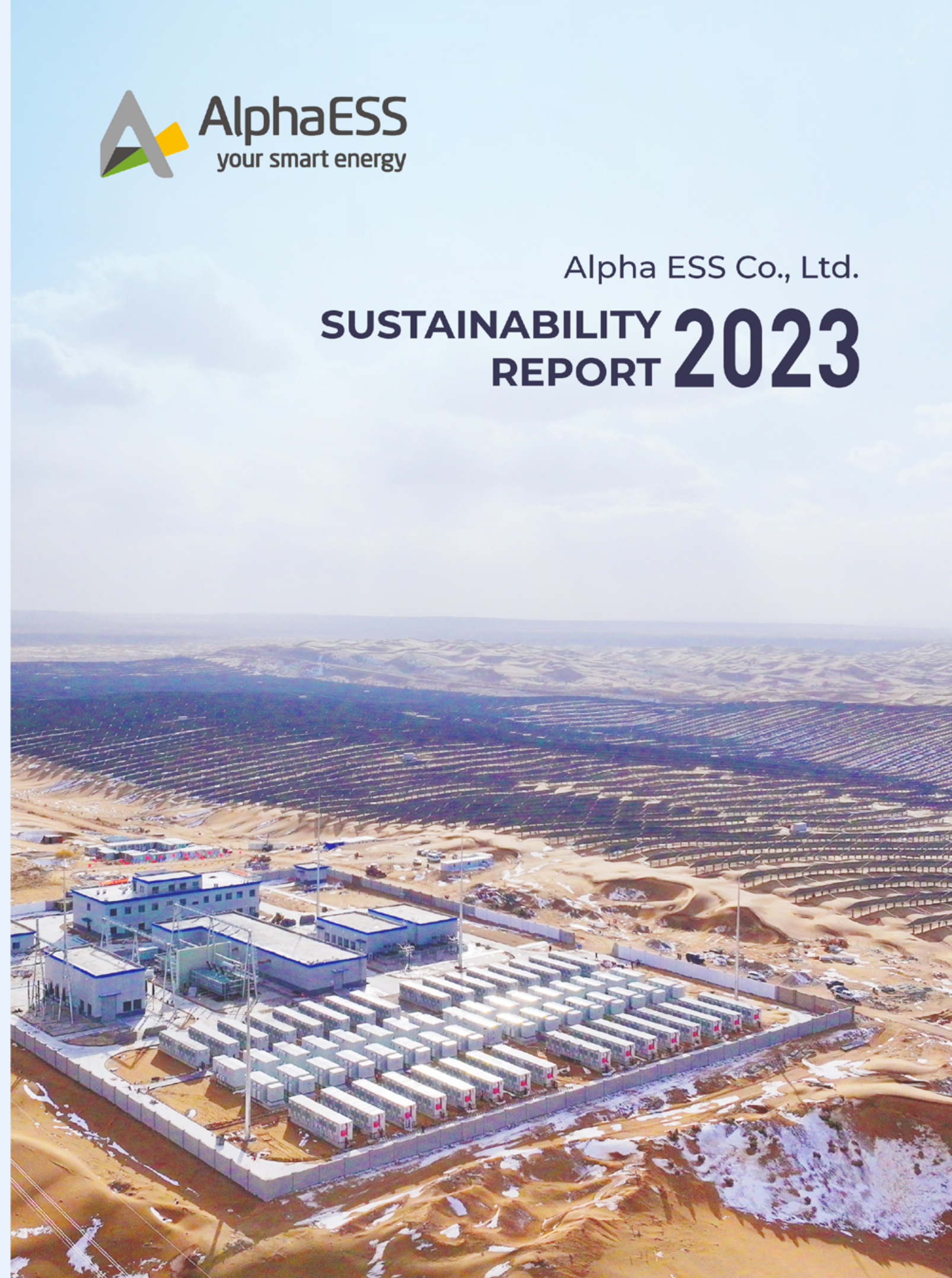




Alpha ESS Co., Ltd.

# SUSTAINABILITY REPORT 2023



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## ABOUT THE REPORT

This is the second Sustainability Report of Alpha ESS Co., Ltd. (The Company published its first “Environmental, Social and Governance [ESG] Report” in 2023. The annual report is now renamed as “Sustainability Report” following the latest requirements of the Stock Exchange and the current international norms). The report discloses in detail the Company's practices and performances in sustainability to its stakeholders for the year 2023, aiming at effective communications and in-depth responses to the significant matters of shared interest.



### ■ SCOPE OF REPORT

| This report incorporates Alpha ESS Co., Ltd. and its subsidiaries.

### ■ REPORTING PERIOD

| This report covers the period from January 1, 2023, to December 31, 2023. For better continuity and forward-looking prospects, certain sections of the report may exceed the defined scope.

### ■ BASIS FOR PREPARATION

*SDG Compass. The Guide for Business Action on the SDGs*, United Nations Development Programme

*GRI Sustainability Reporting Standards (GRI Standards)*, Global Sustainability Standard Board (GSSB)

*Self-Regulation Guidelines No. 1 for Companies Listed on the Shanghai Stock Exchange – Standard Operation*, Shanghai Stock Exchange

*Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG 5.0)*, Chinese Academy of Social Sciences

*GB/T 36001—2015 Guidance on social responsibility reporting*, Standardization Administration of China

### ■ REFERENCES

| “Alpha ESS Co., Ltd.” is referred to as “AlphaESS”, “the Company” or “we” hereinafter.

### ■ DATA SOURCE

The contents hereof are sourced from the financial statements of AlphaESS (audited by RSM China), internal accounting data, as well as corporate documents, stakeholder survey questionnaires, and other relevant sources. The Company undertakes that the contents of this report do not contain any false statement, misleading statement, or substantial omission. For statements relating to future prospect, the actual results may vary. We assume no obligation to update any forward-looking contents herein.

### ■ ACCESS TO THE REPORT

The electronic version of this report is available on the Company's official website in the sustainability section ([https://www.alphaess.cn/sustainable\\_development](https://www.alphaess.cn/sustainable_development)).



## MESSAGE FROM THE CHAIRMAN

2023 has been a year of profound global transformation. Among the climate crisis, energy security, geopolitical conflicts, and many other crises and challenges, the 28th United Nations Climate Change Conference (COP28) called for the “gradual separation of fossil fuels in the transition of the energy system, accelerating the transition to clean energy” for the first time. At the same time, the “engine” which drives China towards the carbon neutrality and carbon peaking goals is running at full power. With the gradual improvement of the policies and institutional systems, green transition has become a common practice across all sectors.

Despite all changes, AlphaESS has been, and always will be working to “make clean energy accessible to everyone in the world”, our founding mission. From our first steps in China, AlphaESS serves the world by actively responding to climate change, contributing to China's carbon neutrality and carbon peaking goals, facilitating the large-scale utilization of renewable energy, and developing smart clean energy solutions with energy storage as the core. In the past year, AlphaESS has demonstrated its commitment to sustainable development by aligning its actions with responsible corporate value creation. We have prioritized sustainability governance, technological innovation, product quality, and customer service, among other areas, aiming to foster long-term value for all stakeholders involved.

**At AlphaESS, sustainability is receiving more and more attention from all levels, including the Company Board.**

The Strategy Committee is now renamed as the ESG and Strategy Committee, a gesture of our sustainability resolution. Carried with the new name is the committee's additional role as the Company's sustainability supervisor to ensure the idea is valued and practiced in the whole company. Under the sustainability governance structure, the Company will integrate the resources and efforts of all departments to take concrete actions on various fronts for better sustainability governance.

**We have also doubled down our effort in product quality and technological innovation.**

As a pioneer in the industry, AlphaESS has never given up doing the right thing since its establishment — energy storage, despite all the hardships and difficulties that we have faced. We are aware that the only ways to stay prepared for future opportunities are more advanced technology, more prudent operation, more thoughtful services, and further lean production. In 2023, we refined our product innovation management model and ensured effective innovations could be brought to reality through efficient resource allocation. Our 160-million-RMB investment in R&D is already powering the innovation of Battery Management System (BMS), Energy Management System (EMS), system integration, AlphaCloud, and other core technologies of AlphaESS. It also allowed us to explore new areas such as battery cell recycling.

**AlphaESS always believes that customer experience is of the utmost importance.**

In 2023, we defined “service-leading” as a key feature and a company strategy. While the market is perpetually changing, the quality of our services will not waver. We will continue to provide quality energy storage products in all power range with better performance and smarter solutions, and further customize our online and offline service provision based on the needs and preferences of our customers. We are confident that these customer-centric actions will in turn bring us healthy and sustainable progresses.

**For the employees of AlphaESS, we are dedicated to creating a fair and open workplace where everyone is equal and respected.**

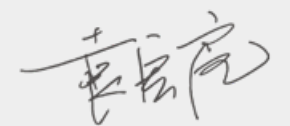
To answer the growing need of the market, AlphaESS and its subsidiaries host more than 1,000 employees in 12 countries and 22 cities around the world by 2023. In the past year, AlphaESS perfected its employee evaluation and training system, increased inclusiveness and diversity, and improved employee communication channels. These efforts allow the 1,000+ AlphaESS employees to work with agility, solidarity and mutual support for the sustainable progress of the organization.

**Green development is the gene of the entire energy storage industry the operation of AlphaESS.**

With the nationwide carbon peaking and carbon neutrality goals in China, we are keenly concerned with climate changes, proactive in reducing energy consumption and promoting green offices, and careful about greenhouse emissions to minimize the environmental impact of our activities. At the same time, we ventured into deserts, mountains, and other places where our energy storage system may play a role to secure the power supply with clean, renewable energy.

The year 2023 marks the start of a new decade for AlphaESS. Over the past decade, we have made remarkable achievements in major energy storage markets around the world. In the future, we will continue to implement service-leading strategy, enhance innovation capability, improve employee development, and practice sustainability with our daily actions. We will join hands with our customers, shareholders, partners, employees, and other stakeholders to realize our vision and “Become a world-leading green energy storage solution and service provider, serving 100 million people in 10 years”.

Yuan Hongliang, Chairman of Alpha ESS Co., Ltd.







# ABOUT ALPHAESS

Since its establishment in 2012, AlphaESS Co., Ltd. has been focusing on the research, development, production, and sales of energy storage products, mastering the core technologies of energy storage including BMS, EMS, system integration and cloud platforms. AlphaESS is an industry-leading energy storage solution provider covering the full power range<sup>1</sup>, committed to providing comprehensive energy solutions for households, industrial and commercial parks, power grids, power stations, power companies, and other customers and clients in need.

The Company has won several honors such as National Technologically Advanced "Little Giant" firm, National High-Tech Enterprise Certification, National Intellectual Property Advantageous Enterprises, among many others. The main products of AlphaESS include residential and commercial energy storage systems and components, which are widely used in power generation, transmission, distribution, power consumption, and other key links of the power system where they reduce the cost of electricity, improve the utilization rate of clean energy, reduce carbon emissions, and contribute to sustainable development.

## Global Presence

The Company follows an international development strategy and adopts a dual-center management model, with Nantong, China as its global headquarters and Singapore as the overseas headquarters. We have established four advanced production bases in Tongzhou and Qidong in Nantong, Jiangsu Province, Guangde in Anhui Province, and Malaysia. We have also set up 30+ subsidiary companies globally, covering key markets including China, Germany, Australia, Italy, the UK, and the USA. Our footprint has spread over 90+ countries and regions, with more than 100,000 energy storage systems installed. We are committed to our vision to "Become a world-leading green energy storage solution and service provider, serving 100 million people in 10 years", contributing our part to realizing carbon neutrality and carbon peaking goal.



AlphaESS Global Presence

<sup>1</sup>At present, the Company has realised the R&D and production of full power range energy storage systems, including 1kW, 3kW, 5kW, 10kW, 50kW, 100kW, MW to 100MW, etc..

Global Subsidiaries & Branches

**30+**

Countries and Regions

**90+**

Systems Installed Globally

**100,000+**

Factory Area (m<sup>2</sup>)

**100,000+**

Global Employees

**1000+**

Industrial Patents

**200+**







## Corporate Culture



### Mission

Make clean energy accessible to everyone in the world



### Vision

Become a world-leading green energy storage solution and service provider, serving 100 million people in 10 years



### Values

Customer-centric, Innovation-driven, Accountable, Collaborative, Open & Honest, Pursuit of Excellence

## Expertise



## Our History

At AlphaESS, we began our story in 2012 as the pioneer in China to launch residential energy storage systems. Since then, we have maintained our growth and pursuit of excellence with profound industrial chain resources, strong R&D background, and rich project experience.







# ANNUAL HONORS

AlphaESS has been continuously improving the quality of its products and services and has been widely recognized by the public. In 2023, the Company won several awards for its outstanding performance for its unremitting efforts in a decade. In the future, we will continue to make breakthroughs in all aspects and aim to become a world-leading green energy manufacturer and service provider.

## Global Awards

- ESG Transparency Award
- GlocalIN Top50 Technology Faces of China's Globalized Companies
- South Africa Top Brand PV Award for Storage 2023
- Australia Top Brand PV Award for Storage 2023
- Japan G-Mark (Good Design Award)
- Reddot Design Award (Germany)

## Presented/ Recognized by

- EUPD Research
- MIT Technology Review China x DeepTech x LinkedIn
- EUPD Research
- EUPD Research
- Japan Institute of Design Promotion
- Design Zentrum Nordrhein Westfalen

## China Awards & Recognitions

- The National-Level "Little Giant" Firms
- National Intellectual Property Demonstration Enterprise
- The 24th China Appearance Design Silver Award
- State-level Postdoctoral Research Station
- AAA of the Dualization Integration Management System
- High-Tech Enterprises
- Internationally Recognized Brands in Jiangsu Province of focused Cultivation and Development
- Jiangsu Province Modern Service Industry High-quality Development of the Third Batch of Two Industry Depth Integration Pilot
- 2023 Postgraduate Workstations in Jiangsu Province
- The First Batch of Jiangsu Province Five-Star Cloud Enterprises in 2023
- Nantong Industrial Design Center

- Ministry of Industry and Information Technology
- State Intellectual Property Office
- State Intellectual Property Office
- Ministry of Human Resources and Social Security, National Post-doctoral Management Committee
- China Classification Society (CCS)
- National High-tech Enterprises Recognition and Administration Leading Group Office
- Department of Commerce of Jiangsu Province
- Jiangsu Development and Reform Commission
- Jiangsu Provincial Department of Education, Jiangsu Provincial Department of Science and Technology
- Department of Industry and Information Technology of Jiangsu Province
- Nantong Bureau of Industry and Information Technology







# SUSTAINABILITY GOVERNANCE

At AlphaESS, sustainability is not only aligned with our mission to "make clean energy accessible to everyone in the world", but is also a guiding principle for our operation and development. With our core values, "Customer-centric, Innovation-driven, Accountable, Collaborative, Open & Honest, Pursuit of Excellence", we have been, and always will be working on sustainability governance for sound, balanced, and high-quality development in the long term.

## GOVERNANCE STRUCTURE

AlphaESS formulated a three-tier sustainability governance mechanism for better capacity and performance. Through the mechanism, the Board of Directors are more and more deeply engaged in the policy-making and management of sustainable development.

In 2023, we elevated our sustainability governance to a board-level action. The Strategy Committee of the Board of Directors, then renamed as the "ESG and Strategy Committee", is entrusted with a new task of sustainability supervision. The committee defines key sustainability issues for AlphaESS and sees them addressed in concrete actions. The committee will be chaired by Chairman of the Board, who regularly reports to the Board of Directors on the progress of the Company's sustainable development.

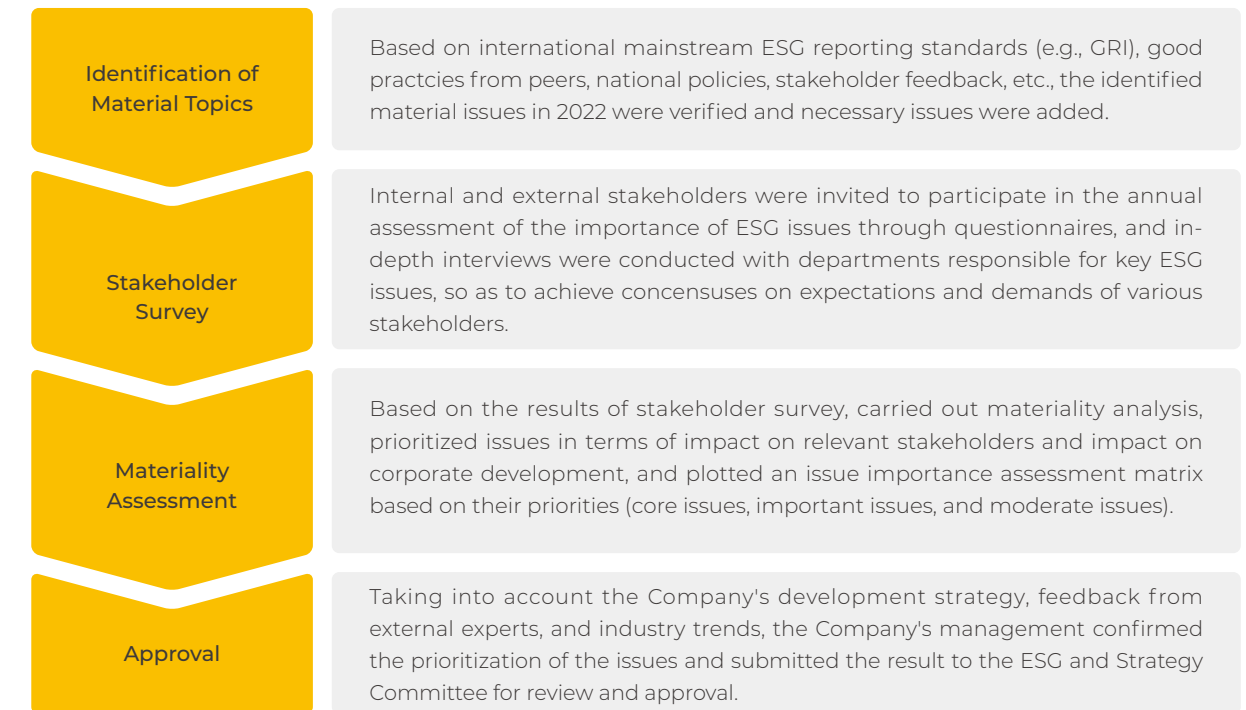
The Company's ESG management team consists of the heads of each department, who plan, manage, and evaluate the performance of sustainability activities, and report to the decision makers on important matters and progresses. In 2023, we developed and published the "Manual of Environmental, Social and Corporate Governance (ESG) Management Indicator System of AlphaESS", which provided an evidence-based guidance for the Company's effective ESG practices.



