%

		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 employee</b> 所有全職員工	<b>All management positions</b> 所有管理人員	All full-time employee 所有全職員工	All management positions 所有管理人員
Chinese (Han)	中國人 (漢族)	92.74%	91.51%	93.53%	97.22%
Chinese (Ethnic minorities)	中國人 (少數族裔)	2.42%	3.80%	2.48%	2.04%
Singaporean (non-minority group)	新加坡人 (非少數族裔)	0.04%	0.13%	-	-
Vietnamese (Non-minority group)	越南人 (非少數族裔)	0.53%	0.04%	0.45%	0.05%
Polish (Non-minority group)	波蘭人 (非少數族裔)	4.27%	4.52%	3.54%	0.69%

		2021	2020
Percentage of employees with disabilities	殘疾員工比率	0.15%	0.16%



## New Hires and Employee Turnover

## 新聘及離職員工

		2021		2020		2019	
		Total number of persons	Percentage of employees in this category	Total number of persons	Percentage of employees in this category	Total number of persons	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>738</b>	<b>6.51%</b>	1,978	15.54%	4,227	31.9%
<b>By gender</b>	<b>按性別劃分</b>						
Male	男性	547	6.37%	1,570	16.00%	3,263	31.70%
Female	女性	191	6.98%	408	13.97%	964	32.59%
<b>By age</b>	<b>按年齡劃分</b>						
30 and below	30歲及以下	356	9.52%	1,155	22.93%	2,399	41.16%
31-40	31-40歲	281	5.47%	681	12.44%	1,466	28.61%
41-50	41-50歲	70	3.85%	119	7.04%	299	17.16%
51 and above	51歲及以上	31	4.90%	23	4.34%	63	11.33%
<b>By location</b>	<b>按地區劃分</b>						
Mainland China	中國內地	602	5.62%	1,900	15.64%	4,132	32.55%
Hong Kong	香港	16	20.51%	10	13.7%	6	8.45%
Singapore	新加坡	1	25.00%	0	0%	1	25.00%
Vietnam	越南	15	25.00%	17	29.82%	18	36.73%
Poland	波蘭	104	21.49%	51	11.31%	70	16.24%
Local Employees <sup>(15)</sup>	本地員工 <sup>(15)</sup>	455	5.47%	1,486	15.45%	3,126	31.37%
Non-local Employees <sup>(15)</sup>	外地員工 <sup>(15)</sup>	283	9.39%	492	15.81%	1,101	33.52%
<b>Total number of employee turnover (resignation/retirement)</b>	<b>員工流失(離職/退休)總數</b>	<b>2,296</b>	<b>20.26%</b>	2,094	16.45%	1,168	8.82%
<b>By gender</b>	<b>按性別劃分</b>						
Male	男性	1,900	22.11%	1,737	17.70%	932	9.06%
Female	女性	396	14.46%	357	12.23%	236	7.98%
<b>By age</b>	<b>按年齡劃分</b>						
30 and below	30歲及以下	1,029	27.51%	1,011	20.07%	594	10.19%
31-40	31-40歲	1,012	19.70%	771	14.08%	398	7.77%
41-50	41-50歲	182	10.00%	230	13.61%	105	6.03%
51 and above	51歲及以上	73	11.53%	82	15.47%	71	12.77%
<b>By location</b>	<b>按地區劃分</b>						
Mainland China	中國內地	2,191	20.47%	2,038	16.78%	1,067	8.40%
Hong Kong	香港	11	14.10%	5	6.85%	6	8.45%
Singapore	新加坡	1	25.00%	0	0%	1	25.00%
Vietnam	越南	11	18.33%	15	26.32%	12	24.49%
Poland	波蘭	82	16.94%	36	7.98%	82	19.03%

## Training and Development

## 培訓及發展

		2021 Hours 小時	2020 Hours 小時	2019 Hours 小時
<b>Total training hours</b>	<b>總培訓時數</b>	<b>904,951.92</b>	875,520.98	367,447
<b>Average training hours</b>	<b>人均培訓時數</b>	<b>79.87</b>	68.77	27.73
<b>By gender</b>	<b>按性別劃分</b>			
Male	男性	<b>90.82</b>	61.87	28.14
Female	女性	<b>45.53</b>	91.95	26.31
<b>By employee ranking</b>	<b>按員工職級劃分</b>			
Senior management	高級管理人員	<b>38.83</b>	26.34	18.94
Middle-level management	中層管理人員	<b>57.13</b>	28.17	23.83
General and technical staff	一般及技術員工	<b>86.90</b>	77.15	28.74

## Health and Safety

## 健康與安全

		2021	2020	2019
<b>Employees</b>	<b>員工</b>			
Number of work-related fatalities	因工死亡個案	<b>1</b>	0	0
Rate of work-related fatalities <sup>(16)</sup>	因工死亡率 <sup>(16)</sup>	<b>0.01</b>	0	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>(17)</sup>	嚴重工傷個案 (不包括死亡個案) <sup>(17)</sup>	<b>0</b>	0	0
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(18)</sup>	嚴重工傷率 (不包括死亡個案) <sup>(18)</sup>	<b>0</b>	0	0
Number of work-related injuries <sup>(19)</sup>	工傷個案 <sup>(19)</sup>	<b>16</b>	10	24
Rate of work-related injuries <sup>(20)</sup>	工傷率 <sup>(20)</sup>	<b>0.14</b>	0.08	0.18
Days of absence from work due to work-related injury	因工傷缺勤日數	<b>1,267</b>	582	1,343
Lost-time injuries frequency rate (LTIFR) <sup>(21), (22)</sup>	損失工作日事故頻率 <sup>(21), (22)</sup>	<b>0.70</b>	0.40	0.90
<b>Third-Party Contractors and Sub-Contractors Working On-site<sup>(23)</sup></b>	<b>第三方承包商及分包商駐場工人<sup>(23)</sup></b>			
Number of work-related fatalities	因工死亡個案	<b>0</b>	1	1
Rate of work-related fatalities <sup>(16)</sup>	因工死亡率 <sup>(16)</sup>	<b>0</b>	0.01	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>(17)</sup>	嚴重工傷個案 (不包括死亡個案) <sup>(17)</sup>	<b>0</b>	0	0
Rate of high-consequence work-related injuries (excluding fatalities) <sup>(18)</sup>	嚴重工傷率 (不包括死亡個案) <sup>(18)</sup>	<b>0</b>	0	0
Number of work-related injuries <sup>(19)</sup>	工傷個案 <sup>(19)</sup>	<b>15</b>	5	6
Rate of work-related injuries <sup>(20)</sup>	工傷率 <sup>(20)</sup>	<b>0.07</b>	0.04	0.07
Days of absence from work due to work-related injury	因工傷缺勤日數	<b>808</b>	175	304
Lost-time injuries frequency rate (LTIFR) <sup>(21), (22)</sup>	損失工作日事故頻率 <sup>(21), (22)</sup>	<b>0.35</b>	0.20	0.35

