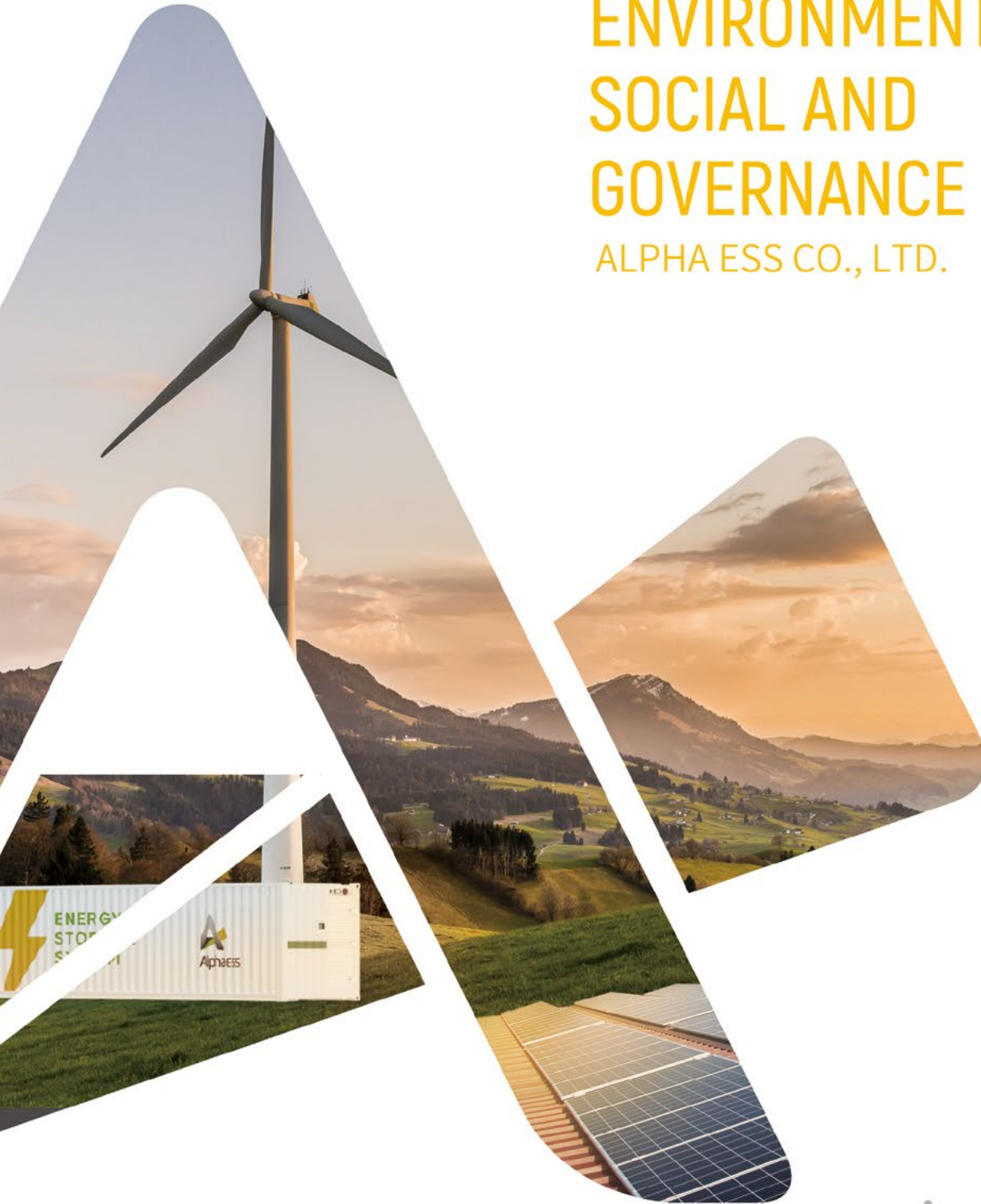


2022

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

ALPHA ESS CO., LTD.





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About the Report

This is the first annual Environmental, Social and Governance (ESG) Report of Alpha ESS Co., Ltd., which discloses in detail the Company's practices and performances on sustainable development in 2022, aiming to effectively communicate with stakeholders and systematically respond to important topics of concern to all parties.



Scope of Report

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

Reporting Period

This report covers the period from January 1, 2022 to December 31, 2022. To ensure more comparability and forward looking, some parts of the Report cover previous and future periods, when applicable.

Basis for Preparation

- *SDG Compass - The Guide for Business Action on the SDGs* issued by the United Nations
- *GRI Sustainability Reporting Standards (GRI Standards)* issued by Global Sustainability Standard Board (GSSB)
- *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG5.0)* issued by Chinese Academy of Social Sciences
- *GB/T36001-2015 Guideline on Social Responsibility Reporting* issued by the Standardization Administration of China
- *Self-Regulation Guidelines No. 1 for Companies Listed on Shanghai Stock Exchange - Standard Operation* issued by Shanghai Stock Exchange

References

"Alpha ESS Co., Ltd." is referred to as "AlphaESS" or the "Company" hereinafter.

Data Source

The contents hereof are sourced from the Company's financial statements audited by RSM China, relevant internal accounting data, corporate documents, and stakeholder survey questionnaires, among others. The Company undertakes that this report is free from any misrepresentation, misleading statement, or substantial omission. Certain forward-looking statements may, for multiple variable factors, be significantly different from the factual results or development trends in the future, which shall be subject to the actual development. We assume no obligation of updating any forward-looking statements herein.

Access to the Report

The electronic version of this report is available at the Company's official website (<https://www.alphaess.com/brochure>).

Chairman's Statement

With uncertainties taking place across continents, the ripple effects caused by climate change and political instability serve as a wake-up call to humanity. It is imperative that we move towards global sustainable development, for which low-carbon transformation is an inevitable path. Energy transition plays a key role in this journey. As China commits itself to realizing the carbon neutrality and carbon peaking goals and building a comprehensive new power system focusing on new energy, energy storage is playing an increasingly vital role in the efficient utilization and distribution of electricity. It has also become the pillar of a modern energy system that is “clean, low-carbon, safe, and efficient”. As a leader in the field of energy storage, AlphaESS has foreseen this trend as early as 2012 and hence committed itself to be an energy storage solution provider covering the full power range, leading the growth across the energy storage industry and making clean energy accessible to everyone in the world.

The finer details fall into place when they align with the bigger picture. This is AlphaESS' first Environmental, Social, and Governance (ESG) report presented to the public. In this report, we place a strong emphasis on material topics such as product quality and safety, opportunities in the clean energy market, as well as employee rights. We sincerely respond to stakeholders' demands by improving our ESG management architecture and system. This enables us



to better integrate corporate operations with global development trends and national top-level strategies. Looking back in 2022, we have, for the first time, conducted a comprehensive assessment of Scope 1 and Scope 2 greenhouse gas emissions totaling 1,529.22 tons, which testifies to our industry-leading progress in emission reduction. We have installed rooftop solar panels in our office area, provided green electricity through charging stations for new energy vehicles, and promoted green offices and a low-carbon lifestyle. In our production bases, we have introduced six automated smart production lines while strictly adhering to ISO 9001:2015 quality management system. Our main products have obtained 139 global certifications, such as IEC, UN38.3 and VDE. We have seized the opportunities in clean energy through technological innovation. Every year, we invest RMB 91.03 million in research and development, and our R&D personnel account for 25.07% of the total workforce. We have expertise in BMS, EMS, system integration, and core control technologies of energy storage related to cloud management platforms. Our industry-leading high-precision State of Charge (SOC) estimation enables us to control the SOC error within 2.5% throughout the battery's entire lifecycle, storing more electricity for residential users. At AlphaESS, we prioritize a people-oriented approach, having created the AlphaESS Online information platform to empower organizational development. We provide digital solutions for employee growth, providing a total of 8,321 hours of training throughout the year for our staff. Safety production is crucial for our sustainable development. By establishing dedicated EHS positions and implementing a comprehensive occupational health and safety management system, we effectively mitigate production-related safety risks.

After a decade of dedication, AlphaESS is starting to make its mark. We have deployed over 100,000 energy storage systems in more than 90 countries and regions worldwide. Striving for ultimate safety, we have maintained a zero-accident record for years on end. By delivering high-quality products and excellent services, we have achieved notable accomplishments, ranking the first in terms of market share in Australia's energy storage market, the sixth in Germany's residential energy storage market, and the third in terms of shipment volume in China's customer-side energy storage systems. In the future, AlphaESS will focus on all aspects of the energy storage industry chain. Based on our extensive experience in the R&D and production of energy storage systems, we will continuously innovate and expand our range of energy storage products so as to meet the diverse needs of various markets and application scenarios. Meanwhile, we will leverage our software and hardware development capabilities as well as our IoT technology to foster interconnectivity among energy production, distribution, and utilization processes, deliver smart energy management solutions centered around electricity, and, ultimately, contribute to sustainable development and environmental protection. Furthermore, we place strong emphasis on organizational development as we work to establish ourselves as a globally leading hub for advanced energy storage technologies and talent cultivation. Every member of the AlphaESS family is essential in shaping values and driving innovation. It is their commitment to excellence that helps us fortify our competitive edges.

To see the bigger picture, one needs to take a longer view. We look forward to collaborating with more stakeholders as we embrace sustainability and achieve mutual benefits across multiple dimensions in the business chain, industrial chain, and value chain, and finally creates a positive feedback loop of development. Together, we aim to engage ourselves in the interconnectivity and transformation of the energy industry, become the world-leading energy storage solution and service provider, and empower a net-zero carbon future with our efforts in energy storage.

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



About AlphaESS

Since its establishment in 2012, Alpha ESS Co., Ltd. has been devoting to the research and development, production, and sales of energy storage products, mastering core control technologies such as BMS, EMS, system integration, and cloud management platform in the energy storage field. As an industry-leading energy storage solution provider covering the full power range, which specializes in providing comprehensive smart energy solutions for households, industrial and commercial parks, power grids, power stations, and power companies, AlphaESS has been awarded multiple honors such as The National-Level "Little Giant" Firms, National High-Tech Enterprise, and National Enterprise with Advantage in Intellectual Property. Being the first enterprise in China that focuses on energy storage, AlphaESS closely follows the industry development trend, responds to the national strategic plan on the energy industry, and adheres to the vision of making clean energy accessible to 100 million people in a decade, playing an active role in contributing to sustainable development and environmental protection.



Global Presence

Upholding the international development strategy, with 20+ subsidiaries and branch offices in the globe based on its global headquarters in Nantong and its overseas headquarters in Singapore, AlphaESS provides services worldwide and supports 100,000+ systems actively running in over 90+ countries and regions. Meanwhile, four major production sites have been established in Tongzhou and Qidong in Nantong, Jiangsu Province, Guangde in Anhui Province, and Malaysia.



Market Performance

The Company has achieved outstanding performance in Europe and Oceania, while further expanding its domestic market in China.

4 Production Sites

Domestic: Jiangsu (Tongzhou and Qidong), Anhui (Guangde)
Overseas: Malaysia (Penang)

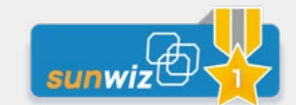
4 R&D Centers

Jiangsu (Tongzhou, Suzhou, Nanjing), Tianjin

14 Subsidiaries & Branches

Domestic: China (Suzhou, Beijing, Tianjin, Shenzhen, Chengdu, Nanjing)
Overseas: Europe (Germany, Italy, UK), Oceania (Australia, New Zealand), America (US), Other Regions in Asia (Republic of Korea, Malaysia)

Note: The data shows the company's global presence as of the end of 2022.



TOP1 in the market share of energy storage batteries in Australia for 2022



TOP6 in the market share of residential energy storage in Germany for 2022



TOP6 globally in the market share of residential energy storage systems for 2021



The White Paper on Energy Storage Industry Research released by CNESA: ranking third in energy storage system shipment to domestic market in 2022 and third in energy storage system shipment to overseas market in 2021.



Corporate Culture



Mission

Make clean energy accessible to everyone in the world



Vision

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



Values

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



Our History

AlphaESS is a pioneer in the residential energy storage system product industry in China. Leveraging its rich industrial chain resources, years of scientific research strength and project experience, AlphaESS has realized the R&D and production of energy storage systems covering the full power range, which are widely applied to power generation, power transmission, power distribution, power consumption and other scenarios, resulting in reduced power costs, improved utilization rate of new energy power, and a reduction in carbon emissions.

Key Solutions



Self-Sufficiency



Peak/Valley Arbitrage



Wind and PV Power Plants



Off-grid



Microgrid



Diesel Replacement



Peak Regulation



PV-Storage-Charge-in-One



2012

Company Established



2013

Launched the first residential energy storage battery
Launched the 1st generation BMS, EMS, and cloud management platform



2014

Renamed as AlphaESS
Launched "All-in-One" Residential ESS



2015

Established the European subsidiary
Established the Australian subsidiary



2016

Developed market in China
Launched C&I energy storage solutions



2017

Launched the SMILE series energy storage systems
Launched large-scale aircooling energy storage systems



2018

Established the Italian subsidiary
Connected several megawatt-scale projects to the grid



2019

Transformed and upgraded from an equipment supplier to a comprehensive energy storage solution and service provider



2022

Provided energy storage products covering the full power range

Launched the high-voltage version SMILE series residential ESS
Launched large-scale liquid cooling energy storage systems



2021

Became a National-Level "Little Giant" Firms

Invested by Temasek, Hillhouse, NIO, etc.
Established the US subsidiary



2020

Established the Singapore subsidiary
Launched the medium-voltage version SMILE series residential ESS



1kW 3kW 5kW 10kW 50kW 100kW 1MW 100MW



Chairman's Statement

About AlphaESS

Annual Honors

Sustainability Management

Sound Governance

Eco-Environmental Protection

Innovative Product Development

Reinforcing People-Oriented Construction

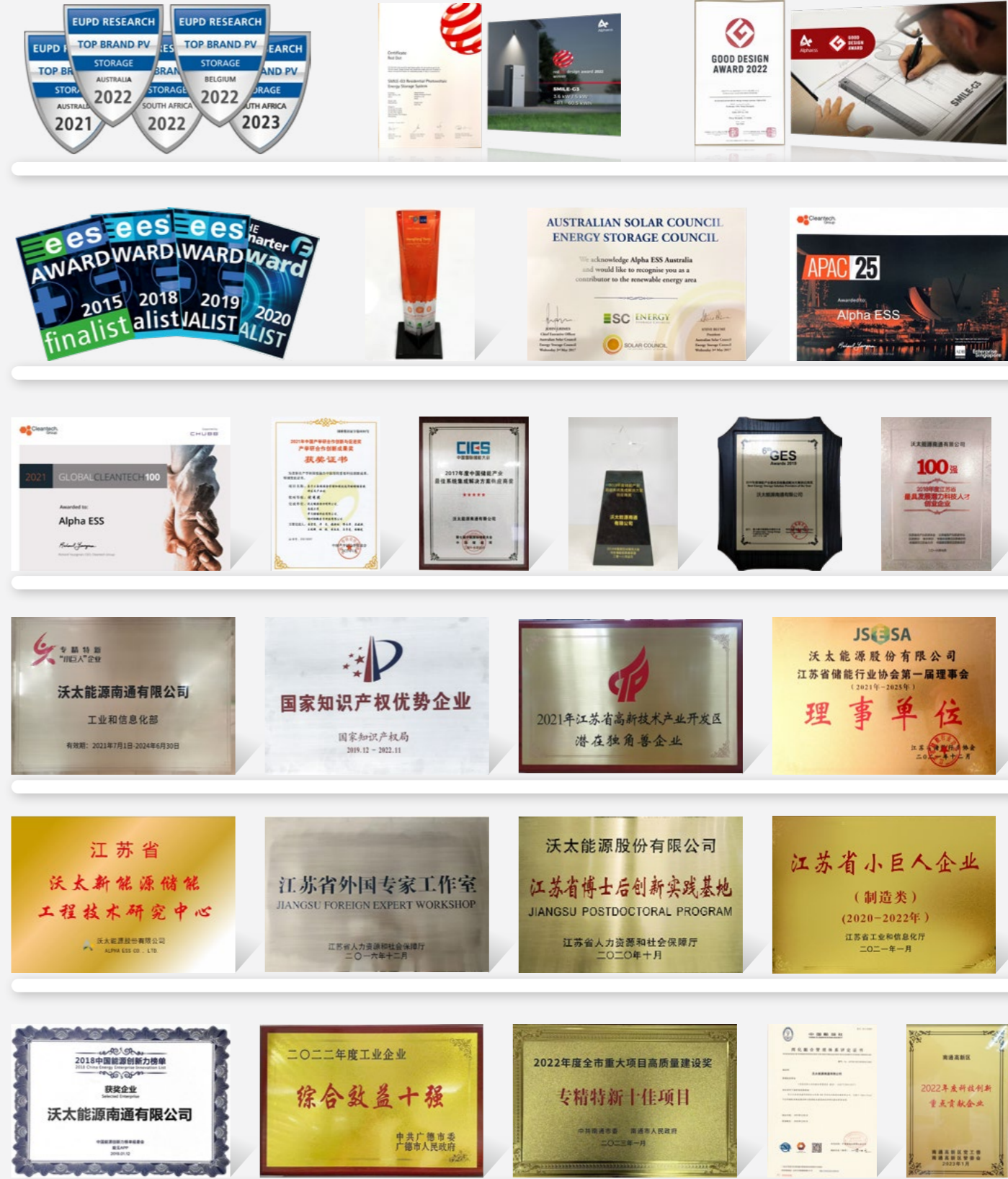
Health and Safety Assurance

Key Performances

2022 Environmental, Social and Governance Report

Annual Honors

The National-Level "Little Giant" Firms	Ministry of Industry and Information Technology	2022
Provincial Model Enterprise for the Implementation of Standard for Integration of Informationization and Industrialization Management System	Industry and Information Technology Department of Jiangsu	2022
Top Brand PV - Storage Awards 2022 in the markets of Australia, Belgium and South Africa	EUPD Research	2022
Reddot Resign Award, Germany	Design Zentrum Nordrhein Westfalen	2022
Good Design Award, Japan	Japan Institute of Design Promotion	2022
2021 China Industry-University-Research Cooperation Innovation and Promotion Award	China Industry-University-Research Institute Collaboration Association	2021
Gazelle Company of Jiangsu High-tech Industrial Development Zone	Productivity Center of Jiangsu Province	2021
Top 100, Global Cleantech 2020	Cleantech Group, USA	2020
EES AWARD 2020	The smarter E	2020
National Enterprise with Advantage in Intellectual Property	China National Intellectual Property Administration	2019
China Energy Storage Industry Best System Integration Solution Supplier Award	Electric Energy Storage Alliance (EESA)	2019
China's Energy Innovation Power List 2018	China Energy Innovation List Organizing committee	2019
Integration of Informationization and Industrialization Management System Certificate	China Classification Society Company	2019
Jiangsu Engineering Technology Research Center	Jiangsu Provincial Department of Science and Technology	2019
Top 25 Asian-Pacific Company, Global Cleantech 2019	Cleantech Group, USA	2019
Australian Clean Energy Sector Outstanding Contribution Award	Australian Solar Council	2017
Asian New Energy Leader Award	Asian Development Bank	2017





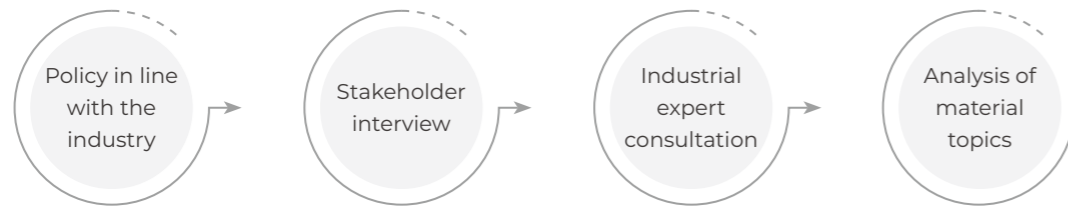
Sustainability Management

The Company attaches great importance to sustainable development management with material topics as the direction and high-quality reports as the focus. By fully understanding the expectations and demands of stakeholders, keeping in line with global ESG policies, regulations, and compliance requirements, and benchmarking to excellent practices of listed companies, the Company maintains efforts on management, practice, review, and optimization in environmental, social, and governance, etc., and deeply integrates sustainable development concepts with corporate culture, creating an excellent ESG management system for sustainable value.