Sustainability Governance Structure and Responsibilities

## MATERIALITY ASSESSMENT

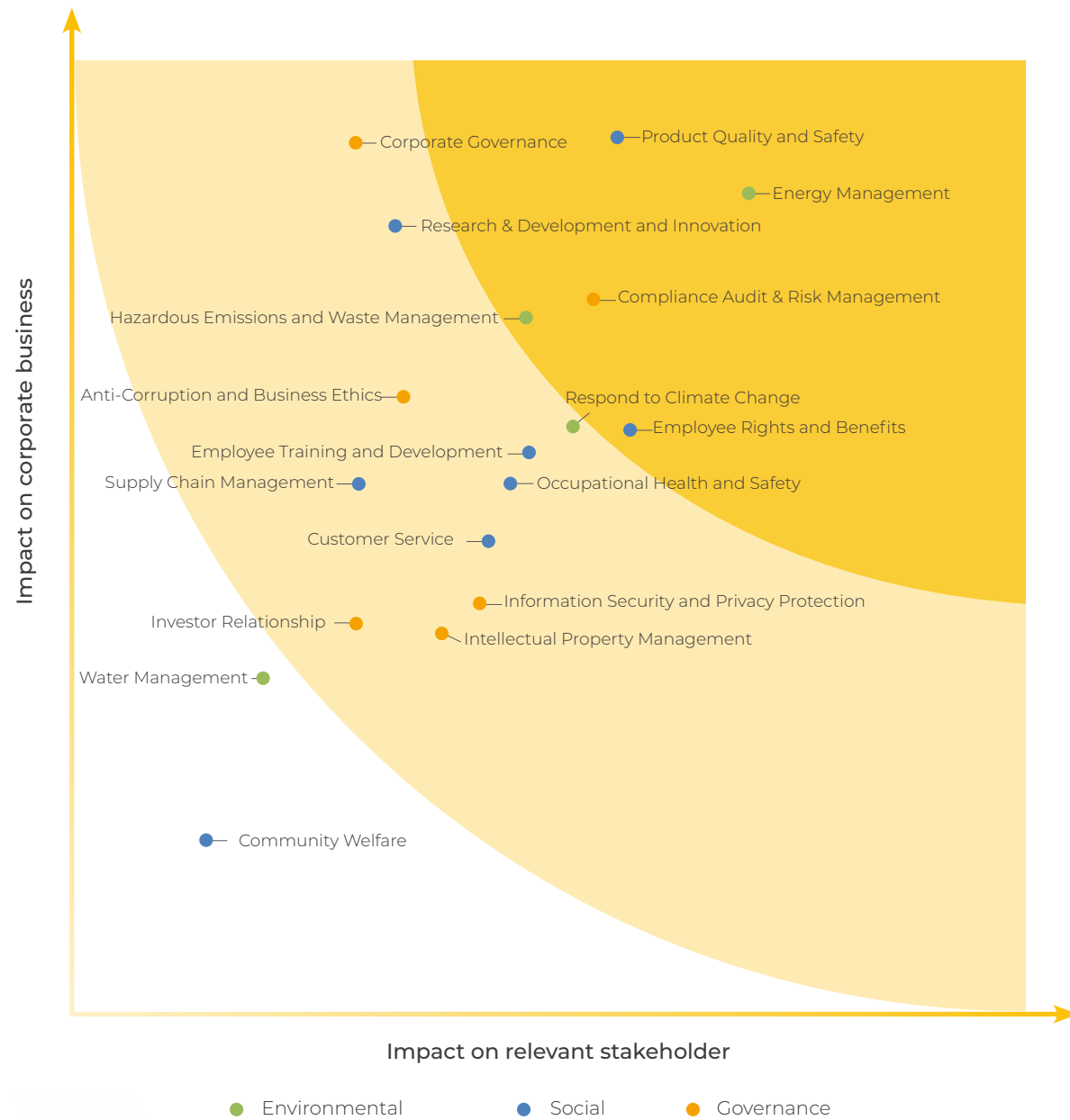
AlphaESS pays continued attention to the dynamics and trends of sustainable development in the clean energy industry and carries out annual assessments of material factors to ensure that each factor is highly relevant to the industry in which the Company operates. With reference to the sustainability topics of outstanding peer companies and considering the concerns of the capital market and other related parties about the Company's sustainable development, the Company conducted a new round of stakeholder survey based on last year's material topics and formed a materiality matrix for 2023, which serves as the basis for this report. The 2023 material topics have been submitted to, and is confirmed by the Board of Directors.



2023 Materiality Assessment Process







AlphaESS 2023 Material Matrix

## STAKEHOLDER ENGAGEMENT

Through the establishment of diversified communication channels, AlphaESS regularly collects, analyzes, and actively responds to the different demands of stakeholders, and continues to create value for all parties. Our key stakeholders include but are not limited to, government and regulatory agencies, shareholders and investors, customers, clients, employees, suppliers, industry associations, peer companies, higher education institutes, communities, the public, and the media.

Key Stakeholder	Topics of Concern	Communication Channels and Response Methods
<p>Shareholder-Investor</p>	<ul style="list-style-type: none"> <li>Business Performance</li> <li>Compliance Governance</li> <li>Risk Prevention and Control</li> </ul>	<ul style="list-style-type: none"> <li>General Meeting of Shareholders</li> <li>Regular Information Disclosure</li> <li>Engagement (Phone Calls, Emails, and Surveys)</li> </ul>
<p>Customer</p>	<ul style="list-style-type: none"> <li>Product Quality</li> <li>Premium Service</li> <li>Rights and Interests Protection</li> <li>Privacy</li> </ul>	<ul style="list-style-type: none"> <li>AlphaCloud After-sales Management</li> <li>Customer Satisfaction Survey</li> <li>Engagement (Meetings, Phone Calls, Emails and Visits)</li> </ul>
<p>Employee</p>	<ul style="list-style-type: none"> <li>Occupational Health and Safety</li> <li>Compliant Employment</li> <li>Remuneration and Benefits</li> <li>Training and Empowerment</li> <li>Employee Rights &amp; Benefits</li> </ul>	<ul style="list-style-type: none"> <li>Staff Councils and Trade Unions</li> <li>Training and Development System</li> <li>AlphaESS Online as Knowledge-sharing Space</li> <li>Corporate Culture Journals</li> <li>Employee Care Program</li> <li>Diversified Communication Channels (Symposium, OA System, Opinion Mailbox, Employee Satisfaction Survey)</li> </ul>
<p>Supplier</p>	<ul style="list-style-type: none"> <li>Transparent Procurement</li> <li>Transaction Honesty</li> </ul>	<ul style="list-style-type: none"> <li>Supplier Conference</li> <li>On-site Visit and Research</li> <li>Regular Evaluation and Review</li> <li>Engagement (Phone Calls, Emails and Visits)</li> </ul>
<p>Government and Regulator</p>	<ul style="list-style-type: none"> <li>Job Creation</li> <li>Contribution to Local Economy</li> <li>Compliant Operation</li> <li>Green Production</li> </ul>	<ul style="list-style-type: none"> <li>Regular Communication Report</li> <li>Special Research and Visits</li> <li>Exchange Conference and Forum</li> <li>Participation in Policy Standard Formulation and Consultations</li> </ul>
<p>Industry Association, Peer Company, Higher Education Institutions</p>	<ul style="list-style-type: none"> <li>Sustainable Supply Chain Management</li> <li>Compliant Operation</li> <li>Product and Service Quality</li> <li>Quality Customer Service</li> <li>Cooperation Projects</li> </ul>	<ul style="list-style-type: none"> <li>Industry Standard Formulation</li> <li>Global Industry Exhibition Participation</li> <li>Meetings &amp; Symposiums Participation</li> <li>Formulation and Consultation of Policies and Standards</li> <li>Strategic Industry-Academia-Research Cooperation</li> </ul>
<p>Community, Public, Media, etc.</p>	<ul style="list-style-type: none"> <li>Waste Discharge</li> <li>Community Welfare</li> <li>Environmental Compliance</li> </ul>	<ul style="list-style-type: none"> <li>Community Project Partnership</li> <li>Charitable Activities</li> <li>Community Volunteer Activities</li> </ul>

Communication with Key Stakeholders

# 01



## STRENGTHENING CORPORATE GOVERNANCE

In strict accordance with the *Company Law of the People's Republic of China* and the *Securities Law of the People's Republic of China*, and with reference to the *Code of Corporate Governance for Listed Companies in China* and other applicable laws and regulations promulgated by the China Securities Regulatory Commission and the Shanghai Stock Exchange, AlphaESS has formulated a series of internal rules and regulations, including the *Articles of Association*, *Rules of Procedure for Shareholders' General Meeting*, *Rules of Procedure for the Board of Directors*, *Rules of Procedure for the Board of Supervisors*, and *Related Party Transactions Management Policy*. The Company has improved its internal corporate governance structure and management system to ensure the standardization and efficiency of corporate governance, so as to lay a solid foundation for the long-term development of the Company and create value for stakeholders in a sustainable manner.

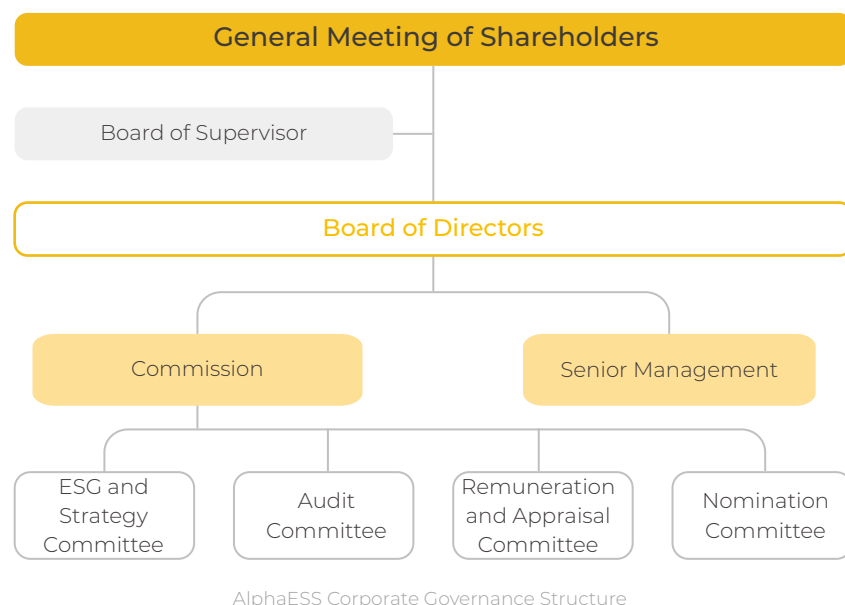
Relevant SDGs





# CORPORATE GOVERNANCE

The Company has established a governance structure consisting of the Shareholders' General Meeting, the Board of Directors, the Board of Supervisors, and the Senior Management. The structure aims to power harmonious interaction while ensuring effective checks and balances among the governance bodies, boosting fairness, transparency, and effectiveness of the Company's decision-making process, and creating an open, transparent and accountable governance environment.



## General Meeting of Shareholders

The Company convenes and holds shareholders' meetings in strict accordance with applicable laws, regulations, and internal rules of procedure. The Company is fully committed to respecting and safeguarding the legitimate rights and interests of all shareholders. The Company's shareholders act responsibly, exercise their rights through the shareholders' meeting, and make decisions on the Company's major operating matters. In 2023, AlphaESS convened a total of 6 shareholders' meetings.

## Board of Directors

The Company elects its directors in strict accordance with laws and regulations. Each term of office of the Company's directors is three years. The same director may be re-elected at the end of his/her term, but independent directors shall not serve the position for more than six years.

The board members have deep industry experience and cross-disciplinary professionalism, and can make effective decisions with comprehensive and diversified perspectives and insightful understandings. At the same time, we emphasize the diversity of our Board members by considering gender, age, cultural and educational background, professional skills, knowledge, and term of service in the selection of Board members to ensure the effectiveness and legitimacy of the Board's operation. As of the date of report disclosure, the Board of Directors of AlphaESS consists of a total of 9 directors, including 6 directors as well as 3 independent directors. Two of nine members are female, accounting for 22.2% of the total number of board members.

As of the date of report disclosure,

of which,  
**9** directors  
**3** independent directors  
**2** female directors  
**22%** of total board members

The Board of Directors consists of four specialized committees, including the ESG and Strategy Committee, the Audit Committee, the Remuneration and Appraisal Committee, and the Nomination Committee. Each committee carries out its work in accordance with their respective charters and other norms and regulations. The committees are fully aligned with the Company's management system and strategic plans to effectively fulfill their supervisory and managerial functions, and to ensure the sound operation of the Company.

**Strategy and ESG Committee**

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- To advise on the medium and long-term strategies of the Company; to make recommendations on major investments, financing programs, major capital operations, asset management projects, sustainable development, ESG works, and other major matters affecting the development of the Company; and to supervise the implementation of the plans.

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- To propose the hiring or replacement of the external auditor; to be responsible for the communication between the internal audit and the external audit; to supervise and review the Company's financial records and their disclosure, the internal audit system and its function; to review the Company's internal risk control system, and conduct audits of major transactions.

**Audit Committee**

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**Remuneration and Appraisal Committee**

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- To formulate remuneration policies or programs such as performance evaluation standards, procedures, incentive plans, and other remuneration policies or programs for the Company's directors and executives in accordance with the their responsibilities and the remunerations in the industry; to supervise and manage the implementation of the remuneration system, and to conduct annual performance appraisals of the directors and executives in accordance with the fulfillment of their responsibilities.

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- To advise the Board of Directors on the criteria and procedures for selecting directors and executives; to conduct extensive searches for qualified candidates for directors and executives; and to review and advise on the conduct of director candidates and executives.

**Nomination Committee**

## Board of Supervisors

The Company has established the Board of Supervisors in accordance with the law to exercise its supervisory power, safeguard the rights and interests of shareholders, the interests of the Company, and the legitimate rights and interests of employees from infringement, and to be accountable to the general meeting of shareholders and report on its work. As of the date of disclosure of the report, the Board of Supervisors consists of three supervisors, including one chairman and one employee representative supervisor. Pursuant to the *Articles of Association of the Company*, employee representatives on the Board of Supervisors are elected through democratic means, such as the employee representative congress, employee assembly, or other forms of democratic elections involving company employees.

During the reporting period,			
<b>6</b> meetings of the General Meeting of Shareholders	<b>5</b> meetings of the Board of Directors	<b>2</b> meetings of the Board of Supervisors	
<b>2</b> meetings of the ESG and Strategy Committee	<b>4</b> meetings of the Audit Committee	<b>1</b> meeting of the Remuneration and Appraisal Committee	<b>0</b> meeting of the Nomination Committee

# RISK MANAGEMENT

AlphaESS has established a comprehensive internal risk control and risk management system, continuously improving the Company's management system, implementing risk management responsibilities, and optimizing risk prevention and response strategies to enhance the Company's resilience and adaptability to fluctuations and uncertainties in the external environment, and to achieve sustained and long-term development.

## Risk Management System

The Company has formulated the *Procedures for Responding to Risks and Opportunities* and *Procedures for Controlling the Analysis of the Company's Environment* in accordance with *Basic Norms for the Internal Risk Control of Enterprises* and other regulatory requirements to safeguard the effective identification and monitoring of risks.

## Risk Management Process

The Company continuously optimizes its risk management process. Based on the results of risk assessment and comprehensive analysis of each department, we form a risk list at the Company level and update it regularly, while improving the list with consultations with the executives.



The head of each secondary department identifies and assesses risks within the respective departments and submits the compiled Risk Inventory of the department to the head of the primary department in charge.

After receiving the risk list of the secondary departments, the heads of each primary department organize meetings to draft a further defined list of risks.

The risk list of each primary department forms a company-level risk list, which is submitted to the Company's senior management for discussion and refinement.

Analyse the identified risks and plan overall responses and strategies.

AlphaESS Risk Assessment Process

During the risk assessment process, the Company also identifies and evaluates sustainability risks during its operations and development, and formulates risk management strategies to effectively reduce business risks.

### Loss of Core Technology Talent and Leakage of Core Technology

#### Risk Description

If there is a loss of the Company's core technical talents due to intensified competition for talents, a breach of contract by the Company's employees, or a failure of the Company's core technology confidentiality practices, the Company will be exposed to the risk of a loss of core technical talents as well as a leakage of core technology. It will affect the market competitiveness of the Company, and adversely affect the Company's technological innovation, product R&D, and sustained business growth.

#### Response

- Increase efforts on talent management and recruitment with:
  - Stock incentive plan for R&D, production, sales, finance, management personnel among others.
  - Sound talent development mechanism that features both internal and external trainings and exchanges as opportunities of employee capacity building.
  - Drawing talents from the energy storage and new energy industry to establish R&D teams for new techniques and technologies.

An Example of Risk Response Initiatives

## Internal Risk Control and Audit

The audit policy of AlphaESS is formulated by considering the Company operation and the charter of the Company, and referring to applicable laws and regulations including *Company Law of the People's Republic of China*, *Securities Law of the People's Republic of China*, and *Audit Law of the People's Republic of China*.

The Audit and Supervision Department, as an independent audit unit within the Company, assumes the important responsibility of ensuring business compliance and efficiency. Every year, we formulate and strictly execute internal audit plans based on the legal and regulatory requirements and risk assessment results of the regions where we operate to ensure that all operation sites are equipped with comprehensive auditing. In addition, we actively cooperate with third-party auditors to conduct external audits on a regular basis, which helps us identify potential management loopholes in a timely manner and further strengthen and standardize our internal management system. This mechanism not only enhances our management transparency but also provides a solid foundation for continuous improvement and risk prevention and control.

To ensure the comprehensiveness and effectiveness of the internal risk control system, the Domestic Internal Risk Control Department, and the Overseas Internal Risk Control Department, in close cooperation with each business unit, are responsible for formulating, implementing, and monitoring the Company's internal risk control policies and procedures. Particularly with respect to specific risks faced in overseas operations, the Overseas Internal Risk Control Department conducts risk management and assessment to ensure that the overseas branches or subsidiaries comply with regulations, industry standards, and the applicable global policies and standards. The Internal Risk Control Department provides reports on internal risk control and risk management to the executives and the Board of Directors to prevent risks.



# BUSINESS ETHICS AND ANTI-CORRUPTION

AlphaESS endeavors to create a fair, just, and clean working environment, and to build solid mechanisms of business ethics and anti-corruption to ensure that these principles are integral to every aspect of the Company's internal management and external cooperation, to maintain the Company's image of integrity and to create a business environment of mutual trust for all stakeholders.

## Business Ethics and Anti-Corruption Management

In 2023, the Company formally established the Code of Conduct Committee with the Chairman of the Company as the committee chair and the Chief Financial Officer (CFO) as the deputy committee chair. The committee is responsible for overseeing and dealing with all kinds of internal corruption, violations of regulations, and other misconducts for the healthy and sustainable management of the Company. The Company regularly identifies risks related to business ethics and anti-corruption, and has formulated a series of internal systems such as the *Anti-fraud Mechanism and Reporting Procedures*, *Gift Policies*, and *Procurement Management Provisions*, which aim to clarify the principles of business ethics management, means of reporting processes, and other matters of interest to ensure honesty and compliance of all staff in any business activities.

## Handling of Reports and Protection of Whistleblowers

We maintain a zero-tolerance approach towards any violations of business ethics. Any substantiated breaches of business ethics will be dealt with strictly. To encourage employees and partners to report any inappropriate behavior, we have established diverse reporting channels, including external reporting email, phone, mailbox, WeChat official account, and an internal platform. We have also developed a comprehensive and detailed reporting handling process, which is closely followed up by the Internal Risk Control Department, ensuring timely and impartial handling of each report. Additionally, we have explicitly stated provisions for whistleblower protection in the *Anti-Fraud Mechanism and Reporting Procedures* to effectively prevent any retaliatory actions and create a safe and fair condition for correcting ethics misconduct.

Reporting Email	ac@alpha-ess.com	If the report involves a senior member of the Company, the report can be sent directly to the chairman of the board of directors: thomas.yuan@alpha-ess.com	
Reporting Line	0513-68070558	Reporting Mailbox	Mailboxes across each site
Wechat Public Platform	AlphaESS Censorship	Corporate Intranet	AlphaESS Online

AlphaESS Censorship

## Building a Culture of Integrity

AlphaESS has formulated an *Employee Handbook* to provide all employees with a clear code of conduct on business ethics, regulate employee behavior, and require all employees to sign an integrity agreement. In order to enhance all employees' awareness and understanding of business ethics, integrity, and compliance, the Company has organized several business ethics and anti-corruption trainings and campaigns for the Board of Directors, senior management, and other employees to reinforce the practice of integrity and honesty. During the reporting period, we conducted a total of 35 hours of compliance training on business ethics and anti-corruption, with 70 participants.