## Remuneration

## 薪酬

		2021	2020	2019
<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>6,450,468.15</b>	6,112,130.99	7,808,000.00
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>123,383.46</b>	107,844.48	91,359.77
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>52.28:1</b>	56.68:1	85.46:1
Ratio of the annual percentage increase in total remuneration of the highest-paid individual to the median percentage increase 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增長與全體員工 (不包括最高薪人士) 薪酬總額中位數的年度百分比增長的比例	<b>0.38:1</b>	-1.2:1 (re-stated) (經重列)	6.96:1
<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>364,013.56</b>	302,245.66	279,807.95
Basic salary of senior management (female)	高級管理人員的基本工資 (女)	<b>366,055.55</b>	307,199.02	319,200.96
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>1.01:1</b>	1.02:1	1.14:1
Basic salary and bonus of senior management (male)	高級管理人員的基本工資和獎金 (男)	<b>612,864.62</b>	520,581.94	480,660.75
Basic salary and bonus of senior management (female)	高級管理人員的基本工資和獎金 (女)	<b>626,390.66</b>	562,143.08	568,618.08
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>1.02:1</b>	1.08:1	1.18:1
<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>205,789.47</b>	196,558.08	184,359.41
Basic salary of middle-level management (female)	中層管理人員的基本工資 (女)	<b>171,906.55</b>	170,140.23	168,640.59
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>0.84:1</b>	0.87:1	0.91:1
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>315,088.88</b>	291,846.48	278,859.53
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>259,410.05</b>	259,936.01	252,064.74
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>0.82:1</b>	0.89:1	0.90:1
<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>112,588.59</b>	95,261.21	92,922.97
Basic salary of general and technical staff (female)	一般及技術員工的基本工資 (女)	<b>97,223.94</b>	79,943.62	78,521.80
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>0.86:1</b>	0.84:1	0.85:1
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>153,232.34</b>	120,472.38	116,027.47
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>132,638.46</b>	102,758.62	99,621.18
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>	0.85:1	0.86:1

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 2021 were made in cash.
- (4) Waste water treatment includes all operating municipal and industrial waste water treatment projects under environmental water.
- (5) Leachate treatment includes all operating waste-to-energy projects and integrated biomass utilisation projects.
- (6) 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.
- (7) 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)*.
- (8) 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.
- (9) GHG emissions from air travel are calculated by International Civil Aviation Organization's Carbon Emissions Calculator.
- (10) GHG emissions reductions is GHG emissions offset minus total GHG emissions.

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) 二零二一年所有捐款均為現金。
- (4) 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。
- (5) 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。
- (6) 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。
- (7) 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）》。
- (8) 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係數和排放因子，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。
- (9) 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。
- (10) 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。

## Key Statistics

### 主要數據

- |   |   |
|---|---|
| (11) Includes all projects of environmental energy and greentech sectors that involve combustion and incineration operations.   | (11) 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。                               |
| (12) Relevant energy conversion factors from <i>China Energy Statistical Yearbook 2020</i> are adopted.   | (12) 能量轉換計算採用《中國能源統計年鑒2020》的相關能量轉換因子。                         |
| (13) 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.                      | (13) 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。 |
| (14) Data as at 31 December 2021.   | (14) 數據截至二零二一年十二月三十一日。  |
| (15) 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.  | (15) 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。               |
| (16) Rate of work-related fatalities = (Total number of fatalities as a result of work-related injury/Total working hours) x 200,000.   | (16) 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。                |
| (17) 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. | (17) 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。              |
| (18) 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.   | (18) 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。  |
| (19) Work-related injuries also include work-related fatalities and high-consequence work-related injuries.   | (19) 工傷亦包含因工死亡及嚴重工傷。  |
| (20) Rate of work-related injuries = (Total number of work-related injuries/Total working hours) x 200,000.   | (20) 工傷率 = (工傷個案總計 / 工作總時數) x 200,000。                        |
| (21) LTIFR = (Number of lost-time injuries/Total working hours) x 1,000,000.  | (21) 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。             |
| (22) LTIFR is a new disclosure for this Report, 2019 and 2020 data have been added as well.   | (22) 損失工作日事故頻率是本報告新披露的項目，2019年及2020年也新增披露此數據。                 |
| (23) Excludes construction workers of projects under construction.  | (23) 不包括在建項目的建築工人。  |





## 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 2021 (hereinafter called the “Report”). The Report stated the sustainability performance of Everbright Environment in the period of 1<sup>st</sup> January 2021 to 31<sup>st</sup> December 2021.

The aim of this verification is to provide a reasonable assurance on the reliability of the report contents. The Report has been prepared in accordance with the Global Reporting Initiative (“GRI”) Standards: Comprehensive option, as well as Rule 13.91 and Appendix 27 “Environmental, Social and Governance Reporting Guide (“ESG Reporting Guide”)” of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “SEHK Listing Rules”).

### 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 out in the GRI Standards: Comprehensive option, and the SEHK Listing Rules (Rule 13.91 and Appendix 27 the ESG Reporting Guide).

HKQAA’s 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 preparation of the information presented. HKQAA did not involve in the collection and calculation of data or the compilation of the reporting contents. Our verification activities were entirely independent and there was no relationship between HKQAA and Everbright Environment that would affect the impartiality of the verification.

### Conclusion

Based on the verification results and in accordance with the verification procedures undertaken, HKQAA has obtained reasonable assurance and is in the opinion that:

- The Report has been prepared in accordance with the GRI Standards: Comprehensive option, as well as the SEHK Listing Rules (Rule 13.91 and Appendix 27 the ESG Reporting Guide);
- The Report illustrates the sustainability performance of Everbright Environment, covering all material aspects, in a balanced, comparable, clear and timely manner; and
- The data and information disclosed in the Report are reliable and complete.