Referring to the *SDG Compass - The Guide for Business Action on the SDGs* issued by the United Nations, the *GRI Sustainability Reporting Standards (GRI Standards)* issued by Global Sustainability Standard Board (GSSB), the *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG5.0)* issued by Chinese Academy of Social Sciences, the *Standards of the Sustainable Accounting Standards Board (SASB)* and other general standards, in light of the annual hot topics, national strategies, and industry trends, the Company has, taking into account its actual development, developed and conducted a questionnaire survey on material topics for the year 2022, to widely obtain the expectations and demands of various stakeholders, including without limitation its senior officers, government authorities, shareholders, investors, employees, customers, suppliers, partners, media, and the public.

A total of 608 questionnaires were collected during the survey, of which 602 accounting for 99% were effective after due screening. Then the questionnaire results were studied according to the following material topics identification process for further analyzing the importance of each issue, with a matrix formed thereafter for 2022 regarding material topics with high attention, strong relevance, and wide influence as an important foundation for the Company's ESG management and this report, which was also communicated regularly through multiple channels including website, report, event, and media.

Material Topics Identification Process



AlphaESS Material Topics Matrix



Communication with Key Stakeholders

Key stakeholders	Topics of concern	Communication channels and response methods
<p>Shareholders and investors</p>	<ul style="list-style-type: none"> Business performance Compliance governance Risk prevention and control 	<ul style="list-style-type: none"> General meeting of shareholders Regular information disclosure Daily communication (by phone, email, and meeting)
<p>Customers</p>	<ul style="list-style-type: none"> Product quality Premium service Rights and interests protection 	<ul style="list-style-type: none"> AlphaCloud AlphaCloud after-sales management Customer satisfaction survey Daily communication (by phone, email, and meeting)
<p>Employees</p>	<ul style="list-style-type: none"> Compliant employment Remuneration and benefits Training and empowerment Employee rights and welfare Occupational health and safety 	<ul style="list-style-type: none"> Training and development System AlphaESS Online information platform Internal journal of corporate culture Employee care activities Diversified communication channels (communication groups, OA systems, feedback emails, questionnaire surveys)
<p>Suppliers</p>	<ul style="list-style-type: none"> Transparent procurement Honest transaction 	<ul style="list-style-type: none"> Supplier conference On-site visit and research Regular evaluation and review Daily communication (by phone, email, and meeting)
<p>Government and regulatory authorities</p>	<ul style="list-style-type: none"> Employment promotion Contribution to local economic development Compliant operation Green production 	<ul style="list-style-type: none"> Daily communication report Special research and visit Exchange conference and forum Policy standard formulation and feedback
<p>Industry associations, peer enterprises, universities</p>	<ul style="list-style-type: none"> Supply chain management Compliance operation Product and service quality Customer service level Responsibility for product Common progress 	<ul style="list-style-type: none"> Industry standard formulation Global industrial exhibition Related forum and meeting Strategic industry-academia-research cooperation
<p>Community, public, media, etc.</p>	<ul style="list-style-type: none"> Waste discharge Community welfare Environmental compliance Volunteer services 	<ul style="list-style-type: none"> Cooperation on social projects Charitable public welfare activities Community volunteer activities

Sound Governance

AlphaESS stays committed to a healthy and compliant corporate governance system for the sake of transparency in information disclosure as well as safeguarding legitimate rights and interests of investors, with constant endeavor made in practice to improve its internal control and risk management system, and great importance attached to business ethics education and full protection of intellectual property, laying a solid foundation for the Company's long-term development and continuously creating value for stakeholders.

Relevant SDGs



SOUND GOVERNANCE

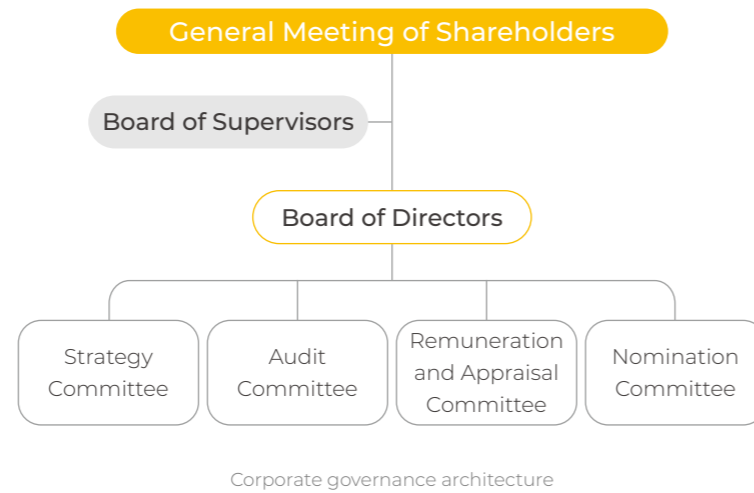


ENERGY STORAGE SYSTEM



Corporate Governance

In strict accordance with the requirements of 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, and in light of the actual operation and development of the Company, AlphaESS has set up a thoughtful modern enterprise system and a sound corporate governance architecture, establishing a "three-board and one-management" structure comprising the General Meeting of Shareholders, the Board of Directors, the Board of Supervisors and the management, along with working out the rules of procedure and work before and after listing to define the responsibilities, authorities and job programs of the directors, supervisors and senior management.



The Company's Board of Directors has 4 special committees: the Strategy Committee, the Audit Committee, the Remuneration and Appraisal Committee, and the Nomination Committee.

Strategy Committee

- Study and make proposals on the Company's medium and long-term development strategic planning
- Study and make proposals on major investments, financing plans, capital operations, and asset management projects that require approval or review by the Board of Directors as stipulated in the Company's *Articles of Association*

Audit Committee

- Propose to hire or replace an external audit agency
- Supervise the Company's internal audit system and its implementation
- Be responsible for communication between internal and external audits
- Review the Company's financial information and disclosure
- Review the Company's internal control system and audit major related party transactions

Remuneration and Appraisal Committee

- Develop remuneration policies, plans, or schemes based on the main scope, responsibilities, and importance of the management positions of directors and senior officers
- Review the performance of the Company's directors and senior officers, conduct annual performance evaluations thereon, and formulate year-end incentive plans
- Develop long-term incentive plans for the Company's directors and senior officers

Nomination Committee

- Study the selection criteria and procedures for directors and senior officers, and make proposals to the Board of Directors
- Locate qualified candidates for directors and senior officers, and review and make proposals on director and senior officer candidates

During the reporting period

the Company held 3 general meetings of shareholders	6 meetings of the special committees of the Board of Directors, comprising
6 meetings of the Board of Directors	1 meetings of the Strategy Committee
3 meetings of the Board of Supervisors	4 meetings of the Audit Committee
	1 meetings of the Remuneration and Appraisal Committee



General Meeting of Shareholders

The Company's General Meeting of Shareholders functions well due to clear responsibilities and established rules of procedure, with all its convening, holding, and proposing conducted as per procedures that comply with relevant laws, regulations, and internal rules of the Company.

Board of Directors

The Company has established a Board of Directors in accordance with the law, which shall be entrusted by the General Meeting of Shareholders to operate and manage the Company's corporate property. The Board of Directors has been assigned with clear responsibilities, with all members fulfilling their duties with due diligence, and all meetings convened and held as per procedures in compliance with relevant laws, regulations and rules.




As of the end of the reporting period

 the Board of Directors has 9 members	 3 independent directors	 2 female directors
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Board of Supervisors

The Company has established a Board of Supervisors in accordance with the law for exercising the supervisory power to safeguard the legitimate rights and interests of shareholders, the Company, and the employees, which shall be responsible for and report to the General Meeting of Shareholders.

As of the end of the reporting period

 the Company has 3 supervisors	 1 employee representative	 1 chairman of the Board of Supervisors
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Internal Control

Pursuant to relevant laws and regulations including the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, the *Audit Law of the People's Republic of China*, the *Regulations of the National Audit Office of the People's Republic of China on Internal Audit*, the *Internal Audit Standards of the People's Republic of China*, as well as the *Articles of Association*, the Company has formulated its *Internal Audit Rules* taking into account its actual situation to promote the rationality of internal control procedures and the efficiency of resource utilization, assist in protecting the safety and integrity of corporate assets, prevent major frauds, and supervise and support the management in effectively implementing relevant rules, regulations, policies and resolutions of the Company, thereby improving the efficiency and effectiveness of operation.

Objectives & Principles



- Establish and improve internal governance and organizational structure, form a scientific decision-making, execution, and supervision mechanism, and ensure the legality and compliance of the Company's business and management as well as the orderly conduct of business activities
- Establish an effective risk control system, and reinforce risk management, to ensure the healthy operation of various business activities of the Company
- Regulate the Company's business behavior and ensure the authenticity, accuracy, and completeness of accounting materials, financial statements, and related information
- Establish a good internal control environment, as well as prevent, promptly detect and correct errors, violations, and frauds, to protect the safety of the Company's assets
- Ensure the implementation of relevant national laws and regulations, departmental rules, normative documents, and inter rules and regulations of the Company

Objectives and principles of internal control

Investor Rights Protection

In order to better regulate the operation and the information disclosure of the Company, and in light of its actual situation, AlphaESS has developed the *Information Disclosure Management Rules*, the *Rules for the Accountability for Major Errors in Annual Report Information Disclosure*, the *Investor Relations Management Rules*, and the *Investor Rights Protection Rules*, among others according to relevant laws and regulations including the *Company Law of the People's Republic of China* and the *Securities Law of the People's Republic of China*, as well as the *Articles of Association*, to ensure the authenticity, accuracy, completeness, timeliness, and fairness of information disclosure, improve the quality and transparency of annual report information disclosure, and safeguard the legitimate rights and interests of both the Company and its investors.

Various channels including field survey, online forum, investor hotline, email and website have been made available by the Company for communication and exchange with investors, to effectively protect the legitimate rights and interests of investors while enhancing their understanding and identification with the Company. In the future, the Company will continuously improve the professionalism of its investor relations management, strengthen investors' understanding of the Company, promote a positive interaction between the Company and investors, effectively safeguarding the interests of all shareholders, especially minority shareholders, for the best interests of the shareholders whilst ensuring maximizing the value of the Company. During the reporting period, there were no significant errors in information disclosure by the Company.

Ways to Communicate with Investors



- Company website
- Roadshow
- Media interview and report
- Field survey
- Telephone consultation
- Mailing
- One-to-one communication
- Advertising, media, newspapers, and other promotional materials
- Various presentations

Communication channels between the Company and investors

Compliance Risk Control

With a view to better regulating its operation, promoting its sustainable development, and effectively controlling internal and external risks, AlphaESS has established a sound risk assessment and control system, under which the *Risk and Opportunity Response Procedure* and the *Environmental Analysis and Control Procedure of the Company* have been made for a comprehensive and systematic collection, identification, and assessment of potential risks in the operating environment, and control procedures and action plans have been timely developed based on the actual situation of the Company, to keep risks under control.

Risks	Responses
<p>Operation risks</p>	<ul style="list-style-type: none"> • Improve the Company's management level through supervision and training • Encourage employees to innovate through talent incentive measures • Conduct qualification reviews on new and existing customers
<p>Market risks</p>	<ul style="list-style-type: none"> • Establish long-term cooperation with certain customers to fix product prices leveraging financial strengths and procurement models • Stay in touch with banks for pertinent businesses and regularly participate in relevant knowledge training
<p>Law and compliance risks</p>	<ul style="list-style-type: none"> • Reinforce corporate governance and improve the standardization and scientificity of decision-making mechanisms • Regularly provide legal and compliance related training for employees

Risk identification and response (part)

Case | Improving contract management rules and procedures to prevent contract risks



In May 2022, to strengthen contract management, the Company revised the duties of each department and personnel, contract drafting, contract review, contract execution, contract performance, change and rescission and other contents in its rules, further clarified the specific requirements for each post as well as operating procedures and operating norms, improved the contract management system and process, and reduced risks in the process of contract execution and performance.



Contract risk prevention training



Case | Improving seal management to reduce the risk of using seals



In June 2022, the Company's CEO's Office revised the seal management rules, and updated rules on the management of seals taken out, management of procurement seals, management of electronic seals, etc., so as to effectively reduce risks in seal use and safeguard the Company's interests.

Seal Carrying Management	Procurement Seal Management	Electronic Seal Management
Anyone who takes away the seal shall be subject to approval through the OA process, for which the applicant shall complete the Takeaway Registration Form. The seal cannot be left overnight.	The special seal for procurement shall be managed and used by the Supply Chain Department solely for the Company's template material purchase orders under the framework agreement.	Each electronic shall be managed by the corresponding physical seal management department. No one else shall be allowed to retain a facsimile of the electronic seal.

New entries into the seal management rules

Business Ethics

AlphaESS has developed the *Anti-Fraud Mechanism and Reporting Procedure* and the *Gift Handover Management Measures* whereby to clarify the management principles and reporting channels for corruption and bribery risks, and require employees to comply with anti-corruption discipline, actively creating a clean-fingered and honest atmosphere and culture in the Company. Meanwhile, through supplier anti-corruption management, the Company seeks to create a good environment for business and cooperation without corruption, requiring suppliers to sign an *Integrity Agreement* to ensure integrity between employees of the Company and those of suppliers in their dealings.

Email: ac@alpha-ess.com
WeChat Official Account: AlphaESS Review
Hotline: 0513-68070558
Mailbox: Each factory mailbox (small mailbox marked with "Report Box") - for all factories
Executive Supervision: Any material and urgent report can be sent to the Chairman via email



Intellectual Property Management

Fully implementing the management policy of "leading the future of energy storage through independent technological innovation, and enhancing competitiveness through intellectual property protection", AlphaESS has developed a series of management rules such as the *Intellectual Property Risk Control Procedure*, the *Intellectual Property Rewards and Punishments Measures*, and the *Intellectual Property Dispute Resolution and Emergency Response Plan*, forming a three-dimensional intellectual property protection for its products. Meanwhile, the Company also lays an emphasis on introducing and cultivating intellectual property talents, with regular professional training, classified rewards and other measures conducted to effectively mobilize the enthusiasm and creativity of all employees in making technological innovation. At present, the Company has successfully passed the review for National Enterprise with Advantage in Intellectual Property and Intellectual Property Management System Certification, and actively undertakes the construction of major scientific research projects such as Jiangsu Provincial Intellectual Property Strategy Promotion Plan and AlphaESS New Energy Storage Engineering Technology Research Center in Jiangsu, further strengthening the core competitiveness of intellectual property.



Intellectual Property Management System Certification



National Enterprise with Advantage in Intellectual Property

To intensify employees' awareness of intellectual property rights, as well as ensure that they go over and master relevant knowledge, and actively participate in intellectual property management and protection, the Company has delved into and studied problems existing in intellectual property management, and proposed solutions and methods in response, with constant work to improve its core competitiveness in practice. In addition, the Company has also conducted intellectual property training around patent clock-in, databases, and patent barriers, and added an intellectual property section at AlphaESS Academy, to give effect to the intellectual property management and maintenance.