During the reporting period,

business ethics and compliance trainings of

35 hours

70 participants

### Business Ethics and Anti-Corruption Training Program

- "Communicating and Responding to Tax Assessment Errors"
- "Year-end Defense Against Association Risks"
- "AlphaESS Tax Notes"
- "Seminar of the Common Legal Risks and Their Prevention During China Marketing"
- "Basics and Principles of Internal Auditing"
- "A Brief Description of Trade Terms and Payment Methods in International Business"
- "Training in Intercompany Transactions"
- "Incoterms & Sales Practices"

## Supply Chain Integrity Management

The Company also incorporates external partners such as suppliers into the Company's integrity management. Suppliers are required to sign *Integrity Trading Agreements* when bidding, and we also offer integrity training sessions for all our suppliers. We include the integrity performance of suppliers in the supplier evaluation system and give priority to those with good business reputations and integrity records when seeking cooperation. For suppliers that are found to violate our code of integrity, the Company would immediately stop any cooperation with the supplier and pursue their legal responsibilities. During the reporting period, the signing rate of the *Integrity Trading Agreement* was 100%.

During the reporting period,

the signing rate of the Integrity Trading Agreement was

100%





# 02



## FOCUSING ON SERVICE LEADERSHIP

AlphaESS firmly believes that energy storage is a critical element in the energy transition process, playing a significant role in supporting a new power system dominated by clean energy and achieve the carbon peaking and carbon neutrality goals. To this end, we continuously enhance our product management practices, drive technological innovation at the source, and refine our quality control processes to deliver safe and reliable energy storage solutions to our customers. Additionally, we are committed to advancing our supply chain management, fostering a sustainable supply chain that supports robust, long-term growth of our company.



### Relevant SDGs





# PRODUCT INNOVATION AND R&D

As an international high-tech enterprise certified as a National High-Tech Enterprise, AlphaESS considers innovation and R&D to be vital components of its development strategy. Driven by innovation, we strengthen our R&D capabilities, constantly refining our product and service offerings to promote the vigorous growth of the energy storage industry.

## INNOVATION AND R&D

With a strong focus on R&D and innovation, AlphaESS consistently improves its R&D management system and assembles a top-tier R&D team to boost efficiency and drive innovation. During the reporting period, our R&D investments reached approximately RMB 160 million, an 80% increase year-on-year.

During the reporting period,

**160** ~ million RMB

on R&D investment

**80%**

year-on-year increase

### R&D Management System Optimization

The Company prioritizes independent innovation and R&D capability building. In 2023, we set up a comprehensive R&D system that integrates R&D resources across various product lines. This has enhanced the alignment between technological development and business objectives, ensuring that our strategies remain agile and responsive to market dynamics. We have implemented a “matrix” management model to streamline project resource allocation. This model not only enhances interdepartmental collaboration but also facilitates information flow and resource sharing, thereby increasing employee efficiency and overall competency.

To further optimize our R&D process, we have clarified the division of responsibilities among project team members using a Responsibility Assignment Matrix (RACI), and fine-tuned our product development and information technology workflows. These adjustments lay a solid foundation for continuous improvements across all aspects of our operations, including R&D and design, intelligent manufacturing, and digital management. Central to our efforts are the R&D center's technological pre-research and technical platforms, which continually inject innovative energy into our full-range energy storage product lines. This drives the rapid iteration of new products, in line with AlphaESS's mission to “Make clean energy accessible to everyone in the world”.

### R&D Talent Training and Motivation

AlphaESS is committed to attracting and cultivating professionals in energy storage and has assembled a team of seasoned, innovative, and highly skilled R&D experts, ensuring our ongoing innovation and leadership in the industry. To pass on and promote the Company's innovative spirit and professional expertise, in June 2023, we set up a special R&D trainee program, led by senior R&D engineers, to provide systematic technical training and career guidance to newly recruited graduates. This initiative helps lay a robust technical foundation for new employees and facilitates their swift integration into our R&D team, jointly promoting the Company's innovation and development. To further stimulate creativity and vitality within the R&D team, we have formulated a series of incentive policies, such as the *R&D Center Innovation Incentive Policy* and the *R&D Center Performance Management Process*. These are designed to create a vibrant, inclusive, and open research environment, where team members are encouraged to propose innovative ideas and transform them into practical R&D projects.

Incentive Recipient	Assessment Requirements	Incentives	Review Cycle
Individual/Team with Key Breakthroughs	Effective Transformation of Project Implementation into Key Technology Achievements	President's Special Award	Annual
Individual/Team with Innovative Projects	Successful Transformation of an Innovative Idea into a Project	Innovative Project Award	Annual
Team with the Maximum Innovative Ideas	Department with the Highest Per Capita Contribution of Ideas Approved in Preliminary Review	Innovative Team Award	Semi-annual
Individual with the Maximum Innovative Ideas	Individual with the Highest Number of Innovative Ideas Approved in Preliminary Review	Innovative Individual Award	Annual

Incentives for R&D Innovation

Continuous training and empowerment are crucial drivers of R&D innovation. To support this, our company not only conducts internal job skills training but also provides a variety of learning and exchange opportunities, including but not limited to seminars, workshops, online courses, and industry forums. Such initiatives ensure that our R&D personnel keep abreast of the latest industry trends, and can explore and apply new knowledge in practice, thus improving their professional skills and comprehensive quality.

#### Spark of Innovative Thinking: Brainstorming Workshops

In February 2023, AlphaESS R&D Center hosted six brainstorming workshops, facilitated by external experts for all its R&D staff. These workshops employed brainstorming techniques to encourage team discussions and exchanges, focusing on the pain points of energy storage products while leveraging the Company's R&D strengths. This method was intended to spark creative ideas and foster their transformation into actionable projects. During the reporting period, a total of 59 innovative ideas were collected through the workshops, of which 53 were approved in a preliminary review by department managers, 18 passed a further review by the center's general manager, and ultimately, 8 were greenlit for development. These projects are currently underway, providing fresh impetus to the Company's R&D innovation efforts.

## Innovative R&D Results

AlphaESS has been adhering to an independent R&D approach, continuously investing in R&D to achieve remarkable advancements in core technologies, testing capabilities, and battery recycling. We are also dedicated to enhancing the performance of energy storage products and introducing solutions that address customer pain points and stand out in the competitive market. Our success is driven by our unwavering dedication to innovation and a thorough understanding of market demands, all aimed at supporting the global energy transition and sustainable development.

### Battery Management System

- Intelligent and Artificial Intelligence Applications
- Network and Communication Technologies
- Safety and Reliability
- Multimodal Sensor Fusion
- Large-Scale Integration and Modular Design

### Energy Storage System Integration

- Improved Energy Storage System Lifespan and Performance
- Reduced Energy Storage Costs
- Intelligent Energy Storage Systems
- Battery Thermal Management Design
- Safety and Protection Design
- Integrated PV and Storage System Interconnection Technology
- High-Speed Frequency Modulation Technology

### Big Data Development

- Battery State Estimation Technology
- Edge Computing Module
- Battery Anomaly Analysis and Early Warning
- Electrochemical-based Battery Aging Model
- Battery Consistency Diagnosis

### Low-Carbon Smart Park Platform

- Internet of Things Technology
- Diversification
- Digital Twin
- Big Data and Artificial Intelligence
- Security and Reliability

Main Technological Directions of AlphaESS



### Continuous Iteration of Core Technology

In 2023, AlphaESS developed a BMS for series-connected batteries, transforming traditional battery limitations into advantages for the new series-connected battery design. This system features major breakthroughs in bypass functionality, functional safety, and seamless switching, securing five relevant patents and achieving successful product application and mass production. This system enables microsecond-level seamless switching between batteries, ensuring exceptional system stability. In addition, by integrating bypass management hardware design with totem pole topology anti-crosstalk technologies, each battery module can independently manage its insertion or removal from the high-voltage circuit through active bypass. This innovation solves the increased costs and larger sizes associated with traditional high-voltage enclosures, eliminates the technical barriers to active balancing between battery modules, and improves the overall capacity and lifespan of the high-voltage series-connected battery system. This breakthrough not only spearheads technological innovation but also delivers substantial economic benefits.

### Enhancement of Reliability Testing Capabilities

In 2023, AlphaESS achieved a significant milestone in enhancing its reliability testing capabilities, including board-level reliability, environmental reliability, and stress testing. These improvements aim to ensure that our products demonstrate excellent performance and reliability under various extreme conditions, thus providing our customers with safer and more efficient energy solutions. Board-level reliability includes comprehensive functional testing, single-node failure testing, and temperature rise testing. Environmental reliability encompasses thermal shock, cyclic temperature and humidity variation, temperature-humidity bias (THB) life testing, and storage at high and low temperatures. Stress testing involves continuous test rigs for large-scale energy storage and BMS load-switching stress test.

### Advancements in Battery Cell Recycling

In 2023, our company made significant progress in the field of battery cell recycling, dedicating efforts to enhance the recycling efficiency of batteries and contribute to a clean, sustainable energy future. In terms of technological innovation, we adhere to national standards for the selection and assessment of batteries for second-life applications. We've developed and established a new system for such batteries, not only extending their lifecycle but also boosting recycling rates. This initiative also cuts down on the energy and environmental toll during the reuse phase. Furthermore, we've constructed a robust battery cell recycling infrastructure, collaborating closely with partners along the supply chain to create an effective closed-loop system. This ensures the efficient collection and processing of spent battery cells. By implementing reasonable pricing strategies and incentive programs, we ensure that used battery cells are directed towards legitimate recycling channels, thereby mitigating the risks associated with illicit recycling activities. Internally, we've intensified our educational efforts to heighten employee awareness of the critical importance of battery cell recycling and encourage them to propose innovative recycling technologies and methods.



### Energy Solution Innovation

In 2023, AlphaESS unveiled two groundbreaking products, demonstrating acute awareness of market trends and customer demands.

- The 1500V liquid-cooled energy storage system is an innovative product crafted around the core principles of safety, reliability, performance, and intelligence. Utilizing an advanced liquid cooling technique superior to conventional methods, this system offers rapid cooling and uniform temperature regulation, which significantly enhances battery lifespan and efficiency. Additionally, the system incorporates an external maintenance architecture and a multi-level intelligent fire suppression system, ensuring comprehensive safety and efficiency. With its modular and scalable design, the system is versatile enough to meet a wide array of scenarios and demands, making it indispensable for large-scale energy storage applications.
- The 30kW plug-and-play air-cooled outdoor cabinet is a highly integrated solution tailored for the distributed photovoltaic power generation market. Its compact and versatile design ensures strong adaptability to various environments, making it user-friendly for installation and operation. The battery modules are designed with a plug-and-play mechanism, streamlining the installation and maintenance process, and feature an automatic 30ms on-grid to off-grid transition to maintain a stable power supply. The outdoor cabinet utilizes dual advanced air-cooling technologies, combining top-mounted air-conditioning with a PACK fan system, and integrates an aerosol fire suppression system for enhanced safety and reliability.



### Industry-University-Research Cooperation

While steadfastly pursuing independent innovation, AlphaESS leverages the technological strengths of academic and research institutions, capitalizing on its own industrial and market advantages. This strategy ensures a synergy of "resource sharing and mutual benefit", which continuously enhances our capacity for innovation. We have forged enduring partnerships with prestigious universities, including Xi'an Jiaotong University, Tianjin University, and Nantong University, to collaboratively tackle technological challenges in the critical field of energy storage, pursue cutting-edge technological research, and cultivate talent.

#### Collaborative Development of Direct Regeneration Technology for Graphite Anode Waste from Retired Lithium Batteries between AlphaESS and Xi'an Jiaotong University

In May 2023, AlphaESS and Xi'an Jiaotong University formed a partnership to advance the "Development of Direct Regeneration Technology for Graphite Anode Waste from Retired Lithium Batteries" project. The project focuses on pioneering technology in the recycling of retired lithium batteries. By leveraging the strong microwave absorption properties of graphite carbon materials, the process involves selective high-temperature calcination to efficiently restore the compromised structure of graphite waste. The technology orchestrates a synergy of multiple fields to fine-tune the physical properties of graphite, thoroughly eliminate impurities, and rehabilitate its electrochemical performance. The outcome is the cost-effective regeneration of graphite waste into viable anode material for lithium batteries.

### INTELLECTUAL PROPERTY PROTECTION

AlphaESS is committed to the management principle that "self-reliant innovation in technology paves the way for the future of energy storage, while intellectual property protection bolsters competitive edge". We are continuously refining our standardized intellectual property management system and establishing a robust "protective umbrella" to support innovation-driven growth through strategic policy implementation and management practices.

We have developed comprehensive policies such as the *Intellectual Property Risk Control Procedures* and the *Intellectual Property Dispute Resolution and Emergency Plan*. Agreements like the *Confidentiality Agreement* and the *Non-Compete Agreement* have been put in place with our key technical staff to ensure the Company's IP management is meticulously regulated. Furthermore, we've introduced the Intellectual Property Incentives and Penalties Policy to foster a culture of innovation and creativity. This policy is designed to incentivize the generation of IP assets and to promote the diligent protection and strategic management of these assets.

To strengthen the awareness of IP protection among our employees, AlphaESS has set up a dedicated IP section within the AlphaESS Academy. We have strictly implemented the annual IP training and learning activities as outlined by our IP management system requirements.



#### 21-Day Patent Information Interpretation Challenge

In the Company's fifth session of the 21-Day Patent Information Interpretation Challenge launched in April 2023, with the theme of "Exploration & Confrontation", channels for accessing patent disclosures both internally and externally were provided. Participating R&D personnel utilized these channels to select patents for interpretation, effectively enhancing their skills in patent exploration and drafting.

#### Book Reading Event

From February to April 2023, the Company organized a book reading event themed "Cultivating a Reading Habit, Empowering AlphaESS with Patents". This event motivated employees to read recommended patent books, assisting new R&D personnel in understanding patent concepts and acquiring skills for patent exploration and drafting. Additionally, it offered new insights to seasoned staff with writing experience, thereby elevating the quality of their patent submissions.



## Awards and Recognitions

In 2023, AlphaESS was elevated from a “National Intellectual Property Advantageous Enterprise” to a “National Intellectual Property Demonstration Enterprise”, a testament to our outstanding R&D innovation and intellectual property management capabilities. Moreover, our innovative projects have garnered a multitude of awards and recognitions.



The 24th China Patent Award Appearance Design Silver Award

SMILE5: Third Generation Residential Storage Product



Jiangsu Province Key Technology Advancement Initiative

R&D and Industrialization of Integrated Equipment for User-Side Distributed Energy Storage Main Stations and Virtual Power Plants



Municipal High-Value Cultivation Initiative

High-Value Patent Cultivation Center for Large-Scale Grid-Side Energy Storage System

During the reporting period, the status of the Company's intellectual property rights is as follows:

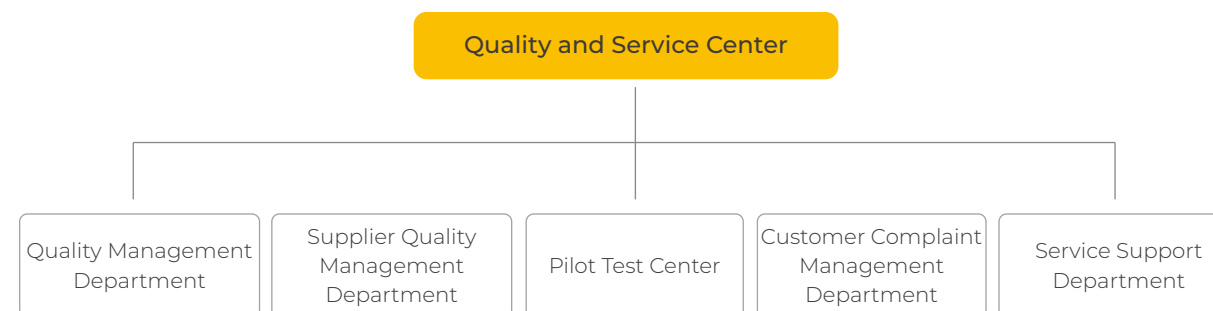
Indicator	Unit	2022	2023
Number of Patents Held	/	147	203
Number of Trademarks Held	/	13	40
Number of Software Copyrights Held	/	69	132

# QUALITY MANAGEMENT

AlphaESS considers product quality to be the lifeline of our business, dedicating ourselves to relentlessly enhancing our product management capabilities. We are committed to the ongoing refinement of our quality management system, initiating stringent quality controls right from the inception of our products. Our goal is to deliver superior, dependable, and consistent products, ensuring an exceptional user experience.

## Product Quality Management System

AlphaESS prioritizes the integrity of product quality and service excellence. To streamline and enhance the oversight of product quality, the Company has consolidated the Quality Management Department, the Pilot Test Center responsible for product and market access testing, and the Customer Complaint Management Department under the unified umbrella of the Quality and Service Center.



AlphaESS Quality Management Structure

In line with our quality policy and objectives of “integrity and traceability for incremental daily improvements; rigor and thoroughness for a decade of zero-defect operations”, we have formulated more than twenty quality management policies. These include the *Quality Manual*, the *Production Process Control Procedures*, the *Shipping Inspection Process*, the *Nonconforming Product Control Procedures*, and the *Product Scrapping and Recall Procedures*. By leveraging cutting-edge quality management tools such as TQM (Total Quality Management), TS core tools<sup>2</sup>, QCC (Quality Control Circle), and the seven QC (Quality Control) tools, along with lean management principles and methodologies, we have established a comprehensive quality control framework that spans product development, procurement, production, testing, and market feedback. Additionally, the Company has set annual quality management objectives and monitors the completion of these quality objectives.

Quality Management Objectives	2023 Achievement Status
First Pass Yield ≥ 96.5%	Achieved
Incoming Quality Yield ≥ 98%	Achieved

<sup>2</sup> TS core tool: includes FMEA (Failure-Mode&Effect-Analyse), MSA (Measure-System-Analyse), SPC (Statistical Process Control), APQP (Advanced-Product-Quality-Planning), PPAP (Production-Part-Approval-Process).



As of December 31, 2023, all domestic factories of AlphaESS have obtained ISO 9001, ISO 14001, and ISO 45001 certifications. The Company's products feature a high-reliability structure and are equipped with intelligent battery management systems that offer high reliability and precision. The key products have passed more than 200 rigorous safety standards set by major international bodies, including the International Electrotechnical Commission (IEC), the United Nations' UN38.3, the European Union's Low Voltage Directive (LVD), Germany's Verband Deutscher Elektrotechniker (VDE), the United States' Underwriters Laboratories (UL), Australian Standard/New Zealand Standard (AS/NZS), Japanese Industrial Standards (JIS), Korea Battery Industry Association (KBIA), and Italy's Comitato Elettrotecnico Italiano (CEI). These extensive safety certifications have significantly boosted the market reputation and trust in AlphaESS's products, establishing a solid foundation for their swift penetration into global markets.

We have continuously enhanced our quality initiatives and implemented several quality improvement projects during the reporting period.

**Introduced a multi-level product audit**

Quality management personnel, ranging from front-line employees, team leaders/supervisors, and department heads, to plant managers and general managers, are organized into four tiers. Each tier conducts on-site process and product audits at designated intervals. The Quality Control Department creates a list of audit issues, and auditors then summarize, track, and resolve these issues systematically.

**Conducted internal product audits**

The "Check Sheet" from the seven QC tools is utilized to cover all in-process products. This tool serves as a platform for continuous optimization of product design and manufacturing.

**Added quality management tools**

Quality management methods are optimized in line with the Company's quality objectives to achieve lean quality management. Quality Gate, QCC (Quality Control Circle), and other tools are applied.

Examples of Quality Improvement Projects

## Full Lifecycle Management

Leveraging its refined quality management system, AlphaESS has established robust process systems and quality management practices across various stages, including early supplier development, raw material warehousing, production, and product dispatch. This ensures a consistent quality control chain throughout the product lifecycle.

### AlphaESS Quality Control Initiatives

**Raw Material Warehousing**

- Quality inspectors conduct inspections based on parts drawings and preset sampling levels and synchronize the results to relevant functional modules such as warehouse and supplier management.

**Product Production**

- The quality team, composed of process control and production personnel, performs self-inspection, cross-inspection, full inspection, and routing inspection on each process in accordance with the Operation Instruction and the Inspection Instruction. All materials utilized and operations performed at each stage are recorded in the manufacturing execution system (MES).

**Product Dispatch**

- We ensure that only qualified products are stored in the finished goods warehouse. All qualified products will be subject to a cross-departmental sampling inspection prior to dispatch.