Nothing has come to HKQAA’s attention that the selected sustainability performance information and data contained in the Report has not been prepared and presented fairly and honestly, in all material aspects, in accordance with the verification criteria. In conclusion, the Report reflects truthfully of 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  
Senior General Manager, Innovation Business  
25 May 2022



## 核實聲明

### 範圍及目的

香港品質保證局已對中國光大環境(集團)有限公司(「光大環境」)二零二一年可持續發展報告(「報告」)的全部內容進行獨立驗證。該報告陳述了光大環境於二零二一年一月一日至二零二一年十二月三十一日期間,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):全面選項,及香港聯合交易所有限公司證券上市規則(「聯交所上市規則」)第13.91條及附錄二十七所載的《環境、社會及管治報告指引》的要求編制。

### 保證程度和核實方法

此次驗證工作是依據 International Auditing and Assurance Standards Board (國際審計與核證準則委員會)發佈的 International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information (《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。收集核實證據的過程是參考國際準則所訂立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:全面選項,及聯交所上市規則(第13.91條和附錄二十七《環境、社會及管治報告指引》)而定。

香港品質保證局的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。相關原始數據和支援證據亦於核實過程中經過詳細審閱。

### 獨立性

光大環境負責收集和準備所有在報告內陳述的資料。香港品質保證局不涉及收集和計算此報告內的數據或參與編撰此報告。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核實公正的關係,我們的核實過程是完全獨立的。

### 結論

基於是次的核實結果,香港品質保證局對報告作出合理保證並總結:

- 報告是按照 GRI 準則:全面選項,及聯交所上市規則(第13.91條和附錄二十七《環境、社會及管治報告指引》)的要求編制;
- 報告平衡、清晰、具比較性和及時地將光大環境的可持續發展表現包括所有重要的可持續發展範疇闡述;及
- 報告內的數據和資料可靠完整。

根據驗證準則,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訊和資料並非公平和如實地按照核實標準在主要範疇作出披露。總體而言,此報告能如實地反映光大環境的可持續發展表現並與其具體的可持續發展情況和重要性相稱。

### 香港品質保證局代表簽署

蔣齊仲  
創新業務高級總經理  
二零二二年五月二十五日



14808648-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 2021 to 31<sup>st</sup> December 2021. 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 GHG Summary” 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.

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Remarks:  
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**Conclusion**

Total GHG emissions and removals of China Everbright Environment Group Limited in 2021:

2021 GHG Emissions and Removals	Tonnes (T) of CO <sub>2</sub> equivalent
Category a): Direct GHG emissions (excluding anthropogenic biogenic GHG emissions)	15,213,304.9
Anthropogenic biogenic GHG emissions	29,552.7
Category a): Direct GHG removals (excluding anthropogenic biogenic GHG removals)	20,060,108.3
Anthropogenic biogenic GHG removals	833,725.9
Indirect GHG emissions	669,573.6
Category b): Imported Energy	519,975.7
Category c): Transportation	126,887.4
Category d): Products used	/
Category e): Use of products	/
Category f): Other sources	22,710.5
Total (Direct + Indirect Emissions excluding anthropogenic biogenic GHG emissions)	15,882,878.5
Total (Direct + Indirect Emissions including anthropogenic biogenic GHG emissions)	15,912,431.3
Total (Direct + Indirect Removals excluding anthropogenic biogenic GHG removals)	20,060,108.3

Signed on behalf of Hong Kong Quality Assurance Agency:

Lead Verifier:

Senior General Manager:

Tommy Lo

Meico Cheong

Date of Issuance: 30 May 2022

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)

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Remarks:

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### 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 GHG Summary" covering GHG emissions and removals of the reporting period 1<sup>st</sup> January 2021 to 31<sup>st</sup> December 2021.

#### 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 March to May 2022. 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 2021 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, Greenery, Envirotech and Environmental Planning
  - o Over 89% of GHG emissions and 75% of GHG removals were contributed from subsidiary companies of China Everbright Environment Group Limited

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Remarks:  
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- 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 GHG Summary"
- 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 2021 to 31<sup>st</sup> December 2021
- Intended user of the verification opinion: Stakeholders identified by CEEGL

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Remarks:  
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**Conclusion:**

CEEGL provided the GHG Statement in form of “CEEGL GHG Summary” 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 15,882,878.5 tonnes of CO<sub>2</sub> equivalent (excluding anthropogenic biogenic GHG emissions), and anthropogenic biogenic GHG emissions of 29,552.7 tonnes of CO<sub>2</sub> equivalent, direct greenhouse gas removals of 20,060,108.3 tonnes of CO<sub>2</sub> equivalent (excluding anthropogenic biogenic GHG removals), and anthropogenic biogenic GHG removals of 833,725.9 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 GHG Summary” 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 GHG Summary” 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”.

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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

Business Sector 業務板塊	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			Materials Consumption 物料使用	Waste Recycling 廢棄物回收	
						Fly ash and bottom ash generated from hazardous waste incineration projects (危廢焚燒項目所產生的飛灰及爐渣)	Fly 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(垃圾發電)所產生的飛灰)	Furnace ash generated from integrated biomass utilisation projects (生物質綜合利用項目(生物質)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			
Environmental 環保能源	Waste-to-energy/ 垃圾發電	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Food waste treatment 餐厨垃圾處理	✓	△		✓	✓					✓	✓	✓	
	Sludge treatment and disposal 污泥處理裝置	✓		△	✓	✓			✓	✓	✓	✓	✓	
	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	✓		△	✓	✓					△	△	△	✓

Business Sector 業務板塊	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			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) 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)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	✓	✓		✓	✓					✓	✓	✓	
Environmental protection company 環保企業													

Appendix I – Reporting Boundary

附錄I—報告邊界

Business Sector 業務板塊	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
	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 危險焚燒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)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		
	GHG Emissions 溫室氣體排放	GHG Emissions 溫室氣體排放	GHG Emissions 溫室氣體排放	Air Emissions 廢氣排放	Energy Consumption 能源消耗	Water Consumption and Discharge 耗水及排水		
Environmental Water 環保水務	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 污水源热泵	✓			✓	✓		✓
	Raw water protection 原水保護							
	Leachate treatment 滲濾液處理	✓			△	✓		✓