Case | The Company conducted activities of "21-Day Clock-In for Patent Interpretation" to help employees improve patent knowledge



In April and October 2022, in order to address the three major challenges in patent writing, namely "which technology points can be used to apply for patents", "how to write patent technology disclosure documents", and "how to write high-value patent disclosure documents", our CEO's Office conducted activities of "21-Day Clock-In for Patent Interpretation" with the themes of "Keep Moving Forward" and "Innovation & Leapfrog Development", effectively improving the R&D team's patent mining, writing skills, and patent protection awareness, and providing a guarantee for the Company's continuous innovation and breakthroughs.



Patent clock-in activity in April - Suzhou



Patent clock-in activity in April - Tianjin



Patent clock-in activity in October - Nanjing



Patent clock-in activity in October - Nantong

Eco-Environmental Protection

Actively responding to China's "dual carbon" strategic goal, AlphaESS has integrated the concept of sustainable development into every aspect of its production and operation. With endeavor on carbon inventory and other carbon management mechanisms, while focusing on developing environmentally friendly technologies and products, the Company keeps optimizing the energy structure, improving the rate of multipurpose utilization of energy, and enhancing energy conservation and emission reduction capabilities, to prevent environmental pollution and protect the eco-environment. Additionally, AlphaESS also motivates peers in the industry to reduce their impact on the environment, working with stakeholders to build a green and low-carbon society.

Relevant SDGs



ECO-ENVIRONMENTAL PROTECTION



Environmental Management

AlphaESS fully abides by 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 other national laws and regulations, issuing and implementing such rules as the *Environmental Protection Facilities Operation Management Rules*, the *Environmental Accidents Management Rules*, and the *Three Wastes Management Rules* in accordance with the requirements of ISO14001:2015 Environmental Management System, with an environmental protection accountability system established and improved based on strict environmental management objectives. Moreover, the Company has been active in identifying environmental risk problems, and fulfilling its responsibilities for pollution prevention, maintaining its efforts on preventing and controlling environmental pollution risks.

During the reporting period, no branch (subsidiary) of AlphaESS was subject to environmental administrative penalties.

During the reporting period, the Company has been working to optimize its environmental management system and organizational structure. Specially, a dedicated EHS department has been set up, the environmental protection functions of each department and relevant personnel clarified, and various environmental accident prevention and handling methods refined to give effect to the Company's long-term mechanism for environmental protection, towards building the Company into an economical and environmentally friendly enterprise. In addition, to further improve environmental management level, the Company has also actively organized environment-related training and exams to enhance employees' awareness and skills in environmental protection.



Person Primarily Responsible for Environmental Protection (CEO)

- Implementing various national and local environmental protection laws and regulations
- Organizing the investigation and handling of major environmental pollution accidents
- Organizing the formulation of environmental protection rules and regulations, etc.
- Organizing personnel to conduct environmental impact assessment and "three simultaneousities" environmental acceptance of the project



Vice President in Charge of Environmental Protection and Other Department Heads

- Coordinating with the CEO to carry out daily environmental management work;
- Supervising and inspecting the implementation of various environmental rules and regulations by the departments, organizing or participating in the formulation and revision of environmental rules and regulations;
- Making an overall plan on and coordinating the relationship among production, development, and environmental protection work, etc.



All employees

- Seriously studying and complying with national/local environmental laws and regulations as well as various environmental rules and regulations of the Company, and conscientiously carrying out various environmental protection work;
- Promptly reporting environmental issues found and trying to stop violations of environmental management rules;
- Strictly implementing the "Three Wastes" management system, without discarding, mixing, or disposing of them at will



AlphaESS takes an active part in facilitating the work for ISO 14001 Environmental Management System Certification, regularly organizing overall inspections and diagnoses of the Company's environmental management system effectiveness and compliance, completion of environmental goals and indicators, important environmental risk control, and other environmental operations through internal examination, management review, and third-party audit, while keeping an eye on the improvement of environmental performance.

As to environmental factor assessment for projects, the Company strictly follows relevant national regulations to conduct environmental assessment of projects under construction.



The Company's ISO 14001 Environmental Management System Certification in 2022

Note: According to relevant provisions and requirements in the *Regulations on the Administration of Construction Project Environmental Protection* and the *Directory of Classified Administration of Construction Project Environmental Impact Assessment*, currently the Company is not required to handle registration for its projects under construction in that it is primarily engaged in the research and development, production, and sales of energy storage products.



Addressing Climate Change

Throughout the journey of more than a decade in exploring energy storage as a key field of energy transformation, AlphaESS has been concerned about international environmental issues such as climate change and global warming. Driven by the national "dual carbon" goal, the Company attaches great importance to its impact on the environment and is committed to empowering stakeholders through its own green transformation and green value dissemination for reducing the burden on the environment throughout the entire industry chain.

Based on the GHG Protocol, AlphaESS has quantified the carbon emissions generated by the group in 2022, in order to carry out more scientific and rigorous carbon management in the future, enhance its resilience to climate change, and achieve high-quality sustainable development. The organizational boundary for the GHG emissions mentioned here was determined using the operation control approach, covering Alpha ESS Co., Ltd. in its entirety as well as all its branches and wholly-owned or majority-owned subsidiaries in China, during which scope I and scope II emissions, i.e., direct and indirect GHG emissions associated with operation of the enterprise, are accounted for.

Greenhouse Gas Inventory Results

This GHG emission accounting work follows the PDCA workflow, which includes five major processes: boundary, source, measurement, reporting, and review. From the definition of organizational boundary, identification of emission sources, to the preparation of the final report, standardized processes are used as a basis to conduct control, so that there are rules and regulations to follow orderly, in alignment with the requirements of the GHG Protocol: Corporate Accounting and Reporting Standard.



After identifying and sorting out the sources of scope I and scope II GHG emissions, it is found that: The Company's direct emissions in scope I were mainly from stationary source, mobile source, and VOCs source, while the indirect emissions in scope II were mainly from purchased electricity. In 2022, the total GHG emissions in scope I and scope II of AlphaESS amounted to 1,529.22 tons, of which the scope I emissions were 93.66 tons, accounting for 6%, and the scope II were 1,435.56 tons, accounting for 94%. The high carbon emissions were sourced from the consumption of purchased electricity, which took up more than 94% of the overall carbon emissions.

GHG Emissions of AlphaESS in 2022

	Total GHG emissions (tCO2-e)
Scope I (direct emissions)	93.66
Among them:	
• Stationary source	0.088
• Mobile source	62.395
• VOCs source	31.179
Scope II (indirect emissions)	1,435.56
Among them:	
• Purchased electricity	1,435.56
Total	1,529.22

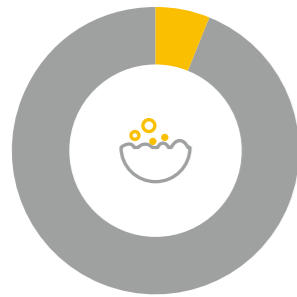
Summary of AlphaESS GHG Emissions in 2022

Emission Scope	Emission Category	Emission Source
Scope I (Direct Emissions)	Stationary source	The Company's canteen stoves using liquefied petroleum gas as the fossil fuels
	Mobile source	The Company's vehicles using fossil fuels including gasoline and diesel
	VOCs source	The VOCs from the Company's refrigerants and GHG emissions from wastewater treatment
Scope II (Indirect Emissions)	Indirect emissions from purchased electricity	Electricity purchased to supply energy for all production and operation facilities of the Company

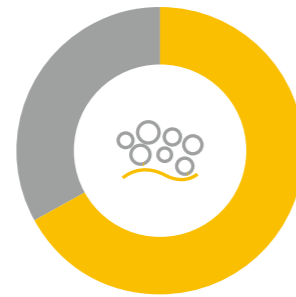


GHG Emissions of AlphaESS in 2022

General Condition



Scope I



Scope II



Scope I (Direct emissions)	6%	Stationary source	0%	Purchased electricity	100%
Scope II (Indirect emissions)	94%	Mobile source	67%		
		VOCs source	33%		

References for emission factor and coefficient:

1. For the stationary and mobile source: *the Guidelines for Measuring GHG Emissions from Energy Consumption (Rev. 2.1)*;
2. For GWP: *IPCC AR4*; For VOCs rate: *BSI data, the Investigation Report on Accounting Methods for GHG Emissions from Waste Water Treatment and the Standard for Design of Outdoor Waste Water Engineering (GB50014-2021)*;
3. For purchased electricity: *Notice on Proper Management of GHG Reports for Enterprises in Power Generation Industry from 2023 to 2025* issued by the Ministry of Ecology and Environment.

GHG Emission Reduction Management

AlphaESS will gradually expand the GHG inventory from the headquarters to all branches and subsidiaries, from domestic to overseas, and from scope I and scope II to scope III, covering GHG in the whole value chain. By accurately grasping the carbon emission data of each aspect, and deeply sorting out key emission sources, the Company has worked out practical energy conservation and emission reduction plans, using constant efforts on improving its clean attributes in practice, to bring customers more low-carbon and high-quality green products, and help the energy storage industry chain to jointly move towards a net-zero carbon future. Bearing in mind the excellent practices in the industry, the Company gradually establishes its GHG emission reduction goals and strategies, and refer to the four dimensions, i.e., "Governance, Strategy, Risk Management and Metrics & Targets" identified by the TCFD for management, in order to make contributions to addressing global climate change and eco-environment protection.

The Company highly values and has been working to internally promote the concept of green office. With comprehensive energy conservation and emission reduction measures developed from daily water and electricity to office equipment, recycling economy has been interrelated by the Company into its work.



Main measures for green office of AlphaESS

- Strengthen daily inspections of water consuming equipment and promptly address waste of water resources such as leaking.
- Encourage to turn on fewer lights when there are fewer people in the office, and turn off lights when leaving the office, to eliminate permanent and daytime lights.
- Reasonably use electronic office equipment, reduce standby energy consumption, and turn off the power promptly after work.
- Control the operating time of the air conditioning according to the seasonal climate, and set proper temperature.
- Promote paperless office work, reduce unnecessary paper consumption, and improve the reuse and recycling rate of waste paper.

KPI for Green Office Operation of the Headquarters in 2022

Indicator	Unit	2022
Office electricity consumption	kWh	1,425,191.00
Office water consumption	M ³	4,696.50
Office paper volume	Ton	9.00
Office waste disposal	Ton	70.00

In 2022, 91 photovoltaic modules with a total power of 49.14kW covering a total area of 235.8m² were installed on the roof of Suzhou Branch. The power generated therefrom is preferentially used for office, while the surplus power will be stored in two types of Series SMILE residential energy storage systems of AlphaESS which will be used to provide green power for new energy vehicles with the support of charging piles. Based on the simulation measurement of photovoltaic power generation, the photovoltaic modules are expected to bring an annual supply of clean electricity for about 50,000kWh, which can save the Company nearly 50% of electricity bills and is equivalent to the CO₂ absorbed by 1,296 trees in a year. In addition, with the AlphaCloud management platform, functions such as online viewing of electricity revenue, monitoring of system operation data, and remote setting of charging and discharging times can also be realized.



Roof photovoltaic project of AlphaESS Suzhou Branch



Energy and Water Resource Utilization

Keeping in alignment with the national environmental protection guidelines, policies, and laws, AlphaESS has established a full-process energy and water resource management system for the Company's production and operation stages. In terms of operation, the Company works to improve resource utilization efficiency for effective resource utilization through the "2R" path of "reducing operational emissions (Reduce)" and "recycling economy (Recycle)".

Green Production and Operation

With the increasingly growing global market of AlphaESS, customers have put forward higher requirements for product quality and production capacity. In 2022, the Company will focus on green production and operation by upgrading production line automation, improving energy efficiency, and promoting green parks, gradually transitioning towards intelligent, digital, and low-carbon upgrades.

Upgrading Production Line Automation



Automatic assembly line for battery cell modules (production site in Nantong)

Currently, the Company has 6 automatic production lines for battery modules, which have the production capacity for square battery modules and large cylindrical battery modules, with technical processes such as cell layout, cell assembly, cell welding, supporting electrical connections, and thermal management in the grouping process.

At the production site of the headquarters in Nantong, compared to the early semi-automatic production line of square battery modules, by optimizing the module structure and upgrading 18 manufacturing processes, the Company has been able to reduce costs and increase efficiency while ensuring process stability and product quality.

The Company also introduced an automatic production line for large cylindrical battery modules at its newly built production site in Nantong, breaking through the traditional production line layout, and bringing a one-piece flow production process for the entire line, which process integrates all working procedures such as module, PACK, aging, packaging and stacking into one automatic production line, and adopts innovated testing plan on aging for the unmanned and automated production regarding this section. Meanwhile, by using robots and automated storage systems, such production line can enable 96 batteries to be tested synchronously and automatically, as a result of which the average time from raw material to finished product for each battery can be reduced to 72 seconds, greatly improving the reliability of the process and the utilization of factory space.

Increasing the production line speed by **92%**

and saving nearly **20%** of manpower

Improving Energy Efficiency



Optimization and transformation of battery aging cycle process (production site in Nantong)

The Company strictly follows the trinity process flow of "planning, production and testing" in the course of production, with the main production processes including cell laser welding, battery assembly, EMS and BMS installation, inverter testing, system functional testing and aging cycle testing, packaging and product warehousing. At the production site of the Nantong headquarters, in light of the actual application scenarios of batteries, the aging cycle process has been optimized and transformed, during which, energy recovery and utilization technology is used for charge-discharge offset whereby the electricity released from battery discharge will be charged to another battery, and then the order of charge and discharge will be controlled to achieve energy reuse, effectively improving energy efficiency.

Estimated saving of electricity by about **3,936** kWh per day

1.44 GWh throughout the year

Promoting Green Parks



Renderings of the smart energy project for the new headquarters building of AlphaESS

The Company's industrial and commercial energy storage products are applied to the Nantong headquarters for "peak-valley arbitrage" through a 2.5MW/7.37MWh 1500V air-cooled battery energy storage system, by charging at low electricity prices during low electricity consumption periods and discharging during peak electricity consumption periods. This can not only save electricity costs but also avoid the risk of power restrictions. Furthermore, the energy storage system can also be used as a backup power source to ensure the safety and stability of power supply in the park. In addition, smart energy projects have been planned for the production sites under construction in Tongzhou and Qidong, Nantong, significantly facilitating the goal of carbon peak and carbon neutrality. Specifically, the building roofs, parking lots and other places in the new plant area will be fully utilized to build photovoltaic power generation systems, solar lights will be set up on the roads, and solar sheds will be established for charging new energy vehicles. At the same time, the energy storage system will be configured based on the distribution and consumption of the plant area to maximize the utilization of green energy and improve the flexibility and intelligence of energy applications. Besides, supporting electric vehicle charging piles will be built to facilitate green traffic in the plant area.



Full-Process Energy Conservation and Emission Reduction

With the concept of energy conservation and environmental protection, the Company focuses on energy conservation and consumption reduction management throughout the entire life cycle of production and manufacturing, by improving product designs and production processes to optimize the comprehensive energy consumption of the production process, while strengthening the environmental protection concept spreading and incentive measures for relevant personnel to give effect to environmental protection in daily production processes, improve operational efficiency, and reduce resource loss.



- The Production Department shall determine its own production plan based on the sales plan of the Sales Department, avoiding the possibility of production and sales disconnection during implementation. Due to the ever-changing market, the Production Department will arrange plans based on past shipments and current inventory conditions to avoid unnecessary waste.
- The Production Department shall keep track of the inventory of various raw materials required for production, with the aim of timely adjusting production and notifying the Procurement Department before material shortages, in order to minimize losses caused by material shortages.
- In order to complete the predetermined production plan, production managers shall keep a close eye on the actual progress of production, with a daily comparison between the actual production and the plan to timely detect gaps and establish effective remedial measures.
- In respect of quality control, production managers shall, while obtaining data about defects, continuously and effectively improve and track quality issues, to reduce defects, and promote effective energy conservation and emission reduction.
- Short-term, long-term, and temporary maintenance plans shall be made for equipment, in order to timely, accurately, and efficiently carry out necessary equipment repairs to ensure normal operation of the equipment and avoid unnecessary waste of personnel and equipment.
- Production managers shall manage the employees with their scope, including understanding their work, health, safety, and ideology status, continuously promoting the concept of sustainable development among them, and encouraging them to actively reduce the concept into practice through various measures.

Production Plan

Raw Materials Procurement

Production Progress

Quality Control

Equipment Maintenance


Personnel Training

Energy conservation and consumption reduction management measures



▶▶ Recycling


Attaching high importance to the recycling of raw materials and packaging materials, AlphaESS has been making endeavors in strict accordance with relevant environmental laws and regulations by improving the effective utilization of raw and auxiliary materials, and reducing the amount of waste disposal at the end to promote effective resource recycling and comprehensive utilization, towards the goal of waste emission reduction. During the reporting period, the Company took various measures to reuse material cartons and incoming pallets, improving resource utilization rate, while reducing procurement costs for similar resources, which has enabled a 100% reuse of material cartons and incoming pallets, thereby facilitating the Company's sustainable development.



Reuse of Material Cartons

- Some material cartons can be recycled and used for packaging of containerized accessories, or if they are unusable or damaged, be recovered for reuse.

Utilization rate
100%



Reuse of Incoming Pallets

- The procurement of pallets for the Production Department can be reduced to conserve resources while saving procurement costs. Damaged pallets can be recycled.

Utilization rate
100%

Main measures for resource utilization of the Company in 2022

KPI for Energy Utilization of the Company in 2022

Indicator	Unit	2022
Gasoline consumption	L	15,000.00
Diesel consumption	L	1,200.00
Liquefied consumption	L	12,000.00
Solar energy consumption	kWh	24,000.00
Purchased electricity (total)	kWh	2,703,137.50


KPI for Water Resources Use of the Company in 2022

Indicator	Unit	2022
Third-party water supply	M ³	15,622.87

Pollutants and Wastes Management


The production and operation process of AlphaESS involved a small amount of environmental pollutants, which were mainly wastewater, exhaust gas, noise, and solid waste. Strictly following the national laws and regulations such as the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste* and various emission and discharge standards, the Company has formulated the "Three Wastes" management system and the *Scrapping Management Regulations* for different emissions and wastes, under which each department shall be responsible for the collection of wastes within their area and ensuring correct classification of them, with the CEO's Office and the EHS Department taking charge of the storage, management, treatment, and supervision of solid waste and hazardous waste respectively, to make certain emission and discharge of wastes in accordance with regulations and standards. During the reporting period, the main pollutants such as exhaust gas and wastewater from each corresponding unit of the Company were all discharged and emitted in an organized and standardized manner.

