



2022 Sustainability Report and ESG Report
JA Solar Technology Co., Ltd.



About This Report

Reporting Period

This report is an annual report covering the period from January 1, 2022, to December 31, 2022. To improve the completeness of the report, some data may exceed the above range (subject to the specific date indicated).

Report Boundary

The Report covers JA Solar Technology Co., Ltd. and its manufacturing bases, which is consistent with the scope of the disclosure in JA Solar's 2022 Annual Report. Some manufacturing bases consist of multiple companies. Where individual companies are involved in this Report, they will be reflected as such; otherwise, the name of the associated manufacturing base will be used.

For ease of presentation, "JA Solar Technology Co., Ltd." is also referred to as "JA Solar", "the Company" or "we" in this Report.

Report Release

This is the sixth sustainability report/ESG report/social responsibility report released by JA Solar Technology Co., Ltd. and its subsidiaries. The last report was published in June 2022.

References

- Global Reporting Initiative (GRI) *Sustainability Reporting Standards*
- United Nations Sustainable Development Goals (SDGs)
- The Ten Principles of the United Nations Global Compact
- HKEX ESG Reporting Guide

Report Reliability Assurance

The Company guarantees that the contents of this report do not contain any false records or misleading statements. The majority of the data in this report is derived from the Company's original operational records and publicly disclosed official documents, such as its quarterly reports and annual reports. Unless otherwise specified, the amounts disclosed in the report are measured in RMB.

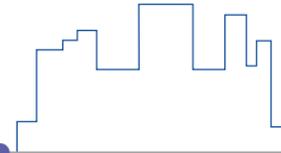
Report Statement

The financial data involved in this report are in compliance with the *Accounting Standard for Business Enterprises* and relevant accounting systems promulgated by the state and have been audited in accordance with the China Internal Auditing Standards, truly reflecting the financial indicators and operating conditions of the enterprise. The report has been reviewed and audited internally by the enterprise, and a report assurance agency has been engaged to provide guidance and evaluation to ensure that the report is true, accurate, and complete. JA Solar hopes to enhance communication with stakeholders through the release of this report.

Report Acquisition

This report can be perused online and is available in both Chinese and English. You may log on to the Company's official website (<http://www.jasolar.com>) or contact esg@jasolar.com to obtain an electronic copy of the report. In case of any ambiguity in the understanding of the Chinese and English content, the Chinese version shall prevail.

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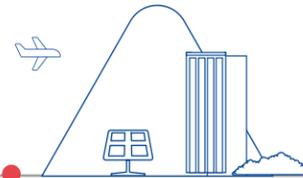
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Message from the Chairman



In the past year, the global energy situation has undergone tremendous changes, and the topic of sustainability has been receiving increasing attention. More and more countries and enterprises are making efforts for this. As a leading global photovoltaic (PV) enterprise, JA Solar is guided by the sustainability concept of "Green to Green, Green to Grow, Green to Great" to supply zero-carbon clean energy and achieve zero-carbon green development while striving to create a high-quality sustainable development model.

For years, we have always focused on PV technology R&D and product innovation to promote the popularization and application of PV power generation on a wider scale. In 2022, we supplied nearly 40GW of PV products to the world, ranking among the top in the world for six consecutive years. The full-scale mass production of JA Solar's n-type PV Module, DeepBlue 4.0 X, will definitely help customers create greater value and provide clean energy for more people.

Over the years, we have always adhered to the concept of sustainability to create a responsible, green and low-carbon corporate image. We have established the Strategy and Sustainability Committee to help achieve the Company's ESG and sustainable development strategic goals. We actively implement the green manufacturing system, pay a premium on resource conservation and intensive utilization, and widely apply digital technology and intelligent manufacturing to create a green intelligent manufacturing factory. Adhering to scientific governance and compliance management, we abide by national laws and regulations and internationally accepted rules, with a "zero tolerance" attitude towards corruption and fraud. This promotes the healthy development of the PV industry through strict internal control and fair competition and cooperation.

For years, we have always embraced the core values of "being customer-centered, promoting welfare for our staff members, creating value for owners", and worked with all stakeholders to create a mutually beneficial situation. We strive to achieve mutual trust and mutual benefit while coordinating development with upstream and downstream partners to jointly build a green supply chain and ecosystem. At the United Nations Climate Change Conference, we launched the Zero Carbon Development Initiative, and initiated the Scientific Carbon Target Commitment as the founding director of the Global Sustainable Markets Initiative (SMI). We have also joined the Photovoltaic Recycling Industry Development Cooperation Center, and become the world's first PV cooperative enterprise to follow the CDP supply chain decarbonization. We actively undertake social responsibility and build PV power generation projects in various application scenarios, such as the agrivoltaic project supplied by JA Solar that has lit up the Winter Olympic Games venue. We are continuously exploring clean energy solutions and new models of ecological restoration and protection, while taking concrete actions like donating PV lamps to the United Nations High Commissioner for Refugees to allow more people to enjoy happiness.

We will keep forward step by step! Leveraging the global trend of the "carbon neutrality" era and staying true to the original mission of "developing solar power to benefit the planet", JA Solar is eager to work together with global partners to create a green earth, a zero-carbon future, and a better life.

JIN Baofang

Chairman of JA Solar



In recent years, with the business principle of "stable growth for sustained profitability", JA Solar has promoted the concept of green and low-carbon to a new level of enterprise strategic development through technological innovation and empowerment. We have driven the green development of the industry with technological advantages. This helps advance global "carbon emission reduction", and realize "carbon peaking" and "carbon neutrality" in China. In 2022, the Company proposed the sustainable development concept of "Green to Green, Green to Grow, Green to Great", hoping to work together with the value chain to move towards a green development path through our own actions. JA Solar has also actively responded to climate change. Based on carbon inventory, JA Solar's Beijing Headquarter has achieved carbon neutrality in operational emissions in 2021. In 2022, the Company joined the Science Based Targets initiative (SBTi) and became the first PV enterprise to participate in the Carbon Disclosure Project (CDP) supply chain project to address climate change.

As of 2022, JA Solar has multiple manufacturing bases around the world, with over 30,000 employees. Its PV module shipments have been among the top in the world for many consecutive years, covering 135 countries and regions. Relying on continuous technological innovation, robust financial advantages, and a developed global sales and service network, JA Solar received the highest "AAA rating" for PV TECH's bankability in 2022. The Company has been ranked among the "Fortune 500 China" and the "Global Top 500 New Energy Enterprises" for consecutive years.

About JA Solar

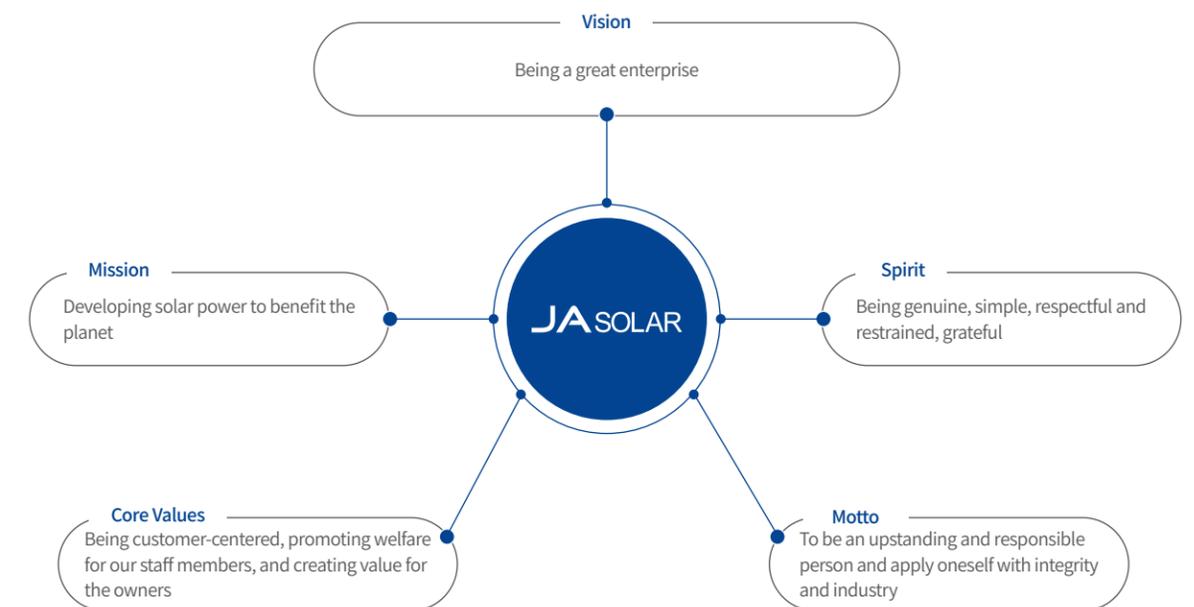
Based on the vertical integration model of the solar PV industry chain, JA Solar Technology Co., Ltd. has been committed as always to provide PV power generation system solutions to global customers. Its main business is the R&D, production, and sales of solar PV wafers, cells, and modules: the development, construction, and operation of solar PV power stations as well as the R&D, production, and sales of PV materials and equipment. The company is headquartered in Beijing and has production factories in China and overseas, mainly in Xingtai and Langfang in Hebei, Wuxi, Yangzhou and Lianyungang in Jiangsu, Hefei in Anhui, Fengxian in Shanghai, Yiwu in Zhejiang, Qujing in Yunnan, and Baotou in Inner Mongolia; and overseas production factory in Bac Giang, Vietnam. New factories are under construction in Dongtai, Jiangsu, Shijiazhuang, Hebei, Ordos, Inner Mongolia and the USA.

Based on the "Photovoltaic Product Business Group" main industry chain, the Company has continuously improved its organizational structure, established the "Intelligent Energy Business Department", and increased investment in downstream PV applications, to expand the development and construction scale of PV power stations. We constantly explore the development of multiple PV power generation application scenarios, including BIPV and energy storage. We have also established the "Photovoltaic New Materials Business Department" to strengthen the R&D of PV supplementary materials and equipment, including PV crystal pulling equipment, PV thermal

field systems, PV conductive materials, and PV packaging materials. Meanwhile, we pursue reduced costs while ensuring supply for the rapid development of the main industry chain.

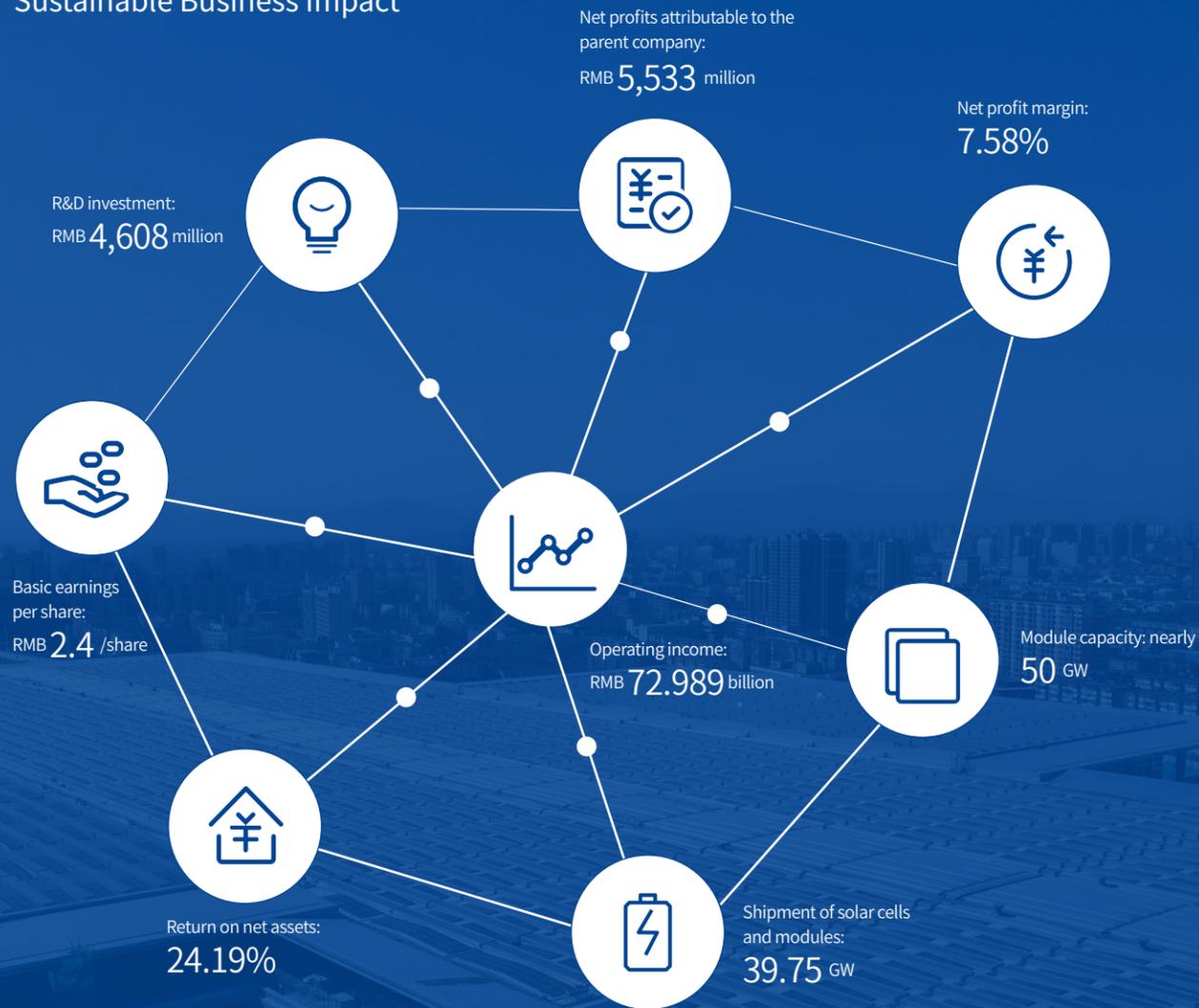
Adhering to the guiding ideology of "seizing opportunities to boost steady progress and improve quality and efficiency", the Company has built a "One Body, Two Wings" business system structure to strengthen and expand the PV intelligent manufacturing business. It focuses on the PV supplementary materials and equipment industry, and develops downstream PV power generation application scenario solutions, thereby providing customers with optimal new energy system solutions.

In 2022, JA Solar accelerated the construction of manufacturing bases, improved its global strategic layout, intensified the transformation and upgrading of intelligent manufacturing, and increased its production capacity, with the aim to seize new opportunities in the future. By the end of 2022, the Company had a total of 963MW of various types of PV power stations. In addition, JA Solar has multiple "grid-parity" PV power plant projects under construction in China, with a capacity of about 240MW. It is anticipated that the grid connection will be completed in the first half of 2023. The Company's cumulative shipment of cells and modules has exceeded 128GW, contributing to the global realization of a zero-carbon future.



JA Solar Sustainability Impact Map 2022

Sustainable Business Impact



Awards/Certifications

ESG Practice in Public Company Case Study
—China Association for Public Companies

Fortune 500 China
—FORTUNE China

Global Top 500 New Energy Enterprises
—China Energy News

Best Investor Relations Award for Listed Companies in China
—Securities Times

AAA Bankability Rating
—PV ModuleTech

ESG Outstanding Corporate Governance Award 2022
—The (5th) Social Responsibility Conference

Sustainable Public Welfare Impact

In April 2022, JA Solar was selected as a board member of the China Poverty-alleviation Promotion of Volunteer Service (now "China Rural Development Volunteer Service Promotion Association")

In August 2022, JA Solar signed a donation agreement with UNHCR to donate PV lamps to families who have been compelled into displacement.

In October 2022, JA Solar participated in the special event of the 77th United Nations Day and jointly raised PV lamps with representatives of the United Nations organizations based in China and more than 100 embassies.

Successfully constructed several national rural revitalization PV projects in Yanchi, Ningxia; Kangbao, Hebei; and Lincheng, Hebei, and other regions. The Company has made a cumulative payment of about RMB 60,294,000 for the projects



Awards/Certifications

Outstanding Cases of Social Responsibility of Chinese Private Enterprises (2022)
—All-China Federation of Industry and Commerce

"Caring Entrepreneur" of the National Charity Organizations
—China Charity Federation

2021 Philanthropist of the Year/2021 Philanthropic Enterprise of the Year
—Hebei Charity Federation

Sustainable Innovation Impact

Representative projects

Providing high-efficiency modules for key PV projects in multiple countries and regions to contribute to the global clean energy transformation.

Largest
The world's largest hydro-PV project - the Kela 1GW PV project in China
Malaysia's Largest Tracked Photovoltaic Project - 116MW PV Power Plant Project in Marang
The largest Building Integrated Photovoltaics (BIPV) project in China Automotive Industry Park - Dongfeng Intelligent Equipment Industrial Park 22MW Roof Distributed Power Generation Project

First
Congo (Brazzaville)'s First Photovoltaic Power Generation and Waste Incineration Power Station Project

Multi-scene
Ulanqab New Generation Grid-friendly Green Power Station Demonstration Project
Beijing Fengtai Station 5.9MW Rooftop PV Project
Tel Yitzhak Reservoir 10.705MW Floating PV Power Station Project in Israel

Product innovation

Continuous product innovation to increase customer value

In May 2022, JA Solar released its first n-type PV module, **DeepBlue 4.0 X**, officially announcing its entry into the n-type PV module market

Intelligent manufacturing

Promoting technological innovation to enhance intelligent manufacturing

In December 2022, JA Solar's Yangzhou Base was included in the list of "**National Excellent Scenarios of Intelligent Manufacturing**" for its "Workshop Intelligent Production Scheduling".

In January 2023, JA Solar received approval to build **the first national intellectual property operation center** in the PV manufacturing field (excluding polycrystalline silicon).

Industry exchange

Actively participating in industry exchanges to promote the common development of the industry

- China Photovoltaic Industry Annual Conference
- World Conference on Clean Energy Equipment
- Photovoltaic Industry Chain Supply Forum
- Global Solar Energy Digital Summit
- World Future Energy Summit

Beijing Fengtai Station Roof 5.9MW Distributed Project



Awards/Certifications

- UL Environmental Product Declaration (EPD) Certification** (DeepBlue 3.0)
— Environment Product Declaration
- The 19th People's Craftsmanship Award - **Craftsmanship Product Award**
— People's Daily Online
- "Top Brand PV"** in the Middle East, & North Africa, Chile, Mexico, and Australia
— EUPD Research
- 2022 **Advanced Clean Energy Equipment** (DeepBlue 4.0 X, DeepBlue 3.0)
— World Conference on Clean Energy Equipment
- Seventh **"Top Performer"** award issued by PVEL
— PVEL (PV Evolution Labs)
- RETC **"High Achiever"** for the third time
— Renewable Energy Test Center (RETC)
- Canton Fair **Design Innovation Award** (CF Award) (DeepBlue 3.0)
— China Foreign Trade Centre Group Co., Ltd
- 2022 **National Intellectual Property Advantage Enterprise**
— China National Intellectual Property Administration
- JA Solar passed the evaluation by the **National Enterprise Technology Center**
— General Office of the National Development and Reform Commission
- Leading Quality Enterprise in the **National Photovoltaic Industry**
Leading Brand of Quality in the **National Photovoltaic Industry**
National Quality and Integrity **Benchmarking Enterprise**
Stable and Qualified Products that passed National Quality Inspection
— China Association for Quality Inspection

Sustainable Green and Low-Carbon Impact

In April 2022, Photovoltaic Recycling Industry Development Cooperation Center

JA Solar joined the "Photovoltaic Recycling Industry Development Cooperation Center" and became a vice-chairman member

In August 2022, Sustainable Markets Initiative

JA Solar became a founding member of the Sustainable Markets Initiative (SMI) China Council



In October 2022, WWF Strategic Cooperation

JA Solar participated in the "Zero-Carbon Mission International Climate Summit 2022" and signed a strategic cooperation agreement with World Wide Fund for Nature (WWF).



In October 2022, United Nations Day Activities

As the only representative of private enterprises, JA Solar attended the 77th United Nations Day celebration event together with the United Nations system in China and more than 100 embassy representatives



In October 2022, Strategic Cooperation with China Beijing Environmental Exchange

JA Solar signed a strategic cooperation agreement with the China Beijing Environmental Exchange for in-depth cooperation in multiple fields, such as voluntary emission reduction market and low-carbon development of enterprises to explore new ways for the PV industry to address climate change.



In November 2022, Joined the SBTi

JA Solar joined the Science Based Targets initiative (SBTi) to help limit global warming to around 1.5° C.



In November 2022, United Nations Climate Change Conference

JA Solar was invited to participate in the COP27 series of events of the United Nations Climate Change Conference, where Board Chairman Jin Baofang delivered a keynote speech.



- 6 Nov Co-hosting a side event on the theme of "Reducing Carbon Pollution and Synergies: Achieving Climate, Economic Benefits" side event
- 7 Nov Co-hosting the "Climate Action for Sustainable Business Development Forum"
- 8 Nov Delivered "Reducing Pollution and Carbon Synergy for Green Power Development and Cooperation to Address Global Climate Change" Keynote Speech
- 15 Nov Participated in the roundtable dialogue on "Gathering Opportunities and Empowering, Creating a Prosperous Development of Renewable Energy in Africa"
- 16 Nov Participate in the Round Table Dialogue on "Building Decarbonization"
- 14 Nov-18 Nov Efficient product landing in COP27 Blue Zone

In November 2022, Meeting with King Charles III of the United Kingdom.

As the only representative of Chinese private enterprises, JA Solar participated in the Global Council of Sustainable Markets Initiative (SMI) networking event and the meeting with King Charles III of the United Kingdom.



In December 2022, Strategic Cooperation with CDP

JA Solar became the first PV enterprise to join the CDP supply chain project.



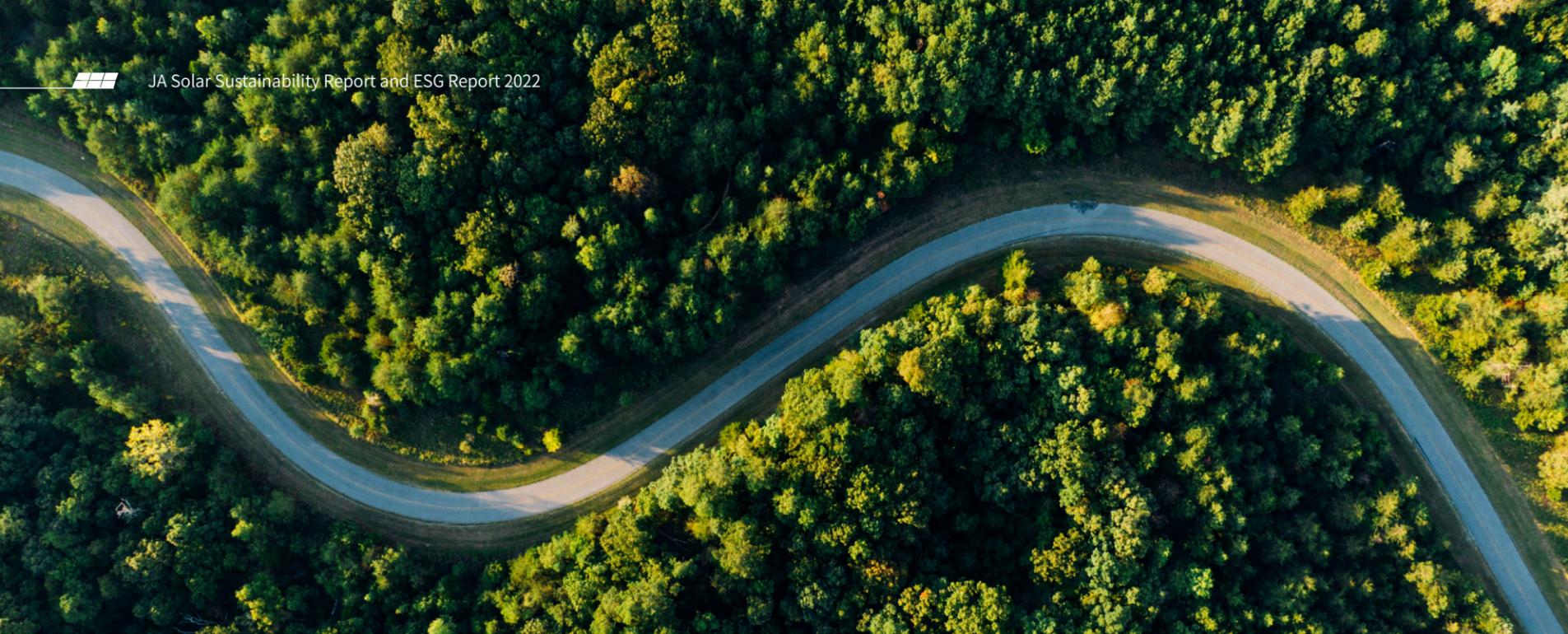
Awards/Certifications

Six bases of JA Solar were awarded as national "Green Factories" (as of February 2023)
— Ministry of Industry and Information Technology

Selected the Report on *Low-carbon Transformation and High-Quality Development of Chinese Enterprises 2022*
— China Chamber of International Commerce Sustainable Development Committee, SynTao

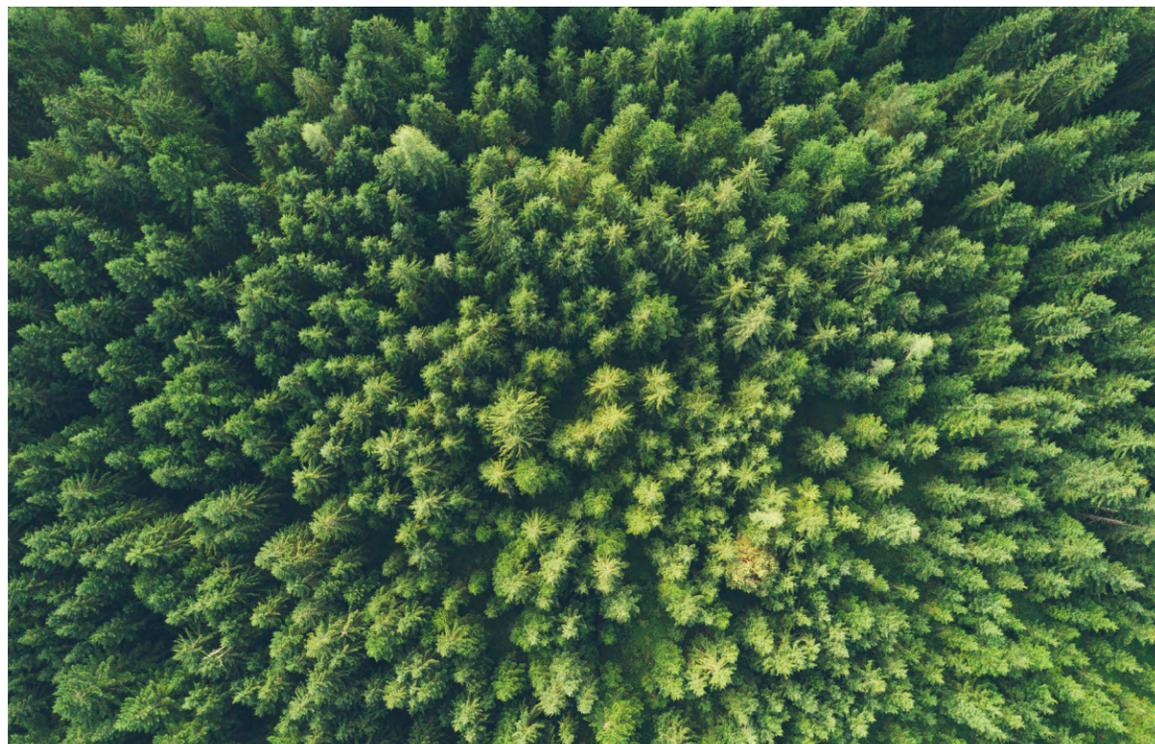
China's Annual Pioneer of CSR Carbon Neutralization of 2022
— China International Import Expo · China International Economic Management Technology Summit Forum

"Zero-carbon Pioneer" Enterprise Demonstration Cases
— China Entrepreneur Magazine



Sustainability Management

JA Solar firmly believes that sustainable development is closely related to the Company's strategy. Only by adhering to the concept of sustainability can its foundation be evergreen. Therefore, while carrying out business activities, JA Solar actively works with stakeholders to jointly put the concept of sustainability into practice and create shared value.



G2G Sustainability Concept

In 2022, JA Solar proposed the sustainable development concept of "Green to Green, Green to Grow, Green to Great" centering on the sustainable development goals of the United Nations.

Green to green



Sustainability Concept

JA Solar has implemented the sustainable development concept of building green factories, manufacturing green products, generating green energy, and jointly creating a green planet in its operations. The Company advocates taking the green and low-carbon concept as a guide, reshaping the business model of the enterprise, and advancing the green cycle of the full industry chain life cycle. On the one hand, the Company comprehensively implements the requirements of energy conservation, environmental protection, pollution reduction and carbon reduction while facilitating a green manufacturing system. At the same time, the Company promotes the recycling of resources in all aspects of production. Through the application of digital technologies such as 5G technology and big data, we have created an intelligent green factory, thereby driving the realization of a green cycle in the PV industry chain.

Green to grow



Sustainability Strategy

Increasing the application of green energy and reducing fossil energy consumption is critical to achieving green development. Adhering to the business philosophy of stable growth for sustained profitability, JA Solar actively cooperates with upstream and downstream partners to build a "zero-carbon" ecosystem. By driving the technological development of PV products, expanding the scale of PV power plants, and innovating and exploring energy storage technologies, the Company is committed to working with value chain partners to jointly boost the widespread application of clean energy in various industries, while contributing to global green development.

