

# DASOLAR

## JOURNAL

August 2023 | Mid-year Edition  
First Edition

**TOPCon 3.0 Advancement**  
Advancing Towards Ultra-High Solar Cell Efficiency

Shipments in 2022 and First Half of 2023

**Global Top 10**



das solar 

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August 2023 | Mid-year Edition  
First Edition



# EDITORIAL

DAS SOLAR CO., LTD.

LIU YONG, CHAIRMAN AND PRESIDENT

## CORPORATE CULTURE



### Vision

Be a Respected Internationalized  
New Energy Company



### Mission

Light Up Your Life



### Core Values

Collaboration and Mutual  
Success

Amidst a multitude of hopeful gazes and spurred by the clarion call of the times, "DAS Journal" emerges from the soil, setting sail as planned—an occasion for joy and felicitation! Much like the early spring sun that graces each of us with its warmth.

The evolution of an enterprise into the necessity for self-organizing a publication reflects its well-established internal strength and a favorable external environment. When an enterprise incorporates culture as a vehicle for internal communication and external image, it signifies its growth and maturation, reaching a significant scale and legacy. Over the course of nearly five years, DAS Solar's construction and development have surged forward like the Yellow River, overcoming challenges and achieving milestones. From establishing headquarters in Quzhou to a nationwide manufacturing base and a global market presence, the company's growth has propelled it into the league of enterprises with a market value of CNY 10 billion. Throughout this journey, DAS Solar has left its mark deeply etched upon the vast landscape, a testament to its progress. Today, DAS Solar stands at a new juncture of development, with the goal of becoming a respected international new energy company resonating as its most resounding ambition.

A business initially hinges on its products, then centers around its brand for a decade, and ultimately thrives on its culture for a century. Sustained success, even prosperity spanning a century, fundamentally hinges on entrepreneurs and business owners embedding their business philosophy within the culture and spirit of the enterprise. This legacy is then passed down through generations, evolving with the times. DAS Solar now embraces culture

to capture the essence of the times. Birthed with profound meaning, "DAS Journal" symbolizes collective efforts, a path to sharpening progress, resilience through adversity, crystallized entrepreneurship, and innovation. It's a necessity born from DAS Solar's elevated development phase. As a unique cultural creation of DAS Solar, "DAS Journal" shoulders the responsibility of bolstering the company's external image, fostering internal and external ideological and cultural exchange, enhancing the overall competence of all employees, promoting the enterprise spirit, constructing corporate culture, conveying corporate ideology, embodying corporate philosophy, and invigorating the company's vitality. Though "DAS Journal" is a fledgling concept, it embodies the core of DAS Solar's corporate culture. It lacks the thunderous authority of a spring storm, yet every issue carries the vibrancy of growth, the force of development, and the allure of innovation.

This publication is still in its infancy, needing tender care and continuous support. In the days to come, it will grow alongside its readers, becoming a mentor and companion in both life and work. It will take pride in the splendor of the company's mission, enhance staff self-worth, earn the leadership's appreciation, and elicit love and deep satisfaction from the workforce. With your support, we envision "DAS SOLAR'S JOURNEY AHEAD" as a vibrant addition to DAS Solar's community. "DAS SOLAR'S JOURNEY AHEAD" signifies larger dreams and aspirations to chase, embracing bigger challenges with fiery passion, diligent hard work, and heartfelt creativity, all to forge a shining brilliance.

DAS Solar lights up your life! Let's strive forward together!

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# RAPID EXPANSION

## FINANCIAL GROWTH RATE

2021	2022	2023
134%	295%	169%

### ► DAS Solar Joins 2022 Carbon Neutral Venture 50 and PV-Tech Investment and Financing List

Through years of pioneering work in N-type technology, DAS Solar has risen to the forefront of the photovoltaic industry, establishing itself as a prominent player in the emerging tier. Over the course of four consecutive years, it has achieved simultaneous growth in both shipment volumes and revenue. This impressive trajectory has garnered the attention of investors, leading to its inclusion in two authoritative lists: the "2022 Carbon Neutral Venture 50" and the "PV TECH 2022 Top Financing Companies".



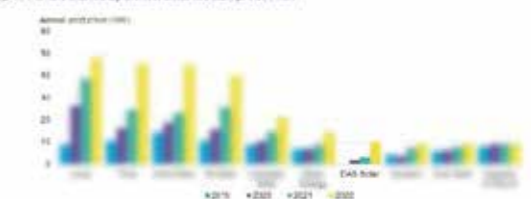
### ► TÜV NORD Awards DAS Solar IEC TS 62941:2019 Photovoltaic Module Manufacturing Quality System Certificate

On March 2nd, TÜV NORD, a globally renowned third-party testing and certification authority, presented DAS Solar with the IEC 62941:2019 Photovoltaic Module Manufacturing Quality System Certificate. The IEC technical specification puts forward high-quality and comprehensive management requirements for photovoltaic modules, encompassing product design and development, product certification, process control, key raw material control, procurement, product testing and monitoring, and document requirements. The conferment of the IEC TS 62941:2019 Photovoltaic Module Manufacturing Quality System Certificate is a testament to the elevated quality management achieved by DAS Solar, marking a significant stride toward elevated industry standards within the photovoltaic sector.