**Product Identification and Traceability**

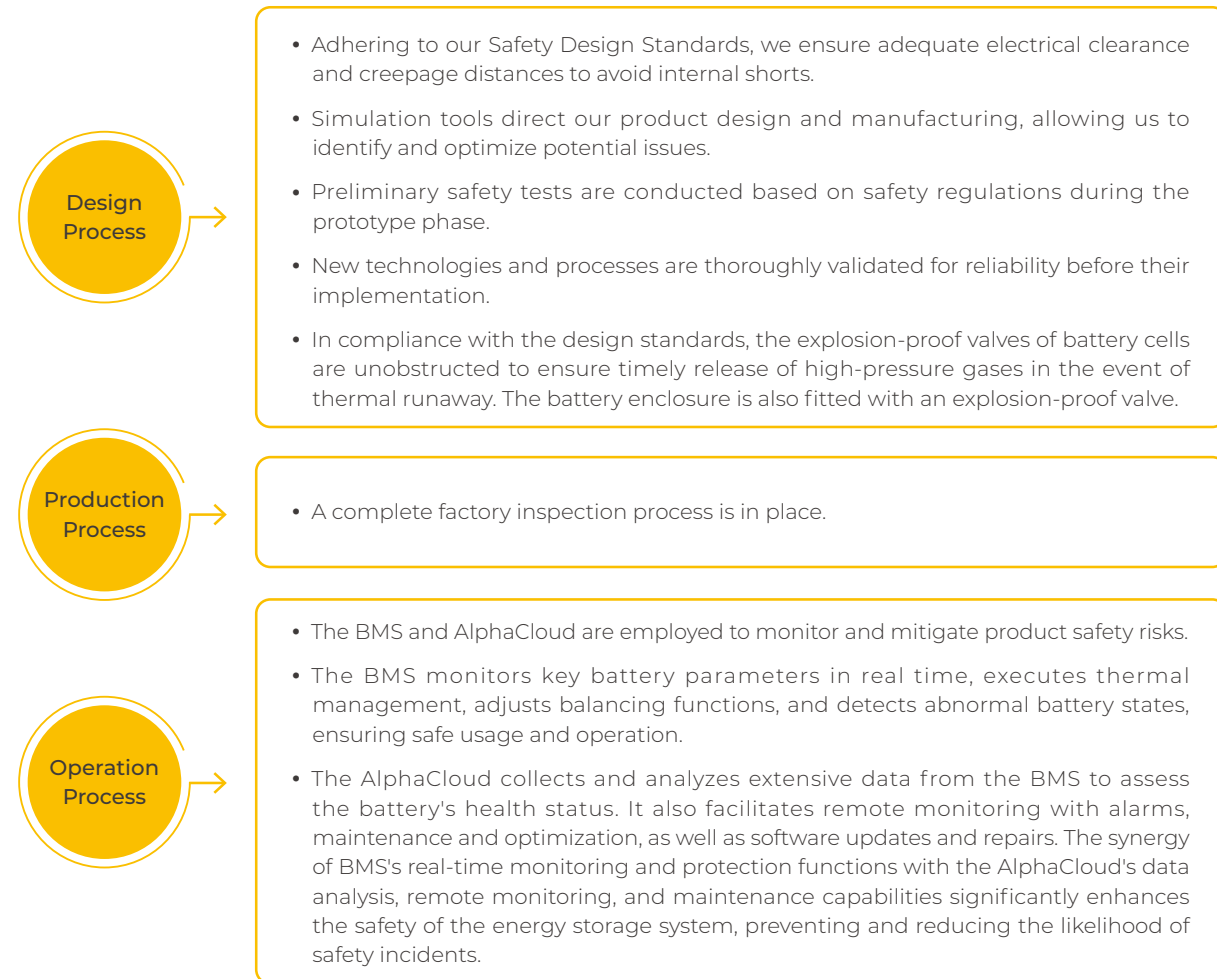
- We have established the Product Identification and Traceability Control Procedures to regulate product identification management and define product traceability procedures.
- Using the MES, we record the quality inspection statuses of the entire production process (including materials, in-process products, and finished products). Each product's serial number is linked to its respective quality records, ensuring the traceability of our products.





## Product Safety Management

The safety risks associated with energy storage systems (ESS) include battery overheating, short circuits, overcharging and over-discharging, all of which could potentially cause thermal runaway, fires, or explosions. AlphaESS places a high priority on product safety management, incorporating it throughout the entire product lifecycle, from design and production to operation.



Product Safety Risk Management and Prevention Initiatives

## Quality Culture Development

Our company is deeply committed to not only maintaining rigorous standards for product and service quality but also to fostering a robust culture of quality. This commitment spans from building a strong team of quality professionals to incentivizing and training our talent, ensuring the continuous enhancement of our quality culture. To boost the engagement and performance of our quality personnel, AlphaESS has developed the Quality Staff Incentive Policy. This policy rewards individuals who demonstrate exceptional efficiency or who offer valuable suggestions for product or process improvements with recognition, bonus points, performance accolades, and special rewards.

In tandem with these incentives, the Company provides comprehensive and varied quality training tailored to different job roles. We aim for our training to be not only practical and adaptable but also to have a tangible impact on performance.

### New Employee Quality Training

We implement this through online platform courses and pre-employment training.

### Routine Meetings

Quality, warehouse, and production staff are trained in daily team meetings and weekly factory meetings.

### Irregular Quality Training

Quality, warehouse, and production staff must attend irregular internal and external training according to the Company's annual training plan. We also engage third-party consulting firms for intensive on-site training.

### Quality Month and Technical Competition

Held bi-monthly, these events reinforce our commitment to a culture of quality. They include all-hands morning meetings at the factory, commendations for outstanding individuals and teams, and collective signing of a commitment declaration followed by motivational pledge ceremonies.



Quality Training System



# CUSTOMER SERVICE AND PROTECTION

AlphaESS, adhering to a “customer-centric” philosophy, establishes multiple channels to gather customer feedback. We promptly refine and innovate our products and services based on the feedback, committed to delivering the highest quality of service and experience to our customers. Moreover, we enhance our information security and privacy measures to rigorously safeguard customer data throughout our operations.

## CUSTOMER SERVICE

To swiftly address customer needs, our company has set up a variety of customer feedback channels. Customers can lodge a complaint directly through the AlphaCloud platform or call the after-sales service numbers listed on warranty booklets, the official website, and other channels. We employ the AlphaCloud platform to quantitatively track and manage each customer's service journey, ensuring every stage is addressed efficiently and issues are resolved promptly.

We have established a robust customer service process and formulated policies such as the *Customer Complaint Management Procedures* and the *After-Sales Issue Resolution Procedures*, encompassing all facets of customer interactions, from inquiries and complaints to after-sales support. Customer feedback is compiled and analyzed weekly, with solutions identified and provided to the appropriate departments for execution and enhancement.



Customer Complaint Handling Process

We continually elevate our customer service experience to ensure a high standard of quality, undertaking a range of initiatives to enhance customer satisfaction throughout the reporting period. Additionally, we have established the *Customer Satisfaction System Management Procedures*, which direct the Company's efforts in conducting customer satisfaction surveys.



Customer Satisfaction Survey Process



<b>AI customer service system</b>	<ul style="list-style-type: none"> <li>Powered by artificial intelligence and machine learning algorithms, customer service becomes more efficient and personalized. Customers can access answers at any time and the Company can thus improve customer satisfaction, achieving both high quality and efficiency.</li> </ul>
<b>OpenAPI project</b>	<ul style="list-style-type: none"> <li>We provide a platform that empowers innovators to create bespoke solutions. It offers developers accessible APIs to seamlessly incorporate new functionalities, delivering a tailored, premium service experience to customers.</li> </ul>
<b>After-sales CRM system and Australian warranty extension features</b>	<ul style="list-style-type: none"> <li>Redefining customer relationship management and after-sales service, we guarantee the best post-purchase experience through efficient issue tracking, premier support, and warranty options.</li> </ul>
<b>AlphaESS Partner APP</b>	<ul style="list-style-type: none"> <li>It is a dedicated mobile app that provides service support for traders and other partners. It enables installation engineers to combine digital technical support with equipment commissioning. Also, this app fosters the creation of a collaborative growth community for users. Through organized content sections, the app ensures quick access to information, thereby enhancing the user experience.</li> </ul>

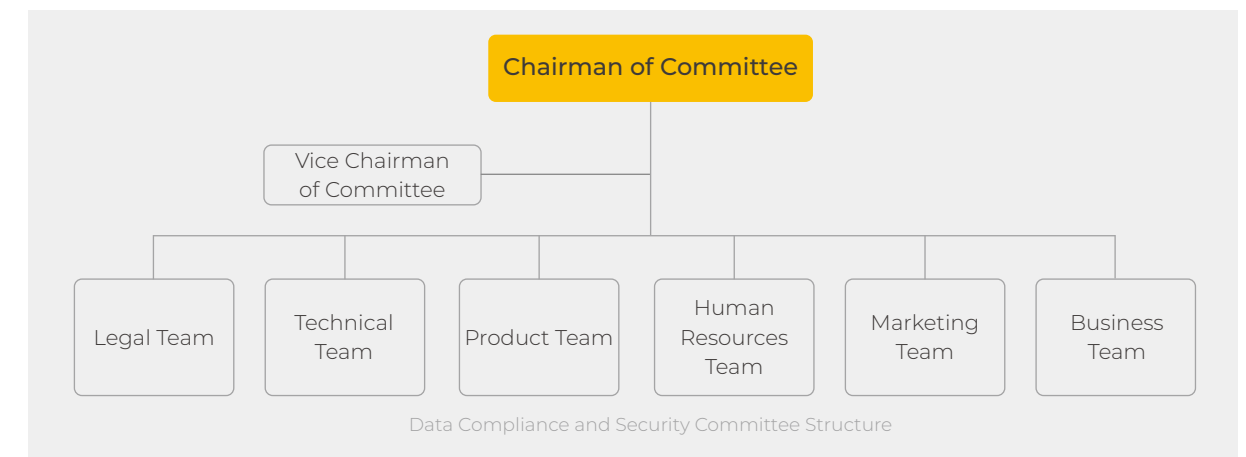
Customer Service Improvement Cases

## PRIVACY PROTECTION

AlphaESS conducts its business in strict compliance with the *Cybersecurity Law of the People's Republic of China*, the *Data Security Law of the People's Republic of China*, the *Personal Information Protection Law of the People's Republic of China*, and EU's “*General Data Protection Regulation*” (GDPR), among other pertinent national and regional regulations. Upholding the overarching principle of “placing security first, with comprehensive risk prevention and equal emphasis on management and technology”, we continuously strengthen our capabilities in data security and privacy protection to mitigate associated risks.

### Data Security and Privacy Protection Management System

In 2023, the Company established a Data Compliance and Security Committee tasked with the coordination, oversight, and execution of data security and privacy protection initiatives. The committee is composed of key figures from the Company's Legal, Technical, Product, Human Resources, Marketing, and Business teams. Their responsibilities include regularly testing and evaluating internal systems, and reviewing and supervising external partners to guarantee the effective enforcement of data security and privacy protection policies.

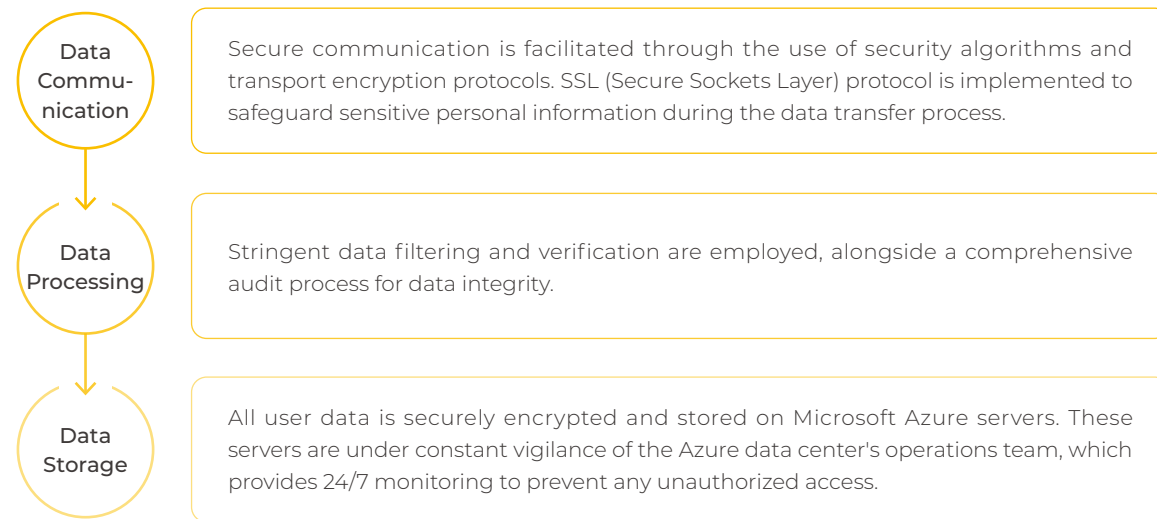


Data Compliance and Security Committee Structure

Furthermore, we have established a suite of governance documents including the *Network Information Security Management Policy*, the *Information Security Principles*, the *Personal Information Protection Management Policy*, the *Basic Data Security Policy*, and the *Data Security Emergency Response Plan*. These policies are designed to standardize process management and direct the Company's efforts in data security and privacy protection. To promptly identify data security risks and assess the effectiveness of our data security management framework, our company engages a third-party organization to conduct annual external data security audits, covering areas such as security governance and data protection. During the reporting period, AlphaESS encountered no major cybersecurity or data privacy incidents.

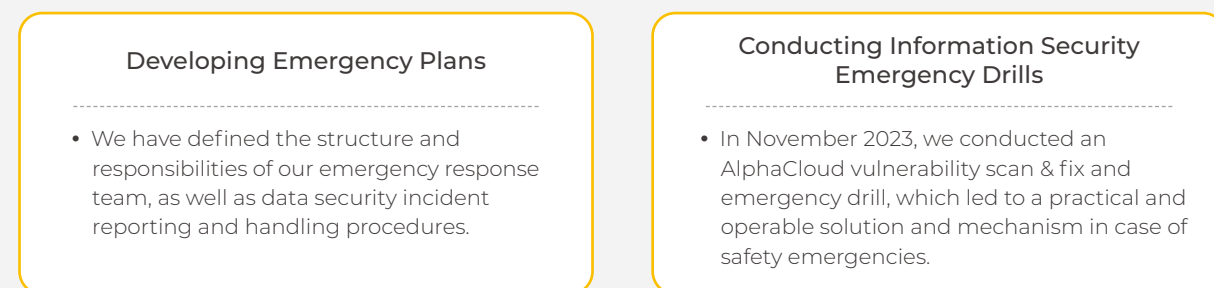
## ■ Data Security and Privacy Protection Management Initiatives

Our company attaches great importance to data security and customer privacy protection. By leveraging various privacy protection technologies and management initiatives, we have built comprehensive standards and mechanisms that govern the entire data lifecycle.



Examples of AlphaESS's Data Security and Privacy Protection Initiatives

We have implemented multiple emergency response measures to address data security incidents, including those that are suspected. By conducting regular information security emergency drills, we have enhanced our team's ability to respond to data security emergencies effectively.



Data Security Emergency Management Initiatives

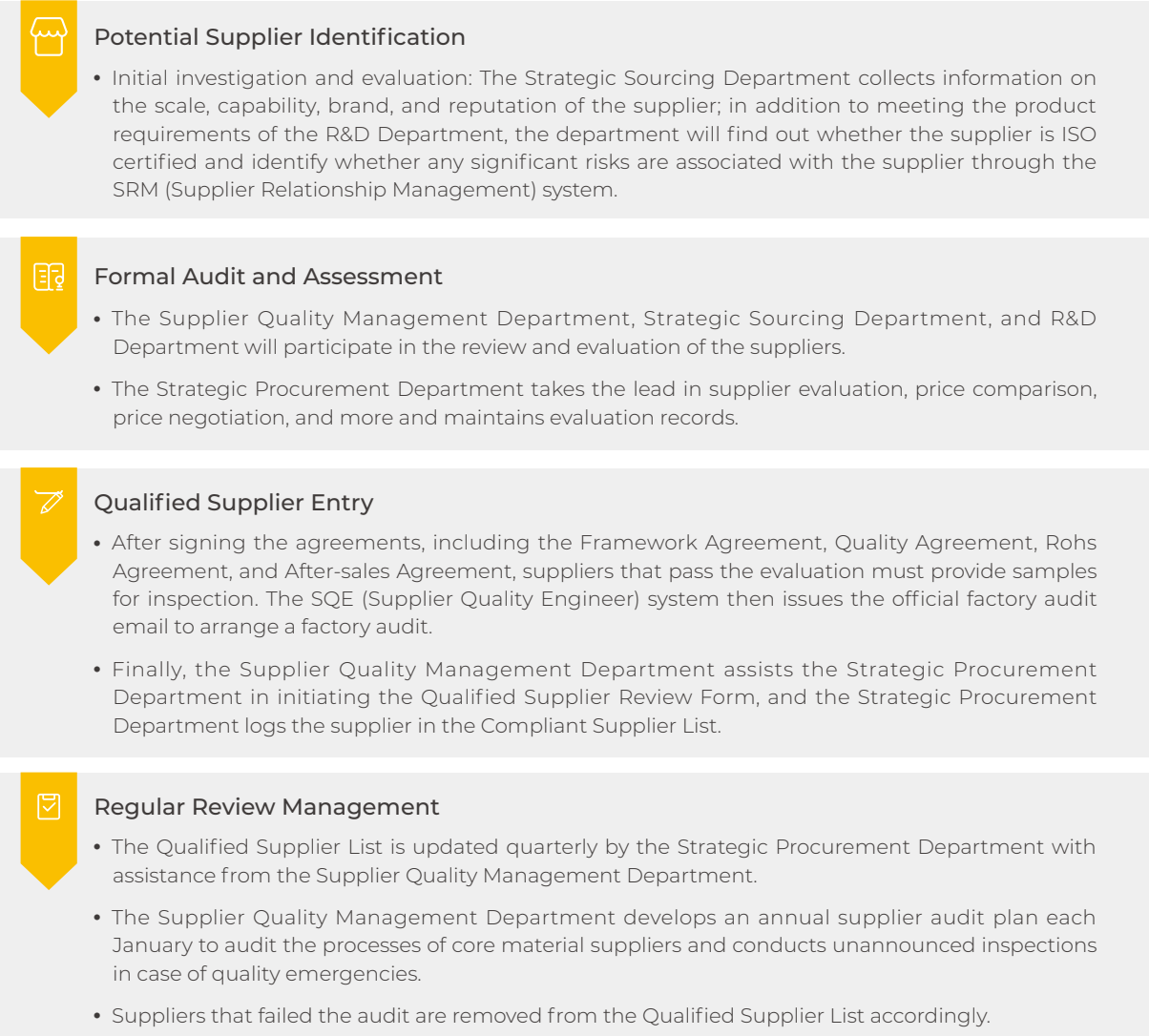
We have cultivated a strong culture of data security and privacy protection. Through regular training for new employees, among other methods, we enhance our team's awareness and skills in safeguarding data security and privacy.

# SUPPLY CHAIN MANAGEMENT

AlphaESS continues to promote the construction of a sustainable supply chain, extending its sustainability criteria to its partners and continually elevating the level of supplier management. By the end of the reporting period, our Supplier Relationship Management (SRM) system has registered 2,477 suppliers, including 269 qualified suppliers<sup>3</sup> and 2,208 potential suppliers. Among the qualified suppliers, 257 are based in Chinese mainland, with the remaining 12 suppliers from the Hong Kong, Macao, and Taiwan regions, as well as from overseas.