Green to great



Sustainability Vision

Since its founding in 2005, JA Solar has established its mission of "developing solar power to benefit the entire human race" and is committed to becoming a great enterprise. Over the years of operation, JA Solar has not only provided green power generation products to the world but has also been ardently practicing social responsibility. The Company benefits all parties locally and abroad through various forms such as PV-based poverty alleviation, charity donations, disaster relief and education assistance. This contributes to the realization of a mutually beneficial situation for the environment, climate, society, and economy. Together with the rest of the world, JA Solar creates a green and beautiful future for humanity.

JA Solar SDGs Map^①

United Nations Sustainable Development Goals (SDGs)	JA Solar's Measures
 <p>Goal 1: No Poverty End poverty in all its forms worldwide.</p>	<p>JA Solar fully mobilizes its business and resource advantages to play a role in the country's "rural revitalization". The Company continues to promote the construction of PV projects in multiple areas and explore the organic combination of PV-based poverty alleviation and industrial development (aquaculture, agriculture, etc.), thereby ensuring the sustained growth of local domestic income.</p>
 <p>Goal 3: Good Health and Well-being Ensure healthy lifestyles and promote well-being for people of all ages.</p>	<p>In 2011, JA Solar officially launched the "Brightness Project for Poor Cataract Patients" and incorporated it into the Company's Three Major Projects for the Benefit of the People, helping cataract patients regain their vision.</p> <p>JA Solar is also fostering occupational health and safety work in various manufacturing bases to ensure the health and well-being of employees.</p>
 <p>Goal 4: Quality Education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.</p>	<p>Through the "100 Hope Primary Schools Donation Project" and the "10,000 Needy Students Relief Project" projects, JA Solar has provided all students with a fair opportunity to receive education.</p> <p>At the same time, the Company actively leverages R&D and platform advantages. While cultivating talents for the Company, JA Solar also builds partnerships with universities and research institutes in China and overseas, continuing to cultivate talents in the industry.</p>
 <p>Goal 5: Gender Equality Achieve gender equality and empower all women and girls.</p>	<p>The Company firmly prohibits all forms of workplace discrimination, harassment, coercion, threats, and violence, and has established a sound human resources management and system. It adheres to equal pay for equal work for both male and female employees as part of our commitment to creating a fair workplace environment.</p>
 <p>Goal 6: Clean Water and Sanitation Ensure availability and sustainable management of water and sanitation for all.</p>	<p>JA Solar attaches great importance to water resource management and has established a comprehensive environmental management system to comprehensively control the pollutants and wastes generated during production and operation. Wastewater and exhaust gas are treated and discharged per the standards. The Company actively explores means of recycling and utilization of water resources, striving to reduce water consumption while continuously improving the utilization efficiency of water resources.</p>
 <p>Goal 7: Affordable and Clean Energy Ensure access to affordable, reliable, sustainable, and modern energy for all.</p>	<p>JA Solar continues to promote technological innovation and improve product efficiency, facilitating grid connection at a fair price. It increases the accessibility of clean energy, and advances the transformation of clean energy.</p>
 <p>Goal 8: Decent Work and Economic Growth Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.</p>	<p>JA Solar provides employees with equal opportunities, a safe work environment and decent work. This supports them in obtaining fair income, a better workplace, better welfare protection, and personal development prospects. While creating employment opportunities, the Company drives the development of enterprises in the upstream and downstream of the industrial chain and fosters the sustainable development of the industry.</p>
 <p>Goal 9: Industry, Innovation, and Infrastructure Build disaster-resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.</p>	<p>The Company has established an independent innovation mechanism, launched innovative and efficient products and solutions. It also continues to enhance the adaptability of products in various extreme climates and environments, thereby improving the ability of PV modules and power plants to cope with extreme environments.</p> <p>In 2022, the Company was rated as "National Intellectual Property Advantage Enterprise" and passed the evaluation of the National Enterprise Technology Center.</p>

United Nations Sustainable Development Goals (SDGs)	JA Solar's Measures
 <p>Goal 10: Reduced Inequality Reduce inequality within and among countries.</p>	<p>JA Solar strictly prohibits employment discrimination, and adheres to the concept of diversified talents and inclusive development. It is committed to providing a talent platform for the growth and development of all groups with protected characteristics, such as gender, age, ethnicity, beliefs, and people with disabilities.</p> <p>The Company has also assisted with rural revitalization and promoted common prosperity through projects, such as "PV-based poverty alleviation" and "grid connection at a fair price".</p>
 <p>Goal 11: Sustainable Cities and Communities Make cities and human settlements inclusive, safe, resilient, and sustainable.</p>	<p>In terms of BIPV, JA Solar has consistently conducted forward-looking exploration. In 2022, it launched the "JA Solar Xingjia" distributed generation household PV brand to explore a new mode of integrating PV technology with rural buildings. In addition, JA Solar BIPV roofing products have made phased progress and can be widely used in courtyards, car sheds, industrial factories as well as other application scenarios. In the future, it will keep on creating BIPV products that meet building safety, aesthetics, and design specifications, and combine building materials and PV properties, contributing to a zero-carbon future city.</p>
 <p>Goal 12: Responsible Consumption and Production Ensure sustainable consumption and production patterns.</p>	<p>JA Solar attaches importance to the supply chain, practices social responsibility, and strictly controls supply chain issues regarding conflict minerals and labor.</p> <p>It also continues to promote green and low-carbon products throughout its entire life cycle, creating a "zero-carbon factory" while exploring product disassembly and recycling. It has jointly launched the "Photovoltaic Recycling Industry Development Cooperation Center" to actively facilitate the establishment and improvement of the system in the PV recycling field.</p>
 <p>Goal 13: Climate Action Take urgent action to combat climate change and its impacts.</p>	<p>JA Solar actively addresses climate change and carries out climate risk identification work. The Company forges a comprehensive green development system through green product technology, green supply chain management, planting greenery, green power supply and application, implementing green office spaces and lifestyles, and the dissemination of the green concept.</p> <p>Based on its own carbon inventory work, the Company joined the Science Based Targets initiative (SBTi) in 2022 and became the first PV enterprise in the world to participate in CDP supply chain projects, facilitating a decarbonized supply chain.</p>
 <p>Goal 15: Life on Land Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</p>	<p>JA Solar has strictly observed the national ecological red line, and explicitly proposed to protect biodiversity in project development, construction, and operation activities.</p> <p>In addition, it actively explores new models of PV and ecological restoration and protection and has built several PV power plants with distinctive characteristics, including PV power plant projects for sand control, agriculture, fishery, and mountain-built PV power plant projects. This helps to achieve complementary and integrated ecological management and industrial development.</p>
 <p>Goal 16: Peace, Justice, and Strong Institutions Create peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.</p>	<p>The Company firmly prohibits child labor and forced labor and explores the application of production raw material traceability mechanisms to continuously boost labor management and conflict mineral management in the supply chain.</p> <p>The Company fulfills compliance management and strictly investigates cases of corruption.</p>
 <p>Goal 17: Partnerships for the Goals Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.</p>	<p>JA Solar highly values the cooperative relationship with global partners. It has actively signed strategic cooperation agreements with relevant parties such as China Huadian Corporation, China Beijing Environment Exchange, Huaneng Renewables Corporation Limited, World Wide Fund for Nature, and One Planet to fully leverage partnerships and drive the realization of sustainable development goals.</p>

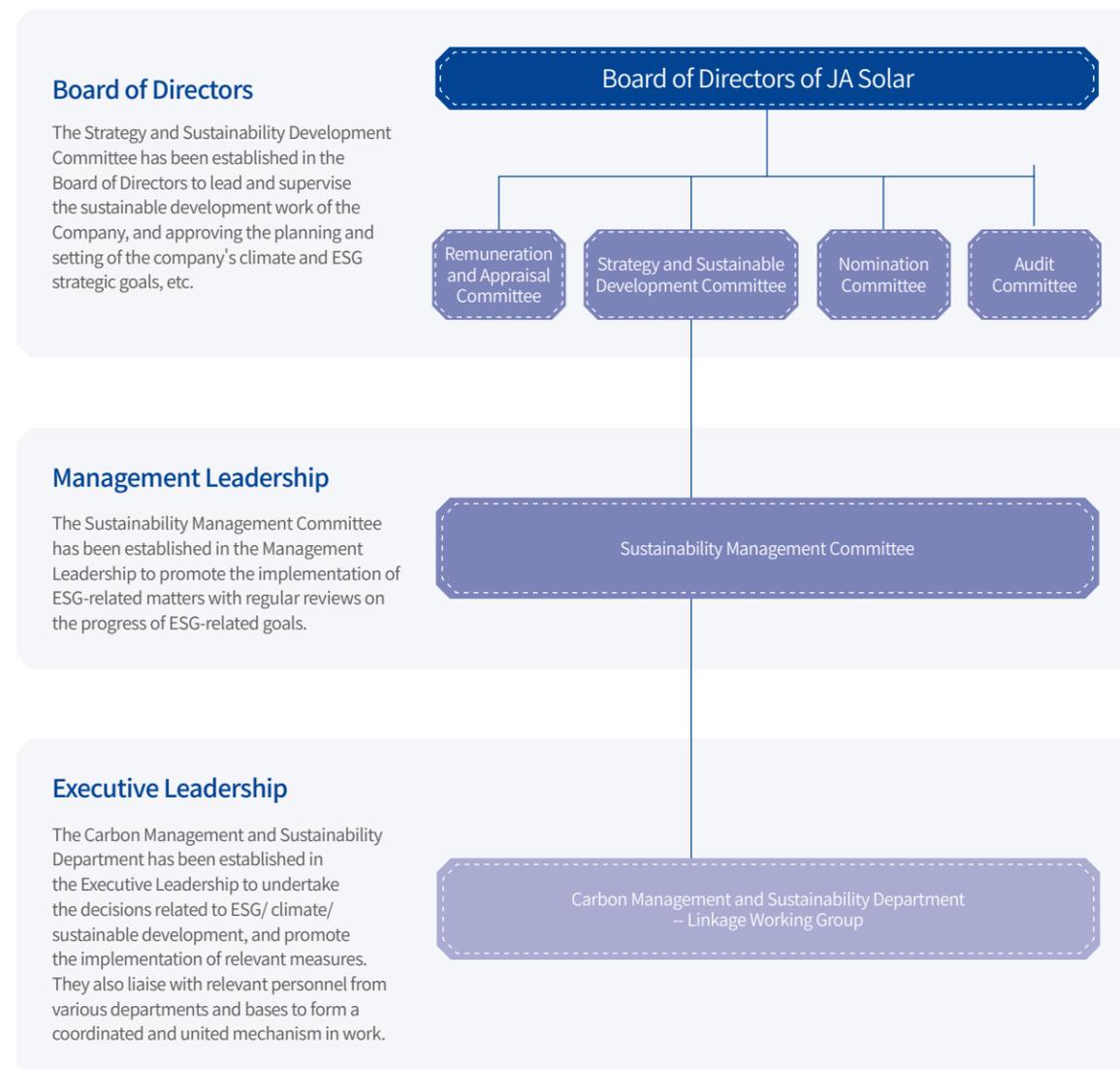
① The United Nations Sustainable Development Goals (SDGs) is the 17 global development goals set by the United Nations, which continue to guide global development efforts from 2015 to 2030 after the expiration of the Millennium Development Goals (MDGs) from 2000 to 2015.

Sustainability Governance

JA Solar continuously updates and improves its sustainability management structure and system, while urging various departments to integrate the concept of sustainability into their daily business work. This seeks to comprehensively enhance the Company's sustainable development capabilities. In 2022, the Company established a carbon management and sustainable development department to promote its strategic planning and implementation related to climate change and sustainable development. In February 2023, in order to adapt to its strategic and sustainability needs, to improve the environmental,

social, and governance (ESG) architecture, and to promote its sustainable development and ESG goals, JA Solar renamed the Strategy Committee under the Board of Directors to the Strategy and Sustainable Development Committee. The Committee will supervise and manage its important ESG-related topics and work, and promote the formulation of its ESG-related plans, goals, and systems, thus improving its sustainability management structure.

JA Solar ESG Governance Framework

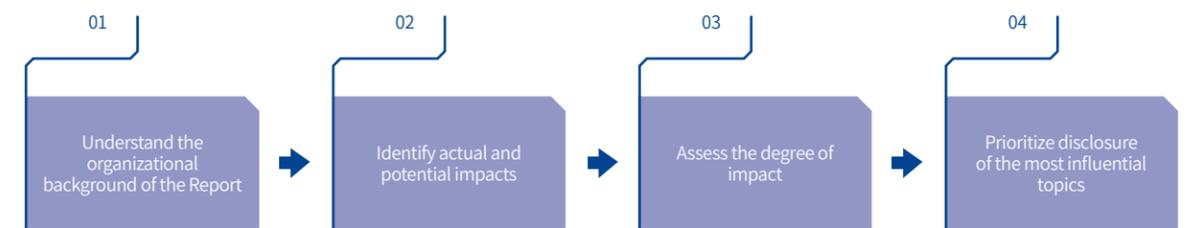


ESG Material Topics Analysis

Attempting to scientifically and accurately identify material topics related to the environment, society, and governance, and actively respond to changes in the internal and external environment, JA Solar carried out material topic sorting and analysis in 2022 based on the guidance provided in the *GRI Universal Standards 2021* issued by the Global Reporting Initiative (GRI) to determine the distribution of material topics. By adding new topics such as "R&D Technology Innovation and Intellectual Property Protection" and "Product Life Cycle Management", and adjusting and upgrading some of the topics (e.g., refining "Environmental Compliance" to "Environmental Management System") to make the company's material topics more relevant and responsive to the expectations of internal and external stakeholders.

In the analysis process of material topics, JA Solar conducted an analysis based on international and domestic policies, combining local and foreign disclosure standards and guidelines, and benchmarking with peers with full reference to the opinions of industry experts and various stakeholders. The Company has communicated with various stakeholder groups through questionnaires, interviews, and other forms to gain an in-depth understanding of their expectations for the sustainable development of JA Solar. The Company has received a total of 187 feedback questionnaires from stakeholders, sorting out 25 material environmental, social, and governance topics (7 at the environmental level, 12 at the social level, and 6 at the governance level), forming an important reference basis for JA Solar's ESG strategic planning, performance management, and information disclosure.

Work Steps



List of Material Topics of JA Solar

Environmental (E)	<ul style="list-style-type: none"> Environmental Management System Effluents and Waste Management Clean Technology Opportunities 	<ul style="list-style-type: none"> Energy Management Addressing Climate Change 	<ul style="list-style-type: none"> Water Resources Use and Management Biodiversity
Social (S)	<ul style="list-style-type: none"> R&D Innovation and Intellectual Property Protection Customer Protection Driving Industry Development Employee Training and Development 	<ul style="list-style-type: none"> Product Quality and Safety Supply Chain Management Public Welfare Occupational Health and Safety 	<ul style="list-style-type: none"> Product Life Cycle Management Responsible Procurement Protection of Employee Rights and Interests Diversity And Equality of Opportunity
Governance (G)	<ul style="list-style-type: none"> Anti-Corruption and Business Ethics Information Security and Privacy Protection 	<ul style="list-style-type: none"> Corporate Governance Improper Competition Behavior 	<ul style="list-style-type: none"> Compliance and Risk Management Market Performance

Stakeholder Communication

JA Solar attaches great importance to communication with stakeholders. It constantly improves various communication mechanisms, actively listens to the voices of stakeholders, understands their demands, and responds with practical actions.

Key Stakeholders	Concerns and Expectations	Communication Channels	Feedback and Practice
 Customers	High-performance products, high-quality service, information security	New product launches, customer appreciation meetings, exhibitions, customer service, product exchange conventions, etc.	<ul style="list-style-type: none"> • Improve product innovation capability • Pay attention to customer demands and provide timely feedback • Actively participate in industry exhibitions • Information security
 Shareholders and investors	High return on investment, robust financial health, accurate information disclosure	Shareholders' meetings, on-site reception, online performance briefing, telephone, online message, e-mail, and other methods	<ul style="list-style-type: none"> • The regular release of sustainability reports, financial reports, etc. • Timely reminders for shareholders to check and collect information related to sustainability and company operations • Set up an "Investor Education" column on the Company's official website
 Staff	Clear career development channels, comfortable working environment, all-rounded personal development	Employee training and communication, employee communication, employee development and group building activities, etc.	<ul style="list-style-type: none"> • Establish a scientific human resource management system • Listen to and collect employee suggestions • Strengthen occupational health and safety management • Focus on employee career development • Regularly organize team bonding or cultural and sports activities
 Suppliers and partners	Stable supply, long-term collaboration, fair cooperation	Supplier exchange meeting, daily supplier management	<ul style="list-style-type: none"> • Improvement of the supplier management system • Dynamic evaluation and review of suppliers • Creation of a list of excellent suppliers • The Company's audit department has established an "anti-fraud" hotline
 Government and regulatory agencies	Orderly industry competition, sufficient industry development momentum, operational compliance of the Company, and focus on environmental protection and safe production	Government-related meetings, websites, policy advice channels, etc.	<ul style="list-style-type: none"> • Strict implementation of the code of business conduct • Optimization of internal control and compliance management • Improvement of our anti-fraud management and strengthen advocacy on corporate integrity and anti-corruption • Strengthening of safety production management • Energy conservation, emissions reduction, and protection of the ecological environment
 Community	Environmental safety, improvement of people's livelihood, community development, public relations, cultural life	Public welfare activities, organization of relief efforts, environmental protection activities, etc.	<ul style="list-style-type: none"> • Organization of charity activities, volunteer work, rendering aid, and making donations • Allocation of resources to support community construction
 NGO	Focus on environmental protection, the sufficient impetus for industrial development, enterprises bearing social responsibilities	Joining associations, participating in initiatives, public welfare donations, etc.	<ul style="list-style-type: none"> • Strengthening of cooperation with non-governmental organizations and active provision of assistance • Develop an environmental management system • Donation to public welfare



Addressing Climate Change

Climate change not only poses a threat to the survival and development of humanity but also has a significant impact on the assets and operational security of enterprises. According to the sixth assessment report of the United Nations IPCC with reference to the current trend of climate change, more frequent and intense extreme climate events could push sensitive species and ecosystems to irreversible critical points. There is an urgent need for global action to mitigate and adapt to the effects of climate change.

As a leading enterprise in the PV industry, JA Solar is strongly aware that with the continuous strengthening of global action and increase in expectations to address climate change, the new energy market in

various countries will expand further. This will open up unprecedented development opportunities for its core business. It is also inevitably facing a series of physical and transformation risks brought about by climate change. To actively address opportunities and challenges, JA Solar regards climate change-related risk management as an important component of corporate governance. The Company follows the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). It conducts overall management and disclosure of work related to addressing climate change from the dimensions of governance, strategy, risk management, and indicator objectives.

Governance

The Board of Directors of JA Solar participates in the decision-making of identifying climate-related risks and opportunities, and formulates relevant management indicators and mechanisms. It also supervises and guides the implementation of relevant tasks. Board members have a deep understanding of the potential impact of climate change on the business, as well as the risks and opportunities faced by the PV industry in the future. Based on these climate-related opportunities and challenging topics, JA Solar regularly evaluates its short-term and long-term business strategies (including the long-term sustainability of the business) and conducts discussions on climate-related risks and opportunities.

In 2022, in a bid to strengthen the management capacity of climate-related topics, JA Solar established the Carbon Management and Sustainable Development Department to coordinate and supervise the advancement of climate change-related work. The Department is

responsible for formulating the Company's carbon reduction strategy, leading strategic resource planning and the relevant resource allocation, and developing an annual budget. The Department is also responsible for leading climate-related risk assessments within the Company, promoting R&D investment decisions, and performing climate-related compliance assessments.

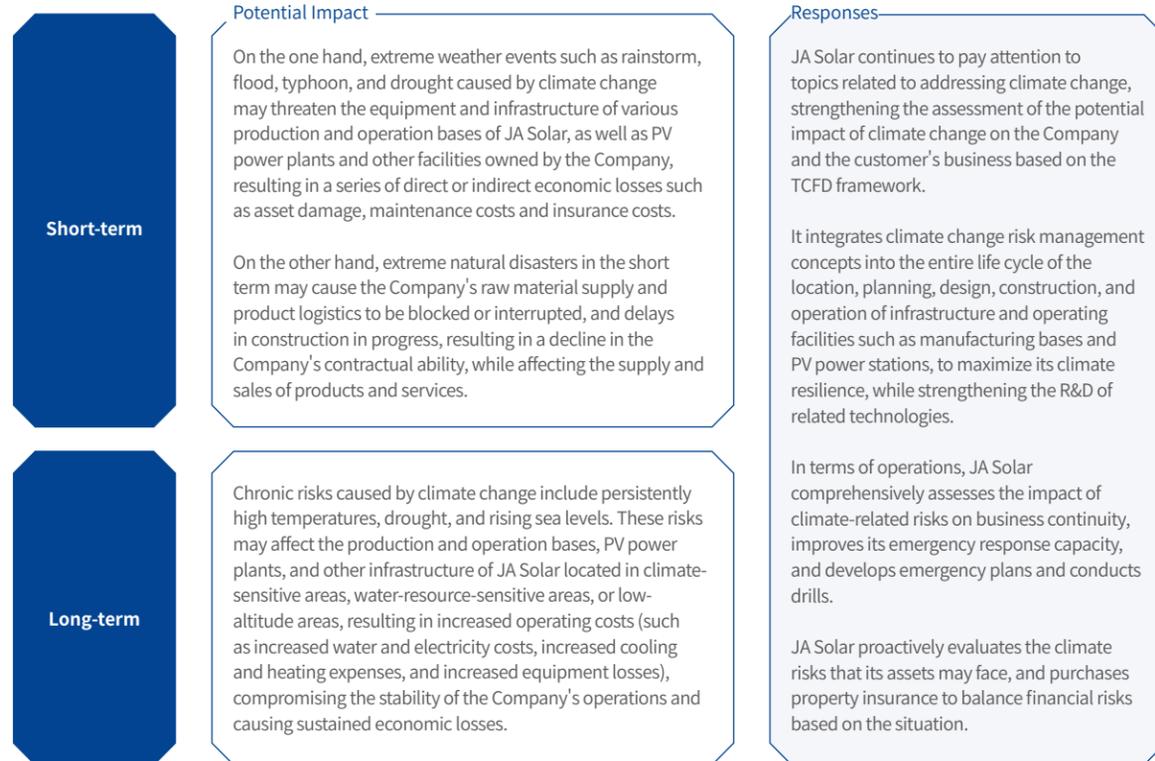
In February 2023, aiming to adapt to its strategic and sustainable development needs, improve the environment, society, and governance (ESG) framework, enhance the management ability of climate-related topics, and promote the realization of its sustainable development goals, JA Solar renamed the Strategy Committee under the Board of Directors as the Strategy and Sustainable Development Committee. Such Committee conducts special supervision and management of the ESG affairs (including climate change-related affairs).

Strategy

JA Solar actively innovates to transform the energy structure. It takes multiple measures to address the risks and opportunities brought about by climate change, and resolves the risks and challenges posed by it. The risks posed by climate change mainly include two types. They are physical risks caused by extreme weather or rising temperatures; and transformation risks brought about by changes in markets, regulations, policies, etc. in response to climate change.

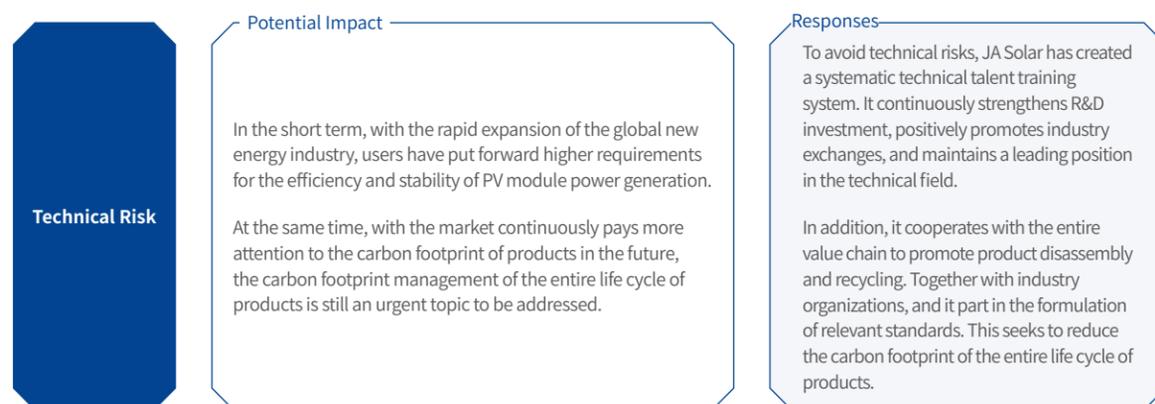
Physical Risks

The main physical risks faced by JA Solar include heat waves, rising sea levels, floods, frequent extreme weather events, and biodiversity losses. These risks have an impact on the production and operation of the enterprise in different time dimensions.



Transition Risks

JA Solar attaches great importance to the transformation risks brought about by climate change. It actively responds to new policies, regulations, and market demand, and promotes innovative development of PV technology. It also builds a low-carbon PV industrial chain to create a green PV plant. It performs information disclosure to continuously reduce medium and long-term potential risks.



Identification of Climate Change opportunities

With the continuous increment of the intensity of policies related to climate change locally and abroad, the intensity of integration of PV power generation with various industries, as an important technical means to achieve net zero carbon emissions, has continuously been increased. This has also brought huge market opportunities for JA Solar. For example, with the imminent implementation of the EU carbon tariff, high carbon emissions enterprises such as steel and nonferrous metals will further seek low-cost carbon reduction measures from the production process to avoid the cost increase caused by the tariff. Therefore, more and more enterprises are purchasing or building PV green power plants to replace a large amount of fossil energy power consumption in the production process. It reduces the product life cycle carbon footprint, and unleashes huge incremental space and opportunities for the PV industry.

Currently, more and more enterprises have set their own carbon targets. Distributed power plants and increasing the proportion of green power utilization have become essential ways to achieve emission reduction goals. Therefore, JA Solar strives to seize the opportunity and explore multiple scenarios of "PV+" applications to help users in different industries achieve their carbon neutrality goals. Currently, JA Solar can be seen in extensive scenarios and applications, such as IKEA, the United Nations in China, the Marina Bay Sands in Singapore, and the Mercedes-Benz automotive dealership store in Kuala Lumpur, Malaysia.

In the future, JA Solar will continue to promote climate-change-related scenario analysis to further identify the short-term, medium-term, and long-term risks faced by its various businesses under different emission scenarios. It will provide a favorable reference for its future strategic and financial planning.



Pakistan Bahawalpur 100MW Ground Power Plant

Risk Management

Based on the possibility and scope of risk occurrence, JA Solar has preliminarily identified climate-related physical risks and transformation risks that have a substantial impact on the business. It further selects key climate risks through communication with stakeholders such as research institutions, government regulators, investors, and stock exchanges, in combination with the climate risks that have occurred or can be predicted in its actual business scenarios. In addition, JA Solar has incorporated climate-related risk management into the overall ESG management framework. The Carbon Management and Sustainable Development Department has coordinated the implementation of climate-related risk management in various departments and business units.

To further strengthen risk management, the Company continues to establish and improve its risk management systems and risk management policies. This allows for effective monitoring and management of various risks including climate risks. Based on the risk management system, the Company has developed a risk management assessment and monitoring process. Each department carries out work based on the relevant process and regularly reports the identified significant risks. Unified grading and overall management of risks (including climate-related risks) are realized.

Metrics and Targets

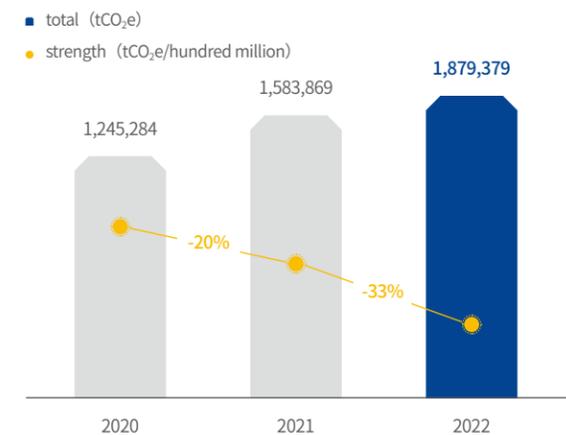
JA Solar has relentlessly promoted the formulation of climate-related strategies and goals. The Company promotes low-carbon management and sustainable development from the organizational side to the product side in an all-rounded manner.

Company has joined CDP supply chain projects to continuously improve supply chain emission reduction performance and enhance the ability of suppliers to address risks related to climate change.

JA Solar is consistently organizing carbon inventory work to identify its own carbon emissions. In November 2022, it joined the Science Based Targets initiative (SBTi), with a commitment to helping limit global warming to around 1.5° C. It promotes the setting of carbon reduction targets in a more sustainable and international manner. In addition, the

In the future, JA Solar will continue to commit efforts to promoting the achievement of carbon reduction goals, lead global energy transformation, and help create a carbon-free new energy world. This will make more contributions to the construction of global ecological civilization and sustainable development.