### ► DAS Solar Makes Bloomberg's 2022 Top 10 PV Module Production List

In 2022, DAS Solar achieved a groundbreaking milestone by earning a place in BloombergNEF's annual "Top 10 Photovoltaic Module Production" list with an impressive 10GW output, securing a remarkable 7th position in this esteemed ranking.

Top 10 manufacturers by annual solar module production



# GROWING PROCESS



In January, DAS Solar announced the official establishment of its German subsidiary

In just 70 days, DAS Solar's 5GW N-type module production base is successfully completed in Dalat Banner

Central China's largest photovoltaic production base, DAS Solar Jingshan Base, successfully launched its first high-efficiency module product





Investment of CNY 1.6 Billion  
DAS Solar New Material settled in Lianyungang Economic and Technological Development Zone

DAS Solar Taizhou Base honored as "Jiangsu Intelligent Manufacturing Workshop"

DAS Solar successfully selected for Zhejiang Future Factory

DAS Solar included in the national standard Data-management Capability Maturity Model (DCMM) Compliance Pilot Work at Zhejiang Provincial Level

Equipment enters Phase II at DAS Solar Zhangzhou Base  
Inaugural Fujian photovoltaic freight train — DAS Solar high-efficiency modules embark with the wind

-  MODULE PRODUCTION CAPACITY
-  MODULE + CELL PRODUCTION CAPACITY
-  CELL PRODUCTION CAPACITY
-  SUBSIDIARY





# TECH TRENDING

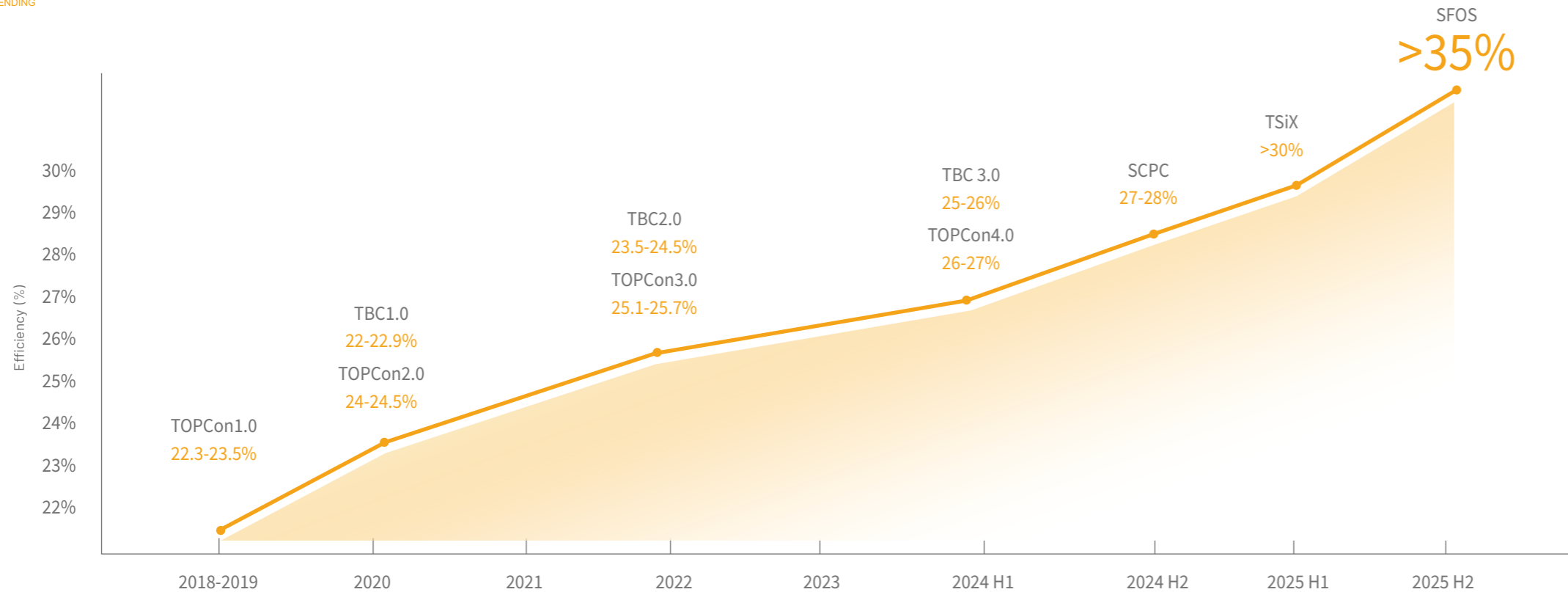
## 02

# TOPCon 3.0

## ADVANCEMENT

DAS SOLAR'S EXPLOSIVE DEBUT OF N-TYPE 3.0  
INNOVATIVE N-TYPE TECHNOLOGY ACHIEVES OPTIMAL VALUE





# ADVANCED R&D

## SNEC

### DAS Solar Reveals Comprehensive Technology Roadmap Series, Solar Cell Efficiency to Exceed 35%

During the 2023 Shanghai SNEC PV Power Expo, DAS Solar unveiled a comprehensive range of high-efficiency cell technology roadmaps, setting the stage ablaze with five revolutionary paths. Research and development indicate that solar cell efficiency will surpass an impressive 35%.