Business Sector 業務板塊	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			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) 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 危險廢棄項目所產生的飛灰及爐渣	Furnace ash generated from integrated biomass utilisation projects (biomass) 項目(生物質)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		
Equipment Manufacturing 裝備製造	✓		△	✓	✓						✓	✓	✓
Eco-recycling 生態資源	✓			✓	✓						✓	✓	✓
Greenery 光大照明	✓			✓	✓						✓	✓	✓
Envirotech 綠色科創	✓			✓	✓						✓	✓	✓
Environmental Planning 環境規劃	✓			✓	✓						✓	✓	✓
Headquarters and Representative Offices 總部及代表處	✓			✓	✓						✓	✓	✓

\* Under preparatory stage  
在籌建階段

✓ Fully disclosed  
全面披露

△ Insignificant  
不顯著

■ Not applicable  
不適用

社會數據

Social Statistics

Business Sector 業務板塊	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、合資格退休員工)	Training Hours 培訓時數	Maternity/ Paternity Leave Statistics 產假/侍產假數據	Health and Safety Statistics 健康與安全數據		Community Engagement 社會貢獻		Supply Chain 供應鏈		Remuneration Statistics 薪酬數據
				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 外判服務工人數目	
Business Sector 業務板塊	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 飛灰填理	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Medical waste treatment 醫療廢物處理	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Solid waste 固廢處理	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Integrated biomass utilisation 生物質綜合利用	✓	✓	✓	✓	✓	✓	✓	✓	✓
GreenTech 綠色環保	Hazardous waste and solid waste treatment 危險及固廢處置	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Environmental remediation 環境修復	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Solar energy 光伏發電	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Wind power 風電	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Environmental protection company 環保企業	✓	✓	✓	✓	✓	✓	✓	✓	✓

Business Sector 業務板塊	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、合資格退休員工)	Training Hours 培訓時數	Maternity/ Paternity Leave Statistics 產假/待產假數據	Health and Safety Statistics 健康與安全數據		Community Engagement 社會貢獻		Supply Chain 供應鏈		Remuneration Statistics 薪酬數據
				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 外判服務工人數目	
Business Sector 業務板塊	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	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Equipment Manufacturing 裝備製造	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Eco-recycling 生態資源	✓	✓	✓	✓	✓	✓	✓	✓	✓
Greenery 光大照明	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Envirotech 綠色科創	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Environmental Planning 環境規劃	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Headquarters and Representative Offices 總部及代表處	✓	✓	✓	✓	✓	✓	✓	✓	✓	

\* Under preparatory stage  
在籌建階段

✓ Fully disclosed  
全面披露

■ Not applicable  
不適用

## 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 2021 二零二一年重點活動

#### China Biomass Energy Industry Promotion Association 中國產業發展促進會生物質能產業分會

##### Association's Ambition 協會抱負

To explore the innovative development of biomass energy and to promote energy transition in China. 探索生物質能創新發展，推動中國能源轉型。

- Cooperated with the Association to develop the Accounting Guidelines for Voluntary Greenhouse Gas Emission Reduction for Biomass Power Generation Projects 配合協會開發《生物質能發電項目溫室氣體自願減排核算指南團體標準》
- Participated in the compilation of *Relevant Suggestions on the Marking Rules for Automatic Monitoring of Pollutant Levels in Thermal Power, Cement and Paper Industry (Trial)* 參與編制《關於對《火電、水泥和造紙行業排污位自動監測資料標記規則（試行）》的相關建議》

**Total amount contributed in 2021: RMB200,000**  
二零二一年總貢獻金額：人民幣200,000元

#### 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》
- Changzhou WTE project and Hangzhou WTE Projects were granted the award of “Socialized WTE Benchmark” and “Refinement WTE Benchmark” 常州垃圾發電項目及杭州垃圾發電項目分別獲評《社會化垃圾焚燒發電標杆》和《精細化垃圾焚燒發電標杆》

**Total amount contributed in 2021: RMB180,000**  
二零二一年總貢獻金額：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 2021**  
二零二一年重點活動

**E20 Environmental Platform –  
China Water Web**  
E20 環境平台—中國水網

**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。

- 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 2021: RMB120,000**  
二零二一年總貢獻金額：人民幣120,000元

**Chinese Society for Environmental  
Sciences**  
中國環境科學學會

**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。

- Attended the annual meeting  
參加年會
- Participated in the evaluation of the National Environmental Protection Education Hubs  
參與全國環保科普教育基地評選
- 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》

**Total amount contributed in 2021: RMB1,500,000**  
二零二一年總貢獻金額：人民幣1,500,000元



## Appendix III – GRI Content Index

### 附錄III—GRI內容索引



For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the Report. The service was performed on the English version of the Report.

GRI於本次實質性披露服務 (Materiality Disclosures Service) 確認GRI內容索引清晰，披露項102-40至102-49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	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>GRI 101: Foundation 基礎 2016</b>			
GRI 101 does not include any disclosures 不包含任何披露			
<b>GRI 102: General Disclosures 一般揭露 2016</b>			
<b>Organizational Profile 組織概況</b>			
102-1	Name of the organization 組織名稱	About This Report 關於本報告	2-6
102-2	Activities, brands, products, and services 活動、品牌、產品與服務	About This Report, About Everbright Environment 關於本報告、關於光大環境	2-6, 16-37
102-3	Location of headquarters 總部位置	About This Report 關於本報告	2-6
102-4	Location of operations 運營活動地點	About Everbright Environment, Sustainable Operations Management 關於光大環境、可持續的運營管理	16-37, 38-55
102-5	Ownership and legal form 所有權與法律形式	Annual Report 2021 二零二一年年報	-
102-6	Markets served 提供服務的市場	About Everbright Environment, Sustainable Operations Management 關於光大環境、可持續的運營管理	16-37, 38-55
102-7	Scale of the organization 組織規模	About Everbright Environment, Annual Report 2021 關於光大環境、二零二一年年報	16-37
102-8	Information on employees and other workers 員工與其他工作者的資訊	Sustainable Operations Management, Talent Development, Key Statistics 可持續的運營管理、人才發展、主要數據 There are no significant variations on the number of employees. 僱用人數沒有重大變化。	38-55, 140-157, 205-216
102-9	Supply chain 供應鏈	Sustainable Operations Management 可持續的運營管理	38-55
102-10	Significant changes to the organization and its supply chain 組織與其供應鏈的重大改變	Message from the Chairman of the Board, Sustainable Operations Management 董事會主席致辭、可持續的運營管理	7-11, 38-55
102-11	Precautionary Principle or approach 預警原則或方針	Sustainable Operations Management, Environmental Protection 可持續的運營管理、環境保護	38-55, 98-139
102-12	External initiatives 外部倡議	Environmental Protection, Together for the Sustainable Development Goals 環境保護、攜手邁向可持續發展目標	98-139, 190-204
102-13	Membership of associations 公協會的會員資格	Appendix II – Main Corporate Memberships 附錄II – 主要企業會籍	230-231
<b>Strategy 策略</b>			
102-14	Statement from senior decision-maker 決策者的聲明	Message from the Chairman of the Board 董事會主席致辭	7-11
102-15	Key impacts, risks, and opportunities 關鍵衝擊、風險及機會	Message from the Chairman of the Board, Sustainable Operations Management 董事會主席致辭、可持續的運營管理	7-11, 38-55
<b>Ethics and Integrity 倫理與誠信</b>			
102-16	Values, principles, standards, and norms of behavior 價值、原則、標準及行為規範	About Everbright Environment, Sustainable Operations Management 關於光大環境、可持續的運營管理	16-37, 38-55
102-17	Mechanisms for advice and concerns about ethics 關於倫理之建議與顧慮的機制	About Everbright Environment, Sustainable Operations Management 關於光大環境、可持續的運營管理	16-37, 38-55