## Supplier Management

AlphaESS boasts a comprehensive supplier development and management system encompassing multiple processes, including supplier access, screening, management, and incentive mechanisms. We have formulated a series of management systems, such as *Supplier Management Procedures*, *Procurement Management Policies*, and *Supplier Performance Management Procedures*, and have set up an internal list of compliant suppliers, which is subject to regular reviews and updates.



AlphaESS Supplier Management Process

<sup>3</sup> Qualified suppliers: suppliers that meet the requirements of quality, procurement, and R&D management system after preliminary selection, evaluation, and assessment. Potential suppliers: new suppliers that have not yet established a formal partnership with AlphaESS and possess a basic quality system, appropriate technical capabilities, good management level, and are yet not audited.



## Sustainable Supply Chain

The Company continues to improve its sustainable supply chain management and incorporates sustainability-related requirements into supplier bidding, assessment, and evaluation to reduce environmental and social risks in the supply chain. In 2023, we established the *Supplier Code of Conduct and Statement*, which specifies the Company's requirements for suppliers on human rights, occupational health and safety, and the environment, and will require all suppliers to sign the statement before December 31, 2024. We have also signed a series of agreements with our suppliers, such as the *Declaration of Conformity*, *Integrity Trading Agreement*, and *Confidentiality Agreement*, which promote the further development of sustainable supply chain construction.

### Transparent Procurement

The *Integrity Trading Agreement* countersigned by suppliers mandates them to follow the Company's integrity-related management system and to commit to establishing a sound integrity system. The agreement also requires suppliers to carry out integrity and honesty education and to oversee and investigate any unlawful or unethical conduct.

### Labor Management

The Company has issued the *Supplier Code and Conduct and Statement*, which mandates suppliers to comply with the Human Rights Statement, respect and safeguard human rights, focus on health and safety, protect the environment, and establish and improve management systems.

### Privacy Protection

In addition to signing a *Confidentiality Agreement* with suppliers, we have concurrently established a *Supplier Data Security Policy*, which mandates suppliers to comply with the relevant provisions of applicable data protection laws and regulations, including, but not limited to, the *Cybersecurity Law of the People's Republic of China*, the *Data Security Law of the People's Republic of China*, and the *Personal Information Protection Law of the People's Republic of China*, and to carry out their data processing activities in accordance with and in compliance with the law.

### Environmental Compliance

The *Declaration of Conformity* countersigned by suppliers mandates them to familiarize themselves with the EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and Restriction of Hazardous Substances (RoHS) that limits the use of certain hazardous substances in electrical and electronic equipment (EEE) and to provide green and compliant products.

### Conflict Minerals

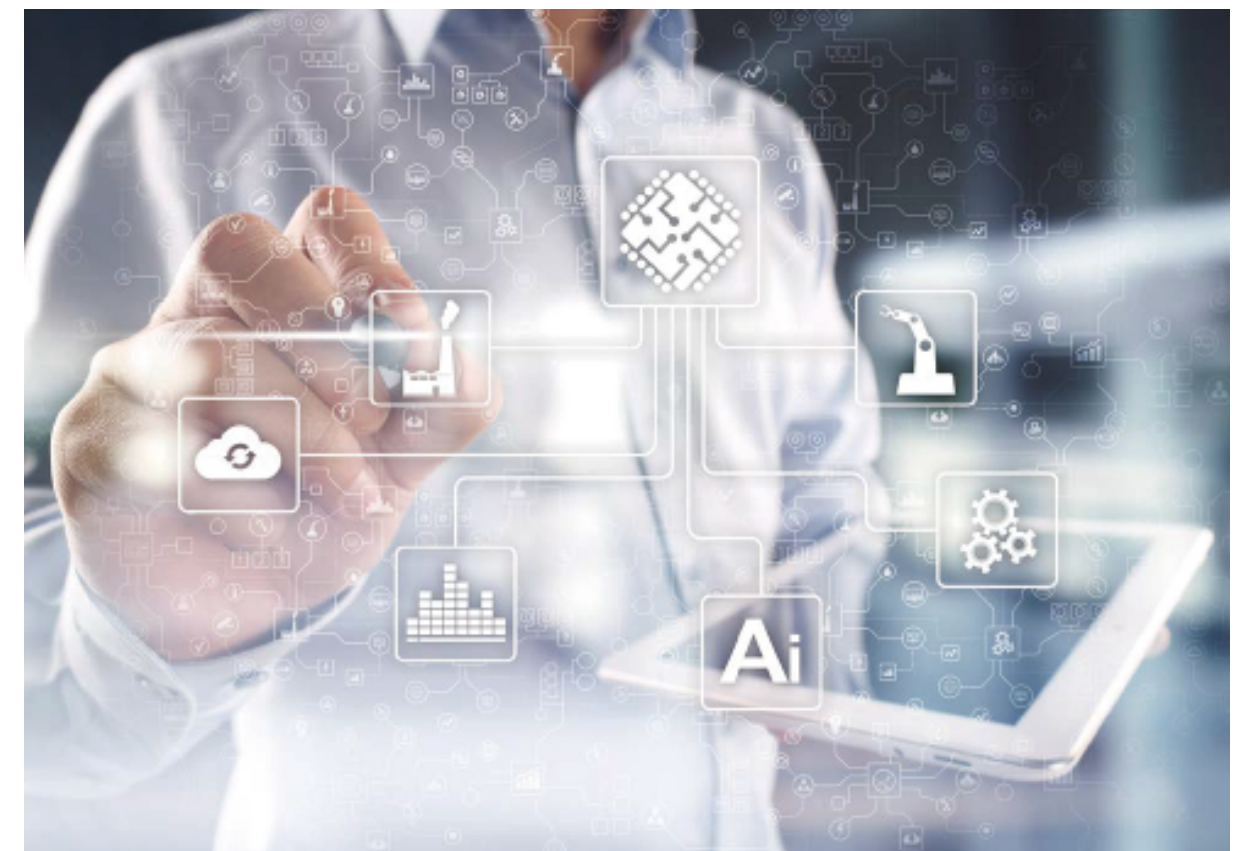
Identify and assess the potential risks of adverse impacts from mining, trading, processing, and exporting mineral resources in Conflict-Affected and High-Risk Areas (CAHRAs) and fulfill the obligation to respect human rights and not contribute to conflict. The Company pledges not to incorporate 3TG conflict minerals (tantalum, tin, tungsten, and gold) into its products and to abstain from any activities that provide financial support to conflicts.

## Supplier Empowerment

AlphaESS consistently upholds the philosophy of mutual benefit in supply chain development. Through dialogue with our suppliers, we discern their specific needs and operational challenges and offer targeted training programs and support initiatives that encompass product knowledge, service quality, and social responsibility commitment. The Company also shares its corporate development strategies and goals with suppliers, discusses industry trends and best practices, fosters mutual advancement, and cultivates a conducive atmosphere for collaboration through supplier conferences, cooperation seminars, supplier exhibitions, salons, and more.

### Supplier Coaching and Support in 2023

Since 2021, AlphaESS has assisted a strategic supplier in carrying out market research and investigation for new technologies while maintaining technical exchanges. From the technical research at the end of 2021, the purchase of single-station equipment in 2022, to the formal introduction of hot pressing, testing, laser welding equipment for automatic assembly line in 2023 and the realization of mass production, AlphaESS and the supplier have held many technical exchanges to solve problems such as NTC (Negative Temperature Coefficient Resistor) abnormality, fuse disconnection, and missed welds on nickel strips, and successfully assisted the supplier in launching new technological solutions.





# 03



## GROWING WITH EMPLOYEES

The development and innovation of AlphaESS are inextricably linked to exceptional talents. The Company adheres to the philosophy of “respect,” “growth,” and “incentive,” constantly refining talent management, emphasizing talent discovery, and improving the recruitment, hiring, training, promotion, and development, as well as remuneration and welfare system. We gather a diverse and international workforce with openness and egalitarianism, respecting employee rights and establishing transparent communication channels. By fostering an agile organization that honors openness and honesty within the team, we manage to vitalize the Company's growth with employees' development.

### Relevant SDGs





# TALENT ATTRACTION

AlphaESS strictly abides by the *Labor Law of the People's Republic of China* as well as the labor laws and regulations where it operates and has formulated guidelines and policies such as the *Labor Contract Management Guidelines* and *Recruitment Management Policies*. In accordance with these regulations, we define the principles, standards, and processes of the recruitment to formulate standardized recruitment process, powering the Company with a professional, prepared, and sustainable talent supply.

## TALENT RECRUITMENT

By establishing a comprehensive recruitment management system and expanding various recruitment channels, AlphaESS greatly values talent recruitment and leverages it to empower the Company's growth. To meet the Company's increasing demand for talent, the Company has formulated *Internal Recommendation Management Measures* and *On-board Staff Application Management Measures* in addition to the *Recruitment Management Policies* and introduced incentives to improve the personnel-to-position compatibility and strengthen the talent pool.

In response to the Company's global operations, we have restructured the Global DNA in talent development to swiftly fill roles within our matrix organizational structure by primarily focusing on external recruitment while complementing it with internal cultivation. By establishing localized talent channels, engaging in overseas campus recruitment, and promoting our global employer brand via LinkedIn, we strive to build an international team in our Regional Business Units to embrace diversity, equality, and inclusiveness. We uphold a global perspective while honoring regional characteristics, adapting our talent management standards to fit regional nuances. Taking the Malaysian plant as an example, we have constructed an "International Talent System" tailored to the locale, encompassing talent development, incentive mechanisms, systemic support, employee codes of conduct, team building, and many more dimensions.



### Internal channels

- Internal recommendation, on-board staff application



### External channels

- Campus recruitment program, campus-enterprise cooperation
- Online recruiting websites: LinkedIn, Liepin, 51job, BOSS, and other regional recruiting websites
- Headhunters, RPO service providers, labor service companies, and others
- Talent Exchange and other government talent introduction programs

Key Talent Recruitment Channels for AlphaESS

## Campus-Enterprise Cooperation

AlphaESS cooperates with many renowned universities and colleges, such as Tianjin University, Xi'an Jiaotong University, and Nantong University, on multiple projects to bolster its talent pool, create job opportunities, and promote the transformation of scientific and technological achievements into tangible productivity.

## Join with Universities and Research Institute for ESS Breakthroughs

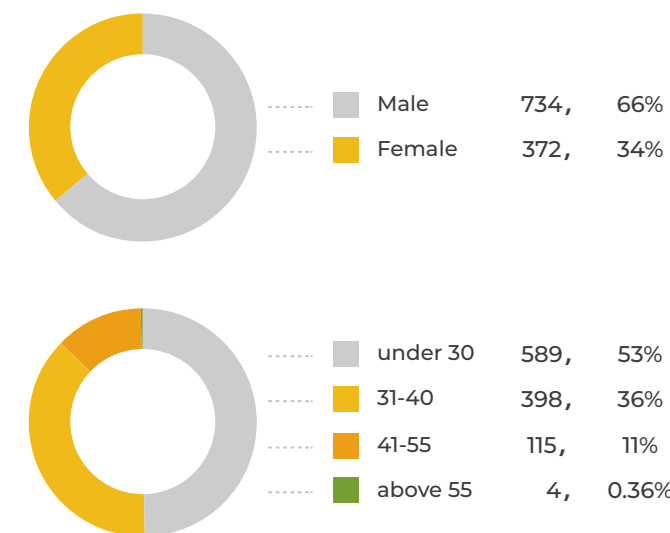
In October 2023, the "AlphaESS-Tianjin University Joint Research Center for Energy Storage System Safety" and "AlphaESS-Xi'an Jiaotong University Lithium Battery Full Lifecycle Research Institute" were inaugurated. We established with our partner universities a sustainable, win-win relation by leveraging our complementary advantages and resource exchanges. Together, we set our goals for the next 3-5 years to build first-class laboratories, establish world-leading information center, and cultivate future experts for energy storage.



## Compliant Employment

AlphaESS strictly adheres to the *Provisions in the Prohibition of Using Child Labor* and related laws and regulations by formulating the *Guidelines on the Management of Underage and Child Labor* to clarify internal policies, procedures, and remedial measures and mandating all employees and stakeholders to follow them. We are also intensifying the scrutiny of candidates' backgrounds in the recruitment process, resolutely eliminating the use of child labor and other forced labor.

As of the end of the reporting period, AlphaESS had 1,106 full-time employees and 31 interns, all on a contractual basis. The composition of full-time employees is as follows:

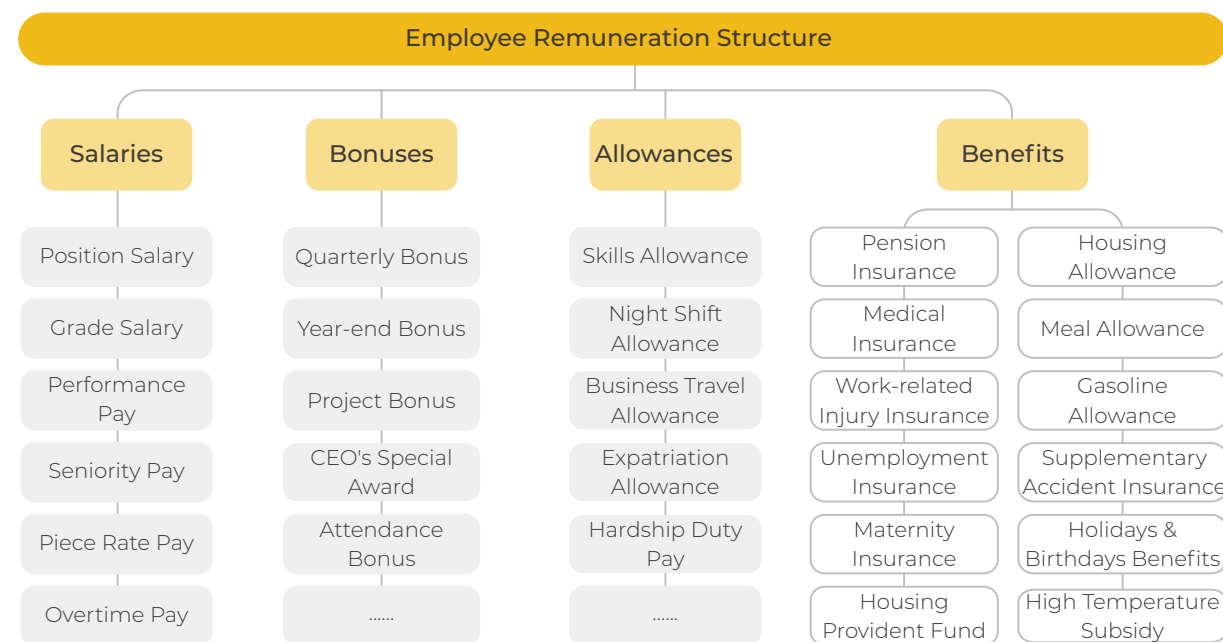


As of the end of the reporting period,



## REMUNERATION AND BENEFITS

AlphaESS has been steadfast in establishing a sound remuneration and benefits system, formulating a series of policies, such as the *Remuneration Management Policies*, *Housing Allowance Management Measures*, and *Expatriation Allowance Management Measures*, that ensure fair and competitive remuneration in a move to provide employees with a balanced and incentivizing remuneration structure. Moreover, the Company regularly optimizes the ratio between fixed and variable remuneration to stimulate the potential of its employees, fostering their growth in tandem with the Company.

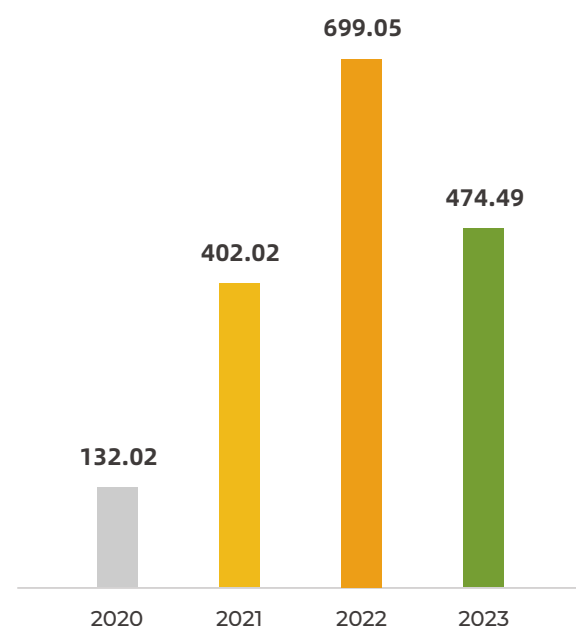


Employee Remuneration Structure

To attract and retain core talents, ensure that their interests are closely aligned with shareholders and the Company's goals, and thereby promote the Company's sustained growth in operating performance, AlphaESS has implemented equity incentives for some of its senior management and core employees through four platforms, namely, Nantong Qingneng, Nantong Qianhong, Qingneng II and Qingneng III, in accordance with the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, and other relevant laws and regulations, as well as the "Articles of Association". In the fiscal years of 2020, 2021, 2022, and 2023, the Company confirmed share-based payment expenses through the aforementioned four equity-holding platforms, amounting to 1.32 million yuan, 4.02 million yuan, 6.99 million yuan, and 4.74 million yuan, respectively.

Moreover, the Company also pays particular attention to employees with special needs, establishing an Employee Charity Fund contributed to by the Company's chairman and senior management team. This initiative is designed to offer additional support to employees with difficulties relating to childbirth, marriage, personal health, or other circumstances. During the reporting period, 83 employees received aid from the Employee Charity Fund, amounting to 146,500 yuan.

Share-based payment expenses (0'000 yuan)



## TRAINING AND DEVELOPMENT

Employees are the cornerstone of the development of AlphaESS, and we are deeply aware that the advancement of our company is closely related to the growth of our employees. To this end, we have established a comprehensive talent management system and developed a clear talent career path, continuously enhancing the professional quality and professional ability of employees. We are committed to creating a nurturing environment brimming with opportunities for growth and building a platform for employees to realize career aspirations and create value.

### EMPLOYEE TRAINING

AlphaESS has formulated comprehensive training policies, including the Training Management Policy, New Employee Training Policy, and Mentor Management Policy. Combined with the Individual Development Plan (IDP) program, we ensure all employees receive continuous career development support. By establishing "AlphaESS Online", an online knowledge base accessible to all employees, and other offline professional training programs, we have built a comprehensive employee development system. During the reporting period, the average training time per employee was 32.03 hours, with a total of 12,769 instances of training conducted, and the training expenses amounted to more than 3 million yuan (excluding travel expenses), marking an increase of 183% compared with that of 2022, demonstrating the firm commitment of AlphaESS to the continuous education and skill enhancement of its employees.