Main Pollutants and Corresponding Disposal Methods of AlphaESS




Waste water

Waste water is discharged through urban sewage pipelines.




Exhaust gas

After adsorption and purification, the exhaust gas is discharged through the air outlet, and then directed to the top of the production workshop by a fan for discharge.



Noise

Main measures including adopting efficient and low-noise equipment, building insulation and noise reduction are adopted to ensure the up-to-standard emission of noise at the factory boundary.



Solid waste

Including domestic waste and waste packaging materials

Domestic waste is collected and treated by the environmental sanitation department, and waste packaging materials are processed by waste recycling units.

In order to further improve the utilization rate of solid waste and promote the recycling economy, the Company has made waste recycling contracts with environmental protection technology companies, covering waste paper, foam, packing belts, corner guards, wooden pallets, and scrap iron, etc. For wires, plastics, and computers, among others, all departments of the Company have strictly followed the scrapping procedures to determine the quality and value as well as disposed of the waste products which were treated as solid waste after being transported to the designated location. Meanwhile, the Company has made it clear the hazardous waste management plan in the *Codification of Environmental Protection Management Rules*, pursuant to which, for the small amount of waste such as glue bucket liners, waste buckets stained with glue, and waste glue during the production, there will be a dedicated placement area, and experts will be dispatched by the CEO's Office for management; for scrapped accumulator, batteries and the like, a special area with clear markings will be designated for storage in the scrap warehouse, which area shall have a safe distance of more than 2 meters from other areas or be isolated using flame-retardant materials, with the status of scrapped batteries to be checked at least once a week, and timely contact to be made with the local environmental protection agency for reporting and disposal.

Innovative Product Development

Adhering to the service philosophy of "satisfying customer, quality first, value-added service, and continuous improvement", AlphaESS is always customer-centric. To this end, the Company strictly follows the ISO 9001:2015 quality management system, continuously improving the quality of products and services to meeting customer needs with high-quality requirements; keeps giving full play of its strength as a research-oriented enterprise, vigorously promoting scientific and technological research and development to break through specialized technical barriers and solve customers' problems; and strengthens reviews and requirements of supply chain environment, society, and other aspects to promote coordinated and sustainable development of the industry.

Relevant SDGs



INNOVATIVE PRODUCT DEVELOPMENT



Product Quality and Safety

AlphaESS embraces the quality policy and goal of "sincerity, traceability, daily improvement; strictness, comprehensiveness, and zero defects in ten years of operation". Referring to domestic and foreign quality management system standards, the Company has developed more than 20 quality-related management rules, including the *Quality Manual*, the *Production Process Control Procedure*, the *Shipping Inspection Process*, the *Non-conforming Product Control Procedure*, and the *Product Scrapping and Recall Procedure*. Meanwhile, strictly following the quality management process, and in light of the latest laws and regulations, effective measures have been taken to control all potential risks in the production of energy storage systems, taking into account the customer needs, to fully ensure the quality and safety of the Company's products. In addition, the Company has also formulated quality policy requirements and corresponding management methods, to maintain verifying the quality policy's consistency with the Company's strategy, effectiveness and feasibility.



Quality Policy Requirements

- Adapt to the purpose and environment of the organization, and support the strategic direction of the latter
- Provide a framework for establishing management objectives
- Meet the commitment on applicable requirements
- Meet the commitment on constant improvement of management system



Quality Policy Management and Communication

- The formulation, revision, and review of policies shall be presented to the employees for their opinion.
- The quality policy shall be publicized to all employees by document distribution, meeting, bulletin board, and other means.
- The Quality Department shall be responsible for providing quality policy training to all employees to ensure a full understanding of the policy.
- The quality policy shall be made available to the public in an appropriate manner (such as establishing a billboard), and if necessary, to relevant parties.
- During the management review, the suitability of the quality policy will be reviewed. If necessary, modifications or revisions shall be made thereto.

Quality policy management of AlphaESS

Control of Non-conforming Products

With a view to properly ascertaining non-conforming raw materials, semi-finished products, and finished products, as well as identifying, isolating, treating, and preventing unexpected use and delivery of non-conforming products, to "stay away from receiving, manufacturing or passing on" non-conforming products, AlphaESS has developed the *Non-conforming Product Control Procedure* which states the responsibilities and obligations of the Quality Department, the Production Department and other relevant departments during the control of non-conforming products, and specifies a standardized process of managing various types of non-conforming products whereby they shall be subject to rework, repair, scrapping, or concession release, etc., according to the prevailing circumstance after a full consideration.

 <p>Quality Department</p>	<ul style="list-style-type: none"> • The Quality Department shall be responsible for confirming, identifying, separating, reviewing, and making statistical analysis of non-conforming products, proposing improvement measures and suggestions, and tracking the disposal results, repair and re-inspection of non-conforming products. • It shall also take charge of evaluating the responsible departments which shall separate and store non-conforming products as well as disposing of them within the specified time as per the instructions based on the evaluation results, and making claims against suppliers.
 <p>Responsible Departments</p>	<ul style="list-style-type: none"> • The SQE Department shall be responsible for handling non-conforming incoming materials, including feedback to suppliers, handling, and tracking rectification measures. • The Supply Chain Department shall be responsible for handling business matters such as replacement and return related to defective incoming materials from suppliers. • The Production Department shall be responsible for analyzing the causes of non-conformities arising during production and making improvement thereon; conducting rework and repair; identifying suspected non-conforming products discovered during production testing; and applying for maintenance of system with abnormal products during production. • The R&D Center shall be responsible for technical judgment and analysis of suppliers' materials, relevant processes, and finished products. • The Technical Service Department shall be responsible for handling customer returns. • The Sales Department shall be responsible for communicating with customers.

Management responsibilities of different departments of AlphaESS for non-conforming products

Product Identification and Traceability

The Company has developed the *Product Identification and Traceability Control Procedure* to trace the process of product quality formation, ensuring reasonable use of raw materials and compliant shipment of finished products. Each product of the Company has a unique serial code as its identity, the serial code of which is bound with all key raw materials and critical steps via MES (Manufacturing Execution System), with end-to-end traceability. Through the quality function module of MES, digital control can be carried out on the quality inspection of materials, work-in-process products, and finished products, effectively preventing the outflow of non-conforming products.



QC Incentive

In order to fully stimulate QC personal potential as well as improve their work enthusiasm and efficiency, AlphaESS has formulated the *QC Personnel Incentive Rules*, under which, the work efficiency and deficiency of quality engineers and inspectors will be evaluated and assessed by the Company, and corresponding quarterly bonuses will be set; employees who propose effective improvement suggestions for improving work efficiency, identifying product or process risks, and making other contributions will be awarded special contribution incentive bonuses to effectively promote the innovation and sustainable development of quality control procedure.



Code of Conduct Advocated by the Quality Department

- Prioritize work according to importance and urgency
- Face difficulties with a positive mindset
- Be responsible, willing to admit mistakes and active in improvement
- Have strong execution ability, and keep promises
- Be ready for learning new knowledge and skills



Establishing the Values of the Quality Department

- Teamwork, adhering to principles, results orientation, continuous improvement
- More: understanding, help, methods
- Less: complaints, indifference, excuses

Values and Code of Conduct of the Quality Department



System Certification

AlphaESS sticks to the standards of the ISO9001:2015 quality management system to establish and improve its quality management system, with certification and update on an annual basis. Meanwhile, based on its global presence, the Company has obtained over a hundred international mainstream product certifications, including, among others, IEC, UN38.3 (UN), VDE (Germany), UL (US), ASNZS (Australia), JIS (Japan), KBIA (Republic of Korea), and CEI (Italy).



AlphaESS quality management system certifications

Customer Service Management

Customer Service

Upholding a "customer-centric" corporate culture, AlphaESS has been working to improve the whole-process customer services, and has created an excellent customer service system. Institutionally, the Company has developed a series of management rules such as the *Customer Complaint Management Procedure*, the *Customer Satisfaction Management Procedure*, and the *After-sales Problem Handling Procedure*. In terms of organizational structure, the Company has built technical service teams and customer quality teams by region and business to ensure timely acquisition of and rapid response to customer needs. In terms of workflow, the AlphaCloud management platform has been set up to quantitatively track and manage the service process of each customer, further improving the response efficiency of each process.

Regarding customer satisfaction management, to collect customer satisfaction information on the products and services provided by the Company, and understand customer expectations and requirements, the Company conducts customer satisfaction surveys on a semi-yearly basis according to customer satisfaction management procedure. Based on the survey results, improvement plans and implementation measures will be proposed to improve product quality and service level.

1 Preparation of Survey Form

- Determine the plan based on the annual target
- Prepare a *Customer Satisfaction Survey Form*

2 Distribution

- Collect customer information
- Distribute the survey forms based on the actual situation by the after-sales personnel

3 Collection of Forms for Statistics and Analysis

- Collect the survey forms, and conduct statistics on the survey
- Summarize the survey results, analyze the survey, and make a report
- Feed back the analysis report to relevant functional departments

4 Proposing Plan for Implementation and Improvement

- Organize the collection of reports on corrective and preventive measures from the departments
- Organize the implementation of various corrective and preventive measures
- Optimize and adjust relevant sales and service strategies

5 Verification and Filing

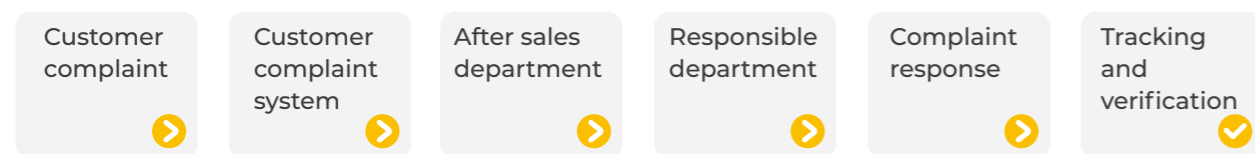
- Verify the effectiveness of various improvement measures and give feedback
- Have a filing and closing meeting to quantitatively evaluate the results and the execution, and close the file to complete the investigation

Customer satisfaction survey process

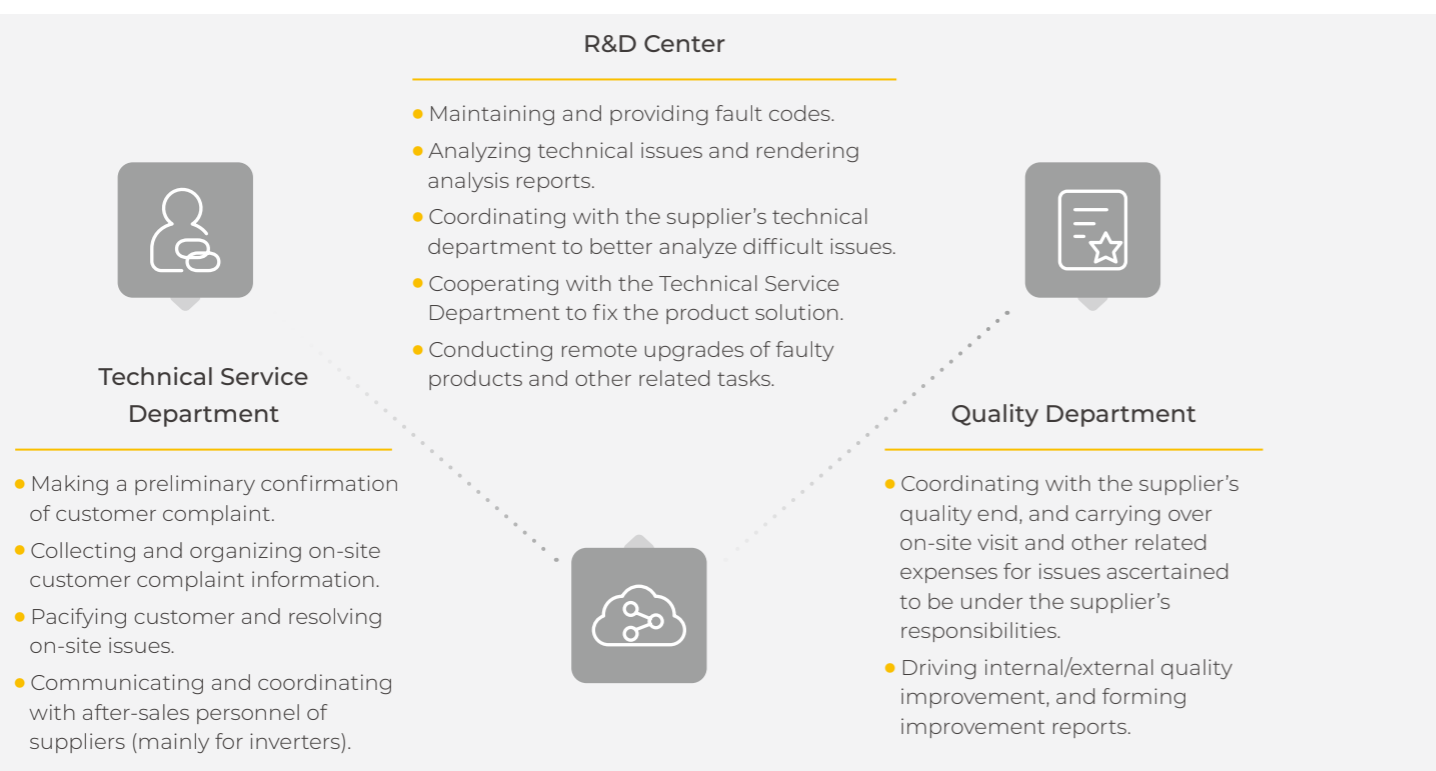




In respect of customer complaint management, in order to quickly respond to and address customer issues and requests, the Company has put in place the *Customer Complaint Management Procedure* and facilitated the management process through the AlphaCloud management platform with core technology. Firstly, a customer may, after activating the purchased product through registration or binding, create a customer complaint form directly via the AlphaCloud. Then, the customer complaint form will be pushed to the authorized account of the corresponding regional subsidiary, so that the after-sales team can remotely diagnose the cause of the complaint, promptly develop a satisfactory and feasible solution for the customer, and arrange for the technical service department to solve the problem remotely or make the repair on site. In the course of handling customer complaints, the corresponding responsible departments perform their respective duties while working with each other for efficiency: the after-sales personnel of the regional department have the authority to handle customer complaints and view equipment data anomalies and data errors; the after-sales department is responsible for collecting customer complaint information and providing feedback on the handling results; the R&D, production, and procurement departments are responsible for analyzing the causes of customer complaints and submitting corrective and preventive measures; and the quality management department is responsible for verifying and tracking the corrective and preventive measures. During problem identification and solution, the Company has been able to improve the customer complaint management process, thereby to help maintain long-term relationship with customers.



In the after-sales management section, for the sake of improving the Company's response to after-sales problems and claims, ensuring the standardization, rationalization, and timeliness of the management process, and enabling effective collaboration among departments, AlphaESS has developed its after-sales problem handling procedure based on the actual situation of its projects. The Technical Service Department, the R&D Center, and the Quality Control Center are respectively responsible for confirming, communicating, and coordinating customer complaints, upgrading faulty products, and managing quality improvement, etc., in after-sales management, which can help address after-sales problems and improving after-sales work at different levels to enhance the quality of the Company's products and services from the source.



Information and Privacy Security

According to the overall requirements of information security management of "safety first, emphasis on prevention, enhancing both management and technology, and integrated governance", and taking customer value as the first orientation, AlphaESS has constructed a strict and high-quality information security management system from such aspects as management system, institutional documents, and technical deployment to regulate data operation processes of various departments, rendering information security management controllable. During the reporting period, the Company has never been subject to punishment by relevant authorities for violation of laws and regulations related to information security and privacy protection.

Improve Management System

- Internally, the Process and Digitization Department is mainly responsible for the Company's information security management, including establishing and improving institutional norms, conducting offline and online training, and comprehensively enhancing employees' security awareness. Externally, the Cloud Platform Development Department may access the operational status data of the energy storage systems on the server according to authorized permissions, of which the data will be encrypted and desensitized, in order to provide users with predicted power generation, electricity load, and other information.

Develop Management System

- The *General Principles of Information Security* stipulate that in no way shall any data of an information system database be directly modified; while the *Cloud Platform System Data Management Rules* define the requirements for data management purposes, management scope, management personnel responsibilities, and data modification management, etc., pursuant to which no data shall be exported from the database without approval.

Deploy Encryption Technology

- Data masking is conducted for users' personal privacy information at the code level, encryption processing is carried out for important customer privacy information, and SSL (Secure Sockets Layer) protocol is deployed to ensure the security of important personal privacy data during data transmission. Meanwhile, the Company records and audits various operations of the database through a database audit system.

Enter into Non-disclosure Agreement

- *Non-disclosure Agreement* and *Non-competition Agreement* are made with core technicians
- The Company fully complies with the *Data Security Law of the People's Republic of China*, the *Personal Information Protection Law of People's Republic of China*, the *General Data Protection Regulation (GDPR)* of the European Union and other relevant national and regional laws and regulations in carrying out its business. Privacy security of customers is protected in an all-round way, with measures adopted to encrypt sensitive communication data during the customer service process, and a graded data access strategy used within the Company to ensure that sensitive information is only accessible to authorized staff for specific work purposes such as after-sales services and maintenance, effectively avoiding potential business risks, and further earning customer trusts in the efficient and timely global service network.