JA Solar Operation-wide GHG Emissions (Scope 1 + Scope 2)²



27%

2022 Percentage of green electricity usage 27%

33%

2022 Operation-wide reduction in GHG Emissions Intensity 33%

Indicator	Unit	2020	2021	2022
Scope 1: Direct GHG Emissions	tCO ₂ e	30,965	35,406	45,268
Scope 2: GHG emissions from purchased power	tCO ₂ e	1,214,319	1,548,463	1,834,111
Scope 3: Other Indirect GHG Emissions ³	tCO ₂ e	7,595,100	10,299,525	15,702,382
Operation-wide GHG Emissions Intensity	tCO ₂ e/hundred million	4,817.91	3,834.85	2,574.88

2. The greenhouse gas emissions (Scope 1+Scope 2) involved in the operation scope of JA Solar include: CO₂, CH₄, N₂O, HFCs, SF₆
 3. Other indirect greenhouse gas emissions (Scope 3) involve greenhouse gas categories: CO₂, CH₄, N₂O, HFCs, SF₆

Corporate Governance



JA Solar regards its excellent governance as an important cornerstone of sustainable development. Adhering to the business principle of "stable growth for sustained profitability", JA Solar has continuously improved the entire corporate governance system, established a diversified governance structure, and effectively protected the interests of investors. The Company continues to carry out compliance risk management and control internally. It actively fulfills its responsibilities in anti-corruption and business ethics and helps to achieve high-quality development while ensuring stable and efficient operation.



Major internal control risk events
0

Percentage of female in the board of directors
33%

Anti corruption related training personnel
3,177 participants

Newly authorized patents
215

Coverage of *integrity and integrity cooperation agreements* signed between the company and suppliers
100%

JA Solar was awarded the
China Well-known Trademark

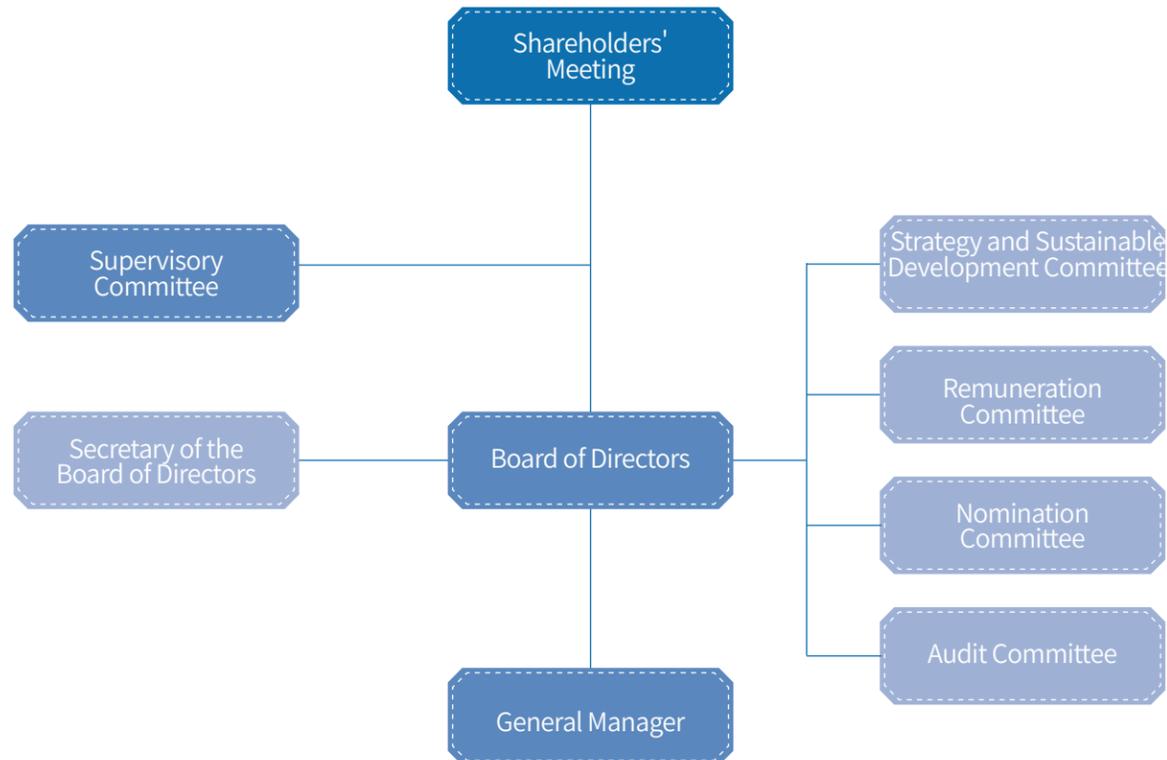
Governance Structure

JA Solar has continuously optimized its corporate governance mechanism and improved its corporate governance level. In strict accordance with a series of laws and regulations such as the *Company Law*, the *Securities Law*, the *Guidelines for Corporate Governance for Listed Companies*, and the *Shenzhen Stock Exchange Stock Listing Rules*, the Company has continuously improved its internal corporate governance structure. It has established and improved its internal control system, further standardized its behavior, strengthened communication with investors. These have properly safeguarded the interests of the majority of investors and continuously improved the Company's corporate governance level.

Governance Framework

JA Solar runs a scientific and standardized management system with efficient operation and clear boundaries to maintain its stable operation and sustainable development. It has established a corporate governance structure with the Shareholders' Meeting, Board of Directors, Supervisory Committee, and Senior Management as the main body. Among them, the Board of Directors has a Strategy Committee (now renamed "Strategy and Sustainable Development Committee"), a Remuneration Committee, a Nomination Committee, and an Audit Committee. The Company has formulated corresponding rules of procedure and work management systems, covering various aspects, such as corporate governance, information disclosure, investment, transaction, audit, subsidiary management. The system has provided a solid institutional guarantee for standardized operations and healthy development.

JA Solar also attaches great importance to the professionalism and diversity of the Board of Directors. Its directors and independent directors boast rich experience in renewable energy applications, sustainable development, business strategy, financial management and analysis along with other fields. By the end of 2022, the Board of Directors of JA Solar had a total of 9 members, including 6 males and 3 females. The Supervisory Committee had a total of 3 members, including 1 male and 2 females.



Board of Directors Governance

JA Solar elects its directors in strict accordance with the recruitment procedures specified in the *Articles of Association*. The Board of Directors of the Company consists of 9 directors, including 3 independent directors, accounting for one-third of all directors. All directors carry out their work in accordance with the *Shenzhen Stock Exchange Guideline No. 1 on Self-regulation and Supervision of Listed Companies - Standardized Operation of Main Board Listed Companies*, the *Rules of Procedure of the Board of Directors*, the *Independent Director System*, and the detailed rules of each special committee. They fulfill various resolutions adopted by the Shareholders' Meeting, so as to ensure the continuous, healthy, and stable development of the Company.

The Board of Directors of the Company has established the Remuneration Committee. The Committee is responsible for formulating and reviewing the remuneration policies and plans of the Company's directors and senior management, formulating evaluation standards for its directors and senior managerial staff, and conducting evaluations. The Company publicly and transparently evaluates the performance of directors and managers in accordance with the *Detailed Rules for*

the Work of the Remuneration Committee and other regulations. The Company has established an incentive mechanism that links the compensation of managers with company performance and individual performance. The managers perform their duties in accordance with relevant provisions, such as the *Company Law*, the *Articles of Association*, and the *Detailed Rules for the Work of the General Manager*.

In 2022, the Company held 3 Shareholders' Meetings, 11 board meetings, 9 meetings of the Strategy Committee (now renamed as the "Strategy and Sustainable Development Committee"), 4 meetings of the Remuneration Committee, 3 meetings of the Nomination Committee, and 6 meetings of the Audit Committee. Various proposals have been properly discussed and voted to ensure that the Company's decision-making is rigorous and efficient. In addition, the Company has repeatedly organized training sessions for the management staff to systematically learn relevant laws and regulations related to the compliance operation of listed companies. The training has enhanced their risk prevention awareness and improved their self-restraint ability.

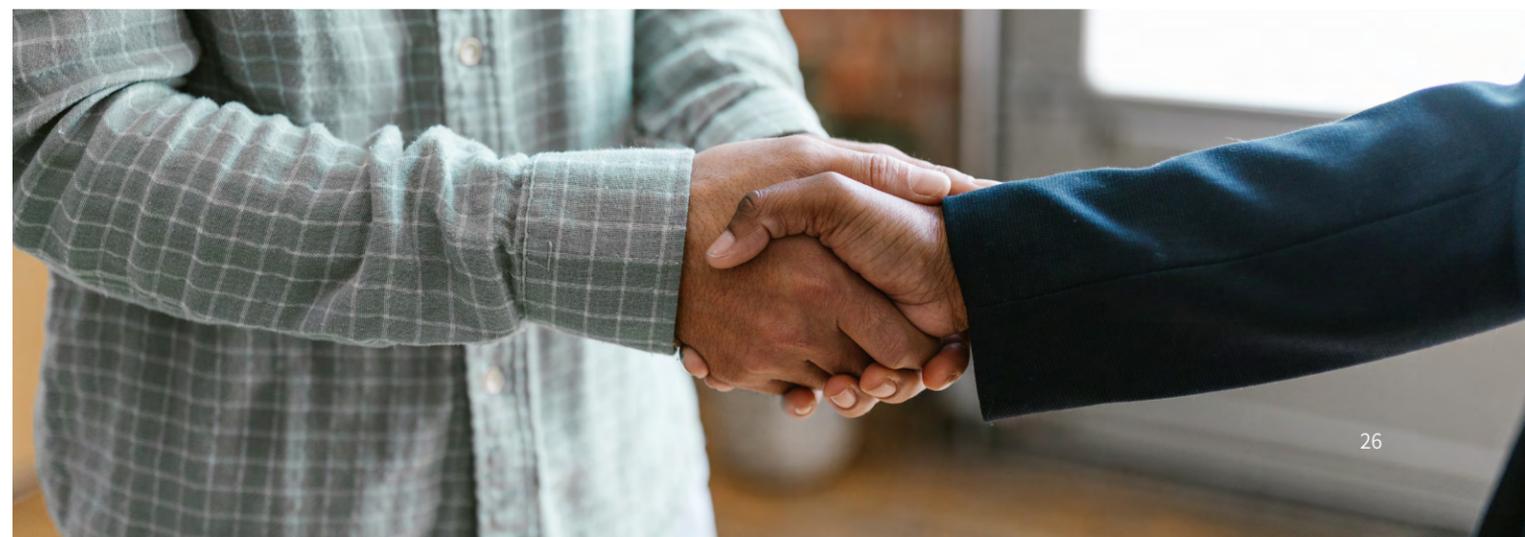
Protection of Investors' Rights and Interests

JA Solar attaches great importance to the protection of investors' rights and interests. It has developed systems such as the *Investor Relations Management Policy and Information Disclosure Management Policy* to disclose information in a timely, objective, accurate, and comprehensive manner in strict accordance with the requirements of relevant laws, regulations, and company policies. During the reporting period, JA Solar successfully completed the preparation and disclosure of 4 periodic reports and 148 interim reports. Apart from disclosing regular reports, the Company actively holds performance briefings and interactive Q&A sessions with investors, so that investors can have a more comprehensive and intuitive understanding of the Company's situation. This helps investors make investment decisions. The Company has also established contacts with investors through various channels and methods, such as official website announcements, strategy meetings, institutional special exchange meetings, exchange interaction platforms, hotlines, emails. This action improves the Company's transparency and integrity, and ensures that all investors of the Company have equal access to relevant information about the Company.

JA Solar adheres to the concept of prioritizing "creating value for the owners". Under the premise of normal operation and sustainable development, it takes a positive approach to bring returns to investors

with practical actions. The Company completed the equity distribution in 2021, distributing a cash dividend of RMB 1.5 (including tax) to all shareholders for every 10 shares, and converting the capital reserve fund to 4 additional shares for every 10 shares. A total of RMB 251,567,168.40 of cash dividends was distributed, and an additional 670,845,782 shares were converted. This ensures stable dividend distribution while sharing business results with shareholders, protecting the interests of investors, and maintaining the Company's sustainable, stable, and healthy development.

Endeavoring to further establish and improve the Company's long-term incentive mechanism, attract and retain outstanding talents, and enhance its core competitiveness, the Company has drafted the *2022 Stock Option and Restricted Stock Incentive Plan (Draft)* with the approval of the 32nd Meeting of the 5th Board of Directors and the 2021 Shareholders' Meeting. It recognized June 22, 2022 as the grant date to grant stock options and restricted shares to eligible incentive recipients. The grant registration was completed on July 25, 2022. The Company granted a total of 4.298 million restricted shares to 32 incentive objects and 15.0276 million stock options to 837 incentive objects.



Legal Compliance

Compliance is an important foundation for a Company's long-term and stable operation. JA Solar pays great attention to internal compliance management. It adheres to business ethics, and improves the construction of the compliance system. It also cultivates a compliance culture and continuously enhances the level of compliance. This ensures the orderly development of the Company's various businesses.

Compliance System

A robust compliance system is a necessary guarantee for strengthening internal supervision and preventing enterprise risks. JA Solar continues to promote the construction of a compliance system. It has set up the Compliance Management Committee to give full play to the leadership of the Company's senior management for the promotion of various types of compliance work and formulation.

At the same time, the Company has also continuously improved the compliance management operation guarantee mechanism and supporting systems. The Company has developed some content management policies, such as the *Control Procedures for the Evaluation of Laws, Regulations and Other Requirements and Compliance, Work*

Plan for the Implementation of Internal Control Specifications. This promotes the steady and orderly implementation of various compliance work.

JA Solar has also carried out several compliance training activities to continuously raise the compliance awareness of all employees. For key regions and business departments, the Company has also conducted targeted compliance training, such as *Legal Due Diligence for Photovoltaic Power Station Projects, Special Training on Trademark Law and Advertising Law, and Guidelines for Combing and Prevention of Legal Risks in Distributed Photovoltaic Power Generation Projects*.



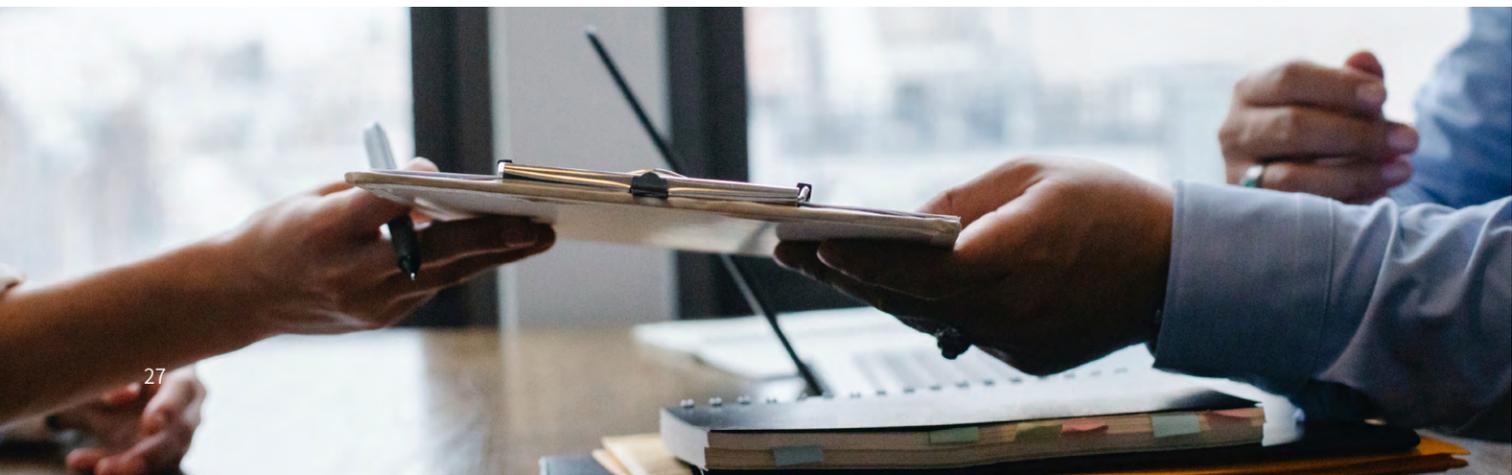
In 2022, 0 major internal control risk events occurred to the Company.

In terms of overseas business compliance risk management, the Company has actively responded to trade restrictions and sanctions policies. On the one hand, the Company has established a professional trade compliance team. The team is responsible for tracking and conveying the latest trends in overseas trade control and sanctions policies. This helps the Company in establishing an effective compliance response mechanism. On the other hand, JA Solar actively optimizes

and updates the Company's supply chain planning and management. It improves traceability of supply chains in accordance with specific country regulations and policy requirements, and reduces the potential impact of overseas trade restrictions. Up to now, the Company's shipments to major countries and regions, such as the United States, Europe, and India have been largely normal.

Case Training on EU Competition (Anti-monopoly) Regulations

In recent years, China's PV industry has developed rapidly, and domestic PV enterprises have flourished in overseas markets. In order to reduce the compliance risks in the Company's overseas operations and enhance employee compliance awareness, the Company conducted training on EU competition regulations for the entire European sales and legal team in January 2022. It has engaged overseas professional law firms to explain the content of EU competition law. The training has laid a theoretical foundation for the Company to better carry out compliance management construction as well as a beneficial foundation for a series of compliance actions brought about by the release of the EU competition law.



Business Ethics and Anti-corruption

JA Solar adheres to corporate values and strictly abides by business ethics standards to promote a culture of honesty and integrity. As a multinational conglomerate with global operations, JA Solar prohibits business conduct in ways that violate laws and regulations or

commercial integrity and ethics, or constitute any form of commercial bribery. It opposes monopoly and unfair competition, and maintains market fairness in its business and commercial activities. In 2022, there were no business ethics risks in JA Solar.

Fighting Corruption and Promoting Integrity

JA Solar focuses on building a robust integrity system to prevent corruption and strives to create a credible and corruption-free enterprise. The Company strictly complies with the *Anti-unfair Competition Law of the People's Republic of China*, the *Anti-money Laundering Law of the People's Republic of China*, the *Anti-monopoly Law of the People's Republic of China*, the *Anti-corruption Law of Vietnam*, and other laws and regulations related to anti bribery, anti-fraud, anti-extortion, and anti-money laundering in various overseas operation locations. A series of policies have been formulated and issued, including the *Business Ethics Policy*, the *Internal Audit Management Policy*, the *Implementation Rules for Punishment of Audit and Supervision Violations*, the *Anti-fraud Reporting and Handling Procedures*, and the *Engineering Audit and Supervision Management Measures*. This strictly prohibits corruption and other violations.

In the *Code of Conduct for Suppliers*, the Company prohibits employees from offering, promising, authorizing, or giving bribes, and explicitly prohibits giving or providing any valuable items to illegally induce the purchase, lease, use, or recommendation of purchasing or leasing the Company's products or services. The relationship between company employees and clients shall not violate any law and shall comply with applicable professional or industry codes of conduct.

In addition, the Company has established the Audit Committee independent of all functional departments and subsidiaries of the headquarters. Such Committee coordinates audit and supervision work, manages and supervises the implementation of the Company's business ethics and integrity work. The Audit Committee regularly conducts internal anti-fraud monitoring on employees; business sorting and risk assessment through internal control testing. It also conducts annual audit and supervision in combination with internal and external clues for reporting.

JA Solar also attaches great importance to the business ethics of its partners. Through the *Open Letter to the Partner of JA Solar*, it advocates that partners jointly abide by business ethics. For suppliers and distributors, the Company regularly organizes and conducts integrity education and training. It regularly performs due diligence on third-party partners through open and legal channels, supervises and manages the integrity performance of distributors. It will stop commercial cooperation with suppliers who violate the business ethics guidelines of JA Solar and blacklist them. In 2022, JA Solar signed the *Integrity Cooperation Agreement* with all suppliers.



Coverage of integrity and integrity cooperation agreements signed between the company and suppliers 100%

Create a Culture of Honesty and Integrity

JA Solar continues to promote the establishment of a culture of honesty and integrity in the Company. The Company has formulated the *Management Rules for Protection of Whistleblowers and Rewards of Honest Deeds*, which is updated regularly. It also provides six reporting channels, including the official WeChat account, complaint telephone and e-mail address, to internal and external stakeholders to lodge their complaints. After receiving the information provided by the informant and submitting it to the internal audit department for preliminary screening and investigation, the suspected act of violation will be transferred to the legal authority for processing and investigation. At the same time, the Company complies with national laws and regulations and its own confidentiality requirements for whistleblowers and reported information. It strictly maintains confidentiality in all aspects, such as acceptance, registration, storage, and investigation to prevent unauthorized disclosure or loss. Those found guilty of violating confidentiality regulations will be dealt with strictly and subject to severe punishment.

At the same time, the Company continues to carry out anti-corruption education, and regularly publish posts through the "JA Solar Integrity" WeChat official account as guidelines for employees to work with honesty and resist corruption. In 2022, JA Solar organized an "Integrity Publicity Month" with the theme of "Shaping a Spirit of Integrity and Building a Great Enterprise" to share fraud cases, anti-fraud policies and systems, and complaint channels. The Company also regularly

publishes various integrity promotion videos and online courses on the Company's "Yidian Zhishi" learning platform. This requires employees to learn and submit questionnaires to ensure that the Company's anti-corruption requirements are implemented and communicated to all employees.

In 2022, JA Solar conducted four anti-corruption related training sessions, with 3,177 participants. The percentage of operating sites that have conducted corruption risk assessments is 100%.

Internal and external complaint reporting channels of JA Solar

- DingTalk client: "JA Solar Energy" workbench - integrity reporting
- Tel.: 010-63611911
- QQ: 3476840246
- WeChat: JA Solar Integrity
- Email: antifraud@jasolar.com
- Address: JA Solar Audit Committee, Building 8, Noble Center, Fengtai District, Beijing

Intellectual Property Protection

JA Solar places emphasis on the important role of independent intellectual property rights in promoting technological innovation. With intellectual property management as a priority in enterprise management, market as the orientation, and talent as the cornerstone, it provides support for consolidating and improving core competitive advantages.

The Company has gradually established a robust intellectual property management and protection system as well as high-level intellectual property cultivation and operational strategies. Through the formulation of a series of systems such as the *Intellectual Property Rights Management Methods*, the Company has established an intellectual property management framework with the legal authority as the main body and various coordinated aspects, such as R&D, procurement, sales, production, and human resources. By the end of 2022, JA Solar has established a relatively complete intellectual property management system and rights protection mechanism, including patents, trademarks, technical secrets, and software copyrights. It has also improved the management process from application to later maintenance, laying a solid foundation for enterprise innovation and development.

In 2022, JA Solar continued to adhere to the *Enterprise Intellectual Property Management* as guidelines, based on the Company's *Intellectual Property Rights Management Methods*, consolidating all aspects of intellectual property management work. It has continuously improved the Company's intellectual property management and protection measures. This helped to strengthen the Company's independent innovation capabilities. In 2022, the Company won the title of "National Intellectual Property Advantage Enterprise".

In addition, JA Solar has continued to increase its Free to Operate (FTO) investigation efforts. Together with the Company's internal intellectual property team and external lawyers, JA Solar also conducted FTO

investigations on solar cell technologies such as TOPcon, IBC, HJT, and key applications of bus bar technologies to avoid product infringement risks.

In 2022, JA Solar had 215 new authorized patents, 65 of which were invention patents, of which 9 were overseas invention patents. All patents were independently applied for and granted. Those patents involve various main business segments, such as crystalline silicon, batteries, modules, and power station maintenance, promoting technological progress in the PV industry. A guarantee has been provided for its product sales.

JA Solar also focuses greatly on the cultivation and protection of brands. It gradually promotes broader and solid trademark registration and protection worldwide. It has always laid out trademarks in advance before the launch of new products, legalized the brand, and monitored the dynamics of core trademarks in real time to ensure the validity of the trademarks. It prevents trademark infringement in the market by sending letters and complaints, effectively preventing and curbing trademark infringement. The legitimate rights and interests are thus safeguarded. In 2022, the Company was granted 18 new registered trademarks, and a total of 301 registered trademarks locally and abroad. In the process of trademark protection, the China National Intellectual Property Administration issued a ruling on October 9, 2022, to protect No. 5514115 "JA Solar" trademark.



JA Solar had **215** new authorized patents



Newly approved registered trademark **18**

Information Security and Privacy Protection

As governments and the public have increasingly attached importance to information security in recent years, JA Solar has made sustained efforts to information security and privacy protection during its operations. Based on the *Personal Information Protection Law of the People's Republic of China* and other laws and regulations, the Company has formulated and issued a series of systems, such as the *Business Secrets Management Methods*, *Information Security Management Procedures*, *System and Network Security Management Regulations*. It has also continuously improved the information security and privacy protection system to protect the information security of employees, customers, and partners.

To ensure its data security, JA Solar has continuously established a security protection system, deployed security devices to formulate policies for data invocation access control, which also detect and protect sensitive data. The system detects key data and file formats in data traffic under specific conditions to prevent leakage of sensitive information. The Company has also made detailed management

regulations on data transmission, data storage, data access leakage prevention, data encryption, etc. in the *System Access Standard*.

To better prevent information security risks, further improve the ability to handle network and information security emergencies, and ensure the physical security, operational security and data security of important computer information systems, JA Solar has also developed the *Security Incident Emergency Response Management Policy*. This ensures a scientific, effective, and rapid response to network and information security emergencies.

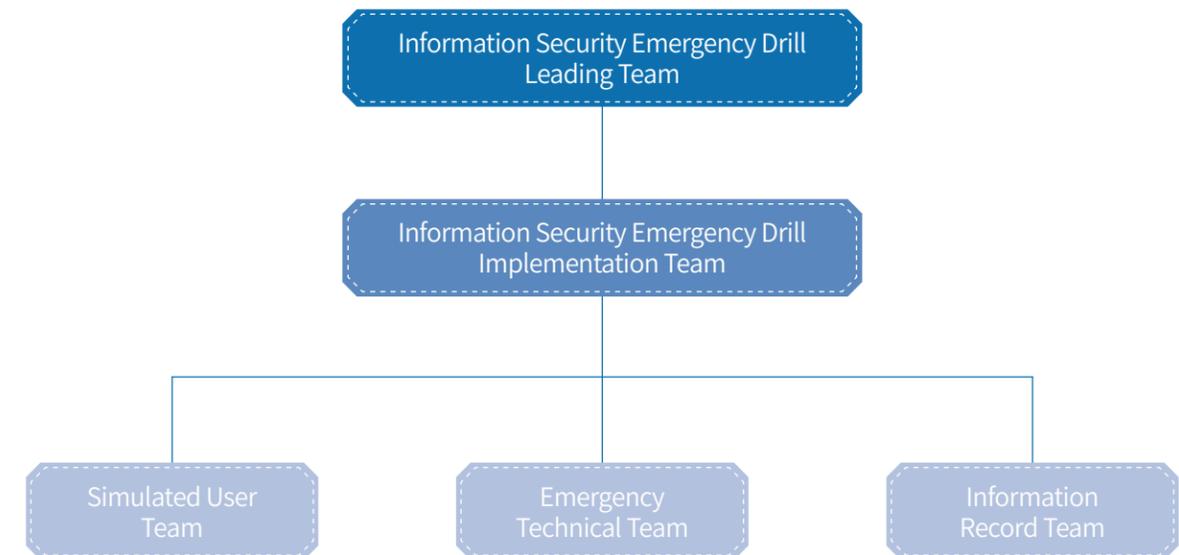
In addition, JA Solar also actively conducts information security training for employees, which enhances the awareness of information security and privacy protection of its employees. In 2022, the Company organized a total of 24 information security training sessions for a total of 5,623 participants. During the reporting period, there were no complaints of infringement of customer privacy rights or loss of customer data.



24 training sessions on information security



Cumulated coverage of **5,623** participants



JA Solar Information Security Emergency Handling Organizational Structure



Environmental Management



Since its establishment, JA Solar has incorporated environmental protection concepts into various stages such as R&D, production, packaging, transportation, application, and product recycling, continuously reducing energy and resource consumption. We have also continuously improved the performance of PV products. It is committed to building a resource-saving and environmentally friendly enterprise. In the future, JA Solar will continue to explore and actively build a green and low-carbon sustainable development ecology of the full industry chain. We will strive to build a high-end, intelligent, and green high-quality development model while contributing to China's transformation from a "manufacturing powerhouse" to an "intelligent manufacturing powerhouse".



Green Manufacturing

With the proposal of the sustainability concept of "Green to Green, Green to Grow, Green to Great", JA Solar practices the concept by building green factories. The practices include manufacturing green products, generating green energy, and creating a green earth in its operations. We implemented a green manufacturing system, thereby reducing pollution and carbon, saving energy and environmental protection, and building green factories with the promotion of green operations.