During the reporting period,

**32.03** hours average training time

**12,769** instances trainings conducted

more than **3** million yuan training expenses

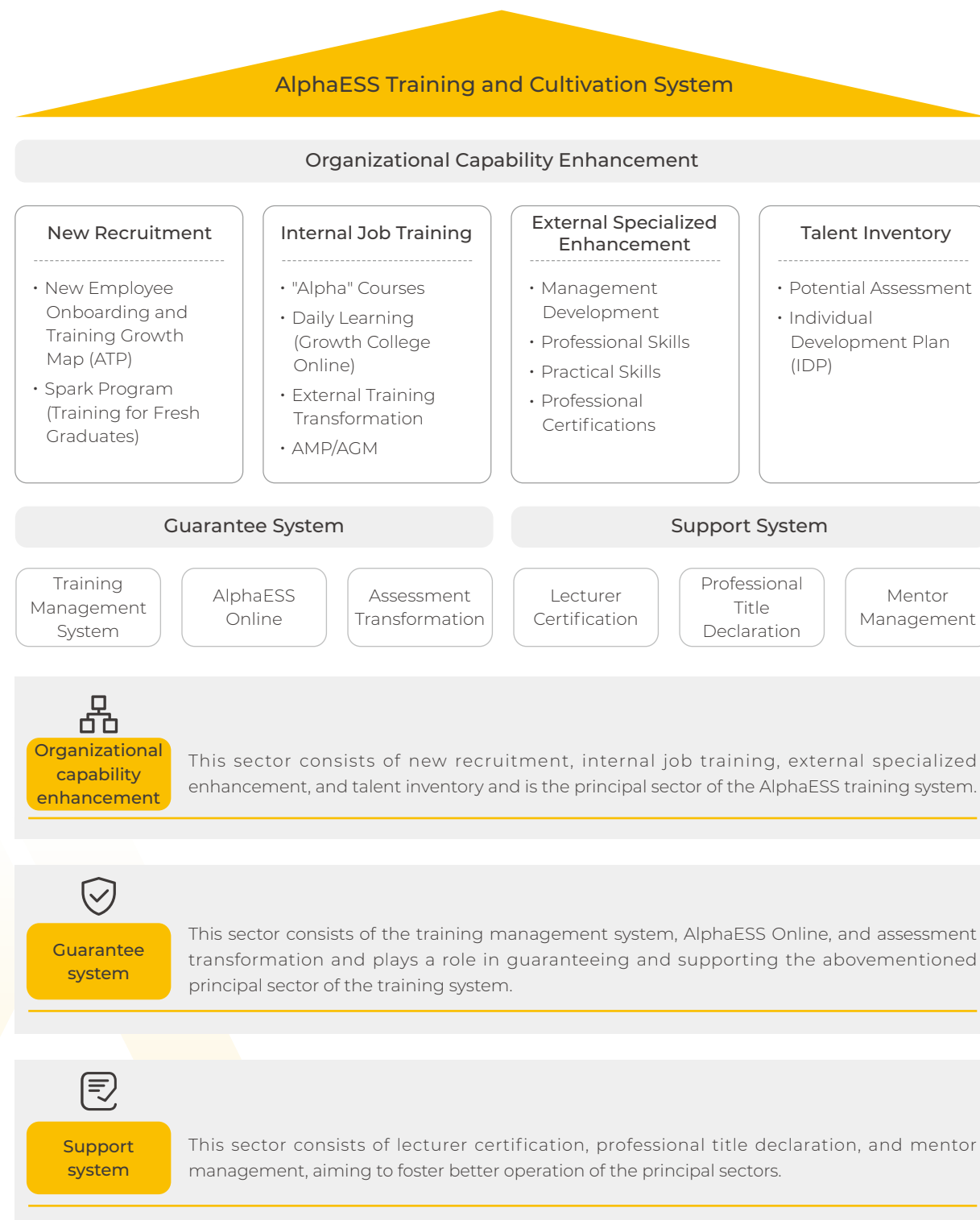
**183%** year-on-year increase





## Employee Training System

The training and cultivation system of AlphaESS consists of three major sectors, namely, organizational capacity enhancement, guarantee system, and support system, with each featuring professional and detailed plans and goals dedicated to continuously stimulating the potential of talents and empowering core competitiveness, thereby ensuring that all employees reach their full potential in their respective roles.



In 2023, the Company improved the quality of training programs from the ground up, strengthening the training and management of new graduates. We designed a "Knowledge Tree" orientation program to help new hires swiftly integrate into the team. Tailoring various training programs to employees across different job levels and functions, we aim to build a professional cadre of managers and technical teams, assisting employees in honing their vocational skills and releasing their developmental potential.

### Spark Program

As a pre-job training program for fresh college graduates, the Spark Program, after years of improvement, has become the key part of cultivating new talents. The 2023 Spark Program was themed "Why Concealing Your Radiance When You're Born with Brilliance", which draws inspiration from the proverb "A single spark can start a prairie fire" and encourages them to show their talents bravely without hiding their light.

The Spark Program has four meticulously crafted chapters, namely Sequoia of Tomorrow, Rising Star, Sunlit Voyage, and Setting Sail, covering professional courses, team building, departmental rotation, probation oral defense, and more to help new employees make a smooth transition from campus to workplace and quickly integrate into the AlphaESS family.



### Dedicated Technology Training

To elevate the professional and technical proficiency of employees at the R&D center, the Company has extended invitations to seasoned professors from esteemed institutions such as Nantong University. These experts conduct weekly lectures on power electronics technology, in addition to offering planning and guidance for daily tasks. This specialized training is held once a week, and the curriculum encompasses “Power Semiconductor Devices” and “DC Converters”, which strengthens the theoretical understanding and practical application of power electronics technology.

**35** training sessions  
on power electronics technology

**600**  
online and offline participants



### AlphaESS Academy

The AlphaESS Academy serves as the internal corporate institute of AlphaESS, representing a key program within the Company's internal training framework. Utilizing the AlphaESS Online knowledge platform as its foundation, the academy aims to furnish employees with targeted and diversified online learning and training opportunities. The curriculum encompasses a rich tapestry of offerings, including exemplary courses under the “Alpha Lessons” series and daily learning segments. Lecturers, drawn from the Company's workforce, include in their lectures the work summaries, technical breakthroughs, and the distillation of external training, thereby fostering personal growth and the enhancement of professional skills amongst employees.

In addition, in order to realize the Company's comprehensive transition towards green development and contribute to the carbon neutrality and carbon peaking goal, the academy has integrated themes such as green finance and workplace safety into its professional courses. This aims to equip employees with the knowledge reserve on sustainable development and to establish a stronger awareness of sustainability.

ATP-Alpha Training Program	Graded training on knowledge and skills covering all employees
AMP-Alpha Management Program	Training for mid-level management
AGM-Alpha General Management	Training for core executives
Specialized Courses	Power electronics, green finance, artificial intelligence, leadership, workplace safety

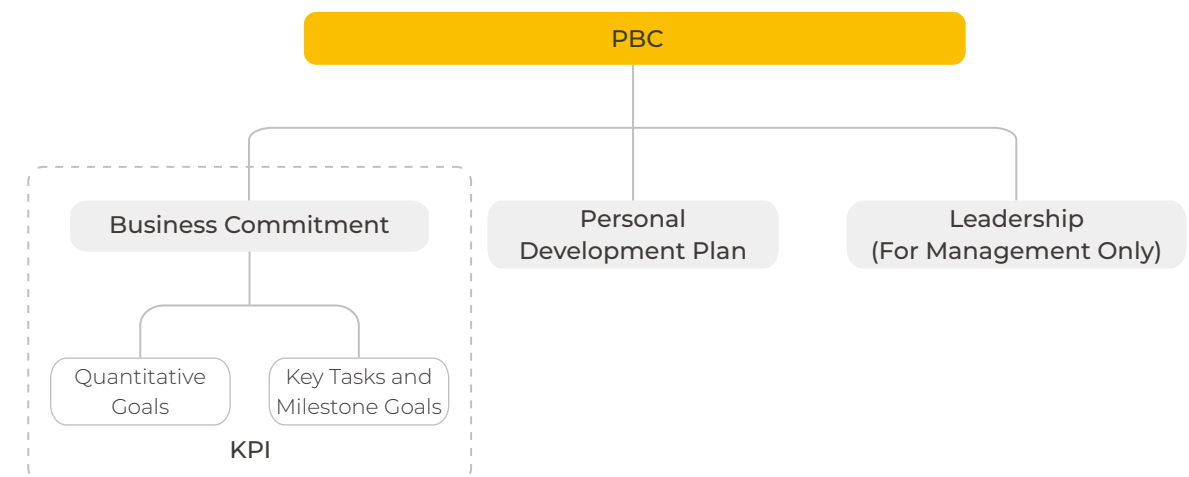
AlphaESS Academy Program

## ASSESSMENT AND DEVELOPMENT

AlphaESS places great significance on the career development of employees and constantly improves the employee promotion system by formulating internal policies such as the *Employee Career Paths Management Policy*, *Employee Transfer and Promotion Guidelines*, and *Performance Management Policy*, which builds up diversified and clear career paths for employees in different functional positions.

The Company's workforce is divided into two main categories: management and non-management. Four career tracks—management, professional, technical, and production—are available to employees, each with 14 hierarchical levels. Responsibilities for each level are clearly defined, and employees are provided with career paths for promotion and transition between levels. This allows employees to advance vertically, transition laterally, or switch between career paths within each track, representing a departure from the traditional single-position promotion model.

At the same time, we continuously optimize our performance management system by taking a more scientific and practical approach to key processes such as setting targets, tracking performance, conducting assessments, and analyzing results. In 2023, we introduced innovative upgrades to our performance management tools, moving from traditional Key Performance Indicators (KPI) to Personal Business Commitments (PBC). This ensures close alignment between organizational goals and individual objectives, while helping each employee develop and implement personal development plans to improve work efficiency, overcome skill limitations and achieve performance goals. To quickly implement this innovative initiative, we have launched the digital PBC management system on AlphaESS Online, the Company's intranet platform. Following a three-step process of “Self-Assessment - Supervisor Assessment - Center-level Calibration”, we achieve comprehensive annual or quarterly assessments for employees across different career tracks, enhancing organizational management efficiency and boosting employee motivation.



### Employee Transfer and Promotion Guidelines



- Align the growth of the Company with the development of individual talents

### Employee Career Paths Management Policy



- Three principles: value-orientation, categorized management, and diversified development;
- Defines the paths for employees' career advancement, including both vertical promotion and lateral career growth, as well as the switch between career paths;
- Specifies in detail the assessment requirements for each job level to maximize the potential of every employee and create opportunities for their career growth.

Employee Performance Assessment and Development Guidelines



# PRIORITIZING EMPLOYEE WELL-BEING AND CARE

AlphaESS is committed to fostering a corporate culture of equality, respect, and inclusiveness. We prioritize fair and equal hiring and employment practices to protect the legal rights and interests of each employee and to create a healthy workplace. To better understand and meet the needs of employees, we have established diversified communication and feedback mechanisms that encourage employees to offer suggestions and opinions. We continuously improve our HR strategies to promote employees' well-being and career growth, ensuring that every AlphaESS employee feels truly cared for by the Company.

## CREATING A DIVERSE AND INCLUSIVE WORKPLACE

AlphaESS is committed to upholding and protecting the legitimate rights and interests of all employees throughout its global operations. We treat each employee equally and fairly by strictly complying with the *Labor Law of the People's Republic of China* and the laws and regulations of other regions where we operate. We have established a series of policies, such as the *Anti-Discrimination, Anti-Harassment, and Anti-Abuse Guidelines* and the *Control Procedure for Prohibiting Forced Labor*, which demonstrates our commitment to opposing all forms of discrimination. In addition, we encourage employees to raise any complaints or concerns they may have with employee representatives, the head of the Organization Development Center, and the Labor and Social Security Department. In order to protect the privacy and safety of whistleblowers, we have explicitly outlined confidentiality measures in our relevant policies to prevent any form of retaliation and give employees a sense of security.

### Control Procedure for Prohibiting Forced Labor

- Forced labor is strictly prohibited and the right of every employee to rest and vacation should be guaranteed.
- The principle of "equal pay for equal work" should be strictly followed to prohibit any form of discrimination based on an employee's race, color, social status, nationality, religion, disability, gender, age, sexual orientation, political affiliation, or marital status.
- It is prohibited to require pregnancy tests or enforce mandatory physical examinations as part of the recruitment process, and the results of such tests should not be used to discriminate against applicants.
- For those with disabilities, the Company pays disability benefits and assists with reemployment.
- .....

### Anti-Discrimination, Anti-Harassment and Anti-Abuse Guidelines

- In recruitment, remuneration, benefits, promotion, rewards, discipline, training, and termination of employment, it is strictly prohibited to discriminate against employees based on their race, color, social status, nationality, religion, disability, gender, age, sexual orientation, union membership, political affiliation, or marital status.
- Unwelcome gazes, and language or behaviors that exhibit tendencies of sexual harassment are not acceptable.
- ...

## Protecting the Rights and Interests of Female Employees

We endeavor to protect women's rights and interests, ensuring that female employees are not subjected to gender discrimination in the recruitment and promotion process. We guarantee equal pay for equal work between female and male employees. In addition, we provide a series of job security and welfare subsidies for "working mothers".

- **For pregnant employees:** Appropriate leave is granted for prenatal check-ups.
- **Maternity policies:** Comprehensive maternity leave policies are in place to ensure that female employees receive adequate leave and benefits during childbirth.
- **For breastfeeding employees:** For mothers with infants under one year old, breastfeeding breaks and dedicated lactation rooms are provided.
- **Parental leave:** Parenting leave is offered to help female employees achieve a better work-life balance and enhance their work efficiency and quality of life.
- **Women's Day:** Various activities and gift distributions are organized across different locations to express care and wishes for all female employees.
- **Medical checkups:** Specialized checkups, such as gynecological checkups and breast checkups, are provided to ensure the health of female employees.



## TRANSPARENT AND OPEN COMMUNICATION CHANNELS

AlphaESS strives to create a respectful, free, and equitable work environment. We respect and protect employees' freedom of association, collective bargaining, and the right to peaceful assembly. We also offer accessible channels for employees to lodge complaints, ensuring that their legitimate rights are free from interference, restriction and coercion. This facilitates democratic communication, decision-making, and management within the Company.

In 2023, we established the Employee Representative Council, which aims to oversee the protection of employees' rights and interests, convey the true voice of employees, and address their reasonable demands. Furthermore, to promote understanding and trust between the Company and its employees, we have established multiple two-way communication channels so that employees' opinions can be communicated directly to management and receive timely responses and feedback. In addition, the Company regularly conducts employee satisfaction surveys to gather feedback, based on which we develop improvement plans, take actions, and implement solutions to continuously improve employee satisfaction. During the reporting period, the Company achieved a score of 88.92 in the employee satisfaction survey, representing an 10.60% year-on-year increase.

During the reporting period,

**88.92**

employee satisfaction survey score

representing

**10.60%**

year-on-year increase

### GM's mailbox

A designated channel is offered for employees to directly submit various issues to the Company's top executives and receive response.

### Employee satisfaction survey

Employees' opinions and suggestions regarding their work and living conditions are collected regularly.

### Chairman/GM luncheon

The chairman or general manager invites employees of all levels to have lunch together from time to time, providing an opportunity for open and honest conversations.

### Regular meetings

Regular meetings are held regularly at both the company and department levels to communicate important reforms, business updates, and work arrangements.

### Internal magazine

"Alpha Times" is an internal publication that tells the stories of AlphaESS people, allowing voices to be heard from top management to grassroots employees. Four issues have been published.

### Intranet platform "AlphaESS Online"

A dedicated section is provided for employees to lodge complaints and reports.

### 360 rationalization proposal submission

An information system-based feedback module for submitting rationalization proposals has been established. As of the end of the reporting period, 469 proposals have been collected through the module, of which 250 were adopted and 199 were closed. The closure rate is 79.6%.

## Cultural Events

The Company organizes a wide variety of activities outside of work to balance employees' work-life and improve team cohesion.



Women's Day Event at Suzhou Office



Tug-of-War



Jump Rope Activity

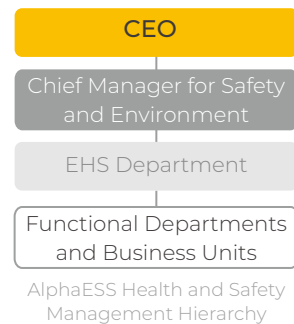


# OCCUPATIONAL HEALTH AND SAFETY

AlphaESS strictly abides by the laws and regulations related to occupational health and safety, including the *Work Safety Law of the People's Republic of China*, the *Fire Control Law of the People's Republic of China*, the *Prevention and Control of Occupational Diseases Law of the People's Republic of China*, as well as other relevant laws and regulations in the regions where we operate. We establish workplace safety guidelines and policies by taking a "safety-first, prevention-focused, and comprehensive management approach" in all activities and operations.

## Health and Safety Management Hierarchy

The Company has established a top-down management hierarchy with clearly defined roles and responsibilities for safety management positions. By implementing the "dual responsibility" system, we ensure clearly assigned responsibility of workplace safety, facilitating the overall coordination and ensuring the occupational health and safety of our employees.



To further improve safety and health management and prevent accidents, we have formulated management policies such as the *Workplace Production Safety Responsibility Guidelines* and the *Production Safety Inspection Policy*. In addition, specific safety management rules have been established for special operations and hazardous sources to improve safe production conditions. We regularly review our health and safety policies and update them based on production needs to ensure the effectiveness of our safety protocols. In addition, we are committed to advancing the certification of our occupational health and safety system. As of the end of the reporting period, all of our plants have obtained ISO 45001 certification.

We integrate safety risk management into all aspects of our production and operational processes. By establishing a dual prevention mechanism that combines safety risk identification and control with hazard investigation and rectification, we effectively prevent and minimize the occurrence of safety accidents. We also strengthen on-site safety management, improve emergency preparedness and prioritize employee education and training. These efforts ensure safety compliance, improve employee safety awareness and enhance emergency response capabilities, thereby contributing to the achievement of our safety goals.



AlphaESS ISO 45001 Certificate



## Safety Risk Identification and Control

Guided by the Safety Risk Identification and Control Guidelines, we annually identify and assess occupational health and safety hazards and invite third-party professional organizations to audit the process and its results. During the reporting period, we identified 46 risk points with a total of 274 hazardous (harmful) factors. With the factors categorized into four risk levels—A, B, C, and D, we have developed detailed response measures tailored to each level to effectively control and manage safety risks.

Risk Point (Unit)	Location	Main Hazardous (Harmful) Factors	Type of Potential Accident	Control Measures
Cafeteria gas	Cafeteria	<ul style="list-style-type: none"> <li>Leakage of natural gas pipelines due to heavy object pressure or collision with a fire source;</li> <li>Improper storage of flammable and explosive materials near natural gas pressure regulating boxes and pipelines;</li> <li>Unauthorized welding or the use of open flames near natural gas pressure regulating boxes and pipelines;</li> <li>Deliberate damage to natural gas facilities that results in gas leaks and accidents;</li> <li>Improper use of gas in the cafeteria;</li> <li>Unauthorized or rule-violating operations.</li> </ul>	<ul style="list-style-type: none"> <li>Fire</li> <li>Explosions</li> <li>Poisoning and suffocation</li> </ul>	<ul style="list-style-type: none"> <li>Regularly maintain gas equipment by the gas company;</li> <li>Restrict unauthorized personnel from approaching pressure regulating boxes;</li> <li>Prohibit smoking or the use of open flames near natural gas pressure regulating boxes and pipelines;</li> <li>Prohibit damage to or placement of heavy objects on natural gas pipelines;</li> <li>Prohibit hazardous operations such as welding or the use of open flames near natural gas pressure regulating stations;</li> <li>Prohibit storage of flammable and explosive materials near natural gas pressure regulating boxes;</li> <li>Set up gas safety awareness cards and warning signs, develop emergency plans, and take preventive measures;</li> <li>Provide firefighting facilities and fire extinguishing equipment that subject to regular inspections;</li> <li>Strictly adhere to safety requirements when operating gas equipment in the cafeteria.</li> </ul>
	Production workshop	<ul style="list-style-type: none"> <li>Forceful removal of stuck fixture plates without stopping the machine;</li> <li>Operators' hand injuries caused by reaching into the assembly lines with stuck fixture plates or similar barriers;</li> <li>Missing protective covers in the equipment's transmission parts;</li> <li>Operators falling from standing on transmission rollers;</li> <li>Electrical leakage caused by aging or damaged wiring in the assembly line;</li> <li>Unauthorized or rule-violating operations.</li> </ul>	<ul style="list-style-type: none"> <li>Electric shock</li> <li>Mechanical injuries</li> <li>Other injuries</li> </ul>	<ul style="list-style-type: none"> <li>The equipment should be powered off immediately when a stuck fixture plate or similar situation occurs on the assembly line;</li> <li>Operators are strictly prohibited from putting their hands into areas of the equipment such as transmission rollers or chains;</li> <li>All equipment must be operated by qualified operators;</li> <li>All operations on equipment should be performed by strictly following the equipment operation instructions and Standard Operating Procedures (SOP);</li> <li>Regular inspections of equipment should be conducted to ensure their integrity and the effectiveness of safety devices;</li> <li>Lockout/Tagout measures must be properly implemented during maintenance and repair.</li> </ul>

Example of Safety Risk Identification in 2023

**■ Safety Hazard Identification and Control ■ Safety Training and Emergency Drills**

In accordance with the *Production Safety Inspection Guidelines* and the *Safety Hazard Identification and Control Guidelines*, the Company conducts regular inspections and promptly addresses any identified issues to eliminate potential hazards as soon as possible. In this way, identified problems are resolved in a closed-loop manner. We also continuously strive to enhance and strengthen our safety management practices. We consistently strengthen on-site safety management and encourage all employees to participate in identifying hazards. To facilitate this, we have established a *Safety Hazard Reporting and Reward Policy*. The policy defines the channels and methods for reporting safety hazards and provides financial incentives for all employees to report any potential safety incidents or hazards they find. During the reporting period, a total of 1,506 safety hazards were identified across the Company, with a 100% rectification rate.