Information Security Emergency Drill

- The Company has established and improved an emergency response mechanism for information security operations, to verify the effectiveness of the comprehensive emergency response plan for information security and the specialized emergency response plan for business technology, see the organizational and command capabilities and emergency response capabilities of relevant organizations and personnel for information security emergencies, make certain that all emergency command and dispatch work is carried out quickly, efficiently, and orderly to meet the needs of information system operation guarantee and fault recovery in emergency situations, and ensure the security and smoothness of the information system. Through drills, the Company has been able to improve the level and efficiency of various departments to respond to emergencies, identify deficiencies in the emergency plan, and further improve the plan.



Data Compliance Certification

The data security management of the Company's global operations complies with relevant local laws and regulations.

In China, SGS-CSTC Standards Technical Services Co., Ltd. issued the *Product Data Privacy Protection Verification Report* in August 2022 after running special check on the Company and conducting verification of the contact information, user information, device information, address information, link network information, account information, login information, password information, user complaints and other contents on the cloud platform system of the Company in accordance with relevant requirements of the EU GDPR, indicating that the Company has passed all certification inspections and complied with relevant provisions of the *Personal Information Protection Law of the People's Republic of China*, the *Data Security Law of the People's Republic of China*, and the *Cyber Security Law of the People's Republic of China*, among other laws and regulations.

Outside China, based on the legal opinions issued by Grandall (Beijing) Law Firm, Thümmel, Schütze & Partner PartG mbB, Maddocks and RHTLaw Asia LLP, the Company has been in compliance with relevant regulations including the GDPR of the EU, the APPs and the Privacy Protection Act of Australia, and the PDPA of Singapore for conducting its business in major overseas regions, and has obtained the product data privacy protection certification under the GDPR issued by the certification authority SGS.



Product data privacy protection certification under the GDPR

Technology R&D Innovation

R&D Innovation

Since the launch of the first-generation residential energy storage system in 2014, AlphaESS has continued to consolidate its technology advantages in the field of electrochemical energy storage, and gradually developed four core technology systems, including BMS, EMS, system integration and cloud management platform. The Company adheres to the safe and reliable lithium iron phosphate technology route, selects globally renowned battery suppliers, researches and produces its own full-power energy storage systems covering consumers, industrial and commercial and large-scale application scenarios, and provides a wealth of solutions such as self-sufficiency, peak/valley arbitrage, demand charge management, virtual power plant, dynamic capacity expansion, and so on, to bring diversified benefits to users while ensuring a safe, stable, and long-lasting energy storage system. Moreover, through digital transformation, we facilitate the intelligent integration of source, grid, load and storage, thus accelerating the construction of a new power system in China and actively responding to the global low-carbon strategy.



Residential energy storage system (0.5kW-30kW)

Increase families' new energy self-sufficiency rate, save electricity cost by peak/valley arbitrage, supply power in emergency, etc.



Industrial and commercial/large-scale energy storage system (30kW-10MW+)

Effectively regulate power fluctuations and reduce the rate of PV and wind power abandonment on the power generation side; assist in peak and frequency regulation and ease transmission and distribution blockage on the grid side; help enterprises realize time-of-day tariff management and demand management, and improve power supply reliability on the power consumption side.

AlphaESS's Four Technology Advantages



BMS

BMS is the core component to protect and manage the battery, and its main functions include real-time high-precision sampling and monitoring of voltage, current and temperature, accurate estimation of the battery status, and multi-level protection of the battery cell, in addition to the function of communication with EMS and SCADA.

- Highly reliable and secure hardware and software design
- Highly accurate data acquisition capability
- Highly accurate SOC, SOH, SOP algorithms
- Efficient equalization technology
- Unique medium- and high-voltage parallel and series connection technologies, etc.



EMS

EMS is the control core of the energy storage system, which all-roundly guarantees the security of power supply and the economy of power consumption of the energy storage system in complex application scenarios, and its main functions include controlling the inverter and collecting inverter data, controlling the battery module and collecting data of the electric cell, executing the logic (of various applications) and integrating with other equipment for scheduling.

- High data granularity and accuracy
- Comprehensive data collection
- Versatility and high compatibility
- Ensure the security of both system and information



System Integration

The Company conducts independent research and development of EMS and BMS, and purchases high-quality lithium iron phosphate battery cells, inverter modules and other components to produce a complete energy storage system.

- Active safety technology that enhances system utilization
- Thermal management technology that ensures system safety and reliability
- System assembly technology that improves the efficiency of system installation



Alpha Cloud

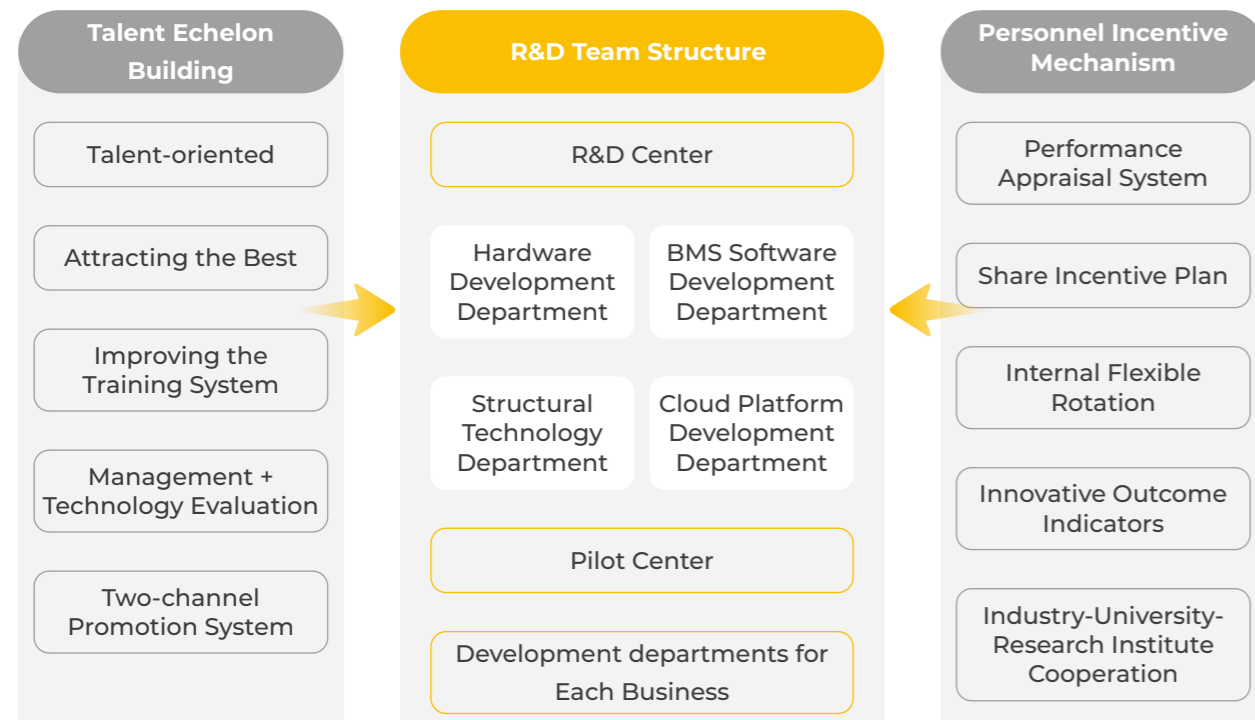
The cloud management platform, Alpha Cloud, combines PV power forecasting and load forecasting to provide users with system status monitoring, intelligent control, power trading and energy services.

- Remote monitoring and configuration
- Remote diagnosis and operation & maintenance
- Remote scheduling and big data analysis, etc.

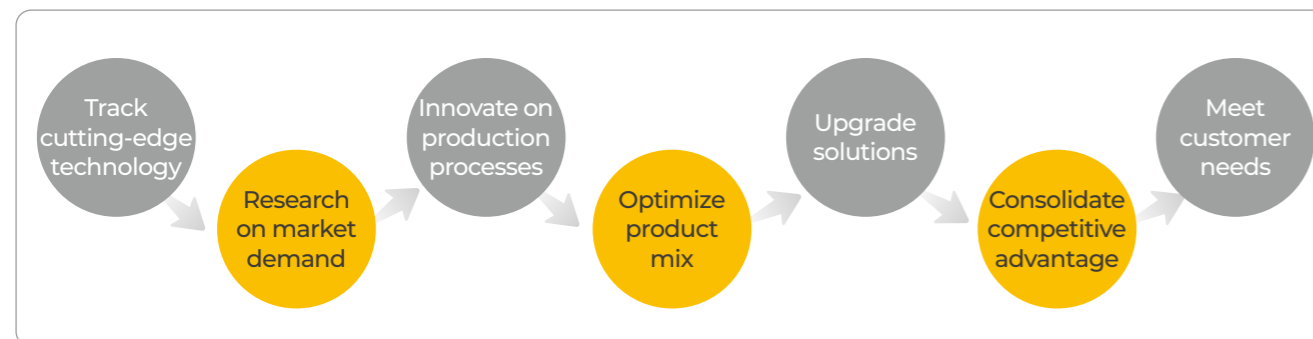


R&D Innovation Management Mechanism

The Company has established a sound R&D innovation management mechanism to build a high-efficiency and advanced R&D team. On the one hand, our core technology team consists of composite talents in the fields of electric power technology research and development, energy storage equipment manufacturing, computer big data, etc., and has a globalized vision of the technological development of the new energy industry. On the other hand, the Company attaches great importance to the construction of R&D personnel echelon, introduces and cultivates R&D talents with extensive theoretical and practical experience, motivates the team in terms of employee welfare, training and development, regular assessment, etc., and creates an active and open innovation atmosphere in the Company.



In terms of product development, the Company is committed to providing comprehensive smart new energy solutions for residential, industrial and commercial users based on endogenous and exogenous demands. Endogenous demand refers to the independent research of our R&D department based on the current status and future development trends of industry technology and our pioneering research on the next generation of innovative technologies by using our years of experience, in order to lay a solid foundation for the Company to maintain the advanced scientific research. Exogenous demand refers to our product and technology R&D based on market feedback and customer demand, so as to make quick response to market demand and ensure our products' competitiveness.



AlphaESS's R&D Innovation Management Mechanism

During the reporting period



The Company has applied for a total of **132** patents

Including **28** invention patents

As of the end of the reporting period



The Company has granted a total of **147** patents

utility models	invention patents	design patents
Including 80	20	47



The Company has been awarded a total of **69** software copyrights.

Cooperation with Universities and Enterprise Qualifications

AlphaESS has been active in industry-academia-research cooperation projects, establishing long-term strategic cooperation relationships with Nankai University, Nanjing University, Nantong University and other universities, with constant efforts to deepen business exchanges and cooperation between schools and enterprise, and provide a resource sharing platform, for mutual benefits and common development. In addition, the Company has set up high-level R&D platforms such as Jiangsu Engineering Technology Research Center, Jiangsu Foreign Expert Workshop, and Jiangsu Postdoctoral Program to accelerate the transformation and implementation of innovative achievements.



Results of the industry-academia-research cooperation and exchanged involved by AlphaESS

During the reporting period

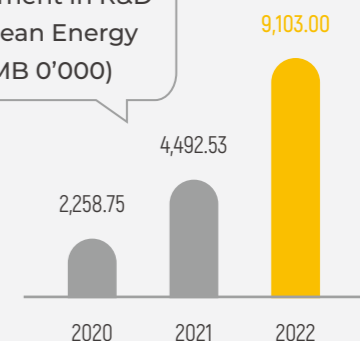


AlphaESS has invested RMB **9,103** million in energy research and development



which was made relating to clean energy. **100%**

Investment in R&D on Clean Energy (RMB 0'000)





» Digital Construction

With a high focus on digital construction, AlphaESS has worked to promote the integration of data in production, supply, sales and other related businesses, opening up data sharing paths for different business processes, and effectively improving information utilization efficiency. The Company has been conducting blueprint research since 2021 and gradually undertaking the construction of five major information systems, i.e., CRM, PLM, SAP, WMS, and OA. This has enabled more efficient and intelligent management collaboration in marketing, research and development, procurement, warehousing, and office work, etc., moving forward the Company's digital transformation and innovation.



During the reporting period, the Company's management efficiency has been effectively improved with the online platform system:

The monthly financial settlement has been reduced by

5 days

The timeliness rate of procurement delivery has been increased by

30%

The customs clearance time has been saved by

1 hour for each shipment



Supply Chain Management

AlphaESS regards sustainable supply chain management as an important foundation for the Company's excellent products and services. In order to ensure that the products provided by suppliers comply with relevant national and local laws and regulations, as well as the Company's requirements, and to effectively supervise and manage the products provided by suppliers, the Company has formulated various management rules such as the *Supplier Management Procedure* to develop and select qualified and eligible suppliers, ensure timely supply of high-quality products and services in a most cost-efficient manner, and fully improve the resilience and stability of its supply chain. Meanwhile, the Company also takes into account suppliers' practices in environmental protection and social responsibility, among other aspects, leading the energy storage industry chain towards net-zero carbon development.

» Supplier Management

In the course of supplier admission, different departments screen and verify suppliers from various perspectives to have full control over their product quality and build a stable supply chain. The Strategic Procurement Department is responsible for the collection, preliminary evaluation, and selection of supplier information, leading the on-site review of suppliers, obtaining certification results, keeping review records, and maintaining the *List of Qualified Suppliers*; the Supply Chain Department is responsible for procurement, tracking, and other follow-up matters for materials based on the suppliers selected by the Strategic Procurement Department; the R&D Department is responsible for preparing the *Acknowledgement of Materials* and developing identification standards and classifications for key components and raw materials; the Supplier Quality Management Department is responsible for evaluating the quality of products from suppliers, assessing the supplier quality management system, reviewing the construction and maintenance of the supplier system, thereby assisting the Strategic Procurement Department in initiating the *Qualified Supplier Establishment Review Form* as well as creating and revising the *List of Qualified Suppliers*.

In terms of supplier management, the Company conducts regular maintenance and evaluation for qualified suppliers in accordance with the procedure based on strict requirements for the admission, ensuring that qualified suppliers provide high-quality products and services steadily and effectively.

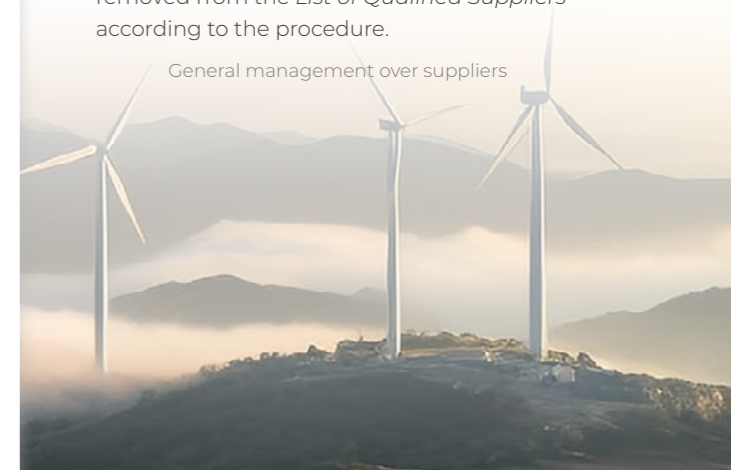
Suppliers List Update

- The list of qualified suppliers shall be updated quarterly and from time to time if a supplier is under any of the following circumstances:
- There is a change in the ownership of the supplier;
- There is a material change in the supplier's organizational structure;
- The Quality Department proposes to disqualify the supplier for finding serious quality issues with raw materials from the supplier;
- There is a material change in the supplier's product price;
- The Strategic Procurement Department considers it necessary to conduct reassessment, in which case, the reassessment records shall be kept and determination shall be made on whether to retain the qualification of the supplier based on the reassessment results;
- There is a change in the supplier's premises.

Supplier Review

- The Supplier Quality Management Department shall work out an annual supplier review plan in January of each year to review the processes of core material suppliers. The supplier shall be required to rectify any issues found during the review and submit a rectification report.
- In case of an urgent quality event, an unannounced inspection shall be conducted at the supplier's site to ascertain the problem, and the supplier shall be required to submit an improvement report accordingly.
- Suppliers who fail the pass the review shall be removed from the *List of Qualified Suppliers* according to the procedure.

General management over suppliers





Case | Conducting a supplier conference to jointly build a sustainable supply chain



In January 2022, the Company held a supplier conference with all levels of suppliers invited, promoting the Company's green supply chain concept and transparent procurement system. Through the conference, the Company has been able to effectively drive retention of, and build stable long-term cooperative relationships with, suppliers, while facilitating suppliers to fulfil their environmental and social responsibilities, thereby to enhance the risk resistance and resilience of the industrial chain for common and stable development of the industry.



AlphaESS Supplier Conference

During the reporting period



the Company has worked with a total of

335 suppliers, of whom



are new suppliers

120



have entered into the supplier code of conduct

100%



have entered in clauses incorporating environmental and labor requirements

100%



have been assessed for social impact

100%





have been assessed for environmental impact

100%

► Sustainable Supply Chain

AlphaESS adheres to the concept of green energy storage, seeking to create a green and sustainable supply chain. In accordance with relevant national laws and regulations and referring to international market requirements, the Company has put forward corresponding requirements and control measures for suppliers while ensuring that the Company takes the initiative to assume environmental and social responsibilities, so as to avoid supply chain-related environmental and social risks, improve the resilience of the Company's supply chain, and procure a sustainable development of green supply chain. Referring to the REACH Regulation and the RoHS2.0 Standard, the Company has raised relevant requirements and conducted relevant control measures for the raw materials provided by suppliers, with relevant agreements made with them, to ensure the stable development of the green supply chain.