Environmental Management System

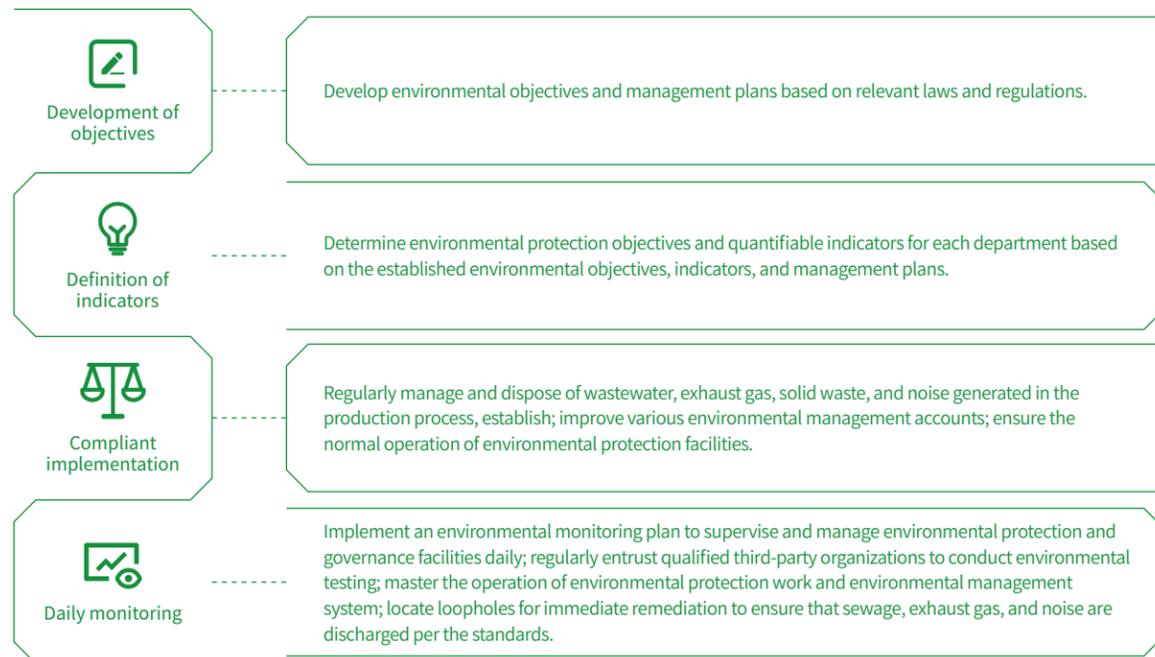
JA Solar has always pursued the path of green development, providing clean and efficient energy to users worldwide. It also practices green production and forges an environmentally friendly enterprise. The Company actively identifies and complies with relevant laws and regulations while continuously improving and implementing the environmental management system under the guidance of laws and regulations, such as the *Environmental Protection Law of the People's Republic of China*, the *Environmental Impact Assessment Law of the People's Republic of China*, and the *Management Measures for Legal Disclosure of Enterprise Environmental Information*. In 2022, all manufacturing bases that have officially been put into operation by JA Solar have passed the certification of ISO14001 environmental management system.

In order to accurately identify and reduce the potential impacts on the environment during production and operation, and proactively respond to and manage environmental risks, JA Solar has developed systems such as the *EHS Management System Manual*, the *Environmental Protection Management Procedures*, and the *Environmental Factor Identification and Evaluation Procedures* in accordance with relevant standards such as ISO14001 and ISO50001, as well as various legal and regulatory requirements, in combination with its actual situation. The

various systems define the organizational structure, corresponding responsibilities, and work procedures of the Company's environmental management while providing standardized and institutionalized management of all business departments, subsidiaries, and entities controlled by JA Solar. In addition, each manufacturing base has continued to develop environmental emergency plans, promptly employ qualified units to prepare environmental emergency plans, and regularly provide environmental emergency management training and drills. These measures minimize the adverse effects caused by environmental accidents.

Aiming to better implement and comply with the relevant national and local environmental protection laws, regulations, and policy documents, JA Solar has established the Safety Committee at its headquarters and the EHS Management Department. The Committee has been equipped with full-time personnel. In addition, it has established EHS management committees and EHS functional departments with full-time management personnel in each subsidiary. A networked management of EHS is therefore formed at the headquarters and subsidiaries. In 2022, the environmental management work of each base of the Company was steadily promoted, and there were no penalties faced for violating environmental laws and regulations.

JA Solar Environmental Management Process



Building a Green Factory

JA Solar attaches great importance to green production and has thus established and implemented a green factory management system. As of February 2023, six bases of JA Solar have been recognized as one of the "green factories" by the Ministry of Industry and Information Technology. This is not only a reflection of JA Solar as an advanced benchmark in the PV industry, but also a positive response on global green development.

Case Carrying out Environmental Activities to Jointly Create a Green Factory

In order to continuously improve employees environmental management capabilities and disseminate green manufacturing concepts and knowledge, JA Solar's Yangzhou Base launched various green factory creation activities in 2022.

On the one hand, the base has implemented a special green factory management organization for the system construction, implementation, assessment, and reward work related to green factories. To ensure the steady progress of the construction of green factories, JA Solar's Yangzhou Base has established a target responsibility system. It has also defined various indicators and execution plans by setting environmental-related medium- and long-term plans as well as annual goals.

In addition, to further spread the green manufacturing culture and create a green environment together with employees, the Yangzhou Base has also conducted environmental-related knowledge training and drills for employees with evaluation of the training results. In 2022, the Yangzhou Base conducted 99 environmental-related trainings for 3,940 participants. The training covers various contents such as emission and treatment of three wastes, environmental related laws and regulations, and environmental factor training.



Environmental Emergency Training and Drills

Energy Management

In terms of energy management, the Company has established an energy management system based on the environmental management system, developed system documents, such as the *Energy and Resources Management Policy and Energy Management Manual*. Guided by the 4R principles of circular economy (reduce, replace, recycle, and recovery), it has continued to promote innovation and improvement in energy efficiency, emission reduction, resource conservation, and other aspects. It has also appointed special personnel to regularly record the use of energy and resources. Thus, it has achieved effective management of energy resources. As of 2022, five of the Company's bases have obtained the ISO50001 energy management system certification.



5 manufacturing bases certified to ISO50001 energy management system



Clean energy usage
1,148.93 GWh

Case JA Solar's Fengxian Base Equipment Energy Conservation Upgrade Project

The No. 1 Workshop of Shanghai Fengxian Base was built in 2010 and was initially equipped with 5 heat pump units and 16 air conditioning boxes. With extended usage time, the working efficiency of various equipment gradually decreased, and it was difficult to meet the control requirements for workshop temperature during the periods of high temperature in summer every year. The indoor temperature in some areas was relatively high.

To further reduce energy consumption and emissions in the production process, in May 2022, the Fengxian Base began to carry out equipment energy-saving technical transformation. This involves eliminating old equipment and installing secondary energy efficiency and frequency conversion-controlled heat pump units and air conditioning boxes. During the trial operation, the workshop temperature was well-controlled. Based on the electricity consumption data before and after the transformation, it was deduced that more than 1.4 million kWh of electricity could be saved each year.



Energy Saving Equipment of Fengxian Base

Case Waste Heat Recovery Project of Production Factory

In response to the national policy of "Controlling energy consumption and energy intensity" to promote energy conservation and consumption reduction, in 2022, the various bases of JA Solar continued to explore and carry out waste heat recovery projects.

Yiwu Base collects and recovers waste heat from power production equipment to increase the temperature of the fresh air supplied in winter. This has effectively reduced the load of air conditioning units, and lowered energy consumption of heating equipment in winter. It is estimated that 1,446.42MWh of electricity can be saved annually. Meanwhile, the Yangzhou Base reduces the use of steam in winter through the heat recovery system at the manufacturing factory. After being put into use, the system can achieve an annual reduction of about 8,000 tons of steam usage.

In addition, in response to the national policy of vigorous development of clean new energy and the national energy structure adjustment strategy and contribute to China's "carbon peaking, carbon neutrality" dual-carbon strategy, JA Solar's bases also actively promote the use of clean energy. In 2022, JA Solar used 1,148.93GWh of clean energy, with the installed capacity of the Group's autonomous distributed power stations reaching 50MW.

Yiwu Base

The 4.8MW distributed photovoltaic power generation project at Jing'ao Yiwu Base was completed in May 2022 and is connected to the grid. The guiding principles of energy conservation and environmental protection were strictly implemented in the design process of the project, with the promotion of reasonable utilization and integration of energy and resources. The project is expected to provide 4.6714 million kWh of electricity to the power grid annually, effectively reducing the emissions of greenhouse gases and various atmospheric pollutants.

Donghai Base

The PV project of JA Solar's Donghai Base was constructed and put into operation in multiple stages starting from 2012 to 2016, with a total installed capacity of approximately 4.36MW. It adopts a "self-generation for self-use grid connection mode to reduce its own carbon emissions. In 2022, the project generated 3,922MWh of electricity, accounting for about 6.6% of the total electricity consumption.



Yangzhou Base

The distributed power plant project of JA Solar's Yangzhou Base is divided into four phases, with a total installed capacity of about 12.74MW, and the power generated is used for production and office use in the plant. In 2022, the first three PV phases of the base generated a total of 1,250MWh of green power. With the completion of the fourth phase of the project and its grid connection, the newly installed PV power generation in the future fourth phase of is expected to reach 9,500MWh/year. This has effectively reduced the Company's energy costs while promoting green and low-carbon production.

Fengxian Base

JA Solar's Fengxian Base has a total of 4MW Golden Sun Demonstration Project and 1MW Distributed Photovoltaic Project, distributed on the roof of the plant area and living areas. In 2022, the PV power station in Fengxian Base generated 3,590.18MWh of total power for use.



Water Resources and "Three Wastes" Management

JA Solar places great emphasis on the management of wastewater, exhaust gases, and waste. It adheres to the policy of "resource recovery, turning waste into treasure, and comprehensive utilization" to reduce "three wastes" pollution. The Company strictly abides by various

laws and regulations. It has formulated corresponding "three wastes" management policies to continuously explore the recycling of resources while minimizing the environmental impact of production.

Water Resources Management

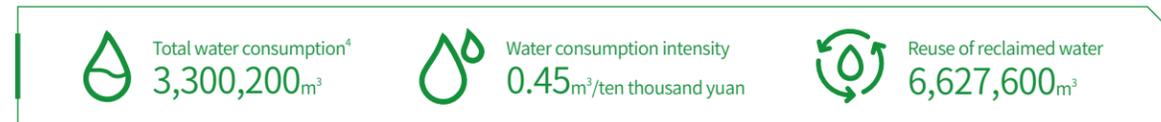
JA Solar highly values water resource management. It strictly abides by relevant laws and regulations, such as the *Water Law of the People's Republic of China*, the *Water Pollution Prevention and Control Law of the People's Republic of China*, and the *Water Pollution Prevention and Control Action Plan*, as well as the Company's Energy and Resource Management Policy. It has established wastewater treatment and discharge management systems, such as the Wastewater Discharge Control Procedures in order to monitor and manage the main water consumption in the production process and key stages that have an impact on water resources. The drainage system of "separating rainwater from sewage and separating clean water from sewage" is adopted for the drainage of each base. The rainwater is discharged locally through the rainwater pipe network while the production and domestic wastewater is discharged after being connected to the existing sewage treatment station in the plant area for treatment per the standards.

situation. For example, JA Solar's Yangzhou Base has set a water consumption target of reducing the ratio of water consumption to production capacity by 3% every year. In 2022, the main source of water for each manufacturing base of JA Solar came from municipal water supply, with a total water consumption of 3,300,200 m³ and a water consumption intensity of 0.45 m³/RMB 10,000.

In addition, the Company attaches considerable importance to the recycling and utilization of water resources. It also constantly explores various methods for wastewater treatment and reclaimed water reuse. In 2022, JA Solar's Donghai Base explored the development of a primary RO concentrated water reuse project. By utilizing equipment, such as RO membranes and high-pressure pumps, the water is purified using osmotic pressure to achieve wastewater reuse. Since the equipment was put into operation in February 2022, as of the end of the reporting period, the total water production has reached 61,800 tons.

At the same time, in order to effectively manage production water, each base of JA Solar has incorporated water use objectives into its environmental management indicators based on its own actual

In 2022, the Company discharged 20,538,700 m³ of wastewater, with a wastewater discharge intensity of 2.81 m³/RMB 10,000, and a water resource recycling capacity of 6,627,600 m³.



Case Qujing Base Reclaimed Water Reuse Project

In order to reduce the unit consumption of water and improve the utilization rate of water resources, JA Solar's Qujing Base has explored reclaimed water reuse projects in multiple workshops. Through equipment, such as concentrated water reuse pump, reuse water tank, multi-media and PP filtration, the treated wastewater can be directly reused after reaching the usage standard and can be sent to a closed cooling tower for reuse after being treated and filtered by nanofiltration membrane. The system was put into use in the slicing workshop in late March 2022, achieving a recycling rate of 80% in April and over 85% in November. The machining workshop of Qujing Base also realizes full utilization of wastewater, with no external drainage except for replacement.

The annual industrial wastewater reuse amount of the sewage station in Qujing Base is about 1,335,000 m³, with a total recycling rate of 32% and a monthly water saving of about 111,000 m³.

Case Yiwu Base Condensate Reuse Project

There are many combined air conditioning units in the cells and modules workshop of JA Solar's Yiwu Base. The units generate a large amount of condensed water during their operations in summer where high temperature and humidity are accompanied. During the operation of the ice machine in the base power station, the cooling tower needs to consume plenty of water for heat exchange and cooling. In order to improve the utilization rate of water resources, in 2022, Yiwu Base collected the condensed water from air conditioners and supplied it to the cooling tower through water pump pipelines. This saved about 74,000 tons of water throughout the year, while saving 180MWh of electricity for ice machines per year.

4. According to GRI 303-5, Water Consumption = Total Water Withdraw - Total Water Discharge

Air Pollutant Management

Air pollutant management is an important part of JA Solar's green manufacturing practice. The Company strictly complies with the *Law of the People's Republic of China on the Prevention and Control of Air Pollution* and other laws and regulations. It conducts classified monitoring and treatment of various types of waste gases generated during various production processes. The Group requires all manufacturing bases to comprehensively identify and manage environmental factors, with full prohibition of the use of ozone depleting substances, such as hydrochlorofluorocarbons (HCFCs), perfluorocarbons (CFCs), and carbon tetrachloride (CCl₄). For the main waste gas pollutants generated during the production process, each base conducts real-time control through online monitoring equipment to ensure 100% compliant emissions.

For long-term and stable operation of environmental protection equipment, the Company also formulated a maintenance inspector and inspection policy for environmental protection equipment. In addition to installing online automatic detection devices for various emissions, the Company has also added quarterly manual testing and proofreading

to its own monitoring plan. This ensures that each emission segment meets the standards.

In addition, JA Solar continuously upgrades and transforms environmental protection facilities. It also optimizes production processes and explores waste gas reuse while reducing air pollutant emissions during production. From 2020 to 2022, JA Solar's Fengxian Base invested more than RMB 5 million to continuously upgrade the technology of the workshop waste gas purification tower. The comprehensive treatment technology of "closed collection + pretreatment + activated carbon + purification tower fan" was adopted to carry out environmental protection transformation on the vacuum pump at the source of laminated waste gas generated in the production process. This reduces the total emission of waste gas, and achieves comprehensive treatment from source to treatment. Currently, the emission value of VOCs in the exhaust gas of the Fengxian Base remains stable at 40mg/m³ and below, far below the local standard of Shanghai (≤ 70mg/m³).

Case Argon Recovery and Reuse

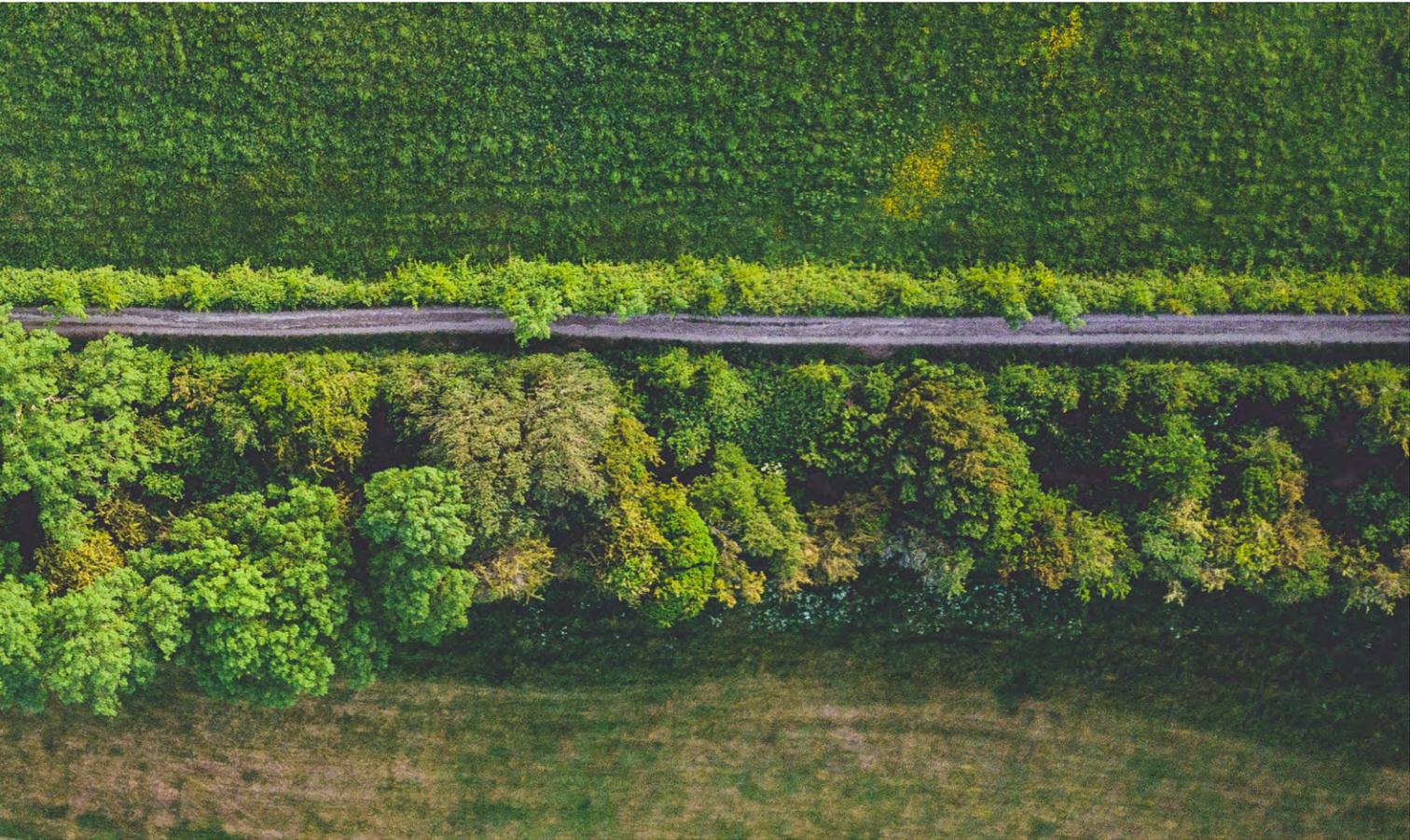
To reduce exhaust emissions during the production process and improve the efficiency of argon used in the production of monocrystalline silicon, various bases of JA Solar have explored the development of argon recovery and reuse.

The argon recovery system of the Xingtai Base utilizes a membrane compressor regulator to recover and purify the argon discharged from the zone of the monocrystalline silicon melting furnace. The purity of argon produced by adsorption and purification reaches above 99.99%. The argon can thus be reused in a crystallization furnace for secondary utilization. After transformation, the system can provide 58,000 tons of high purity argon annually.

The argon recovery system of the Qujing Base of JA Solar (Phase II) is designed through a process flow of "collection - buffer - hydrodeoxygenation - decarbonization - distillation - gas supply". The overall recovery rate is increased by about 8.4% compared to the hydrogen free process by using the hydrodeoxygenation process. The annual argon emission is reduced by about 100,000 tons, and the recycling amount exceeds 96,000 tons. The production cost is reduced by more than RMB 130 million.

Case Resource Utilization of Ammonia and Nitrogen Waste Gas

In the previous waste gas treatment process, the ammonia waste gas generated during the production process is often discharged after being sprayed per the standards. However, the wastewater generated by this process often has a high ammonia nitrogen content, and the process operation is unstable. Therefore, the treatment of ammonia nitrogen waste gas wastewater is costly and very challenging. In 2022, the Ningjin Base of JA Solar explored resource reuse methods. It has performed gas-liquid physical conversion and absorption of ammonia waste gas, and converted ammonia into ammonia water. After purification and recycling of ammonia water, waste can be turned into treasure with the formation of fertilizers. This reduces the cost of sewage treatment, and ensures that the exhaust gas is emitted per the standards, while lowering the emission of exhaust gas and wastewater from the source.



Waste Management

Each manufacturing base of JA Solar implements strict classification management of waste. Wastes are divided into hazardous waste and general waste according to relevant regulations, such as the *Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste* and the *Measures on the Management of Hazardous Waste Transfer*. The Company has also introduced a series of waste management and disposal policies, such as the *Waste Management Policy* and *Solid Waste Control Procedures* to actively explore "waste-free factories" while ensuring compliance with waste disposal.

On the one hand, the Company tries to reduce the generation of hazardous waste from the source. Each manufacturing base has also established a list of hazardous wastes that clearly indicates the types of hazardous wastes, production stage, hazardous toxicity as well as

disposal units and methods. On the other hand, the Company has issued the *Hazardous Waste Management Measures*. The Measures clarify the requirements for collection, storage, transportation, disposal, and other aspects. Each base has also established a full-process, full-chain monitoring camera system that covers the entire process of waste production sites, transportation routes, hazardous waste warehouses, intelligent weighing systems, ground pumps, and factory entrances. This further ensures the standardization of hazardous waste disposal.

While general waste is disposed of by a professional third-party organization, each manufacturing base actively explores the recycling of materials, such as cardboard boxes, plastics, and sludge based on its own solid waste production situation.

 Total amount of hazardous waste generated⁵
2,132.52 tons

 Total amount of non-hazardous waste generated⁶
113,125.64 tons

 Amount of waste recycled
54,390.5 tons

5. Namely, hazardous wastes within the management scope of the National Hazardous Waste List
6. Namely, general waste

Protecting Biodiversity

JA Solar has always adhered to the harmonious coexistence of human beings and nature. It strictly abides by the national ecological red line, and actively promotes ecological protection. In order to ensure the compliant operation of the project, JA Solar has established the *Environmental Protection Management Procedures*, which adheres to the "three simultaneities" requirements for new projects. It has also explicitly proposed to protect biodiversity in project development, construction, and operational activities. No construction will be performed within the national ecological red line protection zone. The Company's manufacturing bases, such as the ones in Ningjin and Yiwu regularly carry out soil and groundwater quality surveys alongside third-party monitoring to ensure ecological stability around them.

In addition, through the organic integration of natural ecological resources and PV projects, JA Solar has continuously explored new models of clean energy solutions and ecological restoration and protection over the years. The Company has also built several PV power plants with distinctive characteristics, including PV power plant project for sand control, for agriculture, for fishery and mountain-built PV power plant project. Thus, we forge an innovative path of complementary ecological management and industrial development.

Case Tuquan Xinsheng 200,000 kW Desert Desertification Land Treatment Photovoltaic Energy Storage Power Generation Project

JA Solar's Tuquan Xinsheng Photovoltaic Energy Storage Power Generation Project is in Taiping Township, Tuquan County, Xing'an League, Inner Mongolia Autonomous Region, covering an area of about 8,000 acres. The final installed capacity is 240MW, and the annual power generation capacity is about 390,000MWh. Through the model of power generation, planting, and restoration", the Tuquan Project has constructed a light storage power station on the Gobi Desert while comprehensively managing desertification land. This has effectively realized desert greening and formed a PV oasis on the Gobi.

In addition, the Tuquan Project is synchronously configured with 60MW/120MWh electrochemical energy storage to consider grid side regulation and power consumption. Through market-oriented electricity trading, peak shaving and valley filling can improve the poor stability of the original new energy independent power generation. This also promotes the realization of market-oriented electricity settlement benefits.

The project will be connected to the grid for power generation at the end of February 2023. It is expected to save 123,500 tons of coal, and reduce carbon dioxide emissions by about 300,000 tons, sulfur dioxide emissions by about 2,173 tons, and nitrogen oxide emissions by about 3,264 tons annually. By creating a demonstration project of "desertification land control + high-tech PV energy storage and power generation", JA Solar has continuously explored the dual benefits of ecological governance and green power generation in the PV industry.



JA Solar Tuquan Xinsheng Photovoltaic Energy Storage Power Generation Project

Green Products and Solutions

With the corporate mission of "developing solar power to benefit the entire human race", JA Solar is committed to promoting global energy transformation as well as green and low-carbon development with clean technologies and products. By the end of 2022, the Company's cumulative shipment of cells and modules exceeded 128GW.

As low-carbon products gradually become a green entry threshold for countries, JA Solar adheres to its own sustainable development philosophy. It continuously improves the technology conversion rate of PV products, while actively fulfilling social responsibilities to create green and low-carbon products. The Company appoints experts in the product technology R&D department to be responsible for product carbon footprint research and management. Currently, all the Company's mainstream products have passed the French Certisolis carbon footprint certification. 182 mainstream products have obtained the Italian UL EPD (Environment Product Declaration)⁷ environmental protection product declaration certification. The core technology "High-efficiency PERC Single Crystal Solar Cell and Module Technology" has

been selected into Green Technology Promotion Catalogue (2020) issued by the National Development and Reform Commission. Several products have also been included in the first batch of "Green Design Products" for PV cells and modules by the Ministry of Industry and Information Technology.

Relying on the world's leading clean energy technologies and products, JA Solar continuously explores innovative solutions during the development, construction, and operation of PV power stations. It uses green products and innovative models to assist with the green and low-carbon transformation of various industries and regions. By the end of 2022, the scale of PV power stations held by JA Solar was 963MW, with an annual power generation capacity exceeding 800 million kWh. In addition, the Company has multiple "grid connection at a fair price" PV power station projects under construction in China. These projects are expected to be connected to the grid for power generation in the first half of 2023, making contributions to achieving global green development.

Case JA Solar 300MW Photovoltaic "Affordable Online" Project in Chaoyang County, Assisting in Cleaning Transportation

The impact of PV products on the environment during the production and use process has always been an important factor of concern for the end market. JA Solar continues to explore green environmental protection throughout the product life cycle. In 2022, the Company's DeepBlue 3.0 and other products were awarded the Italian UL EPD logo.

In addition, JA Solar DeepBlue 3.0 has also successively passed certifications, such as the South Korean Eco-Label Certification and the French Certisolis certificate for low carbon footprint. This demonstrates its positive practice of creating green products and contributing to global sustainable development.



JA Solar 300MW Photovoltaic "Affordable Online" Project in Chaoyang County

7. UL EPD is the global safety testing and certification authority UL and the Italian Environmental Product Declaration (EPD) environmental protection product certification issued by it. This assessment process follows the standards of ISO 14025 and EN 15804, and comprehensively assesses the environmental impacts of products throughout their life cycle (including possible global warming, haze, ozone layer destruction, and water pollution). It is applicable in two global leading markets, North America and Europe, and serves as a powerful reference for investors and owners of PV power plants to choose low-carbon products.

Case JA Solar DeepBlue 3.0 Passed UL EPD Certification

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Case JA Solar's "Farming-PV" Agrivoltaic Project Contributing to a Clean Olympics

In low-temperature and snowy environments, the static load performance and temperature cycling resistance of PV modules are crucial. With professional products and technical solutions, JA Solar supplies all the high-efficiency single crystal modules for the 200MW Farming-PV Complementary Project in Guyuan, Yanzhong, Hebei. This helps create a clean Winter Olympics.

In 2022, as one of the sources of clean electricity for the Beijing Winter Olympics, the Hebei Yanzhong Guyuan Farming-PV Complementary Project will have an installed capacity of 200MW. An annual average power generation of 430 million kWh will be realized, equivalent to a reduction in standard coal consumption of 129,000 tons per year.

Case China-Thailand Cooperative Water Photovoltaic Project Assisting Thailand to Move towards a Low Carbon Society

JA Solar ardently explores diversified PV solutions under different scenarios and conditions, to continuously promote the application of clean energy. It has provided PV modules for the 58.5MW floating PV power station at the Sirindhorn Dam Hybrid Solar PV Park in Ubon Ratchathani, Thailand. This helps build a demonstration project for hydropower and floating PV integrated energy.

Floating power stations require modules with excellent UV resistance, high temperature and moisture resistance, and PID resistance. JA Solar has provided high-efficiency PV modules for the floating PV power station of Sirindhorn Dam. Combining the Sirindhorn Dam hydropower station and energy management system built in the 1970s, this project can adjust hydropower and PV power generation based on load changes (i.e., daytime PV power supply, nighttime hydropower station power supply, or simultaneous PV and hydroelectric power generation operation mode). While ensuring the continuous and stable supply of clean energy, it is expected to reduce carbon dioxide emissions by 47,000 tons per year.

During the project design process, ecological environment protection was also taken into full consideration. Horizontal directional drilling technology is adopted to lay cables underwater to avoid damage to the underwater ecological environment. Relying on stable product performance, JA Solar vigorously utilizes green products to help Thailand achieve the goal of increasing the share of renewable energy to 35% by 2037.



58.5MW Floating PV Power at the Sirindhorn Dam Hybrid Solar PV Park in Ubon Ratchathani, Thailand.

Green Industry Chain

While positively practicing green manufacturing, JA Solar also adheres to integrating the green concept into the entire life cycle of products. This provides customers with efficient and stable products, while minimizing or eliminating the environmental impact of products in various aspects of the life cycle, such as raw materials, warehousing and logistics, use, and recycling.

Environmental-Friendly Raw Materials

JA Solar attaches great importance to the use of green and environmentally friendly materials in the production process. It cooperates with suppliers to actively develop and explore low-carbon and environmentally friendly materials. It reduces the carbon footprint of products while strictly controlling the emission of harmful substances.

On the one hand, JA Solar adheres to the goal of "sustainable development" and the goal of "clean production". In the introduction stage of new materials, based on the general trend of international environmental protection, it fully considers the green environmental requirements of various materials. The Company strictly controls lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl ether, polybrominated biphenyl, and other toxic and harmful substances involved in the entire life cycle of raw materials. Before put into production, the materials are subject to hazardous material compliance and third-party chemical testing. This ensures that all raw materials and auxiliary consumables are green products. It also incorporates topics, such as hazardous chemical waste, solid waste, and no conflict minerals into its supplier social responsibility and sustainable

development evaluation system. In addition, the Company conducts an annual process evaluation of the production line to ensure that green production runs through each production process. In 2022, JA Solar DeepBlue 3.0 single-glass products were developed and applied with environmentally friendly fluorine-free weather resistant backplates. DeepBlue 3.0 double-glass products were developed and evaluated with lead-free solder strips and mass production conditions. This effectively mitigates the negative environmental impact of the products while meeting environmental policies of various countries.