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>Governance 治理</b>			
102-18	Governance structure 治理結構	Sustainable Operations Management, Annual Report 2021 可持續的運營管理、二零二一年年報	38-55
102-19	Delegating authority 委任權責	Sustainable Operations Management, Annual Report 2021 可持續的運營管理、二零二一年年報	38-55
102-20	Executive-level responsibility for economic, environmental, and social topics 管理階層負責經濟、環境和社會主題	Sustainable Operations Management 可持續的運營管理	38-55
102-21	Consulting stakeholders on economic, environmental, and social topics 與利害關係人諮商經濟、環境和社會主題	Stakeholder Engagement 持份者參與	56-65
102-22	Composition of the highest governance body and its committees 最高治理單位與其委員會的組成	Annual Report 2021 二零二一年年報	-
102-23	Chair of the highest governance body 最高治理單位的主席	Annual Report 2021 二零二一年年報	-
102-24	Nominating and selecting the highest governance body 最高治理單位的提名與遴選	Annual Report 2021 二零二一年年報	-
102-25	Conflicts of interest 利益衝突	Annual Report 2021 二零二一年年報	-
102-26	Role of highest governance body in setting purpose, values, and strategy 最高治理單位在設立宗旨、價值觀及策略的角色	Sustainable Operations Management, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、二零二一年年報—企業管治報告	38-55
102-27	Collective knowledge of highest governance body 最高治理單位的群體知識	Sustainable Operations Management, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、二零二一年年報—企業管治報告	38-55
102-28	Evaluating the highest governance body's performance 最高治理單位的績效評估	Sustainable Operations Management, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、二零二一年年報—企業管治報告	38-55
102-29	Identifying and managing economic, environmental, and social impacts 鑑別與管理經濟、環境和社會衝擊	Sustainable Operations Management, Stakeholder Engagement, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、持份者參與、二零二一年年報—企業管治報告	38-55, 56-65
102-30	Effectiveness of risk management processes 風險管理程序的有效性	Sustainable Operations Management, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、二零二一年年報—企業管治報告	38-55
102-31	Review of economic, environmental, and social topics 經濟、環境和社會主題的檢視	Sustainable Operations Management, Annual Report 2021 – Corporate Governance Report 可持續的運營管理、二零二一年年報—企業管治報告	38-55
102-32	Highest governance body's role in sustainability reporting 最高治理單位於永續性報導的角色	Sustainable Operations Management 可持續的運營管理	38-55
102-33	Communicating critical concerns 溝通重要關鍵議題	Sustainable Operations Management, Stakeholder Engagement 可持續的運營管理、持份者參與	38-55, 56-65
102-34	Nature and total number of critical concerns 關鍵議題的性質與總數	Annual Report 2021 – Corporate Governance Report – Risk Management and Internal Controls 二零二一年度報告—企業管治報告—風險管理及內部監控	-
102-35	Remuneration policies 薪酬政策	Sustainable Operations Management, Annual Report 2021 – Notes to Financial Statements 可持續的運營管理、二零二一年年報—財務報表附註	38-55
102-36	Process for determining remuneration 薪酬決定的流程	Sustainable Operations Management, Annual Report 2021 – Notes to Financial Statements 可持續的運營管理、二零二一年年報—財務報表附註	38-55
102-37	Stakeholders' involvement in remuneration 利害關係人的參與	Annual Report 2021 二零二一年年報	-
102-38	Annual total compensation ratio 年度總薪酬比率	Key Statistics 主要數據	205-216
		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。	

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
102-39	Percentage increase in annual total compensation ratio 年度總薪酬比率之增加百分比	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。	205-216
<b>Stakeholder Engagement 利害關係人溝通</b>			
102-40	List of stakeholder groups 利害關係人團體	Stakeholder Engagement 持份者參與	56-65
102-41	Collective bargaining agreements 團體協約	There are no formal collective bargaining agreements in place within the Group. 本集團內部沒有正式的集體談判協約。	-
102-42	Identifying and selecting stakeholders 鑑別與選擇利害關係人	Stakeholder Engagement 持份者參與	56-65
102-43	Approach to stakeholder engagement 與利害關係人溝通的方針	Stakeholder Engagement 持份者參與	56-65
102-44	Key topics and concerns raised 提出之關鍵主題與關注事項	Stakeholder Engagement 持份者參與	56-65
<b>Reporting Practice 報導實務</b>			
102-45	Entities included in the consolidated financial statements 合併財務報表中所包含的實體	Annual Report 2021 – Notes to Financial Statements 二零二一年年報—財務報表附註(331-341頁)	-
102-46	Defining report content and topic boundaries 界定報告書內容與主題邊界	About This Report, Stakeholder Engagement 關於本報告，持份者參與	2-6, 56-65
102-47	List of material topics 重大主題表列	Stakeholder Engagement 持份者參與	56-65
102-48	Restatements of information 資訊重編	Restated information are annotated clearly in this Report. 本報告對重述信息進行了明確的註釋。	107, 206, 210, 214
102-49	Changes in reporting 報導改變	Stakeholder Engagement 持份者參與  In 2021, newly added material topics included anti-corruption, use of water resources and employee training. 二零二一年，本集團新增了三個實質性議題，並包括反貪腐，水資源消耗及員工培訓。	56-65
102-50	Reporting period 報導期間	About This Report 關於本報告	2-6
102-51	Date of most recent report 上一次報告書的日期	5 July 2021 二零二一年七月五日	-
102-52	Reporting cycle 報導週期	About This Report 關於本報告	2-6
102-53	Contact point for questions regarding the report 可回答報告書相關問題的聯絡人	About This Report 關於本報告	2-6
102-54	Claims of reporting in accordance with the GRI Standards 依循GRI準則報導的宣告	About This Report 關於本報告	2-6
102-55	GRI Content Index GRI內容索引	Appendix III – GRI Content Index 附錄III—GRI內容索引	232-242
102-56	External assurance 外部保證/確信	Verification Statement 審核聲明	217-223