The Company places great emphasis on developing employees' safety awareness and capabilities by standardizing the content of safety training programs to effectively enhance their safety consciousness and skills. We also continuously improve our emergency response plans and strengthen the safety and emergency drills.

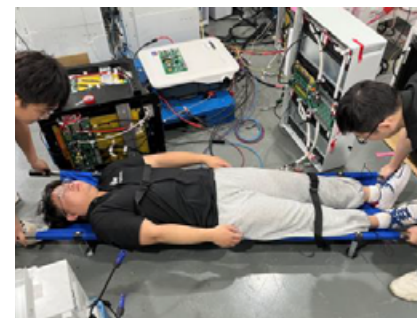
During the reporting period, we conducted a total of 18 safety training sessions, covering a wide range of topics such as pre-employment training, equipment safety, fire safety, and emergency response. These training sessions were tailored to the specific requirements of our production. In addition, we organized 10 emergency drills focused on scenarios such as electric shocks, mechanical injuries, incidents involving special equipment, fire accidents, poisoning, suffocation, and comprehensive emergency situations. We also conducted joint drills with the fire department. These drills aimed to enhance employees' ability to anticipate risks and handle accidents effectively.

**During the reporting period,**



**Everyone Discusses Safety, Everyone Understands Emergency Response**

In June 2023, the Company launched a "Work Safety Month" campaign themed "Everyone Discusses Safety, Everyone Understands Emergency Response". We established a leadership group for the campaign, with the general manager as the group leader and the department heads responsible for safety and production as deputy leaders. The group leader took responsibility for ensuring sufficient funding for the campaign and overseeing the tasks of other group members. Through a series of measures such as internal communication, themed training, self-inspections, and emergency drills, we aimed to translate the concept of workplace safety into action and strive for "zero accident" and "zero injury". We conducted a range of drills focused on scenarios such as electrical shocks, mechanical injuries, incidents involving special equipment, poisoning, and suffocation to keep employees aware of safety and emergency responses in their daily work.



**Prioritize Prevention to Safeguard Life**

On November 9, 2023, which marked the 32nd National Fire Prevention Day, AlphaESS carried out a Fire Safety Month campaign themed "Prioritize Prevention to Safeguard Life". Through a series of initiatives such as internal communication, educational training, workplace inspections, and joint fire safety drills, the concept of "Prioritize Prevention to Safeguard Life" was deeply instilled in the mind of every employee.

Through a combination of centralized and decentralized fire safety campaigns and emergency drills, we have successfully engaged all employees in active participation in fire safety initiatives, thus ensuring the Company's fire safety.



AlphaESS has developed the *Safety Management Guidelines for Outsourced and Contracted Work* specifically for contractors. We have also signed a *Safety Management Agreement* with all contractors and included detailed safety management provisions in the agreement based on specific business scenarios. The internal safety management policies and procedures also apply to the safety management of contractors and their personnel. During the reporting period, we signed the Safety Management Agreement with all of our contractors. In addition, we conduct supplier qualification assessments, review contractors' safety management, and provide safety training for them prior to collaboration. We also conduct regular safety inspections during the cooperation to ensure that they are fulfilling their safety responsibilities.

The Company sets occupational health and safety goals and targets annually and all the goals for the 2023 have been achieved.

Goal	Target	Whether achieved
Elimination of occurrence of fires	• Zero fire accidents	Achieved
Prevention of occupational health and safety accidents	• 0 death/injuries • 0 accidents with an occupational injury rating of level 10 or higher	Achieved





# 04



## WORKING TOGETHER FOR A GREEN ENVIRONMENT

The global community has reached a consensus on the need to address climate change. In response, many countries and regions have made formal commitments to reduce their net carbon emissions to zero. The rapid deployment of renewable energy technologies has become key to the low-carbon transition. In this context, AlphaESS remains steadfast in its commitment to green development, striving for reduced emissions, improved energy efficiency, and minimized pollutants. Additionally, we actively explore low-carbon technologies, leveraging their potential to advance carbon neutrality and foster sustainable development with a focus on green and low-carbon practices.

### Relevant SDGs





# ADDRESSING CLIMATE CHANGE

As a leader in the energy storage industry, AlphaESS not only contributes to the energy transition but also strives towards clean and low-carbon development in its own practices. We adopt clean energy and energy storage technologies to increase the utilization of renewable energy sources, while enhancing intelligent management of energy usage in our facilities to promote green and low-carbon operations and address climate change. Moving forward, we will continue to enhance our capabilities to address climate change. In line with the framework and requirements for climate-related disclosures as outlined in the *Sustainability Reporting Guidelines for Listed Companies on the Shanghai Stock Exchange*, we will further optimize the identification and management of climate change risks to support climate initiatives.

## Clean Energy

AlphaESS advocates for the use of distributed clean energy to improve the utilization of clean energy. As of the end of the reporting period, we have installed a total capacity of 1.45MW of distributed PV systems on rooftops and carports within the park. From the beginning of October 2023 through December 31, 2023, these systems generated approximately 330,400 kWh of clean electricity, equivalent to about 272.25 metric tons of carbon dioxide emissions reduced. While prioritizing the smooth operation of the entire park for office and production purposes, we leverage our expertise to establish an ecological and integrated green model by deploying a 2.5 MW/7.37 MWh energy storage system, a 30 kW/55 kWh energy storage system, and new energy charging piles.

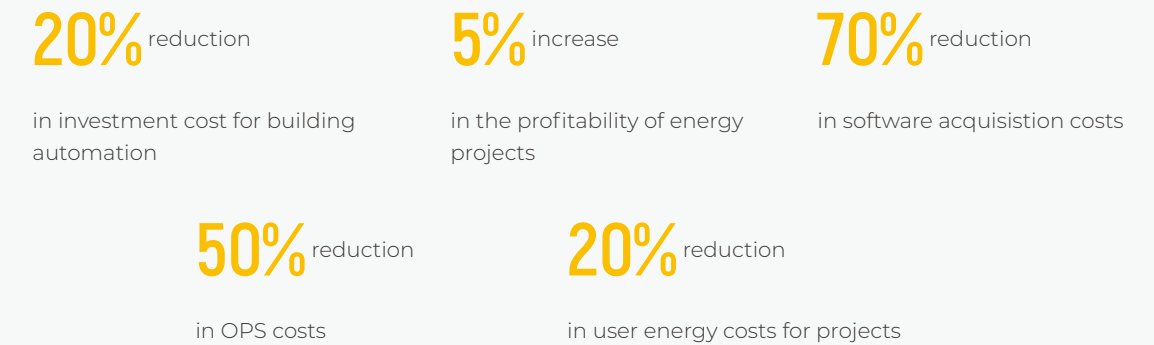
## Low-Carbon Smart Park

AlphaESS has been dedicated to energy storage for 12 years, during which we have been improving our digital capabilities to empower products and management with digital technologies. In 2023, we introduced the AlphaESS Low-Carbon Smart Park Platform. This platform, built on technologies such as the Internet of Things (IoT) and digital twins, integrates dual-carbon management, energy management, intelligent building systems, and security management. It enables centralized operation/maintenance and collaborative optimization, facilitating fine-granularity energy management through multiple measures.

<b>Distributed Technologies</b>	The platform incorporates distributed scheduling, distributed storage, edge computing and microservices to address the streaming collection and computation of massive real-time data. It uses hierarchical access management to grant different roles varying permissions, ensuring the separation of viewing and control functionalities.
<b>Standardized Communication</b>	By using intelligent gateways, the platform interprets communication protocols from various manufacturers and devices in a unified way, and performs simple edge computing. With the standard MQTT protocol, interconnectivity with the platform is realized to ensure stable data transmission, facilitate maintenance, and reduce the workload on cloud servers.
<b>Integrated AlphaCloud Platform</b>	The platform integrates operations and maintenance for PV, energy storage, charging piles, energy consumption, building automation, fire safety and security. This eliminates the need to purchase and maintain separate O&M platforms from multiple vendors, resulting in cost savings.
<b>Standardized Modules</b>	The platform adopts micro-service architecture to realize business separation and management, with each functional module operating independently. This allows users to select and configure modules based on their specific requirements.
<b>Collaborative Optimization</b>	Using AI algorithms, the platform enables collaborative optimization of "Generation-Grid-Load-Storage" within the park. This enhances the integration of renewable energy, reduces energy costs, and shortens the investment payback period for energy projects.
<b>Centralized Alarming</b>	Real-time alerts and warnings for energy equipment, IoT communications, and fire safety issues within the park are sent through the platform, mobile apps, and SMS notifications. This ensures that security issues are detected and resolved promptly by maintenance personnel.

Technical Highlights of the AlphaESS Low-Carbon Smart Park Platform

The AlphaESS Low-Carbon Smart Park Platform brings considerable economic benefits to businesses, including:



## AlphaESS's Global Headquarters Completed as a Low-Carbon Smart Park

On October 10, 2023, the global headquarters of AlphaESS was officially inaugurated in Tongzhou District, Nantong City. The Low-Carbon Smart Park covers an area of around 60 Mu (approx. 9.9 acres), with an annual production capacity of 70,000 energy storage systems. It incorporates AlphaESS's independently developed digital twin "Low-Carbon Smart Park Platform", which integrates dual-carbon management, energy management, intelligent building solutions, and security management. With thousands of monitoring points within the park, it enables energy consumption monitoring and tracking. Through collaborative optimization of solar power generation and energy storage, as well as effective energy management, the park achieves efficient energy dispatch, reducing power purchases from the grid and overall electricity costs. In addition, innovative approaches such as virtual power plants and distribution substation energy storage aggregation allow for participation in regional grid dispatch and ancillary service transactions, ensuring the safe and stable operation of the regional power grid.



AlphaESS Low-Carbon Smart Park Platform



During the reporting period, the Company has been consistently monitoring its energy usage and GHG emissions. The energy usage performance is as follows:

Indicator	Unit	2022	2023
Natural gas <sup>4</sup>	10 <sup>4</sup> m <sup>3</sup>	0.00	1.19
Gasoline <sup>5</sup>	L	15,000.00	26,111.82
Diesel	L	1,200.00	561.72
Liquefied petroleum gas	L	12,000.00	8,500.00
Total purchased electricity <sup>6</sup>	kWh	2,703,137.50	4,385,160.00
PV power generation capacity	kWh	24,000.00	140,000.00

During the reporting period, we have consistently prioritized the assessment of the Company's carbon emissions<sup>7</sup>. According to the requirements of the Greenhouse Gas Protocol (GHG Protocol) and following the five key stages of the Plan-Do-Check-Act (PDCA) cycle, including boundary setting, source identification, emission quantification, reporting, and verification, we quantified the Company's GHG emissions in 2023 to serve as the basis for future emission reduction measures. We used the operational control approach to assess the company's GHG emissions, with the data covering the operating sites of Alpha ESS Co. Ltd. and all of its subsidiaries in China.

In 2023, AlphaESS's direct GHG emissions (Scope 1) were 179.12 metric tons of CO<sub>2</sub>e, while its indirect GHG emissions (Scope 2) were 2,500.86 metric tons of CO<sub>2</sub>e, both of which were higher than in 2022. The main reasons for this increase are the Company's business growth and the relocation of its headquarters, which led to an increase in direct or indirect energy consumption such as gasoline, natural gas, and purchased electricity (see footnotes 4, 5, and 6). In addition, fugitive emissions from fire extinguishers have been included in the statistics. GHG emissions performance is as follows:

Indicator	Unit	2022	2023
Scope 1 (direct emissions)	tCO <sub>2</sub> -e	93.66	179.12
of which:			
Stationary sources	tCO <sub>2</sub> -e	0.09	87.87
Mobile sources	tCO <sub>2</sub> -e	62.39	59.57
Fugitive emissions	tCO <sub>2</sub> -e	31.18	31.68
Scope 2 (indirect emissions)	tCO <sub>2</sub> -e	1,435.56	2,500.86
of which:			
Purchased electricity	tCO <sub>2</sub> -e	1,435.56	2,500.86
Total scope 1 and 2 emissions	tCO <sub>2</sub> -e	1,529.22	2,679.98
GHG emission intensity	tCO <sub>2</sub> -e/MWh	1.3912	1.6031
GHG emission intensity (per 10,000 yuan of revenue)	tCO <sub>2</sub> -e/10,000 yuan of revenue	0.0086	0.0097

<sup>4</sup> During the reporting period, the increase in natural gas consumption was mainly attributable to the addition of employee dormitories in the Company's new headquarters and the resulting increased demand for natural gas heating.

<sup>5</sup> During the reporting period, the increase in the Company's gasoline consumption was mainly attributable to the relocation of its headquarters. The relocation resulted in an increased frequency of business trips from other office locations to the new headquarters, leading to a higher demand for gasoline.

<sup>6</sup> During the reporting period, the Company experienced an increase in the total amount of purchased electricity. The reasons for this increase include: (1) Business growth: An overall increase in production resulted in the electricity consumption for production purposes; (2) Headquarters relocation: The construction of the new factory area required additional electricity for various purposes; (3) New employee dormitories: The increased number of residents in the dormitories led to higher electricity demand for daily living needs.

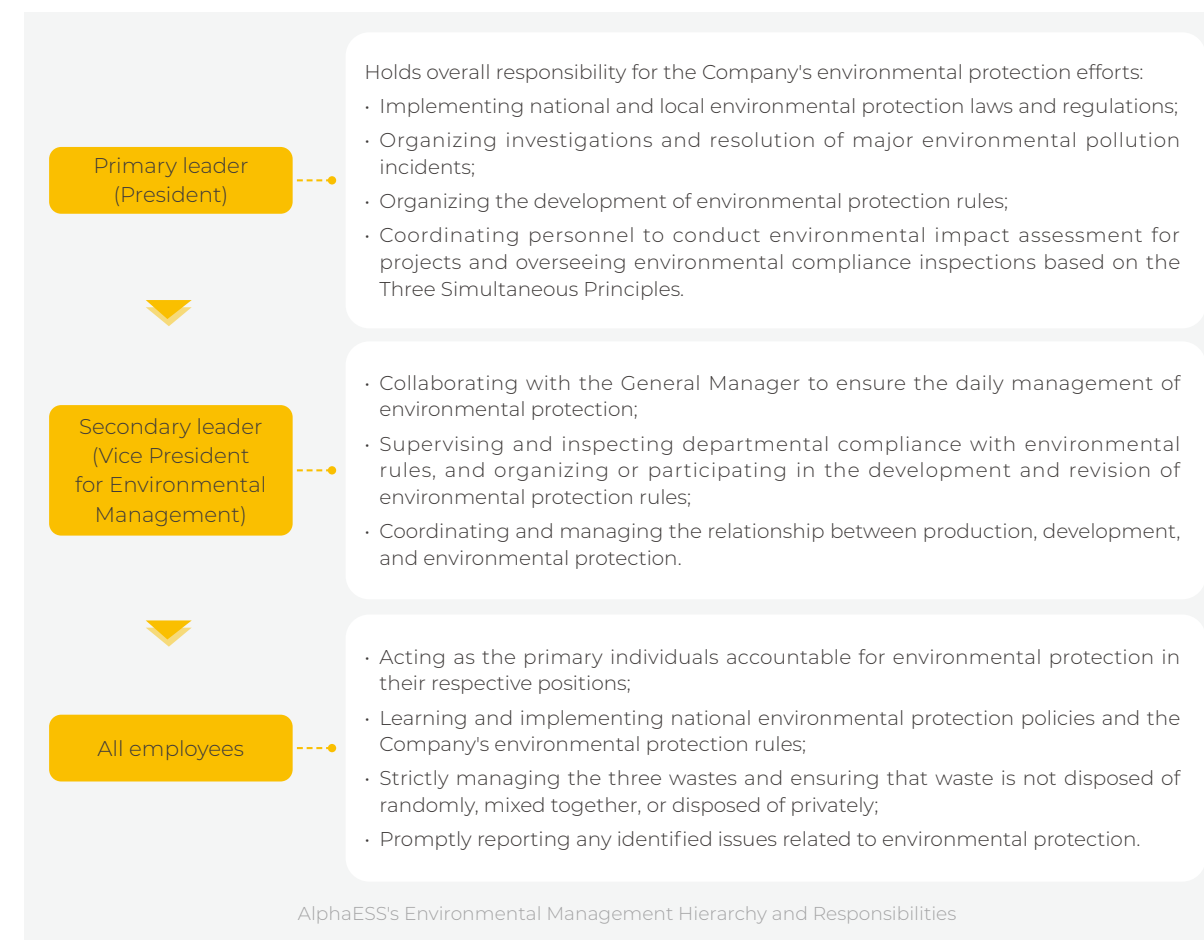
<sup>7</sup> The emission factors for GHG calculations are derived from the IPCC 2006 Guidelines for National Greenhouse Gas Inventories 2019 Revision published by the Intergovernmental Panel on Climate Change (IPCC), the Notice on Managing Greenhouse Gas Emission Reporting in the Power Generation Industry for the Years 2023-2025 issued by the Ministry of Ecology and Environment of the People's Republic of China (including the most recent regional grid emission factors at the time of publication), and other general documents.

# ENVIRONMENTAL MANAGEMENT

AlphaESS has been enhancing its environmental management practices to establish a robust environmental management system that minimizes the environmental impact of its operations. We are strengthening environmental monitoring and auditing, and improving environmental awareness among our employees to ensure compliance with environmental regulations in our operations. These efforts are driving our transformation into an environmentally friendly and responsible company.

## Environmental Management System

AlphaESS continuously improves its environmental management framework to ensure the fulfillment of its environmental management responsibilities. Guided by the principles of "Accountability for those in leadership positions" and "Prioritizing the environment in production", we have implemented a top-down environmental management hierarchy to ensure efficient environmental governance.



The Company strictly complies with the *Environmental Protection Law of the People's Republic of China*, the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste*, and relevant environmental protection laws and regulations in the regions where it operates. We oversee our environmental management practices by following internal policies such as the *Environmental Protection Responsibility Policy*, the *Three Simultaneous Principles for Construction Project Environmental Protection*, the *Operation and Management Guidelines of Environmental Protection Facilities*, the *Environmental Accident Management Guidelines* and the *Management Guidelines for Waste Gas, Water, and Residues*.

AlphaESS organizes regular internal audits of the ISO 14001 system for all of its factories, and takes corrective actions for identified issues. During the reporting period, AlphaESS and its production bases Nantong AlphaESS, Qidong AlphaESS, and Anhui GT obtained ISO 14001 certification for their environmental management systems. We periodically assess the Company's environmental impact to ensure compliance with regulations in our operations. During the reporting period, the Company was not subject to any environmental penalties or sanctions.



ISO 14001 certification

### Building an Environmental Culture

AlphaESS attaches importance to enhancing the environmental awareness of all employees. We achieve this by integrating environmental training courses into new employee onboarding programs and conducting specialized environmental training for key positions. This allows us to establish a comprehensive environmental training system that combines professional knowledge and general awareness.

During the reporting period, we conducted multiple environmental training sessions targeting all employees. The training covered topics such as environmental factor identification, standardized management of hazardous waste, environmental laws and regulations, and case studies of environmental incidents. Each factory also organized offline environmental training sessions for relevant management personnel to jointly fulfill the Company's environmental responsibilities.