As a pioneering N-type innovator, DAS Solar, fortified by extensive technological accumulation, iterates through the historical development of photovoltaic technology. Insightfully analyzing the intrinsic patterns of technological evolution, rooted in the primary principles of photovoltaic advancement, DAS Solar not only presents a path for enhancing N-type cell efficiency but also strategically envisions post-silicon era technologies. This foresight outlines an advanced, clear, comprehensive, and implementable blueprint for DAS Solar's future technological progress.

Dr. Song Dengyuan, Chief Technology Officer of DAS Solar, emphasized the grounded nature of DAS Solar's technological roadmap, standing at the present while keeping an eye on the future. Structured around a three-tier R&D system of Producing Generation 1, Developing Generation 2, and Preparing for Generation 3, and guided by the principle of optimal LCOE for the photovoltaic market, DAS Solar now introduces N-type TOPCon 3.0 PLUS technology and products that cater to current market demands, offering superior cost-effectiveness and iterative PERC technology. Simultaneously forecasting market trends and seizing the initiative, DAS Solar positions itself along five revolutionary paths: TOPCon 4.0, TBC, SCPC, TSiX, and SFOS, with solar cell efficiency expected to exceed 35%.

## TOPCon and TBC

### Capitalizing on Iterative Opportunities from Mainstream Technologies to Niche Markets

From its inception, DAS Solar's focus on N-type TOPCon technology was a calculated move, stemming from accurate technological foresight, substantial technical accumulation, and over four years of research investment. DAS Solar's TOPCon technology development and iteration have unfolded as anticipated, evolving from TOPCon 1.0 to TOPCon 3.0 PLUS, driving China's photovoltaic industry from P-type PERC to N-type TOPCon iteration, now a mainstream technology for iterating PERC cells. According to INFOLINK, TOPCon technology is projected to account for about 80% of the entire N-type technology by 2026. Supported by I-SE, UT-POLYSI, and MT-PASS, DAS Solar's TOPCon 3.0 PLUS cells are in mass production, achieving peak efficiency of 25.8%. Laboratory efficiency surpasses 26.24%, and the record-breaking open-circuit voltage of 730mV sets a global benchmark. Supporting the N-type series of high-efficiency N-type modules with power ranging from 430W to 640W, DAS Solar caters to diverse applications, from distributed, industrial rooftops to large-scale ground stations, desert, urban, and

offshore installations across 18 scenarios.

The journey to the TOPCon 4.0 era is well underway.

TBC technology, developed in parallel with TOPCon, introduces back contact (BC) high-efficiency cells, combining advanced TOPCon technology with back contact technology (TOPCon-BC) to create a novel high-efficiency cell design. Leveraging TOPCon cells' exceptional passivating contact structure, TBC places electrodes entirely on the backside, eliminating shading losses caused by conventional front-side gridlines (about 3.5% shading loss). Not only does this design enhance aesthetics, but it also substantially increases current. DAS Solar began researching TBC 1.0 high-efficiency cells in 2020 and has successfully developed TBC 3.0, with efficiency surpassing 25.2%. The next-generation TBC modules are slated for release in the latter half of this year. TOPCon and TBC cell efficiency are expected to surpass 27%.



# ADVANCED R&D



## ► SCPC and Tsix: Advancing Towards Ultra-High Solar Cell Efficiency

SCPC cells are built upon the efficient TOPCon cell structure, achieving 26% efficiency. These cells employ an innovative selective carrier contact passivation material, effectively minimizing recombination currents to their limits. This advancement brings the conversion efficiency of monocrystalline silicon cells remarkably close to their theoretical maximum. To further enhance cell efficiency, Tsix cells introduce a groundbreaking silicon-based layered design, extending solar spectrum utilization into the infrared range. The layered structure

significantly elevates the open-circuit voltage of the cells. DAS Solar is actively engaged in collaborations with renowned universities and research institutions globally to develop Tsix cells. Key technologies encompass low-resistance tunneling layers within the interfaces of the top and bottom cells, angle deposition technology for silicon velvet surfaces, spectral distribution optimization for both cell layers, and advanced metallization techniques. The industrial efficiency of Tsix cell production is projected to exceed 30%.