Topic-specific Disclosure

特定主題準則

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>GRI 200: Economic 經濟</b>			
<b>Economic Performance 經濟績效</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Message from the Chairman of the Board 董事會主席致辭	7-11
103-3	Evaluation of the management approach 管理方針的評估	Message from the Chairman of the Board 董事會主席致辭	7-11
<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	205-216
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風險及機遇	Response to Climate Change 應對氣候變化	66-97
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劃	Annual Report 2021 – Report of the Directors 二零二一年年報—董事會報告	–
201-4	Financial assistance received from government 政府給予的財政補貼	Annual Report 2021 – Notes to Financial Statements 二零二一年年報—財務報表附註	–
<b>Anti-corruption 反貪腐</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Sustainable Operations Management 可持續的運營管理	38-55
103-3	Evaluation of the management approach 管理方針的評估	Sustainable Operations Management 可持續的運營管理	38-55
<b>GRI 205: Anti-corruption 反貪腐 2016</b>			
205-1	Operations assessed for risks related to corruption 已進行貪腐風險評估的營運據點	Annual Report 2021 – Audit Committee 二零二一年度報告—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。	–
205-2	Communication and training about anti-corruption policies and procedures 有關反貪腐政策和程序的溝通及訓練	Sustainable Operations Management 可持續的運營管理  Number of employees participated in anti-corruption training 已接受反貪腐培訓的員工數據  – Number of senior management (percentage): 501 (100%) – 高級管理人員 (百分比): 501 (100%)  – Number of middle-level management (percentage): 1,866 (100%) – 中級管理人員 (百分比): 1,866 (100%)  – Other employees (percentage): 8,963 (100%) – 其他員工人數 (百分比): 8,963 (100%)  In 2021, all of the Directors of the Company received trainings in anti-corruption. 於二零二一年，本公司全體董事接受了反貪腐培訓。	38-55
205-3	Confirmed incidents of corruption and actions taken 已確認的貪腐事件及採取的行動	Sustainable Operations Management 可持續的運營管理	38-55

Appendix III – GRI Content Index

附錄III—GRI內容索引

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>GRI 300: Environment 環境</b>			
<b>Energy 能源</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139
<b>GRI 302: Energy 能源 2016</b>			
302-1	Energy consumption within the organization 組織內部的能源消耗量	Environmental Protection, Key Statistics 環境保護、主要數據  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。集團另有出售蒸汽；沒有出售製冷。  With waste-to-energy as our major business, the Group uses household waste as the major source of fuel to generate green electricity for 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。	98-139, 205-216
302-2	Energy consumption outside the organization 組織外部的能源消耗量	Environmental Protection, Key Statistics 主要數據  Energy consumption outside the organisation includes the Group's on-grid electricity and amount of steam supplied. 組織外部的能源消耗量包括集團的上網電量及蒸汽供應量。	98-139, 205-216
302-3	Energy intensity 能源密集度	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。	205-216
302-4	Reduction of energy consumption 減少能源消耗	Environmental Protection 環境保護	98-139
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	98-139

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>Water and Effluents 水資源與污水</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139
<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 the Mainland China make use of 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、地表水及重用中水。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」和化淡海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。	98-139
303-2	Management of water discharge-related impacts 管理與排水相關的影響	Environmental Protection 環境保護	98-139
303-3	Water withdrawal 取水	Environmental Protection, Key Statistics 環境保護、主要數據	98-139, 205-216
303-4	Water discharge 排水	Environmental Protection, Key Statistics 環境保護、主要數據	98-139, 205-216
303-5	Water consumption 耗水	Environmental Protection, Key Statistics 環境保護、主要數據	98-139, 205-216



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<b>Emissions 排放</b>			
<b>GRI 103:</b>	<b>Management Approach 管理方針 2016</b>		
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139
<b>GRI 305:</b>	<b>Emissions 排放 2016</b>		
305-1	Direct (Scope 1) GHG emissions 直接(範疇1) 溫室氣體排放	Environmental Protection, Key Statistics 環境保護、主要數據  Calculations are based on the global warming potentials published in the IPCC (Intergovernmental Panel on Climate Change) Sixth Assessment Report, 2021 (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 (政府間氣候變化專門委員會)《第六次評估報告》，二零二一年 (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: 29,552.74 tonnes CO <sub>2</sub> equivalent 生物源排放量：29,552.74噸二氧化碳當量  Non-biogenic emissions: 15,213,304.94 tonnes CO <sub>2</sub> equivalent 非生物源排放量：15,213,304.94噸二氧化碳當量	98-139, 205-216
305-2	Energy indirect (Scope 2) GHG emissions 能源間接(範疇2) 溫室氣體排放	Environmental Protection, Key Statistics 環境保護、主要數據	98-139, 205-216
305-3	Other indirect (Scope 3) GHG emissions 其他間接(範疇3) 溫室氣體排放	Environmental Protection, Key Statistics 環境保護、主要數據  Calculations are based on the global warming potentials published in the IPCC (Intergovernmental Panel on Climate Change) Sixth Assessment Report, 2021 (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 (政府間氣候變化專門委員會)《第六次評估報告》，二零二一年 (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。	98-139, 205-216
305-4	GHG emissions intensity 溫室氣體排放強度	Environmental Protection, Key Statistics 環境保護、主要數據  Calculations are based on the global warming potentials published in the IPCC (Intergovernmental Panel on Climate Change) Sixth Assessment Report, 2021 (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 (政府間氣候變化專門委員會)《第六次評估報告》，二零二一年 (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。	98-139, 205-216
305-5	Reduction of GHG emissions 溫室氣體減排量	Environmental Protection, Key Statistics 環境保護、主要數據	98-139, 205-216
305-6	Emissions of ozone-depleting substances (ODS) 臭氧消耗物質(ODS)的排放	The Group's operation 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。	-