In addition, JA Solar actively cooperates with leading upstream and downstream enterprises in the industry. This aims to promote suppliers' clean energy use and carbon emission management and assist in their energy structure adjustment. It attaches high value to carbon footprint management of raw materials and promotes suppliers to carry out carbon footprint certification work. In 2022, both JA Solar's silicon material suppliers completed carbon footprint certification. This boosts the Company to create green and low-carbon products.

Actively works with suppliers to create low-carbon green raw materials and reduce the carbon footprint of products

Differentiated backplates	The Company effectively reduces product energy consumption and the aging time and production line circulation times in the fluorine film composite process in the production process
Alternative application of recycled aluminum	Cutting down the high energy consumption of electrolytic aluminum production through the recycling and reuse of waste aluminum
Glass energy optimisation	Company cooperates with glass suppliers to explore waste heat recovery and utilization, lowering energy consumption of glass while increasing environmental benefits

Sustainable Logistics and Packaging

As the mainstay of clean energy, PV products bear the important mission of promoting global carbon emission reduction and energy structure transformation. JA Solar is not only a new energy manufacturer of high-quality and efficient PV products, but also committed to taking the lead in creating zero-carbon parks and products during production and processing. It regards packaging logistics as a critical aspect in the realization of a green industrial chain. It continues to make efforts in the packaging, transportation, storage, and other aspects of products, with a view to create a complete green supply chain system and mature green industrial chain implementation standards, serving as a model for green manufacturing.

It positively explores green packaging and the recycling of packaging materials. In 2022, its manufacturing bases continued to advance the recycling of waste pulp and reproduction of carton packaging. It also probes into the method of recycling of packaging materials with suppliers. It realizes the recycling of silicon packaging by using silicon cardboard boxes instead of the original packaging. JA Solar's Yiwu Base has also taken the initiative to engage in frequent contact with outsourcing solar cell manufacturers to promote the recycling of solar cell packaging and practice low-carbon environmental protection. JA Solar's Yangzhou Base promotes the recycling of packaging materials through re-labeling and other methods. This minimizes consumption of one-time packaging material and waste emissions. In 2022, more than 400,000 sets of solar cell carton packaging materials and nearly 20,000 pallets were recycled in the JA Solar's Yangzhou base.

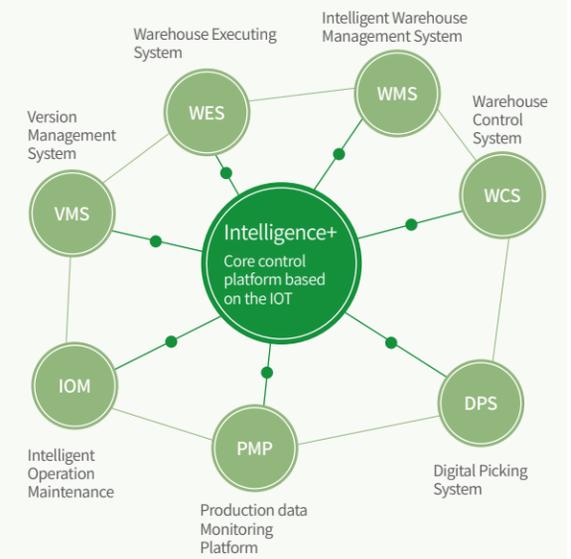
Reduce the carbon footprint of product transportation in the logistics segment

On-site transportation	Promote "the "fuel to electricity" project for forklift trucks. This reduces the carbon footprint of on-site transportation segments, thus progressing towards a zero-carbon green factory. JA Solar's Yangzhou Base actively implements the "fuel to electricity" project for forklift trucks. Currently, a total of 32 forklift trucks have been electrified, realizing the electrification of vehicles for transportation and reduction of exhaust carbon emissions.
Off-site transportation	Exploring fast, stable, and safe green transportation methods such as sea rail intermodal transportation and barge mass transportation. The bases in Yangzhou, Yiwu, and Hefei of JA Solar adopt railway transportation instead of highway transportation to directly reach ports such as Shanghai and Ningbo. This seeks to increase transportation volume while cutting down emissions generated during land transportation. JA Solar is also trying to develop local supply chains, promote localized procurement, and lower carbon emissions generated in transportation.

Case JA Solar's Yangzhou Base Intelligent Three-dimensional Warehouse Taking a Part in Green Industrial Chain

In order to explore and promote the green industrial chain, JA Solar's Yangzhou Base has explored the development of three-dimensional warehousing projects. The original flat warehouse in Jingshan Park has an area of 19,000 square meters that can store 90MW of completed modules. The three-dimensional warehouse achieves a storage capacity of 540MW of completed modules. The establishment and use of intelligent three-dimensional warehouses have greatly improved the utilization rate of unit land area, and reduced the energy consumption brought about by turnover transportation, such as renting warehouses, transporting vehicles by short barges.

In addition, Yangzhou Base also utilizes intelligent logistics transportation systems, such as Manufacturing Execution Systems (MES), Intelligent Warehouse Management Systems (WMS) to complete the transportation and access of materials linked to automated warehouses and module workshops. The intelligent warehousing system can achieve automation in warehousing, tape setting, and palletizing. This effectively increases transportation efficiency, decreases carbon emissions during operation, and creates a green warehouse.



Case Exploring a New Mode of Green Logistics for Multimodal Transport

With customer needs as a priority and guiding direction, JA Solar focuses on smooth freight transportation and works with logistics suppliers to explore a new model of green logistics. JA Solar's Hefei Base has worked with suppliers to successively build mature supply chain logistics models, such as Wuhu Port's "switch from land to water transport", Nanjing Port's "Yongning land transport connecting water transport", and "rail and ocean multimodal transport" direct connection to Shanghai and Nanjing home ports. By creating a "customized" service for the "Land Transport-Chaohu Lake - Yangtze River- Inland Sea" corridor, carbon emissions from logistics processes can be effectively reduced.

In June 2022, the special "Yiwu-Ningbo-Zhoushan port" rail and ocean multimodal transport for PV of JA Solar was launched successfully, with a cargo of 40 cabinets of modules to be shipped from the Yiwu West Railway Station to the port of Algeciras in Spain via a special ship, forging a new mode of green transportation.

The exploration of JA Solar's multimodal transportation mode has broken the limitations of traditional single transportation modes, promoted upstream and downstream cooperation in the industrial chain and supply chain, and innovated operations. Greater contributions have been made to the realization of the global "carbon peaking and carbon neutrality goals".



The First Launch of the JA Solar "Yiwu-Ningbo-Zhoushan port" Rail And Ocean Multimodal Transport For PV

Product Disassembly and Recycling

JA Solar positively undertakes environmental responsibilities throughout the entire product life cycle. It disassembles and recycles waste PV modules to help cover "the last mile" of the PV green chain.

It has established a long-term strategic partnership with PV CYCLE, a world-renowned PV module recycling agency, to ensure that all modules exported to the EU comply with WEEE directives and corresponding national electronic waste disposal specifications and requirements. As a global member of PV CYCLE, JA Solar is also actively delivering solutions for waste PV modules to customers in non-EU regions. In September 2022, JA Solar Group passed the audit conducted by Mazars, a French third-party audit agency, on the recycling of waste PV modules and WEEE compliance. In order to further enhance employees understanding and increase awareness of the disassembly and recycling of PV products, in October 2022, the Company engaged PV CYCLE experts to carry out online training on PV product recycling. Its employees' understanding of product life cycle management has been enhanced.

For further sustainable development of the PV industry, JA Solar works with the PV Committee of China Green Supply Chain Alliance, as well as various enterprises, universities, scientific research institutions, financial institutions, and industry organizations engaged in PV recycling, to jointly initiate the establishment of Photovoltaic Recycling Industry Development Cooperation Center. JA Solar makes full use of its experience and advantages in "green scientific research", "green manufacturing", and "green management" to actively promote the establishment and improvement of systems in the field of PV recycling as well as the formulation and popularization of policy standards, technology research and innovation. JA Solar makes unremitting efforts to develop PV recycling, the final and key link of the entire PV industry chain.

Green Culture

JA Solar attaches great importance to the environmental impact of employees' office activities. It actively responds to the national call for energy conservation and carbon reduction and advocates the concept of green office internally to create a green office culture. The Company has developed a series of internal policies, such as the *Office and Logistics Supplies Management Policy*, *Lighting Safety Management Policy*, and *Enterprise Water Conservation Management Policy* to promote electricity conservation, paper saving, and green travel for daily work. This helps create a low-carbon and environmentally friendly green office.

In 2022, the Company, represented by its headquarters, actively implemented carbon emission reduction in its daily operations through power-saving initiatives, paperless office, centralized garbage disposal, and recycling programs. JA Solar has also increased its proportion of vehicles powered with new energy, reduced the individual carbon footprint of employees, and achieved a continuous reduction in greenhouse gas emissions from its daily administrative activities.



Case JA Solar Beijing Headquarters Achieved Carbon Neutralization of Operational Emissions in 2021

As a leading PV enterprise, JA Solar follows closely the sustainable development concept of "Green to Green" and strives to create a green development model. In 2022, the Company conducted verification on greenhouse gas emissions in Scope 1 and Scope 2 of the global management headquarters in Beijing for the whole year of 2021. By purchasing the verified carbon unit (VCU) produced by the Liangdu Afforestation VCS+CCB certification project, it has achieved carbon neutrality in 2021.



JA Solar strongly believes that the establishment of a green culture is closely related to education, training, promotion, and supervision. It improves the environmental awareness of all employees through various environmental knowledge training, themed activities, and lectures.

In 2022, JA Solar conducted a total of 345 environmental-related training sessions for approximately 13,420 participants.



Conducted a total of **345** environment-related training sessions



Training covering approximately **13,420** participants

Case World Environment Day - Work Together to Build a Clean and Beautiful World

To convey the Company's concept of sustainable development and enhance employees' awareness of environmental protection, in 2022, JA Solar organized "the World Environment Day" activity and environmental protection training for all manufacturing bases and PV power stations. It also implemented the theme of the National Environment Day, "Work Together to Build a Clean and Beautiful World". Each base tapped on employees' environmental habits and enhanced their awareness of caring for the environment and protecting the ecology through promotional videos, banners, posters, signing of proposals, and cleaning up of white trash.



Education and Training for the "World Environment Day" in Baotou Base

Case "Conservation at JA Solar" Action

In order to emphasize the importance of conservation, frugality, and hard work, the Company headquarters held a "Conservation at JA Solar" action training meeting in 2022 for each base to practice frugality and reduce wastage. After the meeting, each base thoroughly implemented the spirit of strict conservation and actively carried out various "Conservation at JA Solar" activities.

Among them, the Xingtai Base carried out various "Conservation at JA Solar" plans such as vehicle management, office management, business entertainment, gift management, etc. Through monthly tracking, it clarifies the actual cost savings of each action item each month, ensuring the continuous and effective implementation of the action plan.

Xingtai Base also organized the posting of signs and slogans on frugality and conservation in different areas and mobilized employees to carry out and practice conservation photography activity. In the form of pictures or small videos, they recorded, displayed, and communicated their own or others' conservation tips and practical actions in green office, food conservation, waste utilization, green travel, and other aspects, cultivating employees' awareness of frugality and conservation while conveying the actions of practicing conservation and advocating against wastage, thus creating "a Conservation at JA Solar" atmosphere for all employees.

By the end of October 2022, all departments of Xingtai Base had submitted nearly 100 "Conservation at JA Solar" action items, saving over RMB 1 million in total. The photography activity received extensive participation of the base staff, achieving an excellent publicity effect.

Products and Services



JA Solar considers technological innovation as an important driving force for sustainability. The Company has always focused on technological innovation and has been guided by market demand based on technological R&D, to promote R&D innovation and strengthen its technological advantages. With a strong emphasis on the construction of an innovation system, JA Solar has created a robust R&D system, laying a solid foundation for it to maintain its leading product technology advantages with medium and long-term technical reserves.



R&D investment RMB
46.08 hundred million



R&D personnel
2,276 persons



Large-scale mass production of n-type Bycium cells with a maximum conversion efficiency of
25.3%



Customer complaint resolution rate
100%



The First National Intellectual Property Operation Center

in the PV Manufacturing Field (excluding polycrystalline silicon)



Technological Innovation

JA Solar considers technological innovation as an important driving force for sustainability. The Company has always focused on technological innovation and has been guided by market demand based on technological R&D, to promote R&D innovation and strengthen its technological advantages. With a strong emphasis on the construction of an innovation system, JA Solar has created a robust R&D system, laying a solid foundation for it to maintain its leading product technology advantages with medium and long-term technical reserves.

Innovative Capacity Building and Guarantee

Facing the full PV industry chain business, JA Solar focuses on building a R&D layout and multi-level R&D system with global competitive advantages. It has established independent R&D centers (including crystalline silicon R&D centers, solar cell R&D centers, component R&D centers, and system R&D centers) and core R&D technology teams in Xingtai, Hebei, Yangzhou, Jiangsu and other places. It also continuously improves PV product technology R&D and process in the major aspects of wafers, solar cells, modules and systems.

To ensure the independent innovation ability of the enterprise, JA Solar adheres to the R&D strategy of "one generation for production, one generation under R&D, and one generation for reservation". It has internally built a professional scientific research team composed of professional scientists and personnel with doctoral and master's degrees from well-known universities locally and abroad. It constantly supports technical research and technological innovation

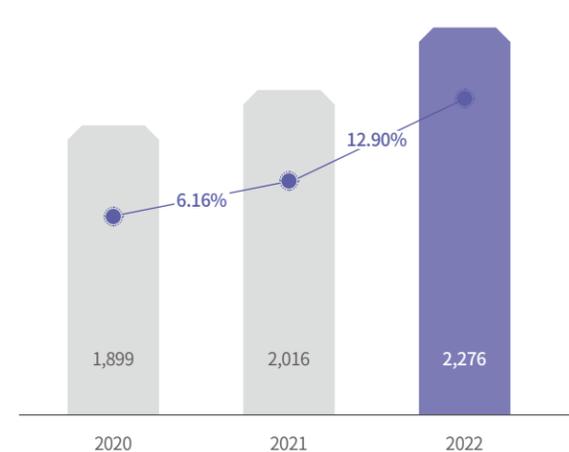
for a long time. On the one hand, the Company continues to cultivate technical backbones with strong scientific research capabilities and rich experience, while vigorously introducing outstanding technical R&D talents to adapt to the rapid technological R&D and production process iteration in the PV industry.

The Company has also established a comprehensive R&D management policy, management norms, and intellectual property protection and incentive policy. A positive atmosphere has been shaped for actively carrying out technological innovation and promoting product intelligent upgrading within the Company. By the end of 2022, JA Solar had 1,260 authorized patents, including 233 invention patents. The Company has also gradually expanded its overseas patent application layout, which currently covers the United States, Europe, Japan, South Korea, Malaysia, India as well as other countries and regions.

R&D investment (hundred million)



Number of R&D personnel (persons) and Growth rate (%)



"National Enterprise Technology Center" of the General Office of the National Development and Reform Commission

The First National Intellectual Property Operation Center in the PV Manufacturing Field (excluding polycrystalline silicon)

"National Intellectual Property Advantage Enterprise in 2022" issued by the China National Intellectual Property Administration

"National Pilot Enterprise of Industrial Enterprise Intellectual Property Rights Utilization" by the Ministry of Industry and Information Technology

JA Solar values R&D cooperation with external third-party organizations highly and actively promotes the R&D model of combining "industry, university, research". The Company has established extensive cooperative relationships with many well-known scientific research institutions, colleges and universities, and internationally renowned enterprises locally and abroad. Together with these third-party organizations, JA Solar developed cutting-edge PV new technologies,

accelerating the pace of industrialization and innovation. In 2022, the JA Solar Human Resources Platform led various bases and organizations to sign contracts with a total of 44 cooperative universities. This effectively assisted in the construction of professional and technical talent teams and promoting the industrial innovation as well as upgrading of the Company.

Case Cooperating with Universities to Cultivate Solar Cell R&D Talents

Perovskite solar cells feature many characteristics, such as easy access to raw materials, high conversion efficiency, and excellent life cycle carbon footprint. They have become a hot research direction in the field of PV technology in recent years. It is anticipated in the industry that the conversion efficiency of perovskite solar cells can reach up to about 50%, which is approximately twice that of current crystalline silicon solar cells. At present, perovskite solar cells are still in the early stages of industrialization where it is facing technical bottlenecks, such as lack of long-term stability and insufficient preparation processes for large areas.

To accelerate the research, development, and application of perovskite PV cells, as a leading global PV enterprise, JA Solar actively carries out research and reserve of perovskite and laminated cell technology and cultivates core technical talents. In 2022, it cooperated with the research team of the Beijing Institute of Technology to jointly research and develop key technologies for high-efficiency perovskite optoelectronic devices with conversion efficiency greater than 20%. Under the guidance of the technical team at Beijing Institute of Technology, JA Solar Research and Development Center has established a perovskite solar cell laboratory to cultivate leading talents in the field of solar cell technology.

Case JA Solar's Yiwu Base was Approved as a Provincial Doctoral Innovation Station

JA Solar's Yiwu Base has always focused on innovation-driven and talent team building. Over the years, the base has cooperated with the doctoral team of China Jiliang University to cultivate nearly 1,000 professional and technical backbone, accelerating the promotion of key core technologies in the PV industry.

In March 2022, after being reviewed and recognized by the Zhejiang Association for Science and Technology, JA Solar's Yiwu Base became the first batch of Zhejiang doctoral innovation stations. We further strengthened the Company's industry-university-research cooperation with universities and scientific research institutions, thus forming a smoother R&D talent cultivation channel and providing a strong assurance for the Company to continue carrying out technological innovation, product innovation, and solution innovation.

Innovation Achievements and Promotion

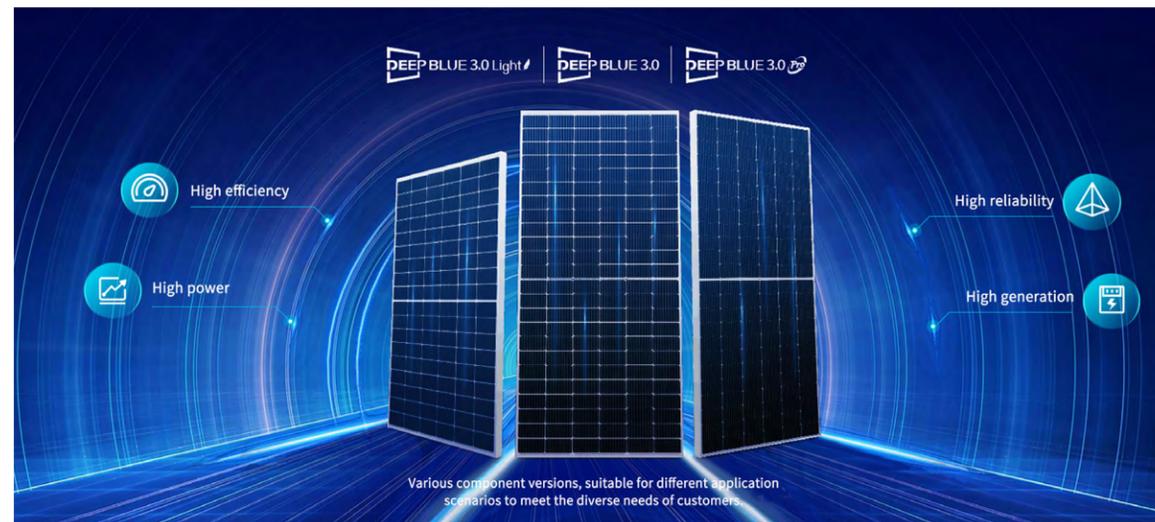
Committed to becoming a leading global PV power generation solution platform enterprise, JA Solar is continuously innovating process technologies and solutions, promoting the rapid development of the industry, and assisting in energy transformation.

With ongoing investment in R&D, JA Solar's solar cell and module technology has always maintained a leading level in the industry. The 182mm * 182mm module size proposed by the Company is the optimal specification based on the current development situation of the full industry chain and the actual situation of the production, transportation, installation, and system support of PV modules. High-efficiency modules, based on 182mm-sized wafer technology, high-efficiency solar cell technology, high-efficiency packaging materials, and high-density packaging technology, can meet the mainstream needs of various application scenarios in the market.

In terms of solar cell technology, the Company took the lead in achieving large-scale mass production of PERC solar cells in 2014, guiding the entire PV industry into the era of PERC technology. Currently, the highest conversion efficiency of Percium solar cell mass manufacturing based on continuous optimization of PERC technology has reached 23.90%. The n-type Bycium solar cell developed successfully by the Company after years of R&D achieved mass production in 2022. Currently, the

maximum conversion efficiency for mass production of solar cells has reached 25.30%. JA Solar is also promoting process optimization to further reduce solar cell production costs and upgrade the cost performance of batteries. By continuously driving forward-looking technical research and reserves, JA Solar continues to maintain a competitive edge in solar cell technology, laying a solid foundation for the constant delivery of higher power PV modules to the market.

In terms of high-efficiency modules, JA Solar relies on the industrial advantage of a vertically integrated R&D system to quickly realize mass production of new technologies and processes in various aspects such as wafers, batteries, and modules. The company positively carried out joint R&D with module and accessory suppliers, introduced new efficient packaging materials such as glass, backplane, and solder tape, and developed several highly efficient modules that are popular in the market. Since 2020, the Company has successively launched three series of core products: DeepBlue 3.0, DeepBlue 3.0 Pro, and DeepBlue 4.0 X. The same version of each series of modules has consistent sizes, which improves power efficiency and reliability while achieving perfect matching and upgrading at the system end. This helps to effectively reduce Balance of System - PV (BOS) cost and leveled cost of electricity (LCOE), thus creating more value for customers.



JA Solar DeepBlue Series Efficient Modules Continue to Be Upgraded

In 2022, JA Solar launched and mass produced DeepBlue 4.0 X series modules. The product is designed with Bycium cell technology and high-density packaging technology. It has a module efficiency of 22.4%, with the maximum power of the Version 78 module reaching 625W. In addition, with the significant improvement of module power temperature coefficient, bifacial module efficiency, and performance under low irradiance conditions, the product features better power generation performance. The results of the one-year outdoor demonstration project conducted by JA Solar with TÜV NORD at the CPVT Yinchuan National Photovoltaic Outdoor Demonstration Base (February 2021 to February 2022) show that n-type modules using Bycium batteries generate 3.9% more power per watt than p-type modules. Compared to mainstream p-type modules, the BOS cost of DeepBlue 4.0 X modules can be reduced by about 2.1%, and the LCOE cost can be reduced by about 4.6%, creating higher value for customers.

Significant Honors

Canton Fair Design Award (CF Award)

In 2022, JA Solar DeepBlue 3.0 series modules won the Canton Fair Design Award (CF Award) at the Canton Fair for their outstanding performance in innovation, functionality, quality, aesthetics, and environmental protection purposes. JA Solar DeepBlue 3.0 series modules were the only PV module product that won awards. The CF Award aims to "establish a quality benchmark and guide design innovation", and selects award-winning products that combine design aesthetics, quality, and market recognition.



Significant Honors

RET C "Top Performer" Honor

In 2022, JA Solar's DeepBlue 3.0 series of modules was awarded the "TOP PERFORMER" honor by the Renewable Energy Test Center (RET C), an authoritative testing agency in the United States, with outstanding performance in three dimensions, namely quality, reliability, and power generation performance. This is the third consecutive time that JA Solar has won this honor.



Significant Honors

PVEL "Top Performer" Honor

In 2022, with its excellent PV module products, JA Solar was once again awarded the "TOP PERFORMER" honor by the global authoritative independent third-party PV testing agency PV Evolution Labs (PVEL), which is also the seventh time that JA Solar has received this honor. The evaluation of "Top Performer" PVEL modules is based on the "Photovoltaic Product Qualification Program (PQP)". Compared to basic testing, PQP testing is more rigorous both in terms of test conditions and test sequences. Each test has significant reference significance for the reliability of modules in practical application scenarios.



The development of energy storage technology is of great significance for the large-scale application of clean energy. Using the independently developed 1500V liquid cooling platform technology, JA Solar actively develops energy storage products based on various application scenarios and outdoor cabinets and prefabricated modular energy storage systems for multi-scenario applications, such as industry, commerce, and source network. For home users, the Company also actively promotes a series of products for household battery systems, optical storage systems, and energy storage systems to meet the energy storage needs of different types of users.

The Company also explores "PV+" integrated solutions, providing customers with services, such as integrated cooling and thermal

insulation, PV storage and charging, and comprehensive energy management through professional scheme design. Through business models, such as independent investment and Contractual energy management mechanisms (EMC) agreement cooperation, the Company provides users with comprehensive energy services, helping them optimize energy utilization schemes and improve energy efficiency.

In 2022, JA Solar conducted in-depth exploration of BIPV modules and established a highly competent BIPV research team to carry out R&D of BIPV roofing and BIPV curtain wall products. This enables the creation of BIPV products that meet building safety, aesthetics, and design specifications while taking both building materials and PV properties into consideration. Hence, this helps to build a zero-carbon future.

Case "JA Solar Xingjia" Promotes Green Energy Sharing in Rural Areas

In order to meet the clean energy needs of users in rural areas and promote the creation of a green countryside, in July 2022, JA Solar officially launched the distributed household power station sub-brand "JA Solar Xingjia" for villagers. By installing household PV power stations, farmers can obtain clean electricity while receiving stable income, creating a "solar passbook".

Currently, JA Solar has launched various cooperation modes, such as Jing Xing Bao (co-construction mode), Jing Yi Bao (full-payment mode), and Jing Zu Bao (operating lease mode). For special roofs, the Company has developed innovative solutions, including an integrated plan for converting flat roofs to colored steel slopes, a courtyard type floor support plan, and a household sun shed PV power generation system plan, thus enabling more users to benefit from green energy for a better life.



31.86kW Flat to Slope Color Steel Integration Project in Ningjin County, Xingtai City, Hebei Province



23.32kW Household Sun Shed Photovoltaic Power Generation Project in Ding'an County, Hainan Province



20MW surface power plant in Campania, Italy

Driving Industry Development

While continuing to carry out technological innovation, JA Solar also actively promotes industry exchanges and development. The Company immensely attaches great importance to the coordination and cooperation of the full industry chain. It actively participates in the formulation and promotion of national PV industry standards and has made outstanding contributions to the formulation of relevant policies, technical process standards, and implementation of operation specifications within the industry.

Case JA Solar Led the Formulation of Group Standards to Promote the Standardized Application of Advanced Technologies

In recent years, the speed of product and technology iteration in the PV industry has accelerated. Group standards developed in the industry in accordance with the actual needs of the market are an effective supplement to national standards and industry standards. These have a long development cycle, with a great positive significance in promoting the integration of industry, university, and research, speeding up the conversion of scientific research results into productivity, and stimulating the enthusiasm of market innovation.

In 2022, the group standard *Test Method for Peel Strength of Crystalline Silicon Photovoltaic Solar Cell Electrodes* (Standard No.: T/CSTM 00461-2022) drafted with JA Solar as the leading initiator was officially released and implemented by the Zhongguancun Material Testing Technology Alliance (CSTM). This group standard specifies the terms and definitions, equipment requirements, sample requirements, environmental requirements, test methods, data processing, and test reports for the *Test Method for Peel Strength of Crystalline Silicon Photovoltaic Solar Cell Electrodes*. It provides a standardized industry standard for relevant testing and has considerable guiding significance in the manufacturing and testing process of crystalline silicon solar cells.

JA Solar positively participates in and organizes the establishment of industrial alliances, and various activities, in a bid to seek common development with the industry. It interacts and communicates with the Photovoltaic Association and establishes contacts with the International New Energy Solutions Platform (INES) and the International Investment Alliance for Renewable Energy (IIARE) to jointly explore the path of clean energy globalization.

Case Hosting the "Global Solar Energy Digital Summit 2022"

To help explore the path of clean energy development and accelerate the establishment of a global green economy, market, and production, JA Solar hosted the "Global Solar Energy Digital Summit 2022". The summit was divided into two parts, namely the Global Station and the Brazil Station. More than 10 speakers, including representatives of the International Renewable Energy Agency, PowerChina Resources Limited, the Korean Solar Energy Society, and the Portuguese Renewable Energy Association, were invited to share their experiences and perspectives online. The summit focused mainly on the global PV market, with the aim to tap into the growth potential of global large-scale ground power stations and industrial and commercial PV, analyze the global energy transformation goals, and facilitate energy transformation.

More than 30,000 attendees worldwide attended the summit online, including vast industry stakeholders, such as government organizations, regulatory agencies, investors, developers, manufacturers, and third-party consulting service providers.

Case Organizing the "Seminar on Green and Low Carbon Solutions for PV Assisted Steel Enterprises"

With the "carbon neutrality" goal included in the "14th Five Year Plan", accelerating the pace of carbon emission reduction, guiding green technology innovation, continuing to promote industrial and energy structure adjustment while improving the global competitiveness of industry and economy have become common issues faced by Chinese enterprises. In July 2022, the "Seminar on Green and Low Carbon Solutions for PV Assisted Steel Enterprises" was held. It was sponsored by the Beijing-Tianjin-Hebei Strategy Innovation Alliance of Green Steel Technology and jointly organized by the Beijing-Tianjin-Hebei Iron and Steel Alliance (Qian'an) Collaborative Innovation Research Institute, and JA Solar Technology Co., Ltd. The Seminar gathered industry stakeholders to explore the path of green transformation in the steel industry.