## ► SFOS: Revolutionary High-Efficiency Cell Technology for the Post-Silicon Era

Enhancing monocrystalline cell efficiency beyond the theoretical limit of 29.4% has become a global photovoltaic research focal point, a key focus, and a critical challenge. To address this, DAS Solar leverages its National CNAS Photovoltaic R&D Laboratory's strengths, partnering with the University of New South Wales' Advanced Photovoltaics Research Center led by Dr. Martin Green, a distinguished solar cell expert. Together, they have initiated research into SFOS ultra-high efficiency solar cells surpassing 35%. The structure

employs DAS Solar's high-efficiency silicon cells as the foundation, layering novel photovoltaic thin-film materials with singlet fission characteristics onto the cell surface, enhancing exciton multiplication. This boosts solar cell quantum efficiency beyond 100%, potentially exceeding 40% efficiency. SFOS cells offer the advantages of cost-effectiveness and high efficiency, adhering to the primary principle of delivering cost-effective energy products.



### ► DAS Solar Granted Zhejiang High-Tech Enterprise R&D Center Status

On January 4, DAS Solar's High-Efficiency Cell and Module High-Tech Enterprise R&D Center was recognized as Zhejiang High-Tech Enterprise R&D Center.

### ► Showcasing Quality: DAS Solar Receives "TÜV Nord CTF Witnessing Lab" Accreditation

On January 10, DAS Solar's Photovoltaic Laboratory was qualified as "TÜV Nord CTF Witnessing Lab".

The CTF Witnessing Lab is an accreditation program by the internationally recognized certification body TÜV Nord, acknowledging independent testing capabilities of a client's in-house laboratory through witnessing tests. This accreditation empowers DAS Solar to perform tests using its own laboratory equipment, reducing product certification lead times.

### ► DAS Solar Photovoltaic Lab Receives National CNAS Laboratory Accreditation Certificate

On May 17, the DAS Solar National CNAS Accredited Photovoltaic Laboratory unveiling ceremony was successfully held at the Quzhou DAS Solar Photovoltaic Laboratory.

With the CNAS accreditation certificate (Certificate No.: CNAS L18259), DAS Solar demonstrates its internationally advanced laboratory management and technical capabilities, allowing it to provide testing services in accordance with recognized criteria, and issue test reports acknowledged by over 100 countries and regions worldwide. This marks a formal step into the realm of nationally recognized international laboratories.



### ► DAS Solar and China Green Supply Chain Alliance Form Intellectual Property Strategic Partnership

DAS Solar collaborates with China Green Supply Chain Alliance on an intellectual property strategic cooperation agreement, mutually promoting high-quality intellectual property creation, strategic deployment, and efficient application in the photovoltaic green supply chain, driving high-quality development of the photovoltaic industry.

### ► DAS Solar Hosts the 2023 Quzhou Intellectual Property Summit

On April 22, the Quzhou Intellectual Property Promotion Week, organized by the Quzhou Municipal People's Government, Quzhou Market Supervision and Administration Bureau (Intellectual Property Bureau), and DAS Solar, was inaugurated. The Intellectual Property Summit was successfully convened.

As a new leading enterprise in the photovoltaic industry, DAS Solar has consistently adhered to an innovative, technology-driven development philosophy since its inception, attaching significant importance to the construction of its intellectual property system and risk prevention. DAS Solar currently holds 139 authorized patents, with nearly half being invention patents, and has filed over 400 patent applications. In the 2022 TOP 100 Chinese Enterprises Patent List for the New Energy Industry, DAS Solar ranks 80th in invention patent applications, 86th in invention patent authorizations, and 34th in total invention patent citations.







01



02



03



04



05



06

# LEADERSHIP CARING



07



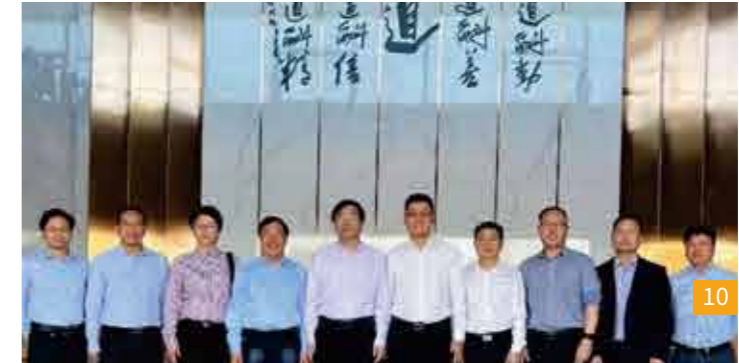
08



09



11



10

June 15: Chen Jinbiao (right), the current Party Secretary and Deputy Director of the Standing Committee of the Zhejiang Provincial People's Congress, and former member of the Standing Committee of the Zhejiang Provincial Party Committee and Executive Deputy Governor, visited the Quzhou Base **07**

March 10: Xu Wenguang (1st from left at the front), member of the Standing Committee of the Zhejiang Provincial Party Committee and Executive Deputy Governor, visited the Quzhou Base. **08**

March 24: Lu Shan (2nd from right), Deputy Governor of Zhejiang Province, visited the Quzhou Base. **09**

November 14, 2022: Gao Xiang (5th from left), CAE Academician, visited the Quzhou Base **10**

March 5: Gao Yi (right), Secretary of Quzhou Municipal Party Committee, visited the Quzhou Base. **11**