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
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> )和其他重大氣體排放	Environmental Protection, Key Statistics 環境保護、主要數據  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> (GB18485-2014), 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》(GB18485-2014)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。	98-139, 205-216
<b>Waste 廢棄物</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139
<b>GRI 306: Waste 廢棄物 2020</b>			
306-1	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	98-139
306-2	Management of significant waste-related impacts 廢棄物相關重大影響的管理	Environmental Protection 環境保護	98-139
306-3	Waste generated 產生的廢棄物	Environmental Protection, Key Statistics 環境保護，主要數據	98-139, 205-216
306-4	Waste diverted from disposal 從處置中轉移的廢棄物	Environmental Protection, Key Statistics 環境保護，主要數據	98-139, 205-216
306-5	Waste directed to disposal 進入處置的廢棄物	Environmental Protection, Key Statistics 環境保護，主要數據	98-139, 205-216
<b>Environmental Compliance 有關環境保護的法規遵循</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139
<b>GRI 307: Environmental Compliance 有關環境保護的法規遵循 2016</b>			
307-1	Non-compliance with environmental laws and regulations 違反環保法規	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

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>GRI 400: Social 社會</b>			
<b>Occupational Health and Safety 職業安全衛生</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Safety Culture 安全文化	158-169
103-3	Evaluation of the management approach 管理方針的評估	Safety Culture 安全文化	158-169
<b>GRI 403: Occupational Health and Safety 職業安全衛生 2018</b>			
403-1	Occupational health and safety management system 職業安全衛生管理系統	Safety Culture 安全文化  The Group's ESHS management system was formulated in accordance to the <i>Labour Law of the PRC, Work Safety Law of the PRC, Criminal Law of the PRC, the Social Insurance Law of the PRC, Occupational Health and Safety Management System Specifications (GB/T28001-2001), Environmental Management Systems – Requirements with Guidance for Use (GB/T24001-2004)</i> , etc. 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規範》(GB/T28001-2001)、《環境管理體系要求及使用指南》(GB/T24001-2004)等編製。	158-169
403-2	Hazard identification, risk assessment, and incident investigation 危害辨識、風險評估、及事故調查	Safety Culture 安全文化	158-169
403-3	Occupational health services 職業健康服務	Safety Culture 安全文化	158-169
403-4	Worker participation, consultation, and communication on occupational health and safety 有關職業安全衛生之工作者參與、諮商與溝通	Safety Culture 安全文化	158-169
403-5	Worker training on occupational health and safety 有關職業安全衛生之工作者訓練	Safety Culture 安全文化	158-169
403-6	Promotion of worker health 工作者健康促進	Talent Development, Safety Culture 人才發展、安全文化	140-157, 158-169
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships 預防和減輕與業務關係直接相關聯之職業安全衛生的衝擊	Safety Culture 安全文化	158-169
403-8	Workers covered by an occupational health and safety management system 職業安全衛生管理系統所涵蓋之工作者	The Group's ESHS management system covers all employees of the group, third-party contractors and subcontractors working on-site. 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 職業傷害	Safety Culture, Key Statistics 安全文化、主要數據  The major risks of work-related injury in the waste to energy and integrated biomass utilisation industry include musculoskeletal injuries, fractures, and ocular trauma; while that of the water 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, one work-related fatality was recorded, in which the employee passed away in a traffic accident on the way to work. The Group compensated the family of the employee in full through the Employer's Liability Insurance, Sun Life Everbright Group Personal Accident Insurance and Work Injury Insurance. 報告期內錄得一宗工傷死亡事故，涉事員工於上班途中遇上交通意外不幸離世。本集團已透過僱主責任險、光大永明團體意外險及工傷保險理賠，並全額賠付員工家屬。	158-169, 205-216

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
403-10	Work-related ill health 職業病	Safety Culture, Key Statistics 安全文化、主要數據  The major risks of work-related ill health in the waste to energy and integrated biomass utilisation industry include skin and gastrointestinal disorders, and exposure to concerning substances, such as respirable quartz dust, dioxins, bioaerosols and carcinogens; while that of the water 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。	158-169, 205-216
<b>Training and Education 訓練與教育</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Talent Development 人才發展	140-157
103-3	Evaluation of the management approach 管理方針的評估	Talent Development 人才發展	140-157
<b>GRI 404: Training and Education 訓練與教育 2016</b>			
404-1	Average hours of training per year per employee 每名員工每年接受訓練的平均時數	Talent Development, Key Statistics 人才發展，主要數據	140-157, 205-216
404-2	Programs for upgrading employee skills and transition assistance programs 提升員工職能及過渡協助方案數	Talent Development 人才發展	140-157
404-3	Percentage of employees receiving regular performance and career development reviews 定期接受績效及職業發展檢核的員工百分比	Talent Development, Key Statistics 人才發展，主要數據	140-157, 205-216
<b>Child Labor 童工</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157
103-3	Evaluation of the management approach 管理方針的評估	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157
<b>GRI 408: Child Labor 童工 2016</b>			
408-1	Operations and suppliers at significant risk for incidents of child labor 運營據點和供應商使用童工之重大風險	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157
<b>Forced or Compulsory Labor 強迫或強制勞動</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157
103-3	Evaluation of the management approach 管理方針的評估	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157
<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 具強迫或強制勞動事件重大風險的運營據點和供應商	Sustainable Operations Management, Talent Development 可持續的運營管理、人才發展	38-55, 140-157