Environmental Training

### Waste Management

AlphaESS has developed management procedures for the proper treatment and disposal of small amounts of wastewater, waste gas, general solid waste, and hazardous waste generated in the operation.

Type	Sources	Disposal
Waste water	Domestic sewage	Directed into the municipal sewage network and treated by sewage treatment plants
Waste gas	Smoke generated by laser welding machines	Collected and treated using industrial dust collectors that are installed as part of the equipment
General solid waste	Household waste and packaging materials	Household waste is collected and treated by the sanitation department, and waste packaging materials are treated through recycling facilities
Hazardous waste	Glue drum liners, used glue containers and waste glue	Transferred and disposed of by qualified hazardous waste disposal companies

During the reporting period, the main types of waste generated by AlphaESS are as follows:

	Indicator	Unit	2022	2023
Emission	Particulate matter (PM)	Kg	0.00	0.00
	Volatile organic compounds (VOC)	Kg	0.00	0.00
	Sulfur dioxide (SO <sub>2</sub> ) emissions	Kg	0.00	0.00
	Nitrogen oxide (NO <sub>x</sub> ) emissions	Kg	0.00	0.00
Waste	Wastewater discharge <sup>9</sup>	Ton	/	40,067.20
	Hazardous waste	Ton	/	0.11
	General solid waste	Ton	/	655.00
	Compliant disposal of hazardous waste	Ton	/	0.11
	Office waste disposal	Ton	70.00	655.00

### Water Management

AlphaESS understands the significant importance of conserving water resources and is committed to sustainable water management. Both our factory and office areas rely on municipal water supply to minimize the impact of water withdrawal. We promote water conservation by installing water-saving facilities and appliances in the factory and office areas, and by posting water-saving signs. During the reporting period, our water usage<sup>8</sup> is as follows:

Indicator	Unit	2022	2023
Water Consumption	m <sup>3</sup>	15,622.00	50,084.00

<sup>8</sup> The wastewater discharge was estimated based on the applicable pollution discharge coefficients selected from the *Manual of Pollution Discharge Coefficients for Domestic Pollution Sources* issued by the Ministry of Ecology and Environment of the People's Republic of China.

<sup>9</sup> The reasons for the increase in the Company's water consumption during the reporting period include: the relocation of the Company's headquarters, the significant expansion of the industrial park, and the continued growth in the number of employees.



# 05



## SHOULDERING SOCIAL RESPONSIBILITY

AlphaESS has consistently stayed true to its founding aspirations and fulfilled its social responsibility through its business operations. Leveraging our expertise, we build ecological value by participating in domestic and international energy storage projects. We also actively contribute to public welfare and charitable initiatives by volunteering in various fields such as education and environmental protection. This demonstrates our commitment to creating social value.



### Relevant SDGs





## UNLOCKING GREEN VALUE

With the vision "Making Clean Energy Accessible to Everyone in the World", AlphaESS actively participates in clean energy projects in both China and beyond. We venture into harsh environments such as deserts and mountainous regions to provide full-range energy storage system solutions, enabling reliable and high-quality energy supply globally. Furthermore, we actively explore the environmental synergies of energy storage projects and engage in industrial desertification control to maximize the green value of our company.

### 200 MW PV desertification control project in Wuwei

Desertification poses a serious threat to the ecological environment and economic development. AlphaESS is actively involved in an innovative industrial desertification control model called "PV Desertification Control". In the Liangzhou District of Wuwei City, Gansu Province, the 40 MW/80 MWh energy storage station built with AlphaESS's 1500V liquid-cooled energy storage system has been integrated into the 200 MW PV desertification control project by China Three Gorges Corporation. The energy storage station can store up to 80,000 kWh of electricity in one cycle and achieve an annual energy discharge of over 24 million kWh, greatly improving the utilization rate of PV power generation. Moreover, the energy storage station offers various functions such as peak shaving, frequency regulation and smooth power output, ensuring stable and high-quality power supply to the grid, enhancing the operational efficiency of the PV desertification control project, and further improving desertification control effect.



### 2,000 MW PV desertification control project in Kubuqi, Inner Mongolia

On November 29, 2023, China's largest single PV desertification control project, the 2,000 MW Kubuqi PV project, was successfully connected to the grid. This project generates an average annual electricity output of approximately 4.1 billion kWh, restores and manages 100,000 Mu of desertified land, and reduces the transfer of sand to the Yellow River by about 2 million tons per year. This effectively improves the ecological environment of the Great Bend area of the Yellow River and the Kubuqi Desert.

AlphaESS, as an important participant in this project, provided an innovative solution that integrated PV with energy storage. We equipped the project's No. 1 and No. 2 energy storage booster stations with 80MW/160MWh and 40MW/80MWh 1500V air-cooled energy storage and container systems. These systems feature intelligent fire control, temperature monitoring, and fault warning capabilities, enabling us to achieve an annual energy storage and discharge capacity of over 72 million kWh. This significantly enhances the utilization rate of PV power, thereby improving the overall economic benefits of the PV desertification project.



### Harnessing green energy along the Hexi Corridor

AlphaESS has traveled all the way to the west of China, spanning 3,500 kilometers through Tianshui, Wuwei, Jiuquan, and Dunhuang in Gansu Province, and planted green solar energy along the Hexi Corridor with safe and stable energy storage solutions.

- **Dunhuang:** The 9MW/36MWh energy storage station built by AlphaESS, was integrated into the 60 MW Three Gorges Energy Dunhuang PV project. This integration has led to an annual energy storage discharge exceeding 12.6 million kWh, effectively alleviating the load on the grid.
- **Jiuquan-Guazhou:** By working with the 10MW/20MWh energy storage station built by AlphaESS, the Huarun Power Gansu Guazhou Qiaowan 50MW PV project no longer relies solely on weather conditions for green energy production, reducing the waste of wind and solar power resources. AlphaESS's air-cooled energy storage system adopts an advanced battery cluster-level control solution, enabling independent management and monitoring of each battery cluster. This enhances the operational quality and ensures the safe and stable delivery of clean energy to households.
- **Tianshui-Qingshui:** The 15MW/30MWh energy storage station built by AlphaESS has significantly boosted the capabilities of the Three Gorges Energy Qingshui Huangmen 100MW Agri-PV and Storage Integrated Power Station. This innovative power station seamlessly integrates agricultural photovoltaics with energy storage technology, fostering advantages that benefit both sectors. With an impressive annual discharge capacity of over 9 million kWh, AlphaESS's energy storage system not only enhances the grid's ability to absorb generated energy, but also strengthens its peak shaving and frequency regulation capabilities, ensuring a more stable power supply. This strikes a balance between energy production and environmental protection, paving the way for a more sustainable future.
- **Jiuquan-Mazongshan:** The 10MW/20MWh energy storage station built by AlphaESS serves as a robust catalyst for the 50MW PV storage project in Subei Mazongshan, Gansu. This collaboration advances the transition from a Demand-Driven Supply model to a Supply-Demand Interaction model, enabling peak shaving and frequency regulation and relieving pressure on the grid during peak hours. This optimizes the allocation of grid resources and enhances overall energy utilization. The Mazongshan PV storage project adopts a model that combines "photovoltaic energy storage and ecological management", setting up a safe and stable "green barrier" on the Gobi Desert. After being connected to the grid, the project provides 86.97 million kWh of clean electricity annually, with an energy storage capacity of more than 6 million kWh. This results in the reduction of approximately 70,000 tons of CO<sub>2</sub> emissions, equivalent to reforesting an area of 5,570 hectares, contributing to the green and high-quality development of the Northwest region.



Qingshui Huangmen 100MW Agri-PV and Storage Integrated Power Station



Mazongshan 50MW PV storage project



**Invited to the SEforALL meeting to discuss the future energy development in Africa**

According to a report released by the International Energy Agency (IEA), 600 million people in Africa lack access to electricity, accounting for 43% of its population. Recognizing the actual demand in South Africa, AlphaESS is actively contributing to the transformation of the energy sector in the region by providing high quality products and energy solutions. In October 2023, a conference on energy development in Africa was held in Beijing. It was jointly organized by the "Sustainable Energy for All" (SEforALL) organization and the China Renewable Energy Association (CREIA), with sponsorship from the ClimateWorks Foundation. AlphaESS was invited to the conference to discuss the future of new energy development and the direction of energy structure transformation in Africa. We expressed our commitment to leveraging the local advantages of our subsidiary in South Africa, aiming to explore and meet the diverse needs of local consumers, and to expand our presence in the African market. By providing high-quality and innovative products and services, we will promote the local energy revolution and build a better green future.



**Establishing the AlphaESS Charity Fund**

In October 2023, the Tongzhou Red Cross Humanity Fund inaugurated its named sub-fund, the "AlphaESS Charity Fund". This initiative contributed RMB 140,000 to support a variety of charitable endeavors, including the Paired Education Support Program in Jianzha County, Qinghai Province, the "AlphaESS Helps Your Dream Come True" educational assistance project in Tongzhou District, and the 2023 Qidong City Charity Online Fundraising Campaign. These efforts aimed to strengthen humanitarian aid and drive the development of the Red Cross mission.



**Working with Jianghai Evening News to support underprivileged students**

In September 2023, upon learning that the "Care Connection" program was once again spotlighting academically excellent students who faced financial hardship as they prepared for college, our company, facilitated by the Tongzhou District Red Cross, sponsored the modest wishes of 10 such students. Accompanied by staff from the Tongzhou District Red Cross, we delivered the donations and necessary supplies to these students before the start of the school year, encouraging them to overcome challenges and bravely pursue their dreams.



**Joining hands with Xiaohongshu to set a trend of green camping**

Xiaohongshu has initiated a non-profit eco-camp project to foster rural revitalization and enhance the well-being of village residents. Xiaohangkeng Village has been selected as the first pilot location for this endeavor. By building sustainable and environmentally friendly campsites, this project aims to attract urban consumers and support the local economy. This endeavor will enable villagers to capitalize on the tourism industry (tertiary sector) to drive the development of agriculture (primary sector), while encouraging young people to return to rural areas. However, the project faced many challenges due to the remote location of the Xiaohangkeng campsites, construction difficulties, and inadequate power supply to meet high electricity demand.



In June, 2023, AlphaESS joined the Xiaohangkeng campsite project with its multi-scenario new energy smart solutions, becoming the "Official Green Energy Designated Partner" for Xiaohongshu's ecological campsites. We provided two sets of 10kW/8.2kWh SMILE-T10-HV residential energy storage systems, along with rooftop photovoltaic panels. This integration formed a "Multi-scenario PV Storage Power Station", effectively addressing the campers' power demands and contributing to the campsite's eco-friendliness.

# DEDICATED TO COMMUNITY PHILANTHROPY AND PUBLIC WELFARE

AlphaESS has been actively fulfilling its corporate social responsibility and, by taking part in charitable and public welfare initiatives, demonstrates its entrepreneurial spirit with a social conscience. In addition to recruiting graduates from special education schools and providing them with equal employment opportunities, we donate to students from underprivileged families to help them complete their education. Through these efforts, we hope to promote the sustainable development of the society and work together to create a more harmonious and greener future.

## KEY PERFORMANCE INDICATORS

Topic	Indicator	Reporting Unit	2022	2023
Economic Indicators	Operating revenue	100 million yuan	17.73	27.76
	Net profit	100 million yuan	1.40	1.79
Corporate Governance	Percentage of female directors	%	22%	22%
	Percentage of independent directors	%	33%	33%
	Number of employees receiving compliance training	/	47	70
	Hours of compliance training for employees	hour	24.00	35.00
Technology Research and Development	Number of patents held	/	147	203
	Number of trademarks held	/	13	40
	Number of software copyright held	/	69	132
	R&D investment	10,000 yuan	9,103.00	16,374.91
Product and Customer Service	Number of information security audits	/	2	1
	Total number of incidents involving violations of customer privacy	/	0	0
Resource Usage	Natural gas <sup>10</sup>	10 <sup>4</sup> m <sup>3</sup>	0.00	1.19
	Gasoline <sup>11</sup>	L	15,000.00	26,111.82
	Diesel	L	1,200.00	561.72
	Liquefied petroleum gas	L	12,000.00	8,500.00
	Total amount of purchased electricity <sup>12</sup>	kWh	2,703,137.50	4,385,160.00
	Total photovoltaic power generation	kWh	24,000.00	140,000.00
	Water consumption	m <sup>3</sup>	15,622.00	50,084.00
GHG Emissions	Total (Scope 1) GHG emissions <sup>13</sup>	tCO <sub>2</sub> -e	93.66	179.12
	Total (Scope 2) GHG emissions <sup>14</sup>	tCO <sub>2</sub> -e	1,435.56	2,500.86
	GHG emission intensity (per MWh of output)	tCO <sub>2</sub> -e/MWh	1.3912	1.6031
	GHG emission intensity (per 10,000 yuan of revenue)	tCO <sub>2</sub> -e/ 10,000 yuan of revenue	0.0086	0.0097

Topic	Indicator	Reporting Unit	2022	2023	
Emissions	Particulate matter (PM)	Kg	0.00	0.00	
	Volatile organic compounds (VOC)	Kg	0.00	0.00	
	Sulfur dioxide (SO <sub>2</sub> ) emissions	Kg	0.00	0.00	
	Nitrogen oxide (NO <sub>x</sub> ) emissions	Kg	0.00	0.00	
	Wastewater discharge volume	ton	/	40,067.20	
Waste	Amount of hazardous waste generated	ton	0.00	0.11	
	Amount of non-hazardous waste generated	ton	/	655.00	
	Amount of hazardous waste disposed of in compliance	ton	0.00	0.11	
	Office waste disposal	Ton	70.00	655.00	
	Employment	Labor contract signing rate	%	100%	100%
Social insurance coverage rate		%	98%	100%	
Total number of employees		/	738	1,106	
Total number of new employees		/	/	524	
Employee turnover rate		%	19%	12%	
Number of employees by employment type					
Full-time employees		/	738	1,106	
Part-time employees		/	0	31	
Number of employees by gender					
Male		/	473	734	
Female		/	262	372	
Number of employees by age group					
Above 55 years old		/	6	4	
41-55 years old		/	79	115	
31-40 years old		/	275	398	
30 years old and below	/	375	589		

<sup>10</sup> During the reporting period, the increase in natural gas consumption was mainly attributable to the addition of employee dormitories in the Company's new headquarters and the resulting increased demand for natural gas heating.

<sup>11</sup> During the reporting period, the increase in the Company's gasoline consumption was mainly attributable to the relocation of its headquarters. The relocation resulted in an increased frequency of business trips from other office locations to the new headquarters, leading to a higher demand for gasoline.

<sup>12</sup> During the reporting period, the Company experienced an increase in the total amount of purchased electricity. The reasons for this increase include: (1) Business growth: An overall increase in production resulted in the electricity consumption for production purposes; (2) Headquarters relocation: The construction of the new factory area required additional electricity for various purposes; (3) New employee dormitories: The increased number of residents in the dormitories led to higher electricity demand for daily living needs.

<sup>13</sup> During the reporting period, the increase in the Company's GHG emissions (Scope 1) was mainly attributable to: (1) an increase in direct energy consumption such as gasoline and natural gas (see footnotes 10 and 11); (2) the inclusion of fugitive emissions from fire extinguishers in the statistics.

<sup>14</sup> During the reporting period, the increase in the Company's GHG emissions (Scope 2) was mainly attributable to an increased consumption of purchased electricity (see footnote 12).



Topic	Indicator	Reporting Unit	2022	2023
Safety Production	Number of safety production training sessions	/	7	32.00
	Total hours of safety production training	hour	1,494.00	3,440.00
	Investment in safety production	10,000 yuan	220.00	198.20
	Employees – Number of work-related deaths	/	0	0
	Contractors – Number of work-related deaths	/	0	0
Employee Training	Employees – Number of serious work injuries	/	0	0
	Average duration of employee training	hour	11.32	32.03
	Employee training duration by gender			
	Average hours of training received by male employees	hour/person	11.72	32.03
	Average hours of training received by female employees	hour/person	10.60	32.03
	Employee training duration by job level			
	Average hours of training received by general employees (P sequence)	hour/person	/	69.55
Supply Chain Management	Average hours of training received by managerial employees (M sequence)	hour/person	/	37.21
	Total number of suppliers	/	333	269
	Number of suppliers by region			
	Suppliers from Chinese mainland	/	331	257
	Suppliers from the Hong Kong, Macao, and Taiwan regions and overseas	/	2	12
	Percentage of suppliers signing the Supplier Code of Conduct <sup>15</sup>	%	100%	3%
	Percentage of suppliers signing contracts containing environmental and labor requirements	%	100%	3%
	Number of suppliers assessed for social impact	/	331	269
	Number of suppliers assessed for environmental impact	/	331	269
Supply Chain Management	Total number of new suppliers	/	115	104
	Percentage of purchasers within the Company trained in sustainable procurement	%	100%	100%

<sup>15</sup> By the end of the reporting period, our supplier system has registered 2,477 suppliers, including 269 qualified suppliers and 2,208 potential suppliers. Among the qualified suppliers, 257 are based in Chinese mainland, with the remaining 12 suppliers from the Hong Kong, Macao, and Taiwan regions, as well as from overseas.

<sup>16</sup> In 2023, we updated the Supplier Code of Conduct and Statement. The signing rate of the latest version is 3% and we will require all suppliers to sign the statement before December 31, 2024.

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GRI Standards	Disclosures	Chapter Index
GRI 2: General Disclosures 2021	2-1 Organizational details	About AlphaESS
	2-2 Entities included in the organization's sustainability reporting	Scope of Report
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	2-7 Employees	Growing with Employees
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	2-10 Nomination and selection of the highest governance body	Corporate Governance
	2-12 Role of the highest governance body in overseeing the management of impacts	Sustainability Governance
	2-14 Role of the highest governance body in sustainability reporting	Sustainability Governance
	2-16 Communication of critical concerns	Sustainability Governance
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	2-29 Approach to stakeholder engagement	Sustainability Governance
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GRI 302: Energy 2016	302-1 Energy consumption within the organization	Addressing Climate Change
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	303-2 Management of water discharge-related impacts	Environmental Management
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	303-4 Water discharge	Environmental Management



GRI Standards	Disclosures	Chapter Index
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	305-2 Energy indirect (Scope 2) GHG emissions	Addressing Climate Change
	305-4 GHG emissions intensity	Addressing Climate Change
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	305-7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	Environmental Management
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Environmental Management
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GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Talent Attraction
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Talent Attraction
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Occupational Health and Safety
	403-2 Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety
	403-3 Occupational health services	Occupational Health and Safety
	403-5 Worker training on occupational health and safety	Occupational Health and Safety
	403-6 Promotion of worker health	Occupational Health and Safety
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety
	403-9 Work-related injuries	Occupational Health and Safety
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Training and Development
	404-2 Programs for upgrading employee skills and transition assistance programs	Training and Development
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Corporate Governance Prioritizing Employee Well-being and Care

## Your Feedback

Dear reader:

Thank you for reading the 2023 Sustainability Report Report of Alpha ESS Co., Ltd.. In order to provide you and other stakeholders with more professional and valuable corporate social responsibility information, we would appreciate it if you could fill in the Feedback Form, which will help us further improve sustainable development management in the future.

Please give a score from 1 (minimum) to 5 (maximum) for each of the following questions

1.What's your overall evaluation of this report?

1                       2                       3                       4                       5

2.Does this report reflect the significant impact of AlphaESS on environment?

1                       2                       3                       4                       5

3.Does this report reflect the significant impact of AlphaESS on the society?

1                       2                       3                       4                       5

4.Does this report reflect the corporate governance situation of AlphaESS?

1                       2                       3                       4                       5

5.What's your overall evaluation of the information disclosure herein?

1                       2                       3                       4                       5

6.What's your overall evaluation of the verbal expression quality of this report?

1                       2                       3                       4                       5

7.What's your overall evaluation of the design style of this report?

1                       2                       3                       4                       5

8.Which topics discussed herein are of your greatest concern?

9. Do you have any other opinions and suggestions regarding this report?

Any feedback is welcome by calling, emailing or mailing us, thank you.