- 01** June 12: Zhejiang Provincial Party Secretary Yi Lianhong (middle) visited Quzhou Base
- 02** February 19: Guizhou Provincial Party Secretary Xu Lin (right) visited Guizhou DAS Solar Changtong
- 03** June 13: Hubei Provincial Deputy Party Secretary and Governor Wang Zhonglin (left) visited Jingshan Base
- 04** February 15: Zhejiang Provincial Deputy Party Secretary and Governor Wang Hao (middle) visited Quzhou Base
- 05** March 7: Hubei Deputy Governor Sheng Yuechun (2nd from right) visited Jingshan Base
- 06** April 19: CAS Academician and distinguished solar cell expert Li Yongfang (4th from right) visited Quzhou Base



## ► Energetic Surge! The Rapid Growth of N-Type “Unicorn”

Author: Xiao Bei, Xi Xia Source: PV-Tech

In every industry, emerging stars shine bright. They accumulate knowledge, seize opportunities, and race ahead using unique strengths.

In the solar arena of 2022, DAS Solar is that star.

In less than five years, this company secured strategic investments from prominent listed enterprises like China Merchants Venture, Three Gorges Capital, and Yongfu Shares. Consistently leading in tender capacities since May, DAS Solar secured 35 projects in a year, with a total capacity exceeding 10GW. It is the embodiment of innovation and achievement in the 2022 photovoltaic landscape.

As the photovoltaic industry expands globally due to energy crises and heightened green energy policies, markets worldwide demand more, especially in Europe. Following its momentum in the German market, DAS Solar is poised to accelerate its presence in Australia, Japan, Southeast Asia, the Middle East, and Latin America.

From a "Dark Horse" to a "New Contender," the developmental path of DAS Solar in the photovoltaic era reveals the company's deep technical accumulation and strategic wisdom in its deployment. Behind this success, we also see a transformation in the company's foundation. Through years of diligent cultivation, it has strengthened its internal capabilities, continuously produced competitive products, and established brand premiums. These factors have contributed significantly to its rapid rise and appeal to various institutional investors.

Truly a company steered by technology experts, its impressive performance to date fuels high expectations. In the ever-changing landscape of the solar industry, what kind of future will DAS Solar forge?

## ► Acceleration and Surprises Await 2022 China's New Contenders in the Solar Industry Accelerate

Source: Energy Box

On January 9, pvbox.com held a week-long voting event, "Select Your Top Ten Module Enterprises." DAS Solar emerged as the undisputed winner with 5867 votes. As a rising star in the module field, DAS Solar is becoming increasingly well-known.

For DAS Solar, 2022 was a year of vigorous acceleration. How fast?

Firstly, expansion speed. At the beginning of 2022, DAS Solar led the way in announcing prices for N-type cell modules, filling an industry gap. In July of the same year, it released the N-type TOPCON White Paper, resulting in a significant increase in global orders, pushing it into the top three globally.

Secondly, construction speed. In 2022, DAS Solar achieved a significant breakthrough, embarking on the expansion of 15GW cell and 15GW new module projects. It established multiple intelligent "future factories" in locations such as Quzhou, Jiangsu Taizhou, and Fujian Zhangzhou, producing leading N-type TOPCon cells and modules.

Thirdly, technology speed. In January 2022, China's first high-speed highway slope photovoltaic trial project successfully connected to the grid in Shandong, using none other than DAS Solar's N-type modules. This achievement was reported by Shandong TV News Broadcast.

Fourthly, professionalism speed. On November 11, 2022, during the Autumn Meeting of the China Semiconductor Industry Association (SEMI) China Photovoltaic Standard Technical Committee, Dr. Song Dengyuan, CTO of DAS Solar, was elected as the new chairman of the SEMI China Photovoltaic Standard Technical Committee.

As for the solar companies, yesterday's journey for DAS Solar started small, but its present is illustrious, and it is in full bloom today. Its future is one of overcoming challenges and obstacles.

## ► DAS Solar's Revelation: Unveiling the Transformation of a Photovoltaic Dark Horse

Author: Wang Liang Source: BLACK HAWK SOLAR

Amidst price fluctuations in the photovoltaic industry, a new era of industrial competition has begun. In the long term, the energy transition toward "double carbon" and cleaner energy sources is inevitable. Chinese photovoltaics are riding the wave toward becoming a major energy source. Consensus is reached, and the trend is positive!

As one of the most intriguing "dark horses" in the photovoltaic industry in recent years, DAS Solar faces new opportunities and challenges.

In the context of historical industrial evolution, intense competition has been a consistent trend in all technological waves. This holds true for various sectors, including the solar industry, where participants like DAS Solar have traversed both challenging terrains and promising avenues.

So, how is DAS Solar preparing for the future? As stated in the Chairman's Message on its official website, "Standing at the dawn of a new historical epoch, gazing far into the distance, we find the future is already here, brimming with passion and imagination. However, this moment of detachment and aspiration merely marks the beginning of the next arduous journey. However, we are aware that the exciting prospect calls for a good start. In the face of relentless technological innovation, escalating market competition, and formidable developmental tasks, seizing the opportunities of the era, enhancing awareness of challenges, staying vigilant in times of security, exploring innovation, and staying in step with the times are imperative. With a meticulously honed unique core competitive edge, DAS Solar is poised to usher in a new era of company development."