References	Specific Provisions	Company Measures
 REACH Regulation	The regulation aims to protect human health and environmental safety, subjecting all related chemicals to a full set of procedures such as registration, evaluation, authorization, and restriction to ensure that relevant chemicals substances are safe to the environment and the human beings.	<p>The Company requires that the raw materials provided by suppliers must comply with REACH Regulation and the RoHS2.0 Standard, and if necessary, the suppliers shall provide corresponding testing reports. A supplier providing non-conforming products may be subject to litigation by the Company.</p>
 RoHS2.0 Standard	This standard is used to standardize the materials and processes of electronic and electrical products, so as to make them more conducive to human health and environmental protection, under which six substances namely lead, mercury, cadmium, hexavalent chromium, PBB and PBDE shall be eliminated from electrical and electronic products, and particularly, the content of lead shall not exceed 0.1%.	

►► Transparent Procurement

For the purposes of ensuring the integrity in the Company's procurement process, preventing corruption, and creating a good business and cooperation environment, the Company has formulated an integrity agreement in accordance with national and local laws and regulations as well as the Company's rules and regulations to prohibit improper pay-to-play during the supply chain management.

While providing integrity education for our employees at all levels in procurement, sales, engineering, technical development, finance, management and other posts, supervising them and holding integrity management meetings for them, the Company also requires suppliers to abide by the Company's integrity management rules, promise to establish a sound integrity system, carry out integrity education, as well as supervise and investigate behaviors running counter to laws and discipline. Where any employee of a supplier and its affiliate violate the integrity responsibilities of the integrity agreement, the Company's Integrity Supervision Department will make investigation into, collect information from, and impose corresponding penalties on the relevant personnel of the supplier and its affiliate.

►► Conflict Minerals

AlphaESS identifies and evaluates the potential risks of adverse effects from engaging in mining, trading, processing, and exporting mineral resources in "conflict affected and high-risk areas", taking its obligation of respecting human rights and keeping away from conflicts. The Company undertakes to avoid including 3TG (tin, tantalum, tungsten and gold) materials related to conflict minerals in its products, refrain from conducting any activities that provide funding for conflicts, and comply with relevant UN resolutions. Meanwhile, the Company is establishing its management rules on suppliers for conflict minerals to further improve its ability of due management in the amenable mineral supply chain.

Reinforcing People-Oriented Construction

Taking employees as the cornerstone of enterprise development, AlphaESS respects the legitimate rights and interests of all employees while valuing talent growth and development. A sound human resources management system has been established by the Company to make detailed provisions and guidance on employee benefits, promotion and training, among others, energizing employees in an all-round way, fully stimulating their development potential, and providing them with good welfare and development opportunities, for both talent growth and company development.

Relevant SDGs





Employment Management

Human Resources Management

As a global enterprise, AlphaESS strictly abides by the *Labor Law of the People's Republic of China* and other relevant laws and regulations in China and other places of operation overseas, having formulated such management rules as the *Labor Contract Management Rules*, the *Employee Career Development Channel Management Rules*, and the *Organization and Position Management Rules*, and laid a sound foundation for human resource management, with constant endeavor to optimize the management system, and actively promote employment.

Always upholding the talent mindset of "respect", "incentive" and "growth", to match the rapid corporate development, the Company has upgraded the Human Resources Department to the Organization Development Center for coordinating the talent strategic objectives and providing talent guarantee planning, and adopted the management model primarily supported by "overseas human resources partners, domestic human resources partners, as well as human resources experts and shared service platform", to improve the talent management mechanism and ensure the sustainable operation of the Company.

Equal Employment

A series of rules and procedures including without limitation the *Anti-Discrimination, Anti-Harassment and Anti-Abuse Management Rules*, the *Juvenile Labor, Child Labor and Management Rules*, and the *Management Procedure for Prohibiting Forced Labor*, have been formulated by AlphaESS whereby to oppose all discriminatory words and deeds in personnel recruitment, employment and other critical sections, emphasize abilities of candidates, select candidates based on their merits taking into account the job responsibilities and requirements, and firmly prohibit the use of child and juvenile labor.

The Company values employee equality, and resolutely prohibits forced labor to ensure that all employees are voluntarily employed. It is a clear policy of the Company to adopt equal pay for equal work, without discrimination against employees for their race, skin color, social position, nationality, religion, disability, gender, age, sexual orientation, political status, and marital status, etc. Candidates shall not be required to undergo pregnancy and mandatory medical examinations, nor shall any adverse words and deeds be made thereon based on the examination results. Moreover, for the disabled, the Company will grant disability allowances in accordance with regulations to assist them in re-employment.



Case | AlphaESS' overseas headquarters was selected as one of the first enterprises into the "HR PowerBank" program in Singapore to assist the disabled in re-employment



In June 2022, AlphaESS established its overseas headquarters in Singapore. After level-by-level review and inspection by multiple local institutions of the brand awareness, product R&D strength and other aspects of the applicant enterprises, AlphaESS successfully became one of the first enterprises to be selected into the Singapore "HR PowerBank" program in November of the same year, and won the certificate of award personally issued by Ms. Halimah Yacob, the President of Singapore, at the award ceremony. This program was officially launched by a well-known training institution in Singapore, Human Capital, in 2021, with the aim of helping people with physical disabilities find employment again. By joining the HR PowerBank program, the overseas headquarters of the Company tries it best to help the disabled reintegrate into society and support public welfare undertakings, giving full play to the "Energy" of AlphaESS to create more value for society and promote harmonious social development.



Award ceremony with government leaders of Singapore

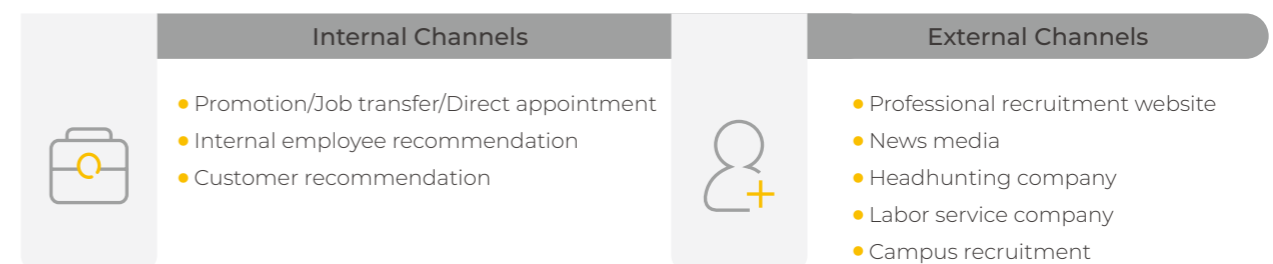


Award certificate for the "HR PowerBank" program

In addition, the Company explicitly objects to workplace harassment and protects employees from sexual harassment, threats, and intimidation at work. Employees who find any of the foregoing incidents are encouraged to file complaints with employee representatives, heads of the CEO's Office or the Organization Development Center, senior leaders including the General Manager, and the labor security administration, in connection with which, confidentiality and non-retaliatory policies for whistleblowers have been established to protect employees' privacy and prevent them from retaliation due to complaints of discrimination, harassment, and abuse.

Talent Introduction

AlphaESS attaches great importance to brain gain for corporate development with talent, for which a sound recruitment management system has been established, and efforts have been continued to expand the recruitment channels. In 2022, the Company revised and updated the *Recruitment Management Rules* and other institutional documents, systematically and purposefully introducing outstanding talents at home and abroad, and strengthening the construction of talent teams, to enhance the its global market competitiveness, and match its long-term development and strategic planning. Additionally, the Company has actively cooperated with various universities and research institutes, with the scale of on-campus recruitment expanded year by year, providing strong human resource support towards the achievement of the Company's strategic goals.



Talent introduction channels



Employee Composition

AlphaESS is committed to creating an equal, inclusive, and diverse platform. In 2022, the Company has 738 employees in total, with a labor contract signing rate of 100%. In addition, the Company values the power of women and provides equal development opportunities for female employees who account for 35.91% of the total number of employees, including 24 middle-senior female managers that represent 24.24% of the total number in the management.

During the reporting period



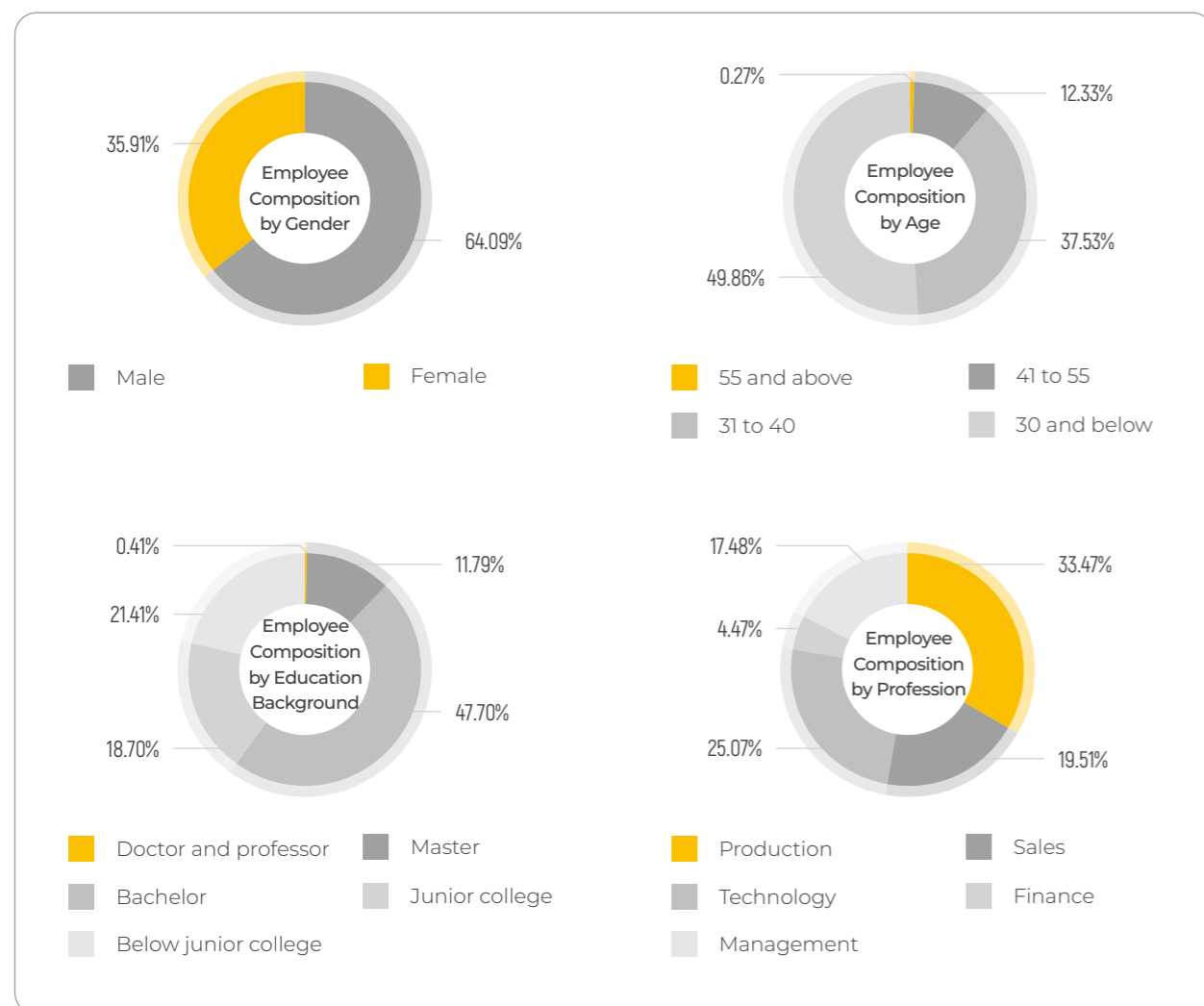
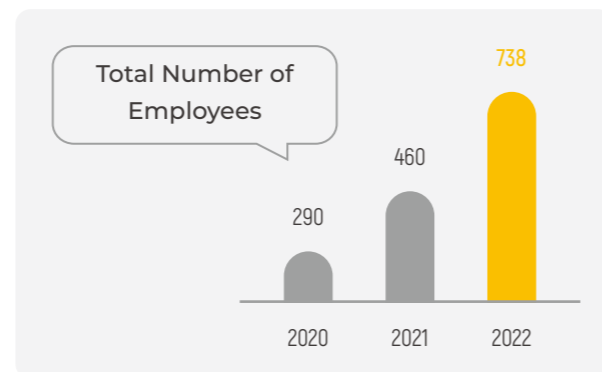
Labor contract signing rate

100%



Labor dispatched by agencies

0



Employee Rights and Benefits

Equal Communication

AlphaESS respects and protects employees' freedom of association, collective bargaining, and peaceful assembly rights, who accordingly has formulated and implemented the *Management Procedures for Freedom of Association and Collective Bargaining*, as well as set up and maintained effective appeal and complaint procedures, to ensure that employees' legitimate rights are free from interference, restriction, or compelling, and give effect to democratic communication, decision-making, and management.

Honoring the right of employees to free expression, the Company has set up a communication bridge with employees, making available multiple channels such as hotline, general manager email, "AlphaESS Online", employee satisfaction survey, and regular meeting to smooth employees' way to express their opinions, and create a more harmonious, equal and democratic working environment.

General Manager Email

It is a green channel for employees to directly present issues to senior officers, promoting vertical interaction and communication within the Company.

Regular Meeting

Regular meetings are held from the company level to the department level to communicate major reforms, business operations, and work arrangements.

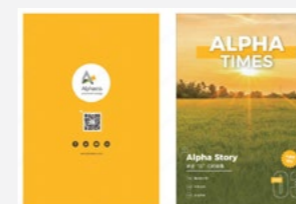
Notice Board & Report Box



Notice board and report box in the office area

Corporate Internal Journal

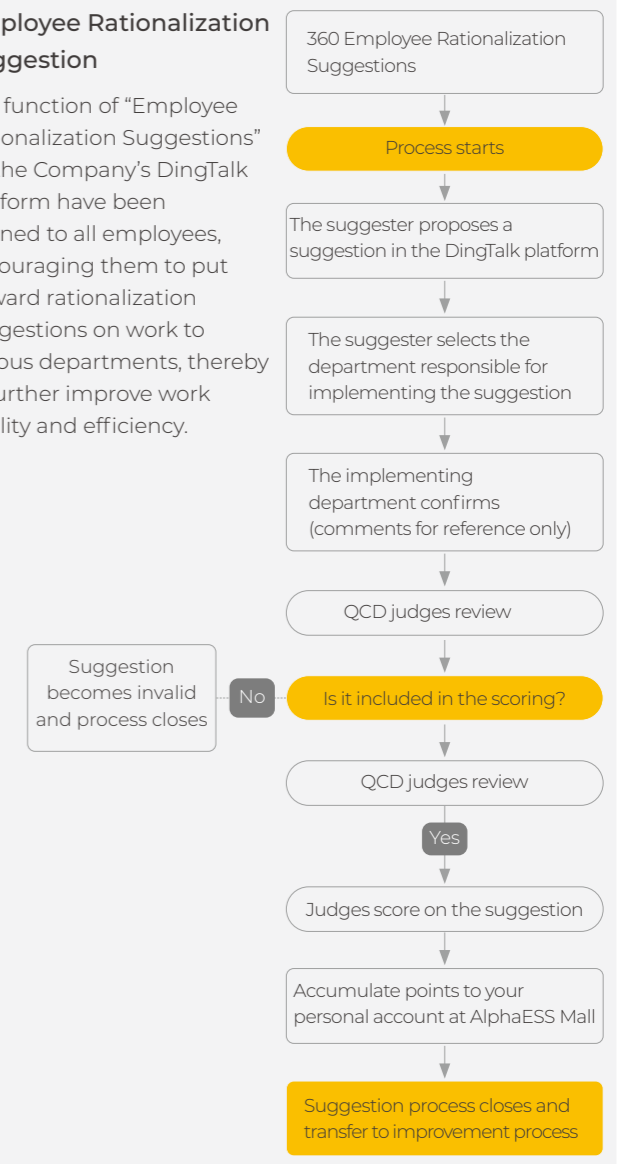
ALPHA TIMES, which has been published in three issues since its launch in 2020, documents stories of efforts and cultural values of members in the AlphaESS family.



Issue 3 of AlphaESS Internal Journal - A Special for the 10th Anniversary

Employee Rationalization Suggestion

The function of "Employee Rationalization Suggestions" on the Company's DingTalk platform have been opened to all employees, encouraging them to put forward rationalization suggestions on work to further improve work quality and efficiency.



Reasonable suggestion submission process



Case | Conducting regular satisfaction surveys to deepen understanding of employee suggestions



AlphaESS conducts a quarterly satisfaction survey for all employees through online anonymous questionnaires, which covers, inter alia, the work environment and atmosphere, employee dormitories and canteens, employee benefits and activities. Based on the survey results, improvement plans will be worked out and implemented by the Company to help further improve employee satisfaction.

In 2022, the employee satisfaction has an average score of 80.40, representing a rising trend in general.



Salary Incentive

In accordance with national laws and regulations, AlphaESS has been working to regulate its salary management, establishing and improving a salary incentive system and policy in line with the Company's development, formulating management rules such as the *Salary Management Rules* and the *Performance Management Rules*, and constructing a performance management mechanism, value distribution mechanism, and internal incentive mechanism with "AlphaESS" characteristics, for fair, reasonable, open, and transparent positive feedback that complements the development goals of both the employees and the Company, thereby to create an excellent and advanced organizational performance.

Ongoing efforts are used by the Company to regulate its performance management and optimize the scientificity and operability of its performance evaluation. Assessment objectives are set and implemented level by level, towards which, top-down joint force are formed through KPI, OKR, GSA and other objectives management methods. Meanwhile, the Company determines the rank and salary after taking full account of the education background, work experience and other factors of the employees, having built a salary structure consisting of fixed salary and floating salary according to the formed by "the principal of distribution according to work and efficiency comes first", "the performance-oriented principle" and "the sustainable development principle", of which the salary will be adjusted twice a year based on the performance results, and connection will be made between the performance and job promotion, salary adjustment and year-end bonus, to help further attract and retain talents.