Case Participation in the "China Photovoltaic Industry Annual Conference"

In November 2022, "the 2022 China Photovoltaic Industry Annual Conference and (Chuzhou) Photovoltaic High Quality Development Summit Forum sponsored by the China Photovoltaic Industry Association" was held in Chuzhou, Anhui Province. JA Solar attended the annual conference and participated in multiple activities, such as the "Photovoltaic Application Ecological Innovation Development Forum", "China (Chuzhou) Photovoltaic Industry Talent Development Symposium and New Energy Professional Development and Talent Demand Seminar". The topics of technical innovation and talent cultivation with the industry were discussed.



Case Joining the Sustainable Markets Initiative (SMI) China Council

To promote the creation of a "sustainable market", jointly advance the coordination and unification of world economic development and environmental protection and drive the Chinese business community to issue "China's voice" and propose "China's plan" in the global economic and environmental governance reform, JA Solar joined the Sustainable Markets Initiative (SMI) China Council in August 2022 and participated in its inaugural meeting. During the conference, Chinese and foreign enterprises conducted exchanges and discussions on sustainable development topics, such as carbon finance and green and low-carbon transformation. It further pooled the wisdom and strength of all parties in a bid to work together to promote the "green recovery" of the world economy.

With the support of the World Economic Forum in Davos, then Crown Prince Charles of the United Kingdom established the Global Council of the Sustainable Markets Initiative (SMI) in June 2019. It was formally proposed and promoted in 2020 and aimed to unite global forces to jointly address climate change, protect biodiversity, and achieve sustainable development.

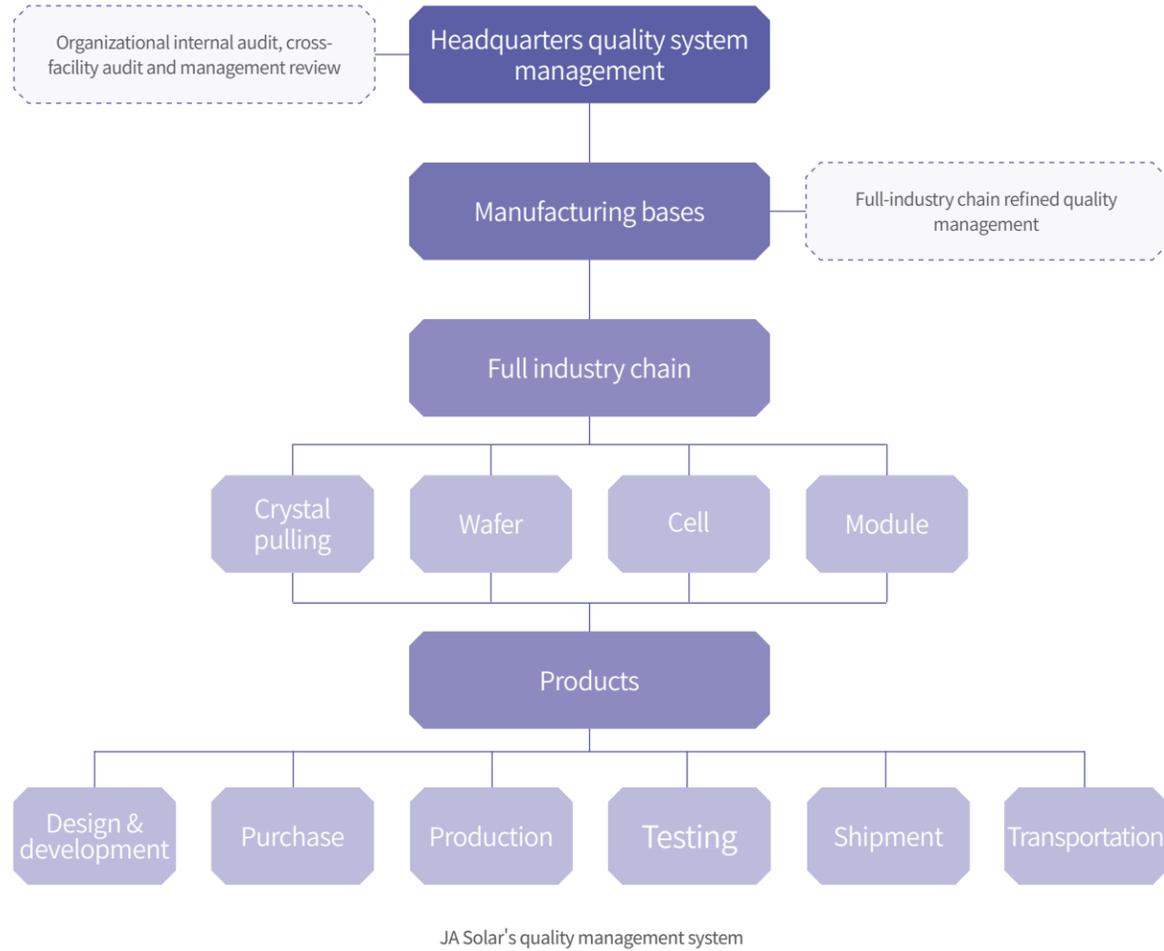


Product Quality and Safety

JA Solar implements strict controls on product quality and safety. Based on the group's strategic planning and with the goal of "continuously becoming a leading global PV product supplier", JA Solar adheres to the principle of "surviving by quality, developing by quality, and seeking benefits from quality", which ensures product quality with high standards, strict requirements, and foresight. The continuous and effective development of the Company's overall management is thus advanced. This enables JA Solar to lead the high-quality development of the PV industry.

management system and works simultaneously on multiple aspects, such as strategic planning and business planning, product and service development management, intelligent manufacturing refinement management, procurement, and outsourcing management, delivery, and after-sales service. At the same time, it continuously improves the quality responsibility mechanism and established a quality management system covering the full industry chain of R&D, procurement, manufacturing, testing, logistics and after-sales.

The Company pays close attention to the construction of the quality



Based on the vertical integration of the industrial chain layout in the product design and development process, JA Solar has established a complete technology R&D system covering all aspects, such as wafers, batteries, modules, and PV application systems. Mass production is introduced and production processes are continuously upgraded in strict compliance with the new product development process to improve product performance and quality. The Company has also set up a comprehensive product feasibility evaluation system, which focuses on comprehensive evaluation of product design itself, materials used, and reliability of production processes to ensure product quality and safety. In addition, the Company strictly reviews and evaluates the selection of suppliers and supply materials. These measures render certain long-term stability in the quality of raw materials, and building a "moat" of excellent quality.

In the process of product testing, the Company has established strict product testing standards. Our modules have passed rigorous testing by international authoritative institutions, and the quality, reliability, and power generation performance have been proven to be excellent. In addition to passing the tests and receiving certifications by TÜV, CE, ETL, Australia CEC, India BIS, South Korea KS, etc. in many regions and countries to meet market access requirements, JA Solar has also adopted stricter testing standards in the process of product design and development. These practices ensure the performance and safety of the product under different extreme conditions, such as Potential Induced Decay Test (PID), salt mist, ammonia gas, sand dust, mechanical load, packaging and transportation.

In addition, JA Solar also actively conducts training for R&D personnel to enhance their professional skills and product quality awareness. On the one hand, the Company provides professional skills training for employees, such as the Robust Design and TRIZ theory training program to polish the team's scientific research professional abilities. On the other hand, the Company offers quality management training for employees. The quality

awareness of R&D personnel and their ability to use high-quality methods and tools have been enhanced. Product defects have been rectified at the design side. The training ensures product quality, performance safety as well as long-term reliability.

Case High Quality Products Helped Cope with Extreme Weather

The Guam Sankyo Garden project, which was connected to the grid in June 2022, is the largest single PV power station in the region. The project site is on an island subject to strong winds and has strict requirements for the performance of modules, such as back load and attenuation rate. With excellent product quality, JA Solar stands out from extensive competitor products and becomes the exclusive module supplier for the project.



88MW Photovoltaic Power Station Project in Sankyo Garden, Guam

In various production aspects, such as wafers, batteries, and modules, JA Solar strictly controls product quality to ensure efficient and reliable product quality. In addition, JA Solar has constantly driven digital transformation in various manufacturing bases. It has established quality analysis systems and conducted real-time monitoring and automatic

early warning for production lines 24 hours a day. Accurate control of product quality and control of quality risks are thus realized. Based on its outstanding performance in product quality control, JA Solar's Yangzhou Base won the Jiangsu Provincial Governor's Quality Award in 2022.

Case Strict Product Quality Control at "Intelligent Factory"

Adhering to the theme of "improving quality, reducing costs, and increasing efficiency", JA Solar actively embraced the transformation and upgrading of digital intelligence. It takes advantage of advanced technologies, such as big data, cloud computing, and artificial intelligence to promote intelligent manufacturing. It has thereby achieved intelligent operation and management of production processes while constantly improving quality management and control capabilities.

JA Solar's Yiwu Base, through the application of digital technology, accomplished intelligent planning, intelligent production, and intelligent logistics, which enables "7-day delivery full process visibility" based on order volume. Fully automated visual inspection equipment based on artificial intelligence technology can facilitate direct monitoring of product defects and improve product inspection efficiency while ensuring product quality and safety.

Moreover, the high-efficiency crystalline silicon solar cell intelligent manufacturing demonstration factory in JA Solar's Yangzhou Base is based on a comprehensive interconnected, intelligently controlled, safe and reliable industrial network. It widely adopts new generation information technology and advanced manufacturing technology. It also comprehensively utilizes intelligent systems, such as MES and Enterprise Resource Planning (ERP) to complete the information utilization and management of the entire life cycle of the automated production, manufacturing, and service of crystalline silicon solar cells. The project's lean production and quality management level has been up to the international leading level in the segmented industry.

Customer Service

Since its establishment, JA Solar has always adhered to the service tenet of "being customer-centered and continuously satisfying customers' demands". We have been wholeheartedly serving every customer while continuously improving the service level. At the same time, we take customer satisfaction as the criterion of action. With persistent adherence to the service concept of "customer-oriented" operations. It has established a complete customer service guarantee system to ensure that every aspect related to customers can be effectively controlled. Thus, JA Solar has developed a customer service network with worldwide coverage. In combination with the characteristics of regional markets, it provides customers with a variety of full-process services in areas, such as sales, technical consultation, on-site service for power stations, and customer feedback processing.

The Company has developed a series of guidelines and documents, such as *Customer Service Control Procedures*, *Headquarters In-Sale Service Process*, *Product Recall Process*, *Customer Complaint Handling Process*, and *Customer Satisfaction Survey Process*. The documents define a customer-centric service policy, clarify the qualification of customer service personnel, and standardize various business processes and rules related to customer service. The standardization and normalization level of customer service have been continuously

improved. In terms of selection of customer service personnel, JA Solar performs strict selection and ensures the professionalism of each customer service personnel. Customer service personnel training is also organized frequently to enhance the professional customer service level provided to customers.

To better understand consumer needs and continuously improve customer service levels, JA Solar provides customers with a multi-channel after-sales service system. Customers can obtain corresponding service support through various channels, such as the official website, official WeChat account, headquarters telephone, customer service email, etc. JA Solar also runs a "24-hour response system" to respond to customer needs within the shortest time possible.

JA Solar strictly conducts annual customer satisfaction surveys to understand customers' feedback and needs on product performance and safety, product delivery time, product prices, customer service, new product requirements, and other multi-faceted aspects. In 2022, the average customer satisfaction score for JA Solar was 96.48 while the customer complaint resolution rate was 100%. There were 0 customer service complaints received and 0 products recalled for safety and health reasons.

JA Solar 2022 Customer Satisfaction Survey Upgrade



JA Solar has always regarded customer satisfaction as an important indicator for quantitative evaluation of the comprehensive quality of JA Solar's products, quality management level, customer repurchase rate, and brand loyalty. Over the years, the Company has continued to conduct customer satisfaction surveys to guide and promote its product quality improvement, enterprise process optimization, and assist it in making the best decisions to maximize customer demand.

At the end of 2022, JA Solar continued to conduct its annual customer satisfaction surveys. Compared to previous years, the scope and sample size of the satisfaction survey in 2022 have been widely improved, with the customer satisfaction survey dimensions increasing from 10 to 20. The satisfaction dimension and Scope 1 include but are not limited to, product quality, factory quality, product delivery, customer service, business connectivity, management system integrity, cost performance, and enterprise cooperation loyalty. The survey targets include, but are not limited to, the top 10 shipping partners in each sales region and the top 3 new customers in each region this year, as well as key strategic and potential customers in each region.

Multi-dimensional and multi-sample satisfaction monitoring and measurement can ensure the objectivity and impartiality of customer satisfaction surveys, thereby deeply exploring customer potential needs, and continually enhancing customer satisfaction.

JA Solar Customer Service System



Value Chain Management



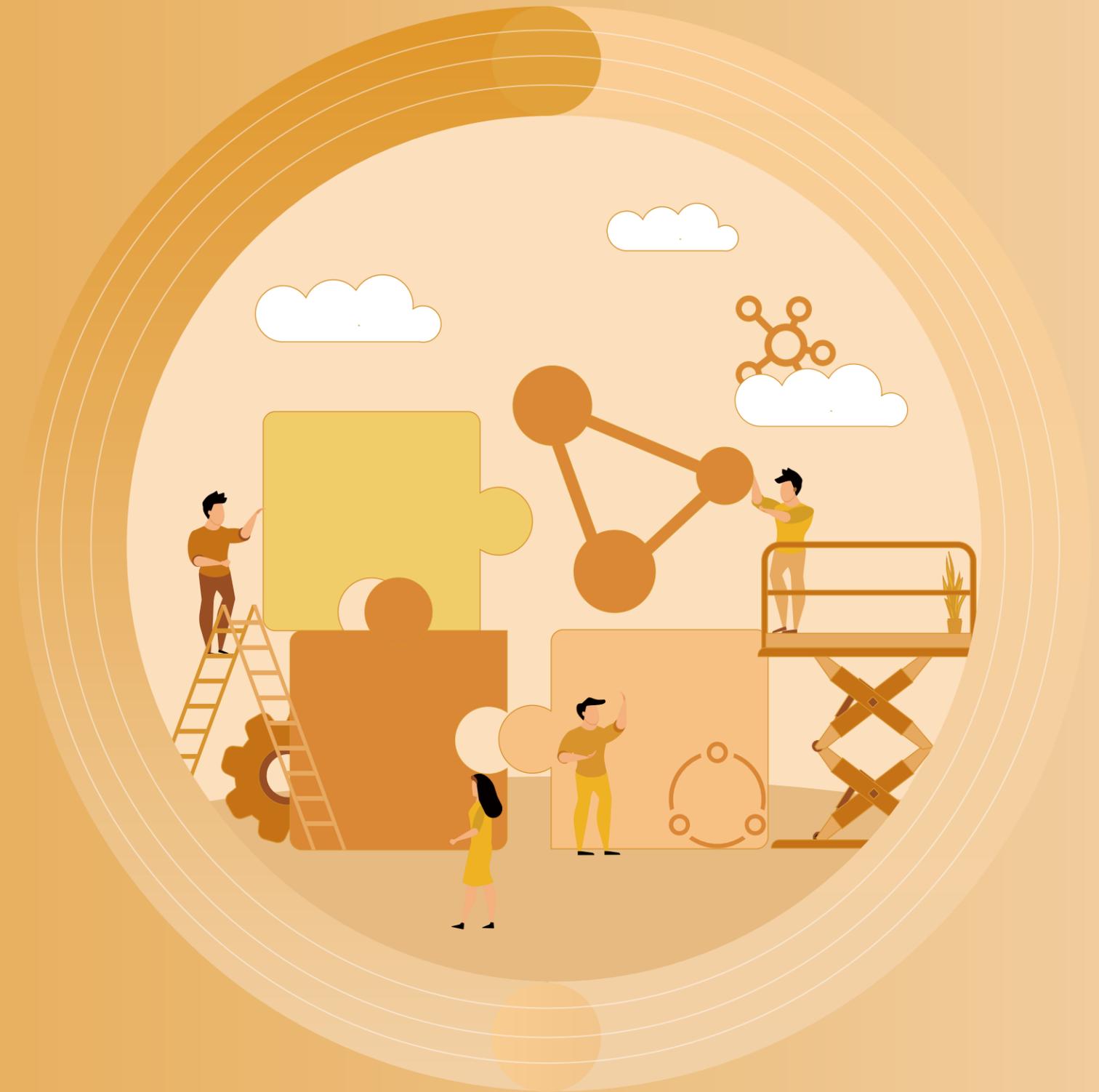
JA Solar is committed to extending its sustainability concept to all links of the value chain. It promotes suppliers to practice social responsibility through continuous improvement and optimization of supply chain management capabilities. The environmental, social, and governance levels of the entire value chain are thus improved.

 Percentage of main material suppliers who have passed the certification of ISO9001 quality management system
100%

 Percentage of main material suppliers who have passed the certification of ISO14001 environmental management system
80%

 Percentage of main material suppliers who have passed the certification of ISO45001 occupational health and safety management system
80%

 Signing rate of *Supplier Environmental Health/Safety and Social Responsibility Commitment*
100%



Supplier Access

Scientific and standardized supplier management can effectively reduce operational risks and ensure product quality. In order to achieve sustainable development and practice sound corporate social responsibility, JA Solar has established a comprehensive supplier management system targeting the three aspects of supplier access, daily management, and improvement. Based on this system, the Company carries out overall management throughout the entire process in various aspects, such as supplier introduction, management, assessment, monitoring, and quality improvement. It has developed and issued a number of supplier management systems, including the *Management System for Adoption of New Suppliers and New Materials*, *Code of Conduct for Suppliers*, *Routine Management Rules for Suppliers* and *Supplier Assessment and Scoring System*. These practices seek to achieve "more rigorous quality management, more scientific management methods, and more efficient quality monitoring", while working together with suppliers

for mutual development. Based on international standards, such as SA8000:2014, the Company has developed the *JA Solar Sustainable Procurement Rules* and requires suppliers to sign the *Supplier's Letter of Commitment on Environmental Health, Safety, and Social Responsibility*. The Letter clarifies the supplier's social responsibility performance and accountability mechanism and urges them to carry out self-inspection on their performance.

JA Solar has also set up a "supplier social responsibility and sustainability assessment" system. The system covers a total of 101 indicators on 17 major topics, such as product quality, environment, employment, health and safety, community communication, and business ethics. While requiring self-evaluation of key material suppliers, the Company also conducts further assessment and evaluation to ensure the compliance and sustainability of the supply chain.

Main material suppliers



Percentage of main material suppliers who have passed the certification of ISO9001 quality management system
100%



Percentage of main material suppliers who have passed the certification of ISO14001 environmental management system
80%



Percentage of main material suppliers who have passed the certification of ISO45001 occupational health and safety management system
80%

JA Solar Code of Conduct for Suppliers

JA Solar has developed the *Code of Conduct for Suppliers* based on the basic framework of internationally-recognized supplier social responsibility systems and standards, such as the Responsible Business Alliance (RBA), Joint Audit Cooperation (JAC) Supply Chain Sustainability Guidelines, and SA8000. The Code controls suppliers' labor, occupational safety and health, environment, business ethics, and other aspects, reduce supply chain risks, and promotes sustainable development of supplier practices.

Main Contents of the Code of Conduct for Suppliers

- Suppliers must comply with applicable environmental laws and regulations and should be encouraged to implement systems aimed at minimizing the adverse impact that supply chain policies, production processes, and products may have on the environment.
- Suppliers shall not deploy child labor or force labor through slavery, imprisonment, contractual bondage, guarantees, or other means of duress, buy or sell workers, or exploit workers through threats, coercion, abduction, or fraud.
- Suppliers must not discriminate against employees' personal characteristics or beliefs, and all workers must be treated fairly with respect and dignity. Workers have the right to freedom of association.
- Suppliers must provide workers with a safe and healthy working environment.
- Suppliers must provide compensation as required by law, and work hours must not exceed the maximum allowed by law, except in exceptional or emergency situations.
- JA Solar does not use conflict minerals, and suppliers need to conduct due diligence on the corresponding mineral supply chain to jointly create a "conflict-free" supply chain.
- Suppliers are required to abide by business ethics, combat corruption, and prohibit bribery.

Management of Suppliers

For suppliers who have been admitted and registered with the Company, JA Solar will establish a supplier management file based on the content of the supplier's social responsibility and results of the sustainable evaluation system, as well as relevant assessing mechanisms, such as the *Code of Conduct for Suppliers*. The Company also conducts daily management and regular audits of suppliers. It

has set up a trans-department management team, including multiple functional departments, such as SQE, procurement, process, and quality control. It also regularly conducts supplier audits and training to effectively identify and evaluate potential risks and weaknesses of suppliers while improving their compliance capabilities.

Case Supplier Evaluation and Classification Management

To continuously improve the comprehensive level of suppliers and improve the overall quality of products, JA Solar has developed a supplier evaluation system for suppliers across the entire production line. They include suppliers of various materials, such as silicon materials, solar cell materials, and modules and accessories. The Company rolls out monthly assessment and evaluation results based on multiple performance indicators, such as supplier quality control, cooperation, delivery management, and service. Based on the evaluation results, the Company has established a supplier classification management model. By classifying suppliers into four categories: A, B, C, and D, it provides preferential conditions for Class A and Class B suppliers in terms of source transaction volume, price, and service. Suppliers are encouraged to constantly upgrade material quality and supply capacity.

In the general management process of suppliers, the Company conducts regular reviews of suppliers under the guidance of the *Code of Conduct for Suppliers*. Suppliers found to be problematic during the review process will be required to complete rectifications within the specified date. If the management team finds that there are serious violations of labor regulations and the SA8000 standards, such as forced labor and environmental pollution, the Company will organize a specialized department in the area where the supplier is located to conduct a written review of the supplier's social responsibility and sustainable development situation in the place of occurrence. The

Company may terminate cooperation with non-compliant suppliers to ensure supply chain compliance.

In 2022, the environmental assessment of JA Solar covered 120 suppliers, and the social assessment covered 70 suppliers. The signing rate of the *Supplier's Letter of Commitment on Environmental Health, Safety, and Social Responsibility* was 100%, and no actual or potential significant negative social impact was found among the suppliers covered.

Case Supplier Training to Improve Supply Chain Accountability

To ensure that suppliers are clear about the latest requirements related to the Company's sustainable development and improve their ability to fulfill their responsibilities, JA Solar continued to provide suppliers with training related to requirements for supplier daily management in 2022. By clarifying the objectives and management measures in the supply process, JA Solar promotes daily self-inspection management for suppliers, ensures compliance in the cooperation process, and drives the sustainable development level of suppliers.



Training on Supplier Daily Management Requirements

Case Supplier Audit and Corrective Actions

JA Solar has developed a strict supplier audit and corrective actions process. The Company enforces "corrective actions" based on the *Code of Conduct for Suppliers*. Third-party auditors are engaged to audit supplier work and accommodation facilities through confidential communication with supplier-end workers. During the audit, the supplier will be required to allow auditors to access their premises and facilities, review records, and interview workers. For suppliers that do not meet the audit standards, JA Solar will require them to immediately provide a detailed remediation plan, take corrective measures to amend any behavior that deviates from the supplier guidelines, and then monitor and confirm that the corrective actions have been implemented by the supplier. If a supplier is found to have violated the *Code of Conduct for Suppliers*, JA Solar will immediately terminate its partnership with the supplier.

Supplier Improvement and Promotion

Based on the principle of "mutual benefits for common development", JA Solar continues to facilitate the improvement of supplier risk management and control capabilities and cooperates with suppliers for common development. After identifying supplier risks, it monitors and manages the supplier improvement process using a project-based approach. On the one hand, the Company has established a special team to conduct on-site verification of the implementation of supplier quality problem improvement, to assist suppliers in solving quality problems arising in the production process. The Company also timely tracks quality complaints, regularly organizes quality analysis meetings, and establishes data and information sharing systems. A management cycle of planning, executing, inspecting, and processing (PDCA) of the supplier management process was formed, thereby promoting the continuous improvement and active development of supplier performance and quality.

JA Solar continuously elevates the sustainable development level of suppliers. The Company actively encourages suppliers to further establish and improve communication channels. While carrying out internal promotion of social responsibility, it also requires suppliers to put forward responsibility requirements for their external supply chain (i.e., secondary suppliers) in aspects, such as health, safety, environment, social responsibility, and sustainable development. The sustainable development of the entire value chain is thus promoted.

In addition, JA Solar also continues to conduct supplier RoHS⁸/REACH⁹ investigations to facilitate responsible procurement. In 2022, the Company conducted a RoHS/REACH investigation on all main material suppliers' materials. RoHS testing of all main material suppliers meets the requirements of the *RoHS2.0 Directive* in 2022.

Case JA Solar DeepBlue Series Modules Passed the REACH Compliance Test

In order to prove the environmental and social friendliness of the product, in 2022, JA Solar cooperated with a third-party authority, SGS¹⁰, to conduct Reach certification tests on JA Solar DeepBlue series modules and issued a Statement of REACH Compliance.



Case Supplier Training on SA8000 Standard

In order to improve the level of social responsibility of suppliers, JA Solar conducted training on SA8000 standard for suppliers in 2022.

The Standard is the world's first international standard for ethics. It covers multiple topics, such as child labor, forced labor, health and safety, freedom to organize trade unions, the right to collective bargaining, and anti-discrimination. It is applicable to companies around the world, in various industries, and of varying sizes. Its purpose is to ensure that the products supplied by suppliers meet the requirements of social responsibility standards.

By explaining the development history and main content of SA8000 to suppliers, JA Solar constantly enhances the sustainable development ability of the supply chain.

Responsible Minerals Management

JA Solar has set clear "conflict minerals" review clauses in its supplier admission and daily review. These clauses explicitly require suppliers to verify the source of purchased materials and products while ensuring the traceability and controllability of gold, tungsten, tantalum, and tin minerals used in the supply chain. For suppliers who refuse to track and monitor the origin of conflict minerals or are unable to determine the identity of conflict minerals, JA Solar will suspend its cooperative relationship with them.

Based on the existing sustainable development strategy, JA Solar encourages suppliers to comply with the Organization for Economic Co-operation and Development (OECD) initiative and exercise due diligence on the mineral supply chain for which they are responsible. The Company also encourages suppliers to track the origin of minerals they use to manufacture products based on a conflict-free smeltery plan developed under the Conflict-Free Sourcing Initiative (CFSI). In 2022, JA Solar positively explored and applied the traceability mechanism for production raw materials. Full industry chain traceability has been realized for some modules.

Currently, the conflict mineral material involved in the production and operation of JA Solar is "tin", with no other materials involved. At present, all the metal tin used by the corresponding suppliers of the Company is produced in Chinese mainland.

8. RoHS is a mandatory standard formulated by European Union legislation, the full name of which is the Restriction of Hazardous Substances. This standard has been officially enforced since July 1, 2006, and is mainly used to standardize the materials and process standards of electronic and electrical products, making it more conducive to human health and environmental protection.

9. REACH certification refers to the English abbreviation for "Registration, Evaluation, Authorization and Restriction of Chemicals", which is a European Union regulation for the preventive management of all chemicals entering its market and was enforced on June 1, 2007.

10. SGS (Société Générale de Surveillance SA) is the world's leading inspection, appraisal, testing, and certification agency, and is a globally recognized benchmark for quality and integrity.

Talent Growth



Committed to continuously nurturing talents for the photovoltaic industry, JA Solar attaches great importance to the cultivation and development of talents. We will comprehensively establish a talent system and promote talent growth from the perspectives of equal employment and rights protection, employee development, employee care and communication, occupational health and safety, and other aspects.

Regular employees
29,900 persons

Ethnic minority employees
944 persons

Accumulated health and safety training
8,711 times

Funding for staff to participate in external training inputs
2,388.8 thousand

Occupational health and safety management system employee coverage
100%



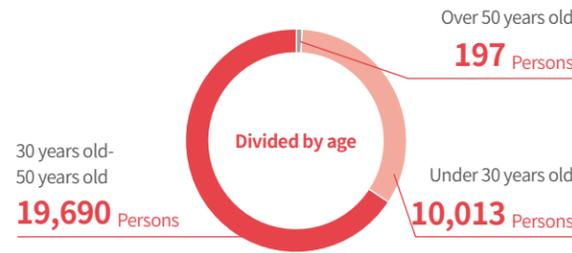
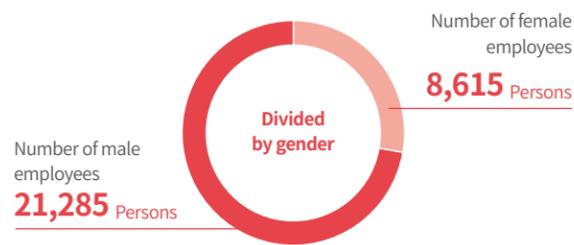
Equal Employment and Rights Protection

JA Solar strictly abides by relevant laws and regulations, such as the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China* and continuously establishes and improves internal employment regulations, such as the *Recruitment Management System*, the *Employee Rewards and Punishments Management Measures*, and the *Performance Appraisal Management System*. It has also set up strict systems related to employee recruitment, promotion and resignation, and provides complete employment, salary, and welfare protection for all employees.