"Founded not long ago, still in its nascent stages, DAS Solar might encounter various challenges that could lead to confusion. Yet, with a solid shareholder background, a favorable sunrise industry, an innovative and enterprising team, a management that embraces self-analysis, and the continuous influx of peers from the solar industry, please believe that these uncertainties are transient. By uniting, persevering, innovating, and embodying the core values of 'synergy and win-win', DAS Solar is bound to lead with greater speed, height, and distance."

Renowned author Wu Xiaobo once wrote in "Thirty Years of Turbulence": "When this era arrives, it is unstoppable. All things grow freely, dust and dawn rise, rivers converge into streams, nameless hills become peaks, and heaven and earth become extraordinarily vast."

Over the past two decades, China's economy has weathered several cycles, and the nation's energy strategy has undergone adjustments and evolution. Simultaneously, global energy transformation has surged forward, and the trends of cleaner energy and low-carbon economic development have solidified.

In an industry marked by growth, change, and cyclical patterns, China's photovoltaic sector has weathered challenges such as the 2008 financial crisis, the 2011-2012 EU and US anti-dumping measures, the 2018 "531 New Policy" downturn, and the pressures of the pandemic since 2020. These fluctuations have tested various new energy enterprises.

Nearly all founders and core management members of DAS Solar have witnessed and experienced these changes firsthand. As the path to the future unfolds, whether it's a narrow bridge or a grand avenue, whether the sun shines brightly or the snow falls heavily, Liu Yong and DAS Solar under his leadership are undoubtedly prepared for the journey ahead.

## ► DAS Solar Shines: 10GW Annual Bid Win, Top 10 Module Shipments!

Source: Solarbe

In a year marked by price hikes, diversification, N-type technologies, integrated expansion, and energy storage, 2022 proved to be another tumultuous period for the photovoltaic industry.

In the midst of turbulent times, a "dark horse" emerges. Over the past year, one of the most remarkable rising stars in the photovoltaic industry is undoubtedly DAS Solar, a company established a mere four years ago. In 2022, DAS Solar achieved an all-time high in photovoltaic module shipments, ranking among the global top ten. With sales breaking the CNY 10 billion milestone, it has swiftly established itself as a leading brand in the emerging tier of the photovoltaic industry.

With its efficient and reliable module products, DAS Solar has repeatedly earned industry accolades and secured major contracts in central SOE procurement. According to the statistics from solarbe.com, DAS Solar secured over 10GW of module bids in 2022. Notable projects include the 2.1GW with China General Nuclear Power Group, 1.3GW+ with China Three Gorges Corporation, and 600MW with China Resources Power, in addition to procurement

projects from China Huaneng Group, China National Energy Investment Group, and China Datang Corporation, among others.

Furthermore, solarbe.com found that the year 2022 saw N-type modules gaining favor within central SOEs, with China Huaneng Group, China National Nuclear Corporation, China General Nuclear Power Group, China National Power Corporation, China Three Gorges Corporation, China National Investment Group, China Datang Corporation, and China Petroleum & Chemical Corporation all issuing tenders for N-type modules. Notably, DAS Solar successfully secured the largest bid, the fourth-quarter 2022 N-type photovoltaic module procurement by China Datang Corporation.

As a pioneer in N-type photovoltaic technology, DAS Solar took the lead in 2022 by publishing N-type cell module pricing, filling an industry gap. In July of the same year, DAS Solar released the N-type TOPCon white paper, resulting in a significant increase in global orders and placing them in the top three worldwide.

## ► Through constant iteration and advancement, DAS Solar continues to lead the trend toward higher efficiency and lower costs in module technology

Source: Energy 1

From the mainstream status of PERC cells in photovoltaics to the current prominence of N-type cells, new-generation photovoltaic technologies such as TOPCon, HJT, and IBC have taken the stage, becoming the direction for the industry's next phase.

Among the many enterprises engaged in N-type cell research and development, DAS Solar has long recognized the transformative trend in cell iteration.

Guided by a keen understanding of technological pathways, DAS Solar has consistently pursued a strategy of technological leadership, prioritizing high-quality, high-efficiency, high-reliability, and environmentally friendly products. Through advanced encapsulation techniques like large silicon wafers, passivated contact technology, gradient film technology, ultrathin polycrystalline silicon technology, edge passivation technology, multi-busbar tech-

nology, and half-cell technology, DAS Solar has achieved continuous enhancements in cell and module efficiency. This unwavering commitment has maintained China's position as a global leader in photovoltaic technology.

DAS Solar welcomes the morning glow with myriad homes. There are even earlier travelers even one leaves early. Amidst the multitude of trends, DAS Solar has maintained a high sensitivity to emerging industry dynamics, driving technological progress through grounded research and empirical evidence. With unwavering passion and determined action, DAS Solar continuously pushes the boundaries of technological innovation. Walking at the forefront of cell technology, DAS Solar strides confidently toward the future, illuminated by the dawn of the industry.