Employee salary structure

- | Fixed salary | Floating salary |
|---|---|
| <ul style="list-style-type: none"> Position salary Government subsidy Education subsidy Seniority allowance Skill allowance ... | <ul style="list-style-type: none"> Rank performance salary Performance commission Project bonus Overtime pay/ piece-rate salary Year-end bonus |

In addition, the Company has adopted an ESOP equity incentive plan that closely combines corporate and personal interests, endowing employees with a sense of ownership and effectively enhancing the cohesion of core talents, to attract and retain talents, activate human resources, and improve the Company's core competitiveness, for a win-win situation between the Company and the employees.

Case | AlphaESS has implemented an employee equity incentive plan for three consecutive years



AlphaESS highly values the construction of R&D personnel echelon, actively cultivates the innovative talent team, and endeavors to attract excellent talents to join the Company. Pursuant to the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, and other relevant laws, regulations and normative documents, as well as the *Articles of Association*, the Company has developed an equity incentive plan to further build and improve its long-term incentive mechanism.

In 2020, 2021, and 2022, the Company granted equity incentives to certain senior officers and core employees through four platforms, namely Nantong Qingneng, Nantong Qianhong, Qingneng No.2, and Qingneng No.3, with the recognized share-based payment amounting to RMB 1,320,200, RMB 4,020,200, and RMB 6,990,500, respectively. By implementing equity incentives, the Company has fully energized middle-senior managers and core employees, playing a positive role in the Company's production and operation.

Employee Welfare

Embracing the "accountable, cooperative and collaborative" concept, AlphaESS cares about the work and life of every employee, devoted to becoming the most solid backing for them. The Company is referring to and promoting the SA 8000 (Social Accountability 8000 International standard) certification, providing diversified welfare plans for employees, and helping them better and faster integrate into the Company.

Employees are entitled to such warfare as statutory holidays, paid annual leave, marriage and funeral leave, maternity leave, paternity leave, and full-pay sick leave granted by the Company. Besides, in addition to the statutory social insurances and housing provident funds, employees also enjoy commercial insurances, annual free physical examinations, travel, irregular group building activities, birthday and festival allowances, charity funds and other subsidies and cares. To further enhance employees' sense of happiness, the Company has set up employee dormitories and canteens in multiple locations, and has established the Dietary Management Committee at the Nantong headquarters to ensure that employees have a healthy and reasonable diet. Furthermore, the Company gives employees flextime, allowing employees to flexibly adjust the working time according to the nature of their work.

Statutory Benefits

Social Insurances and Housing Provident Fund:

Pension insurance, medical insurance, work-related injury insurance, maternity insurance, unemployment insurance, and housing provident fund

Statutory Leave: Annual leave, marriage leave, pregnancy examination leave, maternity leave, breastfeeding leave, parental leave, funeral leave, sick leave, personal leave, work-related injury leave, and statutory holidays

High Temperature Subsidy

Employee health

Annual physical examination, and additional commercial insurance

Holiday benefits

Activities and gifts for statutory holidays and important festivals

Charitable funds

Marriage gift, hospitalization and funeral condolence, serious illness assistance, special hardship or other assistance to employees

Other benefits

Birthday benefits, team-building benefits, entry anniversary benefits, uniforms; food, housing, traffic and other subsidies





Case | The Company has established the Dietary Management Committee to ensure healthy and reasonable diet for employees



With a talent-based mindset, the Company puts high attention to the healthy diet of its employees. In October 2022, AlphaESS (Tongzhou factory) established the Dietary Management Committee, which is responsible for overseeing quality of the diet provided by the Company's canteen, ensuring the safety of the employees' meals, and assisting the Company in understanding the suggestions and opinions of the employees on the dietary issues. During the three-month trial period, the Dietary Management Committee has carried out 9 rounds of routine inspections on the canteen, detecting a total of 34 problems which have been fully rectified with good results to ensure the safety of the Company's meals and safeguard the employees' dietary health. At present, the committee has run formally and will provide monthly feedback to the Company on the inspections.



Employee canteen at the Company's Nantong headquarters



The Company keeps upgrading its cultural and sport activities, and has organized and provided such activities as footballs, basketballs, clubs, and associations, while setting a gym and fitness equipment in the office area, and building a platform for employees' body building, relaxing and showcasing in their spare time. This allows employees to develop their interests and hobbies, further enhancing their satisfaction and sense of belonging to the Company.

- 1 Women's Day activity
- 2 Badminton game
- 3 Basketball game
- 4 Football
- 5 Christmas activity

Employee Training and Development

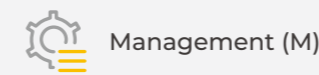
» Career Development

Keeping in mind value creation, AlphaESS has developed various management rules such as the *Employee Career Development Channel Management Rules*, the *Employee Transfer and Promotion Management Regulations*, and the *Organization and Position Management Rules* to conduct better promotion management based on job value and employee career development demands, create diversified development channels, and promote the common development of employees and the Company.

The Company classify job families into two categories, i.e., management and non-management, of which the non-management is further classified into three categories, i.e., technology, profession, and output. Each job family is divided into 14 ranks depending on different job families and positions, with each rank having definite responsibilities. Unlike the single promotion mode, the Company has opened up two promotion paths for employees, namely rank and position promotion vertically, and family promotion horizontally, providing them with more development opportunities, enriching their career development choices, and achieving a balance between the Company's human resource needs and personal career development.

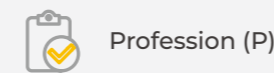
AlphaESS Career Development Channels

Management



- Management personnel at the department level in the Company's organizational structure

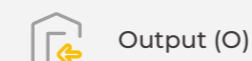
Non-management



- Mainly include positions in financial management, personnel administration, information management, quality management, planning management, procurement management, marketing, customer service, logistics management, audit and other related work;
- Focus on knowledge and skills, with evaluation made according to professional contributions and actual performance;
- Adopt a process and problem accountability system.



- Mainly include positions in product research and development, testing and development, process development, technical support (after-sales), equipment maintenance, power support, and engineering construction, etc.;
- Focus on ability, with evaluation made according to resource input and product contribution;
- Implement a profession and project accountability system.



- Mainly include positions in production, inspection, packaging, and maintenance, etc.;
- Focus on workload management.



Talent Cultivation

AlphaESS places considerable value on talent cultivation, and has developed the *Training Management Rules*, as well as constructed a training system that consists of three major parts, namely organizational capability improvement, guarantee system, and supporting system, with the Company's characteristic by integrating both internal and external training resources. The Company is committed to providing employees with the greatest career development opportunities, improving their core talent competitiveness, and helping them achieve personal value, while providing talent protection for the Company's career development.



During the reporting period

- A total of **3,166** employees have received training provided by the Company
- with a total of **8,321** hours of training for them
- an average training time of **11.32** hours each
- The aggregate investment made by the Company on training amounts to **RMB 1,826,834.00**
- with a total of **RMB 4,858,271.00** in the past three years

Recruitment Action

The Company has offered different training courses for new employees from social and on-campus recruitment, helping new employees have a quick overview of the Company, learn necessary skills, and make career development in a more targeted manner.

A program named "Growth Map for New Employee Onboarding Training" has been designed for new employees recruited from the society, giving them a training pattern that combines online and offline training, self-learning, organizational learning, and department mentor-led learning.

Besides, the Company also launched the "Spark Program" for new graduates onboarding, which covers one-week centralized pre-job training, two-week job rotation, three-month probation, and one-year mentoring. A comprehensive evaluation will be made by the Company on the growth of employees recruited from campus through debriefing after probation completion and performance appraisal, laying a solid foundation for the Company to develop vitality young talent team.



External Special Training

The external special improvement training encompasses training on management skills, professional skills, practical skills, and certificates, among others. It is aimed at all in-service employees, conducted by way of lectures from external teachers invited by the Company, and public classes for employees, etc.



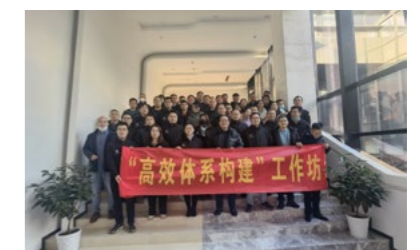
Supply Chain Management Training

AlphaESS conducted a supply chain management training session, with a total of 48 related employees participating therein;



Insurance Practice Training

AlphaESS conducted an insurance practice training session, which was participated by a total of 39 employees from finance, business, supply chain and other departments;



Efficient System Construction Training

AlphaESS conducted workshop training on "Efficient System Construction", with all the 73 Rank-M employees participating therein.



Internal Job Training

The Company offers internal job training, which primarily contains "AlphaESS" Selected Course and Daily Lesson, etc., for all in-service employees, with internal employees serving as lecturers to share around work summary, technical breakthroughs, and external training conversion, among others. In addition, "AlphaESS Academy", as a key project for internal training within the Company, conveys the Company's values and guide employees' continuous learning and growth based on the Company's intranet "AlphaESS Online" as both the Company's learning center and employees' life center.

AlphaESS Academy

AlphaESS Academy is a company academy established by Alpha ESS Co., Ltd., aiming to provide professional learning and training opportunities for employees, help them improve their skills and knowledge, and provide excellent talent for the Company. Meanwhile, as the strategic department of the Company in talent development, AlphaESS Academy plays a planning and execution role in the implementation of talent strategies such as talent cultivation and echelon construction. Additionally, to bring an all-round green development to the Company and support the national "dual carbon" goal, the Company has included courses on topics such as green finance and work safety in special courses, enabling employees to have ESG knowledge reserves while establishing awareness of sustainable development.



Display of AlphaESS Academy

By virtue of libraries, online book reviews, reading clubs, and other forms, AlphaESS Academy seeks to expand and improve the knowledge structure of employees, as well as build the Company's knowledge system. Meanwhile, the academy will customize learning plans and regularly push learning courses for each employee based on the growth map of new employees in different centers and positions. Leaders can get and oversee employees' learning progress in real time by accessing push records. Besides, after completing the study, the academy will arrange targeted online exams.

Course Center of AlphaESS Academy

ATP-Alpha Training Program	Covering knowledge and skills training for all positions in the Company
AMP-Alpha Management Program	Referring to the training for the Company's middle management
AGM-Alpha General Management	Referring to the training for the Company's core executives
Thematic Courses	Electronics Green Finance Artificial Intelligence Leadership Work Safety

Course Management Center of AlphaESS Academy

School-Enterprise Cooperation

AlphaESS has conducted extensive cooperation with various schools, fully leveraging the advantages of, and forming a synergy between, both sides, to jointly provide support for cultivating composite, technological, and innovative talents, as well as continuously transport talents for the development of enterprises and society, through various activities including strategic cooperation, topic researches and industry-academia-research projects. 2022 sees a year in which the Company established a new energy research institute with Nantong University, and carried out a number of strategic cooperation with Nankai University, Tianjin University and other universities.

Case | Cooperating with Nantong University in establishing a new energy research institute to jointly develop high-quality talent

AlphaESS built a new energy research institute jointly with Nantong University, which serves as a postgraduate training base for carrying out horizontal research projects related to core technologies in the energy storage field. This cooperation officially marks the beginning of AlphaESS' road towards common development and win-win cooperation with schools, promoting the optimized allocation and resource sharing of both sides' research capabilities, building a long-term cooperation mechanism in multiple fields, levels, and dimensions, accelerating the development of cutting-edge key technologies and the transformation of sci-tech achievements, strengthening talent cultivation, and outputting high-quality and top talents for AlphaESS, the industry, and the country.



Signing and awarding ceremony with Nantong University

Health and Safety Assurance

The health and safety of employees is essential to the production and operation of an enterprise. AlphaESS has been adhering to the people-oriented principle, actively practicing and innovating occupational health and safety management, and reviewing occupational safety and health with a new humanistic concept, to fully safeguard the interests of both the enterprise and employees, whilst guaranteeing the health and life safety of employees.

Relevant SDGs



HEALTH AND SAFETY ASSURANCE

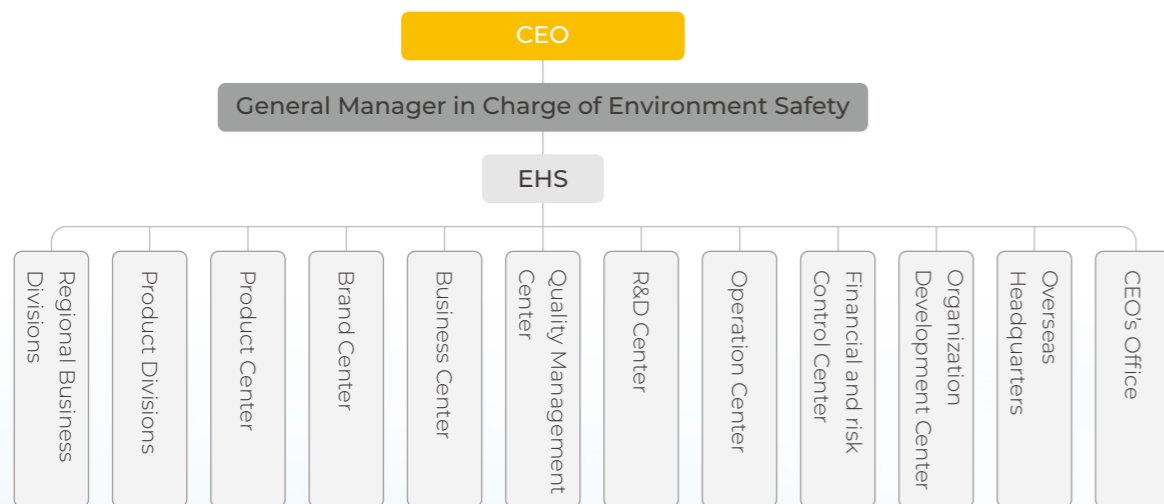


Work Safety Management

Work Safety Management

AlphaESS has strictly implemented the *Law of the People's Republic of China on Work Safety* and other relevant laws and regulations, established a comprehensive work safety management system which is subject to regular review and update from time to time for improvement, and developed 33 work safety management rules and processes such as *the Rules on the Accountability for Post Work Safety* and the *Three-level Safety Education Rules*, to effectively prevent and control safety risks.

A sound safety management organizational structure has been established by the Company with clear responsibilities strictly assigned for the safety and environmental management positions to give an overall planning on, coordinate, and solve material topics as to work safety of the Company, under which a "dual-responsibility" pattern is adopted requiring that leaders and departments at all levels should not only complete their corresponding business work, but also fulfil their responsibility to properly keep work safety, with responsible person to be held accountable therefor, so as to ensure work safety everywhere and in every respect, continuously improve safe work conditions, and guarantee the occupational health of employees.



Safety and environment management organization diagram of AlphaESS

In order to establish a safe working environment and order, the Company has institutionalized and normalized safety inspection, with the *Work Safety Inspection Rules* and the *Hidden Danger Investigation and Management Rules* established accordingly. Adhering to the principle of laying emphasis on inspection and rectification, the Company is serious in carrying out daily hidden danger investigation by various methods including routine inspection, specialized inspection, comprehensive inspection, monthly safety inspection, holiday inspection and seasonal inspection, for fully checking and improving management over facilities, operational behavior, work environment, accountability system implementation, safety measures, and other aspects, so as to ensure timely elimination of potential safety hazards.

During the reporting period, a total of 150 safety hazards were identified throughout the Company, 100% of which have been duly rectified. Meanwhile, the inspection situation and review results were recorded on time, and various security measures were effectively implemented to ensure work safety.



Work Safety Standardization Certificate of AlphaESS

Case | Establishing the safety hazard reporting system to better ensure work safety

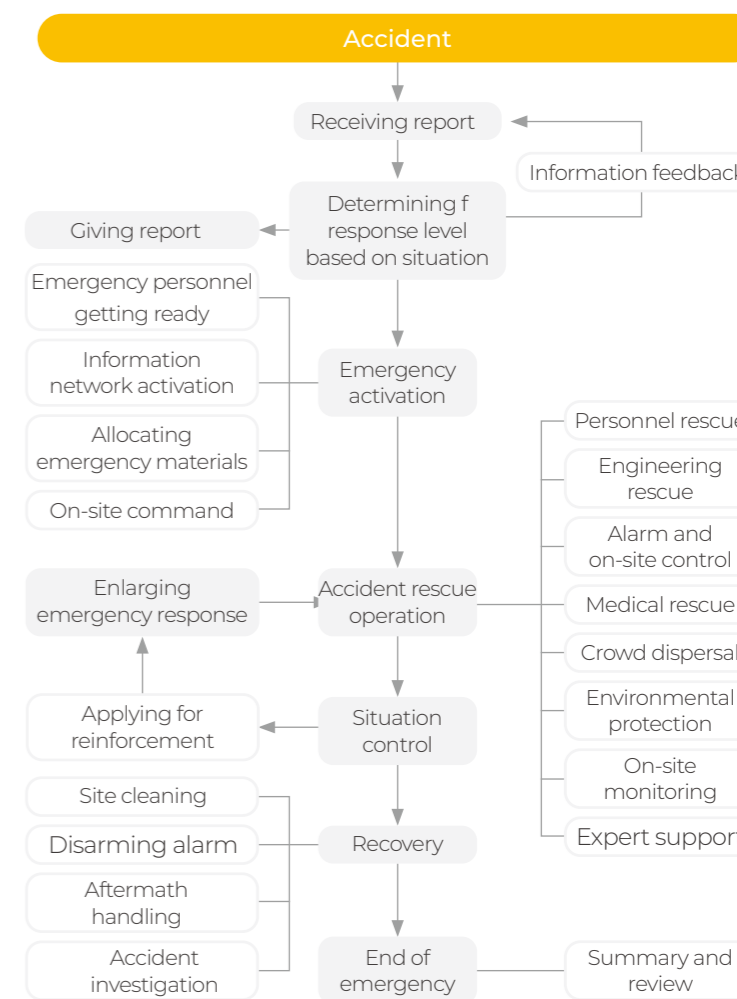
With a view to fully mobilizing the enthusiasm and initiative of all employees to participate in the identification of potential safety hazards in production, and normalizing and standardizing the safety hazards investigation work, the Company has developed a safety hazard reporting APP, through which all AlphaESS employees who discover safety hazards can upload the time, location, and specific content of the hazards once found with attachment of relevant photos. After the EHS review, the responsible person will be contacted for rectification. Ultimately, the closed-loop management covering hazard investigation, rectification, review and ending will be able to be conducted through information technology, to achieve the goal of "0" safety hazards.