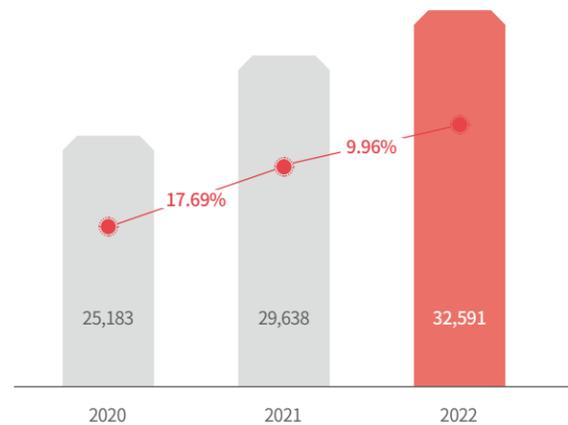
ethnic, racial, religious, gender, age, sexual orientation and other factors in the recruitment and employment process, and resolutely prohibits the employment of child labor and forced labor. The legitimate rights and interests of all employees are thus respected and protected. The Company fully practices the policy of gender equality and equal remuneration with full protection of the special rights and interests of female employees in terms of salary and treatment. The Company employs disabled employees based on the actual situation of the manufacturing industry and specific positions available in accordance with relevant national regulations and recommendations.

JA Solar strictly adheres to the principles of open, fair and just employment, follows the human rights policies set forth in the core conventions of the International Labor Organization, and is committed to creating a diverse and inclusive employment environment. In system documents, such as the *Headquarters Recruitment Management System*, the Company explicitly prohibits all discriminatory acts against

As of the end of the reporting period, the total number of employees of JA Solar was 32,591 (including labor dispatch system employees and part-time employees). The total number of formal employees (signing full-time labor contracts) is 29,900, including 21,285 male employees and 8,615 female employees.



- Total number of employees (including dispatched employees and part-time employees)
- Employee growth rate



"Outstanding Employer" in 2022
- 51job (issued in 2023)

"China's Best Employer of the Year" in 2022
- fortunechina.com (issued in 2023)

Promoting Employee Development

JA Solar takes talent strategy as the core of its company strategy, with a consistent focus on talent development in the PV field. We have established a talent development model, which is continuously refined, and take "attracting talents externally and cultivating talents internally, so as to shape their spirit with culture" as the pillar of talent development. The Company provides diversified incentive means, such as educational promotion, special training plans, salary packages and special incentive

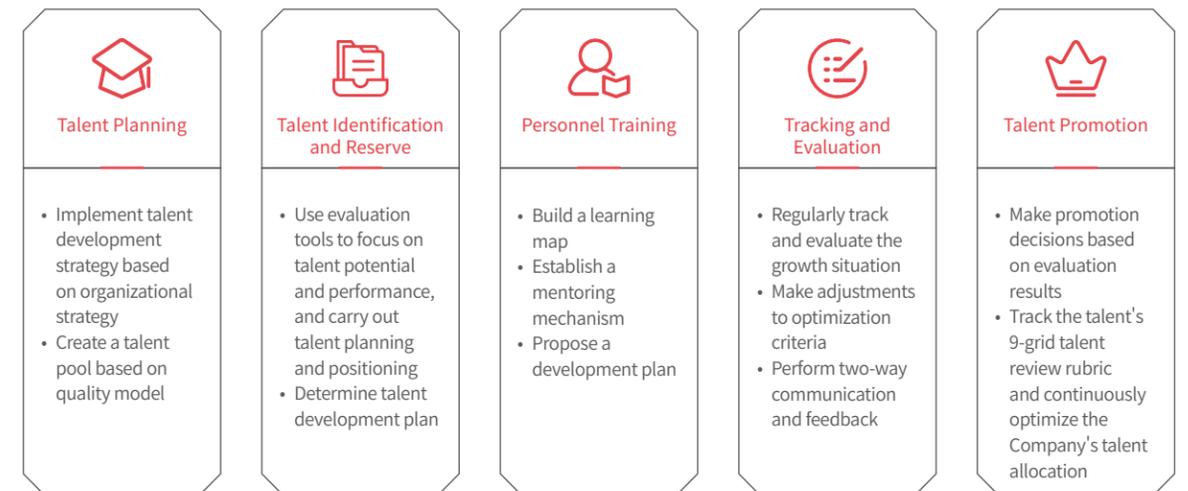
mechanisms. These means aim to build a comprehensive talent cultivation and incentive system to provide employees with a broad career development channel and help them grow professionally. In February 2023, the Company was awarded the title of "National Advanced Private Enterprise in Employment and Social Security" jointly issued by the All-China Federation of Industry and Commerce, the Ministry of Human Resources and Social Security, etc.

Diversified Career Development and Incentive Mechanism

Committed to continuously nurturing talents for the PV industry, JA Solar focuses on the introduction, retention, cultivation and development of talents. It has established a complete talent management system and management mechanism. Through the

formulation of the *Headquarters Recruitment Management System*, new vitality has been injected into the innovation and development of enterprises.

JA Solar talent management mechanism



The Company firmly believes that fresh graduates are an important force for its talent development and supply system. In 2022, JA Solar actively launched campus recruitment around the Company's "One Body, Two Wings" talent development plan. It organized 31 online and offline recruitment sessions, covering over 100 universities and colleges. It also carried out targeted training activities for new graduates to facilitate the full process of empowering graduates and helping them grow.

Case JA Solar's Vietnam Base University- Enterprise Cooperation Project

JA Solar continues to promote talent team building overseas. JA Solar's Vietnam Base actively conducts university- enterprise cooperation to expand potential talent channels. In 2022, the Company forged close ties with many universities in Vietnam, such as the Foreign Language School of Thai Nguyen University in Vietnam, Hanoi University of Science and Technology, to recruit and train college students as technical talents. The Vietnam Base recruits more than 1,660 employees throughout the year and employs more than 50 technical personnel holding college degrees or above through university- enterprise cooperation. An extensive talent pool has been established for the Company while helping local students obtain employment opportunities.

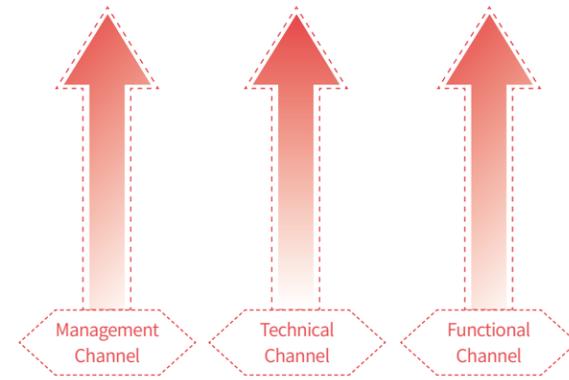
JA Solar adheres to the talent strategy of "attracting talents externally and cultivating talents internally". While continuously expanding the talent pool and identifying, and retaining incremental talents, it has constructed a clear, flexible, and effective diversified career development channel for existing talents. The Company built a "Post Competency" Evaluation Model based on several dimensions, such as management, professional, executive, and innovation capabilities

to empower and evaluate employees. Through a series of systems, such as the *Internal Selection Method for Reserve Cadres of Senior Management Personnel*, the *Rotation Management System*, and the *Employee Job Transfer Management Measures*, a diversified career development channel of "vertical rank promotion + horizontal cross sequence expansion" has been developed for different types of employees.

"Post Competency" Evaluation Model

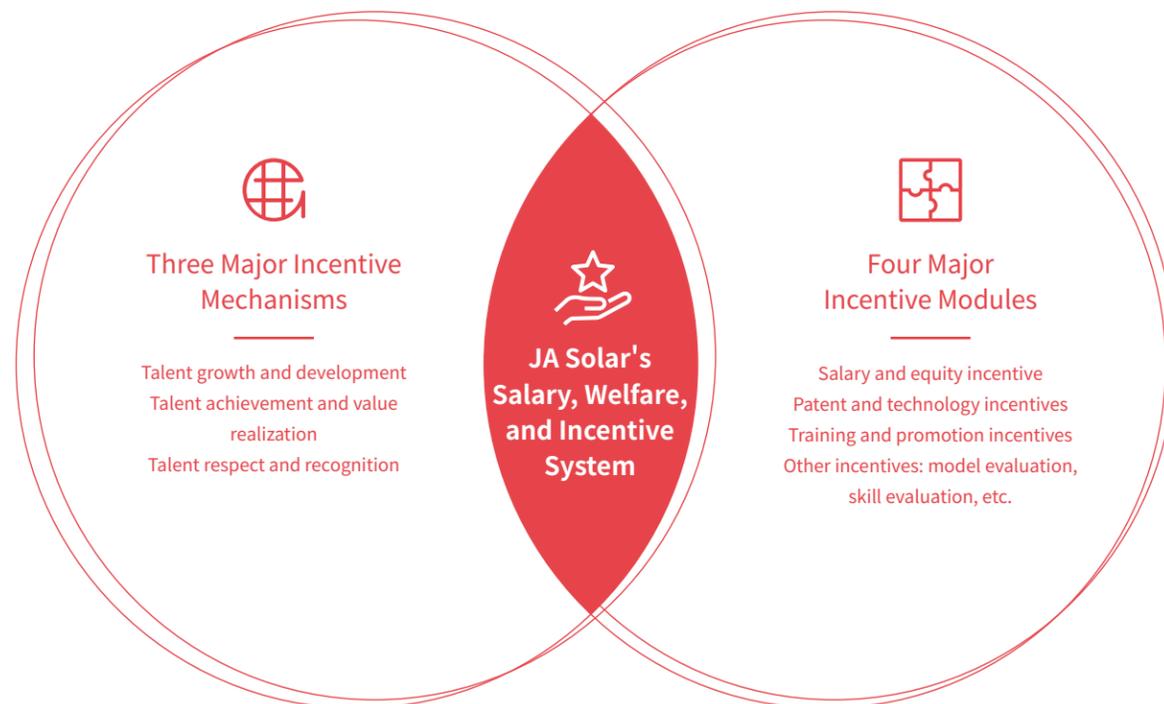


JA Solar's Employee Promotion and Development Channel



JA Solar also implements a comprehensive incentive and welfare system. The Company has formulated a series of talent incentive systems, such as the *Management Regulations on Continual Education for Onboard Employee*, *Incentive Measures for Further Strengthening On-the-job Learning for Employee*, and *Management Rules on Rewarding Employee for Publications*. In the major areas of "talent growth and development", "talent achievement and value realization" and "talent respect and recognition", the Company has launched

a total of 23 diversification projects in the short, medium, and long term, so as to continue to promote talent assessment and motivation, talent development and retention. The Company regularly conducts performance and career development evaluations for employees and maintains active communication with them. In 2022, the Company had a total of 29,900 employees who received regular performance and career development evaluations.

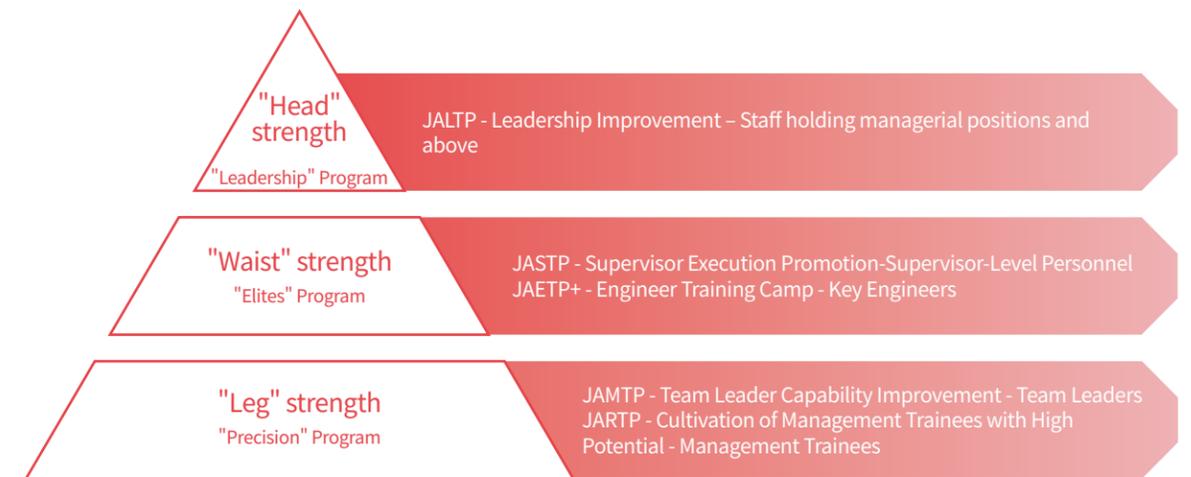


Systematic Employee Empowerment and Training

To promote continuous and effective learning and development of staff at all levels JA Solar has created a comprehensive and systematic characteristic talent cultivation system. Based on the Company's *Training Management System*, the Company focuses on its development needs. The rapid improvement of employees' professional and general abilities is enhanced through four stages of

comprehensive and systematic training courses (namely, launching training camps, industrial chain rotation, centralized transfer activities, and promotion training). For employees at different levels, JA Solar conducts a pyramid training system of "leadership", "elites", and "precision", which aims to boost employees' growth and improve talent echelon construction.

JA Solar Talent Team Construction Project



To boost specialization and standardization of talent cultivation and improve its talent cultivation ability, JA Solar has established the JA Solar College to conduct overall management and supervision of the Company's training plans. In order to broaden its talent training channels, JA Solar has created an "online + offline" training form. On the one hand, it has set up a "Yidian Zhishi" online learning platform, covering more than 2,000 backbone employees in the headquarters and bases. On the other hand, it also provides internal training resources for various units, with a total of over 400 trainers.

In addition, the various bases of JA Solar also actively carry out diversified forms of job skills competitions to help employees improve their abilities. Through the form of competition instead of conventional training, the Company enriches the professional knowledge of operators, strengthens the sense of teamwork, and gradually consolidates the

foundation of refined operation. The overall comprehensive quality of employees is upgraded. In 2022, JA Solar's Ningjin Base successfully hosted the "JA Solar Cup" Photovoltaic Industry Staff Skills Competition in Ningjin County and the "JA Solar Cup" Staff Skills Competition in Xingtai City. Several top operating technology winners have been successfully cultivated. A healthy atmosphere of "Than to learn out for super" has been formed internally.

In 2022, JA Solar's "Yidian Zhishi" online learning platform provided 131,245.6 hours of training, with an online per capita participation of 55.68 hours. It provided RMB 2,388,800 in funds for employees to participate in external training and conducted 17,117 internal and external offline training sessions.



Funding for staff to participate in external training inputs **2388.8** thousand



Conducting internal and external offline training **17,117** sessions

Case "JA Solar Talent Action" Boosts Employees' Career Development

To realize development of international talents, JA Solar has launched the "JA Solar Talent Action" to deliver customized international business courses for employees since 2019. In May 2022, JA Solar College launched the fifth "JA Solar Talent Action". The 180-day training event combined community activities with AI courses to facilitate thematic learning activities from various dimensions, including listening, speaking, reading, and writing. The courses expand participants' knowledge of English and assist employees in improving their business English proficiency. The average learning time of the participants was 2,361 minutes. Through this course, the participants' business English level has been significantly improved.

Case The First "JA Solar Employees' Craftsmanship" Equipment Skills Competition

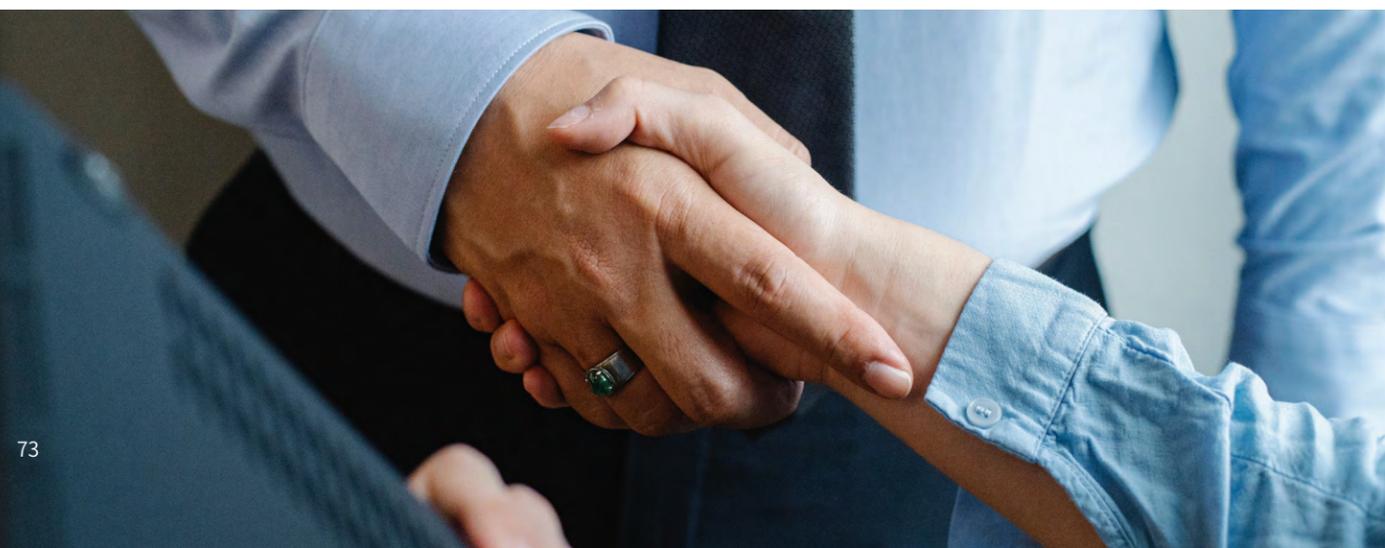
In 2022, JA Solar College and the Intelligent Manufacturing Management Department of the headquarters held an equipment system skills competition to carry forward the craftsmanship spirit and exemplary power while upgrading the equipment technical level of employees. Through competitions for the same process and section of the base, colleagues in each base can learn from each other, identify gaps in understanding, set benchmarks, and improve their competency level. This effectively boosts the comprehensive skills of equipment maintenance personnel and cultivates technical talents adapted to the era of cost competition.

Case Ningjin Base Conducted Skills Competition for Staff

To enhance the professional skills of employees and replace training with competition, the labor union of JA Solar's Ningjin Base held employee skill competitions in 2022. The competition was divided into three categories including forklift, typing, and electrical work. Employees from all departments made active preparations and participated in the competition, creating a satisfactory learning and research environment.



Ningjin Base Conducted Skills Competition for Staff





Employee Care and Communication

JA Solar has always attached great importance to the work-life balance of employees. The Company has established a comprehensive welfare system for employees and carried out a series of activities to enhance their sense of satisfaction in the workplace, enabling employees to work and live happily.

JA Solar places emphasis on the physical and mental health of employees. It strictly complies with national laws, regulations, and policies, provides employees with childcare leave, parental leave, various special allowances, and offers supplementary commercial medical insurance to a certain extent. It proactively launches annual physical examination programs for all employees (twice a year for staff holding positions with special risks), communicates with physical examination institutions, builds an online consultation platform for employees who receive abnormal test results, and engages relevant experts to conduct on-site health consultation and training for them. Bases of the Company actively organize and carry out various sports activities to enhance the physical fitness of employees and cultivate their spirit of cooperation. At the same time, it allows more employees to relish in the joy brought by sports.

In addition, JA Solar has organized various activities to show concern for female employees. Based on the requirements of laws and regulations, it provides female employees with leave benefits such as maternity leave, breastfeeding and childcare facilities, and nursing rooms in some office areas. The bases have carried out a series of caring activities for female employees such as sending flowers to female employees at their work units, production of MV "Sending a Little Red Flower" and raising awareness on the holistic health of female employees.



Case

Special Lecture on "Caring for Women Workers, Caring for Health" Women's Health Knowledge

In 2022, the Ningjin Labor Union of JA Solar organized a special lecture on women's health knowledge, with the theme of "Caring for Female Workers, Caring for Health". The lecture focused on women's health and provided a simple explanation of profound theories. Based on years of rich clinical experience, the experts remind everyone to pay attention to their own health, maintain good psychological wellbeing, develop favorable living habits, identify pressing problems and treat them promptly, and develop a health philosophy of prevention first and treatment second.

This lecture effectively enriched the female health knowledge reserve of female employees and boosted their self-health care level.

JA Solar has also continued to carry out assistance activities for needy employees, with the grassroots labor unions continuously developing and improving relevant systems to provide timely assistance, rights protection, and support to employees faced with various difficulties. JA Solar's Yangzhou Base has established a labor union fundraising management system to help employees and their families who suffer sudden changes in their families (major diseases, car accidents, etc.) get through difficulties. In 2022, JA Solar's Hefei Base arranged multiple donation activities for underprivileged employees, with a total donation amount of RMB 65,325. In 2022, JA Solar's Xingtai Base applied for a total of RMB 201,467 in employee assistance funds and helped solve the problem of children's education for 34 employees.

JA Solar has always placed great emphasis on employee communication and exchange. Each base has established a labor union committee and held general meetings on schedule. Each base has also signed and passed collective agreement documents such as the *Collective Agreement*, the *Collective Agreement for the Protection of the Rights and Interests of Female Employees*, and the *Collective Negotiation Agreement on Salaries*. In order to resolve conflicts arising in the work process in a timely manner, the Company has set up various communication channels, such as the DingTalk client workbench, phone, email, to ensure that issues are reported and dealt with. The Company has issued and implemented the *Employee Satisfaction Survey Procedure of JA Solar Headquarters* since 2017 and has conducted employee satisfaction surveys for several consecutive years to provide a listening ear for employees.



2022 JA Solar's Ningjin Intelligent Manufacturing Base Autumn Basketball League

Occupational Health and Safety

JA Solar attaches great importance to the occupational health and safety of employees, has formulated a series of occupational health and safety regulations and work rules, established a sound occupational health and safety management system, and provided a safe production environment for employees, create a safe production culture and effectively ensure the occupational health and safety of employees.

Construction of Safety Management System

JA Solar adheres to the principle of "safety first". It constantly improves the construction of occupational health and safety management system, to effectively ensure the occupational health and safety of employees. The Company strictly 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 Occupational Diseases*, the *Law of the People's Republic of China on Work Safety*, the *Basic Rules for Standardization of Enterprise Safety Production*, and the laws and regulations of each operation location. It has built an integrated system for dual prevention of hierarchical risk control and hidden danger detection and governance, with ISO45001 occupational health and safety management system and ISO14001 environmental management system as the framework, and safety production standardization as the basis. Currently, JA Solar has successfully passed the annual supervision and audit of the quality system, environmental system, occupational health, and safety system in 2022, and obtained the certificate of ISO45001 system and ISO14001 system.

To continuously improve the prevention and management capabilities of occupational health and safety issues, the Company has developed the *EHS Management System Manual* and the *EHS Accident Management Procedures* and set up the Safety Committee with full-time

occupational health management personnel, who are fully responsible for the establishment and maintenance of the occupational health and safety management systems to ensure timely and effective control of safety risks. JA Solar has also established and implemented systems, such as the *Hazard Identification and Evaluation Control Procedures* and *Risk and Opportunity Identification and Evaluation Control Procedures*. These can be used to identify and evaluate the occupational health and safety risks of the Company in the aspects of products, activities, or services.

In addition, the EHS team of JA Solar headquarters and each base organize occupational health and safety risk identification and assessment at least once a year. This aims to comprehensively identify and detect occupational hazards in production processes, labor processes, production environment, and conduct risk assessment and grading. Based on the evaluation results, the Company lists the identified "major risks" and "significant risks" as unacceptable risks and includes them in the Company's *Unacceptable Risk List and Control Plan* for strict control and follow-up review. Those classified as "general risk" and "low risk" will be included in the acceptable risk list. In addition to negligible risks, control measures will be taken for them to further reduce the risk value.

Construction of Occupational Health Culture

To comprehensively enhance the safety awareness of employees and ensure the safe, stable, and healthy development of the enterprise, JA Solar has provided safety knowledge training for employees to create a safe and healthy culture.

The headquarters of the Company and each manufacturing base have established occupational health network teams. The teams hold monthly meetings, and carry out communication and training on occupational health management, occupational health laws and regulations, excellent practices, etc., thus comprehensively improving the management level of full-time occupational health and safety management personnel of each subsidiary.

The Company also incorporated employees health and safety training into the group's annual training plan and uses the "Yidian Zhishi" platform to conduct occupational health knowledge training. All subsidiaries and manufacturing bases organize safety training on occupational health, hazardous chemical safety, equipment and fire safety, emergency management, limited space operations, etc. according to the annual work plan.

JA Solar and various manufacturing bases have also carried out interesting activities to shape a safe production and work culture. In June 2022, various bases actively responded to the national call and carried out various forms of "Safety Month" activities. JA Solar raises employees' safety awareness through a series of activities such as

safety management personnel training, special warning education and fire-fighting skills competition. The Company has rolled out an "Occupational Disease Prevention and Control Publicity Week" activity. Subsidiaries promoted relevant laws and regulations at crowded locations such as workshop entrances, canteens, and lounges to raise employees' awareness of occupational hazard prevention and protection.



Ningjin Base Occupational Health Promotion Week

Ensuring a Safe Production Environment

JA Solar continues to optimize the workplace environment and is committed to enhancing employees' sense of security. The Company's existing and ongoing projects strictly follow the "three simultaneities" management requirements for occupational health and safety. The construction is carried out in strict accordance with the requirements, so as to ensure a reasonable layout of the factory and eradicate hazardous and harmless operations. Each base is equipped with various occupational disease prevention equipment and facilities, which are regularly inspected and maintained to ensure their integrity and availability.

In addition, the EHS departments of JA Solar headquarters and manufacturing bases have full-time occupational health personnel responsible for promoting occupational disease prevention, occupational hazard warning and notification, hazardous factor monitoring, and employee occupational health monitoring. For key departments, JA Solar has formulated requirements for personal protective measures. Targeted training has been provided to employees who may be exposed to occupational disease hazards to ensure that they correctly wear and use appropriate personal protective equipment as required. The Company's EHS departments also conduct regular spot checks on the use of personal protective equipment and protective

equipment for on-site operators, and promptly correct any improper use to ensure the effectiveness of personal protective measures.

JA Solar also continues to enhance occupational health examination before, during, and after work, with the establishment of occupational health monitoring files for employees who are prone to occupational hazards. In addition, the Company regularly entrusts an agency with occupational health testing qualifications to detect occupational disease hazards in the workplace every year, posts occupational health notices, warning signs, and instruction signs on the production site. The monitoring results are published on site. The Company also regularly reports occupational disease hazards in the workplace to relevant competent departments.

In 2022, the Company's occupational health and safety management system covered 100% of employees, with 0 occupational disease cases. The rate of work loss accidents per million working hours was 0.47, and 1 employee death due to work-related injuries. In 2022, JA Solar's Yangzhou Base was rated as a health enterprise in Yangzhou City. JA Solar's Ningjin Manufacturing Base was evaluated as one of the first batch of "Hebei Provincial Occupational Health Enterprises" in Xingtai City.



Occupational health and safety management system covered of employees
100%



Number of incidences of occupational diseases
0



Rate of work loss accidents per million working hours
0.47

For medical emergency rescue and treatment of common wounds, JA Solar invited the local Red Cross Society and medical institutions to carry out emergency rescue training and first-aid knowledge training. The training enhances employees' awareness on occupational injury prevention, enriches their first-aid knowledge, and polishes their early emergency response skills.



Emergency Rescue Training



Training on First-aid Care in Ningjin Base



In 2022, JA Solar conducted health and safety training sessions
8,711 times



Covering
362,732 participants

Community Public Welfare



2022 marks a key year for the 14th Five-Year Plan and an important year for "continuously improving people's well-being and solidly promoting common prosperity". Adhering to the mission of "developing solar power to benefit the entire human race", JA Solar practices corporate social responsibility through concrete actions. It extensively participates in social charity and public welfare undertakings, and exerts the power of enterprises to do good.



The cumulative payment for rural revitalization photovoltaic projects is approximately
RMB 60,294,000

The number of public welfare activities carried out in 2022 totaled
27

Three major projects for the benefit of the people, donations of
RMB 1,675,100 in 2022

Accumulated participation in unpaid blood donation in 2022
739 participants

Exploring Industrial Revitalization

2022 marks a key year for China in the comprehensive promotion of rural revitalization. In response to the national call, JA Solar earnestly practices corporate social responsibility, and leverages its industrial chain advantages, product technology advantages, and ecological cooperation advantages to assist in the revitalization of the country's rural areas.

As one of the initiators of the China Photovoltaic Poverty Alleviation Alliance, JA Solar has continued to promote PV project construction in multiple regions of the country, relying on its years of accumulated experience in PV-based poverty alleviation and leading advantages in core technologies. Since 2015, the Company has successively constructed several national rural revitalization PV projects in Yanchi, Ningxia; Kangbao, Hebei; and Lincheng, Hebei, and other regions. As of the end of 2022, the Company has made a cumulative payment of about RMB 60,294,000 for the projects. These PV-based poverty alleviation power plant projects will provide local support funds amounting of more than RMB 200 million in 20 consecutive years, benefiting 4,055 needy families.

By the end of 2022, JA Solar has realized scenarios such as agrivoltaics, fishing PV and PV mountain range applications alongside other

applications, building a new rural revitalization model that integrates "providing assistance funds, lease payment, and providing job opportunities." By creating a "PV+" industrial revitalization model that integrates industrial development and rural revitalization, the Company not only helps rural areas achieve clean energy applications, but also lays a solid foundation for upgrading rural industries and realizing common prosperity.

JA Solar also actively connects with community industrial resources. It responds to the call for consumer assistance, innovates consumer assistance models, and assists in the development of rural characteristic industries. In October 2022, JA Solar and China Huadian signed a consumer assistance cooperation agreement at JA Solar's Beijing headquarters. On the basis of the original PV module cooperation through the e-commerce channel of China Huadian, JA Solar procured its counterpart's product "Pilale rice" to assist with the development of rural characteristic industries while shaping a new pattern of consumer assistance.