# MEDIA COMMENTS

## ► Song Dengyuan, DAS Solar: There is no ultimate technology, only innovation and iteration. DAS Solar's TOPCon 4.0 is about to surpass 26%!

Author: Yan Qi Source: guangfu.bjx.com.cn

"The concept of transitional technology is relative to ultimate technology, as there is no such thing as a definitive endpoint in technological evolution. Reflecting on the history of scientific advancement, every technology is destined to be succeeded by the innovations of the next generation. This dynamic is the driving force behind human technological innovation. In line with the principle that new technologies replace older ones as part of the natural progression, the solar industry is no exception to this principle of ongoing innovation."

Approaching 2023, DAS Solar has set a new goal — achieving a conversion efficiency exceeding 26% with TOPCon 4.0 cells, and reaching a cumulative TOPCon cell capacity of 30GW by year-end. At the Jinan Photovoltaic Expo, guangfu.bjx.com.cn engaged in a dialogue with Dr. Song Dengyuan, CTO of DAS Solar, to explore the path of N-type technology iteration during the PERC cell transition. Amidst this period of innovation, where will this dark horse of the industry lead?

Since 2022, DAS Solar's module bids have exceeded 10GW, making it a key supplier to both major and minor players in the domestic solar PV plant development scene. To ensure a stable supply of high-efficiency N-type products, DAS Solar's expansion plans are making steady progress. It is projected that by the end of 2023, cell and module production capacities will both exceed 30GW. Song Dengyuan explained that DAS Solar's cell production bases include a 10GW facility in Xinzhou, Shanxi Province, a 10GW facility in Taizhou, Jiangsu Province, and another 10GW facility in Quzhou, Zhejiang Province. The module production is also strategically dispersed, with manufacturing bases in Shanxi, Gansu, Anhui, Zhejiang, Fujian, Guangxi, Inner Mongolia, and other regions.

Recognizing the critical interplay between market demand and production capacity, DAS Solar has launched the "N-type" brand, featuring three series of high-efficiency N-type products that cover various applications, including distributed photovoltaics, residential photovoltaics, centralized PV plants, offshore photovoltaics, and photovoltaic integration with highways. In January 2023, DAS Solar signed a joint venture cooperation agreement with Elion, with plans to invest CNY 4 billion in Inner Mongolia for the construction of a 10GW high-efficiency cell and 10GW desert-specific photovoltaic module project. This expansion aims to further diversify application scenarios.

Amidst the ongoing transition from P-type to N-type technology, TOPCon cell capacity is experiencing explosive growth, contributing to the iterative process. According to Dr. Song Dengyuan's predictions, with the inclusion of HJT and XBC technologies, the market share of N-type products is expected to surpass that of P-type products and become the industry norm by 2025.

In the current landscape of technological debates, Song Dengyuan emphasizes that "A single flower does not constitute spring. The proliferation of diverse photovoltaic technologies and their competitive coexistence drive down the cost of photovoltaic power generation and propel the overall development of the industry." At the same time, he cautions that amidst the high enthusiasm for the photovoltaic industry, there is also a mix of voices. To ensure sustainable and healthy development, the photovoltaic sector must maintain equanimity, adhere to scientific development principles, and collectively foster an industry that endures.





### ► DAS Solar and Ropenet signed strategic cooperation agreement

On March 20th, DAS Solar and Ropenet signed a strategic cooperation agreement. The two parties will jointly establish a research and development platform for offshore floating photovoltaic mooring and anchoring systems, dedicated to the research and technological breakthroughs of offshore floating photovoltaic mooring and anchoring systems.

### ► DAS Solar partnered with Henan Houjiang Group for a 100MW distributed project

DAS Solar signed a cooperation agreement with Henan Houjiang Group for a 100MW distributed project in Zhengzhou. Both parties will engage in comprehensive and in-depth strategic cooperation in the field of enterprise low-carbon sustainable development.

### ► DAS Solar initiated a distributed power project

On May 25, DAS Solar signed a strategic cooperation agreement for distributed photovoltaic development with Beijing Golden River Water Resources & Hydropower Construction Group Company Limited. The collaboration aims to actively promote comprehensive, multi-domain, and deep-level cooperation in distributed photovoltaic project investment, development, construction, and operation management.



## BUSINESS DEVELOPMENT



### ► DAS Solar partnered with Energy Fields for collaboration

At the Shanghai SNEC Expo, DAS Solar signed a cooperation agreement with ENERGY FIELDS to jointly explore the Israeli market, strengthening their presence in international cooperation.

### ► DAS Solar expands clean energy projects with Southeast Guangdong Hydropower Investment Company

During the Shanghai SNEC Expo, DAS Solar's subsidiary, Shanghai Youwen New Energy signed a strategic cooperation agreement with Southeast Guangdong Hydropower Investment Company. Both parties will deeply collaborate in clean energy project development, construction, and operation, working together to promote nationwide project investment, development, and construction.