Emergency Management System

AlphaESS fully implements the principle of "equal emphasis on prevention and emergency response", with the *Emergency Response Plan for Work Safety Accidents* developed for various potential work safety accidents to regulate the Company's emergency management work and implementation process, as well as improve the level of emergency management and the ability to respond to emergencies. In the event of an accident, the Company has been able to timely and orderly carry out rescue work to quickly keep a lid on things, mitigate the harm caused by the accident, and contain any potential emergency as far as possible to reduce the negative impact of emergencies on employees, the property, and the environment.

In strict accordance with the laws and regulations such as the *Emergency Response Law of the People's Republic of China*, and the *Measures for the Administration of Emergency Response Plans*, the Company has formulated the *Emergency Response Plan for Work Safety Accidents* with respect to various possible work safety accidents, and continued efforts to regulate its emergency management work and implementation process, improve the emergency response management level and ability, and prevent various work safety accidents, ensuring the safety of employees' lives and company property.



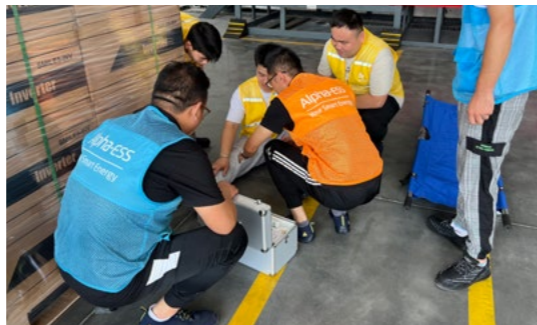
Emergency response procedure of AlphaESS



Case | Emergency drill for forklift to improve emergency response capabilities



In order to further improve the practicality and operability of emergency response plans, verify the readiness of teams, materials, equipment, and other aspects required to respond to emergencies, and enhance the ability of departments and employees to implement emergency plans, the Company organized multiple emergency rescue drills for, among others, special equipment accidents, electric shock accidents, fire accidents, and mechanical injury accidents. Relevant actions included training forklift drivers and relevant operators before the drills, and simulating emergency rescue measures after accidents, through which, emergency management work has witnessed a solid progress.



Emergency rescue drill by AlphaESS for forklift accident

Case | Fire safety action by the Company to improve employees' fire awareness



With the aim of enhancing the fire prevention awareness of employees, enabling them to solidly grasp the fire escape and self rescue knowledge and skills, and effectively preventing various fire accidents, the Company organized a fire fighting activity with the theme of "Implementing Fire Safety Responsibilities and Preventing Safety Risks".



Fire emergency drill by AlphaESS

Occupational Health and Safety

Occupational Health Management

Adhering to the people-oriented concept and attaching great importance to the personal safety as well as physical and mental health of its employees, AlphaESS has developed the *Occupational Health Management Rules* after a full consideration, committed to providing a safe, comfortable, and enjoyable working environment. Whilst continuing its efforts to establish a sound occupational health and safety management system and regularly seek ISO45001:2018 occupational health and safety system certification, the Company has conducted a series of occupational health and safety training to ensure the physical and mental health of employees, integrate the concept of occupational health into the entire process of its operation and management, further improve the health system, and advocate sustainable work pattern.



Occupational health and safety training provided by AlphaESS



Occupational Health and Safety Management System Certificate for AlphaESS

Employee Safety Training

AlphaESS has prepared an annual education and training plan, based on which, various safety education and training, including those on forklift operation, electricity safety, fire safety, laws and regulations, safe operation procedures, accident warning education, have been carried out, enabling employees to better learn the work safety regulations and operating rules, obtain necessary work safety knowledge, master the safe operation skills for their respective positions, be clear about emergency responses, understand their rights and obligations in work safety, and enhance their ability to prevent risks and handle accidents.



Safety training court online of AlphaESS

Chemical Safety Management

In order to ensure the safe use and management of chemicals, AlphaESS has formulated the *Chemical Safety Management Rules*, which clarifies the responsibilities of procurement, warehousing, manufacturing, EHS, and other departments, specifies the processes for chemical procurement, storage, and use, and states the requirements for the safe disposal of chemical residues and the safe use of explosion-proof cabinets to ensure the effective management of chemicals and avoid personal injury or environmental pollution caused by improper management.

In order to strengthen the safety management throughout the process of battery transportation, storage, use, testing, and scrapping, AlphaESS has worked out the *Battery Safety Management Rules*, whereby to clearly stipulate the responsibilities of the quality, warehousing, production and other relevant departments, and put forward strict requirements for battery transportation and handling, status inspection, and classification management, etc., continuously reducing risks and hidden dangers to ensure safety.



Fire Safety Training

In order to further enhance employees' fire safety awareness and skills as well as give effect to the policy of "putting prevention first and combining prevention with elimination" for fire protection, the Company has been working to comprehensively popularize fire safety knowledge towards building a "safe AlphaESS".



Fire safety training provided by AlphaESS



Pre-job Training

New employees of AlphaESS are required to receive safety education and training at the company/ department/team level and pass the appraisal thereon before taking up their posts.



Pre-job training for new employees of AlphaESS



Safety Training on Hydraulic Carrier

The Company offers targeted safety training for various operations. For example, safety operation training for hydraulic carrier have been conducted to standardize the operation of such carrier, avoid injury accidents and ensure work safety.



Safety training for hydraulic carrier (pallet truck) provided by AlphaESS

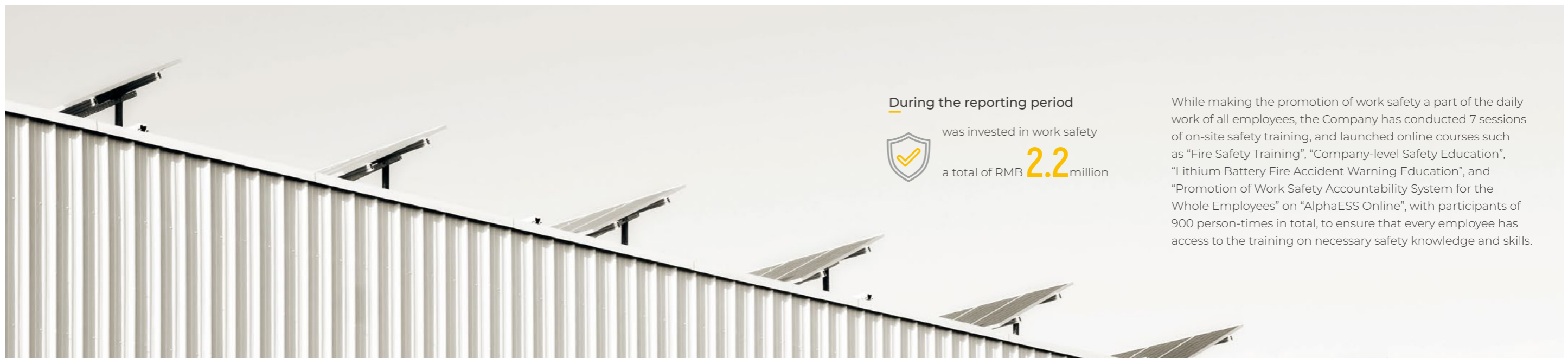


Emergency Rescue Training

For the purpose of further enhance employees' ability and awareness of self and mutual rescue, and create a good atmosphere of life paramountcy and safe development, AlphaESS organized the training of emergency rescue to popularize correct basic rescue concepts, skills and knowledge to employees.



Emergency rescue training provided by AlphaESS



During the reporting period

was invested in work safety a total of RMB **2.2** million

While making the promotion of work safety a part of the daily work of all employees, the Company has conducted 7 sessions of on-site safety training, and launched online courses such as "Fire Safety Training", "Company-level Safety Education", "Lithium Battery Fire Accident Warning Education", and "Promotion of Work Safety Accountability System for the Whole Employees" on "AlphaESS Online", with participants of 900 person-times in total, to ensure that every employee has access to the training on necessary safety knowledge and skills.



Key Performances

Economic Indicators

Indicator	Unit	2020	2021	2022
Operating income	RMB 0'000	36,956.96	80,414.15	177,337.96
Net profit	RMB 0'000	3,013.82	5,658.58	14,003.61
Total tax	RMB 0'000	357.36	700.72	2,215.05

Note 1: The financial data is sourced from the financial statements audited by financial statements audited by RSM China.

Corporate Governance

Indicator	Unit	2022
Number of female directors	Person	2
Number of independent directors	Person	3
Number of employees receiving compliance training	Person	47
Employee compliance training hours	Hour	24

Research and Development

Indicator	Unit	2020	2021	2022
Number of patents held	Piece	45	67	147
Number of trademarks and text registration rights held	Piece	4	7	13
Number of software works held	Piece	15	36	69
Number of new patent applications for the year	Piece	22	58	132
R&D investment	RMB 0'000	2,258.75	4,492.53	9,103.00

Product and Customer Service

Indicator	Unit	2022
Number of information safety audits	Time	2
Total number of events violating customer privacy	Piece	0

Note 1: First pass yield refers to the probability for a product to pass through the entire process without any defects during production.

GHG Emissions

Indicator	Unit	2022
Scope I: Total GHG emissions	tCO ₂ -e	93,6613
Scope II: Total GHG emissions	tCO ₂ -e	1,435,5587
GHG emissions intensity ¹	tCO ₂ -e/MWh	1.3912
GHG emissions intensity ²	tCO ₂ -e/RMB 10,000 revenue	0.0086
GHG emissions intensity ³	tCO ₂ -e/RMB 10,000 revenue	0.0070

Note 1: For the 2022 GHG emissions, the organizational boundary is determined using the operation control approach, covering Alpha ESS Co., Ltd. in its entirety, as well as all branches and wholly-owned or majority-owned subsidiaries of it in China.

Note 2: GHG emissions intensity¹=Total GHG/Total output
GHG emissions intensity²=Total GHG emissions/Main business income
GHG emissions intensity³=Total GHG emissions/Total output value

Note 3: The emission factors for stationary sources and mobile sources come from the *GHG Protocol Tool For Energy Consumption in China (Rev. 2.1)*, the *Guidelines for Accounting Methods and Reporting of GHG Emissions of Land Transport Enterprises*, and the *Climate Change 2013: IPCC Fifth Assessment Report*; the key coefficient for VOCs comes from the *Climate Change 2007: IPCC Fourth Assessment Report*, the *Climate Change 2013: IPCC Fifth Assessment Report*, BSI; the emission factors for purchased electricity come from the *Notice on Proper Management of GHG Reports for Enterprises in Power Generation Industry from 2023 to 2025* issued by the Ministry of Ecology and Environment.

Resource Utilization

Indicator	Unit	2022
Gasoline	L	26,194.28
Diesel	L	2,400.53
Liquefied gas	L	12,000
Solar energy	kWh	24,000
Total purchased electricity	kWh	2,517,199.2
Third-party water supply	M ³	15,622.87
Office waste disposal	Ton	70

Note 1: The data of gasoline, diesel, liquefied gas, purchased electricity and third-party water supply for 2022 covers Alpha ESS Co., Ltd. in its entirety as well as all branches and wholly-owned or majority-owned subsidiaries of it in China; the data of solar energy for 2022 comes from the simulation of rooftop photovoltaic power generation in the office area of the Suzhou branch.



Employment

Indicator	Unit	2022
Proportion of labor contract signing	%	100
Social insurance coverage	%	97.80
Total number of employees	Person	738
Employee turnover rate	%	19.4
Number of employees by gender		
-Male	%	64.09
-Female	%	35.91
Number of employees by age		
-55 and above	%	0.27
- 41 to 55	%	12.33
- 31 to 40	%	37.53
- 30 and below	%	49.86
Number of employees by educational background		
-Doctor and above	%	0.41
- Master	%	11.79
-Bachelor	%	47.70
-Junior college	%	18.70
-Below junior college	%	21.41

Note 1: Employee turnover rate=Number of separating employees/(Number of employees at the end of the period+Number of resigned employees)

Work Safety

Indicator	Unit	2022
Number of work safety training sessions	Session	7
Total hours of work safety training	Hour	1,494
Investment in work safety	RMB0'000	220

Employee Training

Indicator	Unit	2022
Total investment in training	RMB 0'000	1,475,278.41
Total hours of training received by employees	Hour	8,321
Average hours of training received by employees	Hours/Person	11.32
Total number of employees trained	Person	3,166
By gender		
- Total hours of training received by male employees	Hour	5,545
- Total hours of training received by female employees	Hour	2,776
By employee type		
- Total hours of training received by grass-roots employees	Hour	7,356
- Total hours of training received by middle management employees	Hour	573
- Total hours of training received by senior management employees	Hour	392

Note 1: Average hours of training received by employees=Total hours of training received by employees/Total number of employees

Supply Chain Management

Indicator	Unit	2022
Total number of suppliers	EA	335
By region		
- Mainland China	EA	331
- Hong Kong, Macao, Taiwan and overseas area	EA	2
Percentage of suppliers signing the code of conduct	%	100
Percentage of suppliers signing clauses containing environmental and labor requirements	%	100
Number of suppliers assessed for social impact	%	100
Number of suppliers assessed for environmental impact	%	100
Total number of new suppliers	EA	120
Proportion of internal procurement personnel trained for sustainable procurement	%	100



GRI Content Index

GRI Standards	Disclosures	Chapter Index
GRI 1: Foundation 2021		
GRI 2: General Disclosures 2021		
2-1	Organizational details	About the Report
2-2	Entities included in the organization's sustainability reporting	About the Report
2-3	Reporting period, frequency and contact point	About the Report
2-6	Activities, value chain and other business relationships	About the Company
2-7	Employees	Employment Management
2-9	Governance structure and composition	Corporate Governance
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	Corporate Governance
2-16	Communication of critical concerns	Sustainable Development Management
2-22	Statement on sustainable development strategy	Message from the Chairman
2-27	Compliance with laws and regulations	Compliance Risk Control
2-29	Approach to stakeholder engagement	Sustainable Development Management
GRI 201: Economic Performance 2016		
201-1	Direct economic value generated and distributed	Key Performance
201-3	Mandatory defined benefit plans and other retirement plans	Employee Rights and Benefits
GRI 203 Indirect Economic Impacts 2016		
203-1	Infrastructure investments and services supported	Community Welfare
203-2	Significant indirect economic impacts	Technological Innovation and R&D
GRI 205: Anti-corruption 2016		
205-2	Communication and training about anti-corruption policies and procedures	Business Ethics
GRI 302: Energy 2016		
302-1	Energy consumption within the organization	Energy and Water Resource Management
302-3	Energy intensity	Energy and Water Resource Management
302-4	Reduction of energy consumption	Energy and Water Resource Management
302-5	Reductions in energy requirements of products and services	Energy and Water Resource Management
GRI 303: Water and Effluents 2018		
303-2	Management of water discharge-related impacts	Energy and Water Resource Management
303-3	Water withdrawal	Energy and Water Resource Management
303-4	Water discharge	Energy and Water Resource Management

GRI Standards	Disclosures	Chapter Index
GRI305: Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	Energy and Water Resource Management
305-2	Energy indirect (Scope 2) GHG emissions	Energy and Water Resource Management
305-4	GHG emissions intensity	Energy and Water Resource Management
305-5	Reduction of GHG emissions	Energy and Water Resource Management
GRI 306: Waste 2020		
306-1	Waste generation and significant waste-related impacts	Harmful Emissions and Wastes
306-2	Management of significant waste-related impacts	Environmental Management Work Safety Management
306-3	Waste generated	Harmful Emissions and Wastes
306-5	Waste directed to disposal	Harmful Emissions and Wastes
GRI 308 Supplier Environmental Assessment 2016		
308-1	New suppliers that were screened using environmental criteria	Supply Chain Management
GRI 401: Employment 2016		
401-1	New employee hires and employee turnover	Employment Management
401-2	Benefits provided to full-time employees	Employee Rights and Benefits
GRI 403: Occupational Health and Safety 2018		
403-1	Occupational health and safety management system	Occupational Health and Safet
403-3	Occupational health services	Occupational Health and Safet
403-5	Worker training on occupational health and safety	Occupational Health and Safet
403-6	Promotion of worker health	Occupational Health and Safet
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safet
GRI 404: Training and Education 2016		
404-1	Average hours of training per year per employee	Employee Training and Development
404-2	Programs for upgrading employee skills and transition assistance	Employee Training and Development
GRI 405: Diversity and Equal Opportunity 2016		
405-1	Diversity of governance bodies and employees	Employment Management
GRI 414: Supplier Social Assessment 2016		
414-1	New suppliers that were screened using social criteria	Supplier Management
GRI 416: Customer Health and Safety 2016		
416-1	Assessment of the health and safety impacts of product and service categories	Work Safety Management
GRI 417: Marketing and Labeling 2016		
417-1	Requirements for product and service information and labeling	Product Quality and Management Supply Chain Management
GRI 418: Customer Privacy 2016		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Privacy and Data Security

Your Feedback

Dear readers,

Thank you for reading the *2022 Environmental, Social and Governance (ESG) 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?

Your contact information:

Name: Email: Position:
Tel: Company: Fax:

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



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