Case "Photovoltaic Applications in a Whole County" Activated Green Kinetic Energy for Rural Revitalization

With the overall success of poverty alleviation and the vigorous development of rural revitalization in China, JA Solar has actively responded to the national call to explore the "county-wide promotion" of rooftop distributed PV construction. In November 2022, JA Solar's first "county-wide promotion" grid connection project – the 3.6MW Qujing Jinglong distributed rooftop PV power plant fulfilled grid connection, helping Qujing to achieve intensive rural energy development. The project adopts the mode of "self-use first with surplus electricity connected to the grid" where the generated clean electricity is basically fully consumed on the spot, thus effectively reducing local electricity costs while facilitating a green and clean countryside.



Focusing on Education Development

Education is an important foundation for achieving the great revitalization of the Chinese nation. JA Solar highly stresses education topics and actively promotes the development of education. The Company, in conjunction with Jinglong Group, has continued to promote the "100 Hope Primary Schools Donation Project" and the "10,000 Needy Students Relief Project" projects since 2017. By improving the construction of teaching hardware facilities, providing learning tools and grants, it has taken a part in promoting regional education equity.

In 2022, the JA Solar' Solar Charity Fund donated a total of RMB 800,000 to three primary schools in Hebei to improve school conditions and solve practical difficulties faced by students. By the end of 2022, the Company had invested more than RMB 10 million in the "100 Hope Primary Schools Donation Project", donating a total of 75 Hope Primary Schools in Huanghua City, Qian'an City, Dongguang County, Pingshan County, Zhanhuang County, Chicheng County, Liulin Town, Yan'an, Shaanxi Province, and other places.



In 2022, "10,000 Needy Students Relief Project" invested RMB 477,400



Benefiting 114 students

Case JA Solar "Solar Scholarship" Helped Students Realize Their Dreams

JA Solar's "10,000 Needy Students Relief Project" was officially launched in 2017, aimed at aiding poor students with outstanding academic achievements to complete their studies by continuing to support and encourage them through various dimensions. In 2022, the JA Solar's Ningjin Intelligent Manufacturing Base provided continuous funding for 12 students for a period of 4 years, with a "Solar Scholarship" of RMB 5,000 per person each year, to support them to successfully complete their university studies. So far, JA Solar has helped 39 students realize their dream of attending college in the Ningjin region.



"Solar Scholarship" Award Ceremony

Each manufacturing base of JA Solar also actively cooperates with local charity associations, the Red Cross Foundation, and education institutes to provide educational assistance to surrounding communities. In 2022, JA Solar's Yangzhou Base cooperated with Yangzhou Special Education School and invested RMB 15,520 to donate learning equipment for blind children to attend Yangzhou Special Education School. JA Solar's Donghai Base cooperated with Donghai County Charity Federation, contributing RMB 65,000 to support 13 college students. JA Solar Intelligent Energy Business Department has also partnered with the Beijing Charity Foundation to donate RMB 255,000 to Lianshui Chenshi Primary School to upgrade school environmental conditions. In addition, JA Solar's Vietnam Base also donated 500 sets of living materials and 100 shares of food to Fushan Community and Youchan Community Primary Schools in Sơn Động County, Bac Giang Province.

Employees are encouraged to make donations. In total, it raised over VDN 70 million as donations and distributed VDN 500,000 as a student aid bonus to each student.

In addition, JA Solar vigorously implements the national strategic layout of "innovation-driven development". It gives play to its own industrial and technological advantages, supports scientific research and innovation among college students, and assists in the cultivation of talents in the clean energy industry. Since 2011, the Company has provided PV modules free of charge to local universities such as Tongji University, Peking University, Tsinghua University, Beijing Jiaotong University, Shanghai University of Engineering Science, Xi'an Jiaotong University, Southeast University. It has also supported competition teams to participate in the International Solar Decathlon Competitions.

Case JA Solar Supported College Students to Explore Zero-carbon Photovoltaic Integration

In August 2022, the Solar Decathlon China 2022 kicked off in Hebei. This event gathered 15 teams from 29 universities and 10 countries to build a high-performance full-size house powered by clean energy. It focused on the three themes of "sustainable development, intelligent interconnection, and healthy living", with the concept of spreading green development and the 48-hour zero energy consumption challenge as the highlight.

JA Solar proactively supports technological innovation and helps the competition team understand cutting-edge PV technology. The Company provides DeepBlue 3.0 modules for the Solar Ark team (Southeast University – ETH Zurich – Fujian Sanming University united team) and XJTU+ team (Xi'an Jiaotong University), lending a hand to college students to innovate and launch zero-carbon PV integrated buildings such as the "Solar Ark 3.0" and "Intelligent House", injecting a new force into the industry's development.



Courtesy of XJTU+ Team: Intelligent House



Courtesy of Solar Ark Team: Solar Ark 3.0

Supporting Healthcare

JA Solar actively implements medical assistance actions to assist the development of community health undertakings. The Company officially initiated the "Brightness Project for Poor Cataract Patients" in 2011 and incorporated it into its Three Major Projects for the Benefits of the People. In 2022, the Company partnered with the Lianyungang Red Cross Society

and the Ningjin County Charity Federation to promote the "Brightness Project for Poor Cataract Patients" in Ningjin and Lianyungang regions, donating RMB 397,800 to treat 254 cataract patients and help them regain their vision.

Overseas Assistance

Overseas Project Assistance

Exerting its own industrial and technological advantages, JA Solar actively assists overseas regions in the construction of PV projects in a bid to build a community with a shared future for humankind. In 2022, JA Solar ardently promoted the "Southern Entrepreneurship" 1.6MW project, providing PV module assistance to countries such as Somalia, Central Africa, Lebanon, Sudan, and supporting the development of PV industry in technologically backward countries and regions.

Humanitarian Assistance

JA Solar is concerned about every corner of the world. In 2022, it made donations to United Nations High Commissioner for Refugees (UNHCR), providing PV lamps for forcibly displaced families, and delivering support to refugees in dire straits in various parts of the world.



Support Local Development

The overseas base of JA Solar has also been vigorously supporting local development. JA Solar's Vietnam Base continues to carry out material donation activities and work with surrounding communities to achieve common prosperity. In January 2022, JA Solar's Vietnam Base donated RMB 5,600 to poor people in Yen The County, Bac Giang Province to celebrate the Spring Festival. In November 2022, the base donated RMB 70,000 to organize the "Caring and Warmth" activity in Sơn Động County, Bac Giang Province, Vietnam.

Conducting Employee Volunteer Activities

JA Solar regards employees as a key factor in promoting corporate social responsibility. Over the years, the Company has encouraged employees to participate in volunteer activities and jointly fulfill social responsibility. On the one hand, each base of the Company organizes employee volunteer teams to engage in social environmental governance and protection activities, and community basic services. Bases in Fengxian, Hefei, Donghai, and Ningjin have conducted several voluntary blood donation activities. In 2022, a total of 739 people participated in voluntary blood donation drives.

Case "Run for Life with Love" Volunteer Blood Donation Activity in JA Solar's Ningjin Base

In May 2022, JA Solar's Ningjin Base launched the "Run for Life with Love" volunteer blood donation activity, which received a positive response from most employees. At the site, everyone orderly filled out registration forms, cooperated with medical personnel for inspection, testing, and blood drawing, eventually donated blood for free after passing the eligibility and blood test. In just one day, over 300 employees actively participated in blood donation, with 201 employees were qualified and donated a total amount of more than 80,000 ml of blood.



Case The 3rd Daqing Mountain Tree Planting Festival in JA Solar's Baotou Base

In order to improve the urban environment, enhance employees' environmental awareness, and safeguard the city's blue sky, JA Solar's Baotou Base has organized voluntary tree planting activities for employees for three consecutive years. The festival took place in April 2022, garnering 94 employee volunteers across all levels who planted 200 apricot trees.



Report Appendix

Key Performance Table

Topics	Primary indicators	Secondary indicators	Unit	2022 data	
Economic Performance	Operating Income		10^8RMB	729.89	
	Net Profits Attributable to the Parent Company		10^8RMB	55.33	
	Shipment of Cells and Modules		GW	39.75	
Environmental Management	Non-compliance with Environmental Laws and Regulations	Amount of fines	10^4RMB	0	
		Number of incidents punished	Case	0	
		Cases Brought through Dispute Resolution Mechanisms	Case	0	
	Employee Environmental Training	Number of Sessions	Session		345
		Number of Employees Participating	Participant		About 13,420
	Energy	Energy Consumption	Integrated Energy Consumption	tce	537,311.85
Electricity Consumption			MWh	4,293,020.17	
Natural Gas Consumption			10^4 m ³	40.64	
Coal Consumption			t	0	
Diesel consumption			t	273.26	
Gasoline Consumption			t	101.45	
LPG Consumption			t	137.30	
Heating Consumption			GJ	245,498	
Integrated Energy Consumption (Renewable sources)			tce	396,108.76	
Integrated Energy Consumption (Non-Renewable sources)			tce	141,203.09	
Energy Intensity		Electricity Consumption	MWh		4,293,020.17
		Market-based Purchase of Green Electricity	MWh		1,115,023.11
		Other Purchased Power	MWh		3,144,093.46
		In-plant Distributed Green Electricity Consumption	MWh		33,903.61
		Integrated Energy Consumption Intensity	tce/10^8RMB		736.15
		Scale of Self-owned PV Station	MW		963
		Scale of Self-owned PV station - Centralized	MW		788
		Scale of Self-owned PV station - Distributed	MW		175
		Self-generated Distributed PV Plant	MW		50

Topics	Primary indicators	Secondary indicators	Unit	2022 data
Water Resources Use and Management	Water Withdraw	Water Withdraw	m ³	23,838,835.03
		Municipal Water	m ³	18,369,057.10
		Rainwater Collected and Stored Directly by Enterprises	m ³	18,000.00
		Wastewater from other Companies or Organizations	m ³	0
		Ground Water	m ³	0
	Water Discharge	Surface Water	m ³	5,451,777.93
		Water Discharge	m ³	20,538,665.96
		Water to Sewage Pipes	m ³	16,067,278.96
		Surface Water	m ³	0
		Ground Water	m ³	0
Water Consumption ¹¹	Water Consumption	Other	m ³	4,471,387.00
		Water Consumption	m ³	3,300,169.07
Reclaimed Water	Reuse of Reclaimed Water	m ³	6,627,645.63	
Effluents and Waste Management	Other Significant Air Emissions	NO _x	kg	5,503.77
		SO _x	kg	111.98
		VOCs	kg	91,617.74
		PM	kg	89,684.79
		Ammonia	kg	23,469.84
	Waste	Fluoride	kg	21,759.99
		Hazardous Waste	t	2,132.52
		Non-hazardous Waste	t	113,125.64
		Recycled Waste	t	54,390.50
		Recycled Hazardous Waste	t	93.90
Recycled Non-hazardous Waste	t	54,296.60		
Addressing Climate Change	GHG Emissions	Operation-wide GHG Emissions (Scope 1 + Scope 2)	tCO ₂ e	1,879,379
		Scope 1: Direct GHG Emissions	tCO ₂ e	45,268
		Scope 2: GHG emissions from purchased power	tCO ₂ e	1,834,111
		Operation-wide GHG Emissions Intensity	tCO ₂ e/RMB10^8	2,574.88
		Scope 3: Other Indirect GHG Emissions	tCO ₂ e	15,702,382
Employment	Employees	Full-time Employees	Person	29,900
		Contractors	Person	2,633
		Part-time Employees	Person	58
		Employees in Mainland China	Person	27,003
		Employees out of Mainland China	Person	2,897

11. According to GRI303-5 standard, Water Consumption = Total Water Withdraw - Total Water Discharge

Topics	Primary indicators	Secondary indicators	Unit	2022 data
Employment	Employees	Employees new hired	Person	18,796
		Under 30 years old	Person	9,754
		30 - 50 years old	Person	9,001
		Over 50 years old	Person	41
		Male	Person	13,851
		Female	Person	4,945
		Employee Satisfaction	Grade	85.7
Diversity and Equal Opportunity	Management Staff by Gender	Male	Person	104
		Female	Person	13
	Management Staff by Age	Under 30 years old	Person	0
		30 - 50 years old	Person	101
		Over 50 years old	Person	16
	Employees by Gender	Male	Person	21,285
		Female	Person	8,615
	Employees by Age	Under 30 years old	Person	10,013
		30 - 50 years old	Person	19,690
		Over 50 years old	Person	197
Other Employee Diversity Indicators	Minority Employees	Person	944	
	Disabled Employees	Person	27	
Employment Training and Development	Training and Education ¹²	Average Training Hours per Employee	Hour	55.68
		Average Training Hours of Senior Management	Hour	42.58
		Average Training Hours of Middle Management	Hour	104.69
		Average Training Hours of Elementary Employees	Hour	28.87
	Professional Training	Training Participants of Employees	Participant	19,270
		Training Participants of Senior Management	Participant	1,858
		Training Participants of Middle Management	Participant	6,452
		Training Participants of Elementary Employees	Participant	10,960
		Funded External Professional Training	Hour	17,684
	Career Development	Internal and External Professional Training	Session	17,117
			Participant	1,901
		Funded External Professional Training	Hour	17,684
			10^4RMB	238.88
		Employees Receiving Regular Performance and Career Development Reviews	Person	29,900

12. This employee training data only covers a total of 2,357 employees registered on JA Solar's online learning platform

Topics	Primary indicators	Secondary indicators	Unit	2022 data
Occupational Health and Safety	Occupational Health	Workers Covered by an Occupational Health and Safety Management System	--	100%
		Training on Occupational Health and Safety	Session	8,711
		Employees Participated in Occupational Health and Safety Training	Participant	362,732
	Work-related Injuries	Work-related Death	Person	1
		Rate of Work Loss Accidents per Million Working Hours	--	0.47
		Work-related Ill Health	Person	0
R&D Innovation and Intellectual Property Protection	R&D Investment	10^8RMB	46.08	
	Number of R&D Personnel	Person	2,276	
	Cumulatively Authorized Patents	Patent	1,260	
	Newly Authorized Patents	Patent	215	
Customer Protection	Customer Satisfaction	Grade	96.48	
Supply Chain Management	Supplier Environmental Assessment	Supplier	120	
	Number of Suppliers Identified as having Significant Actual and Potential Negative Environmental Impacts	Supplier	0	
	Supplier Social Assessment	Supplier	70	
	Number of Suppliers Identified as having Significant Actual and Potential Negative Social Impacts	Supplier	0	
Anti-corruption and Business Ethics	Percentage of Operational Sites Covered with Corruption Risk Assessment	--	100%	
	Incidents of Violation of Anti-corruption Related Regulations	Incident	0	
	Anti-corruption and Business Ethics Training	Employees Participated in Anti-corruption Related Training "Anti-corruption Related Training Session"	Participant Session	3,177 4
Information Security and Privacy Protection	Information Security and Privacy Protection	Number of Substantiated Complaints of Invasion of Customer Privacy and Loss of Customer Data	Compliant	0
	Information Security Training	Information Security Training Session	Session	24
		Employees Participated in Information Security Training	Participant	5,623
Corporate Governance	Number of the Board of Directors	Person	9	
	Number of female in the Board of Directors	Person	3	
	Number of male in the Board of Directors	Person	6	
Local Communities	Public Donation	Donations of "Three Major Projects for the Benefit of the People"	10^4RMB	167.51
		Donation of Oversea Assistance	10^4RMB	20.56

GRI Content Index

GRI STANDARD	DISCLOSURE	LOCATION
GRI 2: General Disclosures 2021	2-1 Organizational details	About This Report About JA Solar
	2-2 Entities included in the organization's sustainability reporting	About This Report
	2-3 Reporting period, frequency and contact point	About This Report
	2-5 External assurance	About This Report Independent Assurance Report
	2-6 Activities, value chain and other business relationships	About JA Solar
	2-7 Employees	5.1Equal Employment and Rights Protection Key Performance Table
	2-8 Workers who are not employees	Key Performance Table
	2-9 Governance structure and composition	Sustainability Management Addressing Climate Change 1.1Governance Structure
	2-10 Nomination and selection of the highest governance body	1.1Governance Structure
	2-12 Role of the highest governance body in overseeing the management of impacts	Sustainability Management
	2-13 Delegation of responsibility for managing impacts	Sustainability Management Addressing Climate Change
	2-14 Role of the highest governance body in sustainability reporting	Sustainability Management
	2-16 Communication of critical concerns	5.4Occupational Health and Safety
	2-17 Collective knowledge of the highest governance body	Sustainability Management Addressing Climate Change 1.1Governance Structure
	2-19 Remuneration policies	1.1Governance Structure
	2-20 Process to determine remuneration	1.1Governance Structure
	2-22 Statement on sustainable development strategy	About JA Solar G2G Sustainability Concept
	2-23 Policy commitments	1.2Legal Compliance 4.1Supplier Access 4.2Management of Suppliers 4.3Supplier Improvement and Promotion
	2-27 Compliance with laws and regulations	1.2Legal Compliance
	2-28 Membership associations	About JA Solar
2-29 Approach to stakeholder engagement	Sustainability Management	
2-30 Collective bargaining agreements	Employee Care and Communication	

GRI STANDARD	DISCLOSURE	LOCATION
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainability Management
	3-2 List of material topics	Sustainability Management
	3-3 Management of material topics	Sustainability Management
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	About JA Solar Key Performance Table
	201-2 Financial implications and other risks and opportunities due to climate change	Addressing Climate Change
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	About JA Solar 2.2Green Products and Solutions 3.1Technological Innovation 6.1Exploring Industrial Revitalization
	203-2 Significant indirect economic impacts	1.3Intellectual Property Protection 3.1Technological Innovation 6.1Exploring Industrial Revitalization
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	1.2Legal Compliance Key Performance Table
	205-2 Communication and training about anti-corruption policies and procedures	1.2Legal Compliance Key Performance Table
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1.2Legal Compliance
GRI 301: Materials 2016	301-1 Materials used by weight or volume	2.3Green Industry Chain
GRI 302: Energy 2016	302-1 Energy consumption within the organization	2.1Green Manufacturing Key Performance Table
	302-2 Energy consumption outside of the organization	Key Performance Table
	302-3 Energy intensity	Key Performance Table
	302-4 Reduction of energy consumption	2.1Green Manufacturing
	302-5 Reductions in energy requirements of products and services	2.1Green Manufacturing 3.1Technological Innovation

GRI STANDARD	DISCLOSURE	LOCATION
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	2.1Green Manufacturing
	303-2 Management of water discharge-related impacts	2.1Green Manufacturing
	303-3 Water withdrawal	Key Performance Table
	303-4 Water discharge	2.1Green Manufacturing Key Performance Table
	303-5 Water consumption	2.1Green Manufacturing Key Performance Table
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	2.1Green Manufacturing
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Addressing Climate Change Key Performance Table
	305-2 Energy indirect (Scope 2) GHG emissions	Addressing Climate Change Key Performance Table
	305-3 Other indirect (Scope 3) GHG emissions	Addressing Climate Change Key Performance Table
	305-4 GHG emissions intensity	Addressing Climate Change Key Performance Table
	305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	Key Performance Table
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	2.1Green Manufacturing
	306-2 Management of significant waste-related impacts	2.1Green Manufacturing
	306-3 Waste generated	2.1Green Manufacturing Key Performance Table
	306-4 Waste diverted from disposal	2.1Green Manufacturing Key Performance Table
	306-5 Waste directed to disposal	2.1Green Manufacturing Key Performance Table
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	2.3Green Industry Chain 4.1Supplier Access 4.2Management of Suppliers 4.3Supplier Improvement and Promotion Key Performance Table
	308-2 Negative environmental impacts in the supply chain and actions taken	2.3Green Industry Chain 4.1Supplier Access 4.2Management of Suppliers 4.3Supplier Improvement and Promotion
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	5.3 Employee Care and Communication Key Performance Table
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	5.4 Occupational Health and Safety
	403-2 Hazard identification, risk assessment, and incident investigation	5.4 Occupational Health and Safety Key Performance Table

GRI STANDARD	DISCLOSURE	LOCATION	
GRI 403: Occupational Health and Safety 2018	403-3 Occupational health services	5.3 Employee Care and Communication 5.4 Occupational Health and Safety	
	403-4 Worker participation, consultation, and communication on occupational health and safety	5.4 Occupational Health and Safety	
	403-5 Worker training on occupational health and safety	5.4 Occupational Health and Safety	
	403-6 Promotion of worker health	5.3 Employee Care and Communication 5.4 Occupational Health and Safety	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	5.4 Occupational Health and Safety	
	403-8 Workers covered by an occupational health and safety management system	5.4 Occupational Health and Safety	
	403-9 Work-related injuries	5.4 Occupational Health and Safety Key Performance Table	
	403-10 Work-related ill health	5.4 Occupational Health and Safety	
	GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	5.2 Promoting Employee Development
		404-2 Programs for upgrading employee skills and transition assistance programs	5.2 Promoting Employee Development
404-3 Percentage of employees receiving regular performance and career development reviews		Key Performance Table	
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	1.1Governance Structure 5.1 Equal Employment and Rights Protection	
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	5.3 Employee Care and Communication	
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	4.2Management of Suppliers 5.1 Equal Employment and Rights Protection	
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	4.1Supplier Access 4.2Management of Suppliers 5.1 Equal Employment and Rights Protection	
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	6.1 Exploring Industrial Revitalization 6.2 Focusing on Education Development 6.3 Supporting Healthcare 6.4 Overseas Assistance 6.5 Conducting Employee Volunteer Activities	
	414-1 New suppliers that were screened using social criteria	4.1Supplier Access 4.2Management of Suppliers	
GRI 414: Supplier Social Assessment 2016	414-2 Negative social impacts in the supply chain and actions taken	4.1Supplier Access 4.2Management of Suppliers	
	416-1 Assessment of the health and safety impacts of product and service categories	3.2 Product Quality and Safety	
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	3.2 Product Quality and Safety	
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	1.4 Information Security and Privacy Protection 3.3 Customer Service Key Performance Table	

Assurance Statement of GHG emissions



鉴衡认证
CHINA GENERAL CERTIFICATION

Assurance Statement of GHG emissions

Certificate No. : CGC-CC&SS-CN20230002

Company Name : JA Solar Technology Co., Ltd.

Address : Ningjin County, Xingtai City, Hebei Province

Reporting Period : 01/01/2022- 31/12/2022

Applied Standards : ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

Reporting Boundary : GHG emissions from global operations

GHG Included : CO₂ CH₄ N₂O HFCs PFCs SF₆ NF₃

GHG Emissions :
 Direct GHG emissions (Category 1) : 45,268 tCO₂e
 Indirect GHG emissions from imported energy (Category 2) : 1,834,111 tCO₂e
 Total GHG emissions quantified above: 1,879,379 tCO₂e

The organization verifies in accordance with ISO 14064-3 that the above organization-level GHG accounting complies with the selected standards and that the results are accurate, conservative and credible.






鉴衡认证
CHINA GENERAL CERTIFICATION

Assurance Statement of GHG emissions

Certificate No. : CGC-CC&SS-CN20230003

Company Name : JA Solar Technology Co., Ltd.

Address : Ningjin County, Xingtai City, Hebei Province

Reporting Period : 01/01/2022- 31/12/2022

Applied Standards : ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

Reporting Boundary : Other indirect GHG emissions from global business activities

GHG Included : CO₂ CH₄ N₂O HFCs PFCs SF₆ NF₃

GHG Emissions :
 Indirect GHG emissions from transportation (Category 3) : 1,238,644 tCO₂e
 Indirect GHG emissions from products used by an organization (Category 4) : 14,248,507 tCO₂e
 Indirect GHG emissions associated with the use of products from the organization (Category 5) : 215,231 tCO₂e
 Indirect GHG emissions from other sources (Category 6) : Not quantified
 Total GHG emissions quantified above: 15,702,382 tCO₂e

The organization verifies in accordance with ISO 14064-3 that the above organization-level GHG accounting complies with the selected standards and that the results are accurate, conservative and credible.




Independent Assurance Report



ASSURANCE STATEMENT

SGS-CSTC'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE JA SOLAR TECHNOLOGY CO., LTD. 2022 SUSTAINABILITY REPORT AND ESG REPORT

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

SGS-CSTC STANDARDS TECHNICAL SERVICES CO., LTD. (hereinafter referred to as SGS) was commissioned by JA SOLAR TECHNOLOGY CO., LTD. (hereinafter referred to as JA Solar) to conduct an independent assurance of the Chinese version of JA Solar Technology Co., Ltd. 2022 Sustainability Report and ESG Report for 2022 (hereinafter referred to as the Report).

INTENDED USERS OF THIS ASSURANCE STATEMENT

This Assurance Statement is provided with the intention of informing all JA Solar's Stakeholders.

RESPONSIBILITIES

The information in the Report and its presentation are the responsibility of the Strategy and Sustainable Development Committee of JA Solar.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all JA Solar's stakeholders.

ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognized assurance guidance and standards, which including:

- The principles of reporting process contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) as:
 - GRI 1: Foundation 2021, for report quality
 - GRI 2: General Disclosure 2021, for organization's reporting practices and other organizational detail
 - GRI 3: Material Topics 2021, for organization's process of determining material topics, its list of material topics and how to manage each topic
- and the guidance on levels of assurance contained within the AA1000 series of standards.

The assurance of this report has been conducted according to the following Assurance Standards:

- SGS ESG & SRA verification regulations (based on GRI Principles and guidance in AA1000)

The Assurance has been conducted at a moderate level of scrutiny.

SCOPE OF ASSURANCE AND REPORTING CRITERIA

The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below, and evaluation of adherence to the following reporting criteria:

- GRI Standards 2021 (Reference)
- SZSE <Shenzhen Stock Exchange Self-Regulatory Guidelines for Listed Companies on the Shanghai Stock Exchange No. 1 - Standardized Operation>

ASSURANCE METHODOLOGY

The assurance comprised a combination of pre-assurance research, on-site interviewed with relevant employees including the JA Solar group which is located at Building 8, Noble Center, East Auto Museum Road, Fengtai District, Beijing, P.R. China; Documentations and records were reviewed and validated with relevant employees of the other subsidiaries as necessary.

LIMITATIONS AND MITIGATION

Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

The on-site verification was only at the JA Solar group. The assurance process only involved interviews with the heads of relevant departments and certain employees of group as well as consultation with relevant documents. No external stakeholders involved.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from JA Solar, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised of CCAA registered ISO 9001, ISO 14001 and ISO 45001 auditor, SGS recognized ISO37001 and CSR/ESG lead auditor.

FINDINGS AND CONCLUSIONS

ASSURANCE/VERIFICATION OPINION

On the basis of the methodology described and the verification work performed, the specified performance information included in the scope of assurance is accurate, reliable, and has been fairly stated.

The assurance team believes that the Report is with reference to the GRI Standards 2021.

Principles

Accuracy

JA Solar's information in the report was accurate, enable to release multiple qualitative and quantitative information with indicators for stakeholders.

Balance

The Report followed the balance principle and truthfully disclosed the positive and negative information.

Clarity

The Report was presented different ways with words, charts, graphics and pictures, also described with actual cases to ensure the stakeholders understanding easily.

Comparability

JA Solar had disclosed performance indicators in 2022, previous data of partial indicators were disclosed, which could help stakeholders to understand and compare the improved performance year by year.

Completeness

The Report included coverage of material aspects and boundaries, to reflect significant economic, environmental and social impacts and enable stakeholders to assess the organization’s performance in the reporting period.

Sustainability Context

JA Solar had presented the efforts on sustainability development related to economic, environmental and social aspects and combined the performance in the wide context as well.

Timeliness

Verification showed that the reported data and information was timely and effective.

Verifiability

The data and information can be traced and verified.

Management Approach

The Report had disclosed the management approach of identified material topics.

General Disclosures

The general disclosures were presented in accordance with GRI 2: general disclosures 2021.

Topic-Specific Disclosures

JA Solar’s topic-specific disclosures related to the material topics in economic, environmental, and social areas were in accordance with GRI Standards 2021.

Findings and recommendations

Good practices and recommendations for sustainability report and management process were described in the internal management report which has been submitted to the management of JA Solar for continuous improvement.

Signed:



For and on behalf of SGS-CSTC

David Xin
Sr. Director – Knowledge
16/F Century Yuhui Mansion, No. 73, Fucheng Road, Beijing, P.R. China

Apr. 23rd 2023
WWW.SGS.COM

Feedback

This is the fifth sustainability report or social responsibility report that JA Solar Technology Co., Ltd. has published. We seek your feedback and suggestions to continuously enhance our sustainability efforts and CSR capabilities and practices. Please complete the feedback form and return it to us using one of the following methods

Tel.: 010-63611888

Email: esg@jasolar.com

Add.: Building 8, Noble Center, East Auto Museum Road, Fengtai District, Beijing, China

Your information

Name: _____

Organization Name: _____

Title: _____

Tel: _____

Email: _____

1. Which stakeholder group do you belong to?

- Customer Shareholder and Investor Employee Supplier and Partner
- Government and Regulator Community Non-governmental organization Other

2. What is your overall comment on our sustainability report?

- Very Good Good Average Poor Very Poor

3. What do you think of disclosing our significant impact on the economy, society and environment in this report ?

- Excellent Good Average Poor Very Poor

4. What do you think of the clarity, accuracy, and completeness of the information, data and indicators disclosed in this report?

- Very Good Good Average Poor No idea

5. Have you obtained the information you wanted from this report?

- Yes No

6. Which aspect of this report are you most satisfied with?

7. What other information would you like to learn more about?

8. What other suggestions do you have for our future reports? ?

Developing solar power to benefit the planet

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Environmental considerations for report publication

Paper: Printed on environmentally friendly paper

Ink: Using environmentally friendly ink to reduce air pollution



This report is printed on environmentally friendly paper



JA Solar WeChat official account