Appendix III – GRI Content Index

附錄III—GRI內容索引

Disclosure Number 披露編號	Description 描述	Relevant Chapter(s) or Other References/Explanation 有關章節或其他參考/說明	Page Number 頁數
<b>Rights of Indigenous Peoples 原住民權力</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Community Care 社區關懷	170-189
103-3	Evaluation of the management approach 管理方針的評估	Community Care 社區關懷	170-189
<b>GRI 411: Rights of Indigenous Peoples 原住民權力 2016</b>			
411-1	Incidents of violations involving rights of indigenous peoples 涉及侵害原住民權利的事件	The Group has no incidents of violations involving rights of indigenous peoples in 2021. 本集團於二零二一年沒有侵害原住民權利的事件。	-
<b>Socioeconomic Compliance 社會經濟法規遵循</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Community Care 社區關懷	170-189
103-3	Evaluation of the management approach 管理方針的評估	Community Care 社區關懷	170-189
<b>GRI 419: Socioeconomic Compliance 社會經濟法規遵循 2016</b>			
419-1	Non-compliance with laws and regulations in the social and economic area 違反社會與經濟領域之法律和規定	Appendix V – Compliance with Relevant Laws and Regulations that have a Significant Impact on Everbright Environment, Annual Report 2021 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、二零二一年年報	249-252
<b>Disaster and Emergency Planning and Response 災難及應急預案規劃</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Safety Culture 安全文化	158-169
103-3	Evaluation of the management approach 管理方針的評估	Safety Culture 安全文化	158-169
<b>Technological R&amp;D 技術研發</b>			
<b>GRI 103: Management Approach 管理方針 2016</b>			
103-1	Explanation of the material topic and its Boundary 解釋重大主題及其邊界	Stakeholder Engagement 持份者參與	56-65
103-2	The management approach and its components 管理方針及其要素	Environmental Protection 環境保護	98-139
103-3	Evaluation of the management approach 管理方針的評估	Environmental Protection 環境保護	98-139

## Appendix IV – Stock Exchange Environmental, Social and Governance 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>Mandatory Disclosure Requirements 強制披露規定</b>		
<b>Governance Structure</b> 管治架構	<p>A statement from the board containing the following elements:</p> <ul style="list-style-type: none"> <li>(i) a disclosure of the board's oversight of ESG issues;</li> <li>(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</li> <li>(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.</li> </ul> <p>由董事會發出的聲明，當中載有下列內容：</p> <ul style="list-style-type: none"> <li>(i) 披露董事會對環境、社會及管治事宜的監管；</li> <li>(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</li> <li>(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。</li> </ul>	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	<p>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.</p> <p>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。</p>	About this Report 關於本報告
<b>Reporting Boundary</b> 匯報範圍	<p>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.</p> <p>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。</p>	About this Report, Stakeholder Engagement 關於本報告，持份者參與



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>“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 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 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  Particulate Matter (PM): 559.41 tonnes 噸 顆粒物(PM):  Sulphur Dioxide (SO <sub>2</sub> ): 4,003.39 tonnes 噸 二氧化硫(SO <sub>2</sub> ):  Nitrogen Oxides (NO <sub>x</sub> ): 22,467.59 tonnes 噸 氮氧化物(NO <sub>x</sub> ):  Hydrochloric Acid (HCl): 984.78 tonnes 噸 鹽酸(HCl):  Carbon Monoxide (CO): 7,655.52 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 prevail international and national 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，所有排放均優於國際及國家標準。
<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
<b>KPI A1.5</b>	Description of emission 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
<b>KPI A1.6</b>	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 comprised 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。

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 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
<b>KPI A2.1</b>	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). 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
<b>KPI A2.2</b>	Water consumption in total and intensity (e.g. 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
<b>KPI A2.3</b>	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
<b>KPI A2.4</b>	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。
<b>KPI A2.5</b>	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 main 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
<b>KPI A3.1</b>	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them. 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。	Environmental Protection 環境保護
<b>KPI A4.1</b>	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。	Environmental Protection 環境保護
<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、歧視視以及其待遇及福利的： (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

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 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(如高級管理人員、中級管理人員等)劃分的受訓僱員百分比。	Male: 100% 男: Female: 100% 女: Senior management: 100% 高級管理人員: Middle level management: 100% 中層管理人員: General and technical staff: 100% 一般及技術員工:
<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。
<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。

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>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V—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 did not have products recalled for safety and health reasons in 2021. 本集團於二零二一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 is 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 – Stock Exchange Environmental, Social and Governance 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 2021. 本集團於二零二一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 2021, there was no confirmed case of non-compliance in relation to corrupt practices that would have a significant impact on the Group. 二零二一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, 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

### Stock Exchange ESG Reporting Guide Subject Area

### 聯交所《環境、社會及管治報告指引》範疇

#### Aspect A1: Emissions

#### 層面A1：排放物

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 large number 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*, *Marine Environment Protection Law of the PRC*, *Law of PRC on Prevention and Control of Environmental 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*, *Wetland Protection Law of the PRC*, *The Yangtze River Protection Law of the PRC*, *Provisions for the Administration of Compensation for Damage to the Ecological Environment*, *Measures for the Administration of the Mandatory 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*, *Regulation on the Administration of Permitting of Pollutant Discharges*, *Administrative Measures for Urban Living Garbage*, *Provisions on the Administration of Urban Construction Garbage 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 that it is important to meet these statutory obligations as violation of any of applicable environmental laws and regulations may result in penalties, suspension of operation, and/or legal action against the Group by regulatory authorities.

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》、《中華人民共和國環境噪聲污染防治法》、《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》、《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》、《危險廢物轉移聯單管理辦法》、《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》、《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管理條例》。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律及法規的重要性，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。

In 2021, 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 chapter entitled "Environmental Protection" of the Report on how Everbright Environment ensures compliance with applicable environmental laws and regulations.

二零二一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*, *Regulation on the Implementation of the Employment Contract Law of the PRC*, *Regulation on Work-Related Injury Insurances*, *Regulation on Paid Annual Leave for 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 care 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 2021, 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 chapter entitled "Talent Development" 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》、《中華人民共和國勞動合同法實施條例》、《工傷保險條例》、《職工帶薪年休假條例》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和規例，保障本集團最寶貴的財富—員工。

二零二一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 manufacturing organisations 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 care 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 2021, 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 chapter entitled “Safety Culture” 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* 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 strictly complying with the relevant labour standards.

In 2021, 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 chapter entitled “Talent Development” 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。

二零二一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》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。

二零二一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*, *The 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 2021, 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 chapters entitled "Sustainable Operations Management" and "Environmental Protection" 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 2021, the group did not make payment to any lobbying, interest representation, or political campaigns or organisations.

In 2021, 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 chapter entitled "Talent Development" 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。

二零二一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。在二零二一年，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。

二零二一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「人才發展」一章。



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

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