# TOP 10

SHIPMENTS IN 2022 AND FIRST HALF OF 2023

## Global Top 10

DATA SOURCE  
SOLARBE.COM

### ▶ China Datang Group Successfully Delivers First N-Type Module in Jiangsu Province

In January, the photovoltaic modules for Datang Lvsigang Phase III 70MW photovoltaic power generation project, supplied by China Water Resources & Hydropower Materials, was successfully delivered from DAS Solar.

### ▶ DAS Solar Chairman and President Liu Yong Visits China Water Resources & Hydropower Materials Group

On January 4, DAS Solar Chairman and President Liu Yong visited China Water Resources and Hydropower Materials Group. Both parties engaged in in-depth discussions regarding strengthening the upstream supply chain cooperation, advancing photovoltaic technology innovation, deepening strategic collaboration, and achieving mutual benefits and win-win outcomes.

### ▶ Chairman of Jiangxi Electric Construction, Zou Shengping, Visits DAS Solar

On February 22, Zou Shengping, Chairman of Jiangxi Electric Construction, along with other representatives, visited DAS Solar for discussions and negotiations. DAS Solar's Chairman and President Liu Yong, Vice Chairman Shi Si, and other leaders accompanied the delegation.

### ▶ DAS Solar's N-Type D-Mini Black Pro Bifacial Modules Make Debut in Australia

In March, DAS Solar's N-type D-Mini Black Pro bifacial modules made their debut in the Australian market, showcasing the energy value of N-type technology in the southern hemisphere.

### ▶ DAS Solar's First Batch of N-type Modules Successfully Shipped to Thailand

In April, DAS Solar's first batch of N-type modules arrived in Thailand, marking a significant entry into the N-type module market in Southeast Asia.

### ▶ Shining in Caucasus DAS Solar's Inaugural Introduction of N-type Modules in Georgia

In May, DAS Solar's N-type modules arrived in Georgia. This is another step in the global "going abroad" strategy. DAS Solar's decision to use offshore RMB settlement in international trade further contributes to the internationalization of the RMB.





# Rising to New Heights with Floating Photovoltaics

DAS Solar Contributes to Constructing the World's Largest Single-Unit Floating Photovoltaic Phase I of 250MW Photovoltaic Project in Southern Fuyang, Anhui

## 250MW

Fuyang, Anhui, May 2023

Floating PV plant | DAS-DH144PA 540, 545 in Coal Mining Subsidence Area

# PROJECTS REVIEW

► **Delivering Quality Amidst the Pandemic  
DAS Solar Modules Power Ninglang Sanlongtan 60MW Photovoltaic PV Plant's Successful Grid Connection**

In January, Ninglang Sanlongtan 60MW Photovoltaic PV plant in Lijiang, invested and constructed by China Three Gorges Group Yunnan Energy Investment Co., Ltd., was successfully incorporated to the grid and began generating power. DAS Solar supplied all photovoltaic modules for the project, marking the first grid-connected power generation project in Lijiang by China Three Gorges Yunnan Energy Investment.



► **DAS Solar Brightens Dali  
Successful Grid Connection of Phase I at Heqing Junhua Photovoltaic PV Plant**

In February, Phase I of the Heqing Junhua Photovoltaic Power Station in Dali was successfully incorporated to the grid, with DAS Solar supplying all 136.7MW of photovoltaic modules. The PV plant is developed and invested by China Energy Engineering Group, and is their first fully-owned photovoltaic project in Yunnan. It is a key project in supporting Yunnan's efforts to create a national-level demonstration zone for new power systems.







► **Harmonizing Photovoltaics and Flexibility DAS Solar Successfully Completes Yunnan's First Flexible Bracket Project**

In April, the Fengqing Daxing Agricultural-Photovoltaic Hybrid Technology Upgrade Project was successfully completed as the first flexible bracket project in Yunnan. DAS Solar's flexible bracket structure injected new vitality into rural revitalization, offering advantages such as efficient land use, easy installation, cost-effectiveness, and high reliability.



► **DAS Solar joins forces with Germany's JEKUSOL GmbH to generate power on the roofs of Schaeffler Group in Hirschegg, Germany**

In June, DAS Solar and Germany's JEKUSOL GMBH cooperated to enable the grid connection of a distributed rooftop solar project in the Schaeffler Group's industrial park in Hirschegg, Germany. The collaboration of traditional industry with innovative green energy has brought forth a new source of eco-friendly electricity under the sun.

## Das Solar Paints a Green Picture for a Low-carbon Future

Yanpeng Photovoltaic PV Plant in Binchuan County, Yunnan Province

Completely incorporated to the grid with full capacity

The project uses DAS Solar's **72-cell 545W monofacial modules**

Designed installed capacity **100MW**

It is expected that after the project is incorporated to the grid

It can provide green and low-carbon electricity of approximately **170 million kilowatt-hours**

≈ annual savings of coal consumption: **52,900 tons**

≈ Reduction in CO<sub>2</sub> emissions: **145,600 tons**

≈ Reduction of SO<sub>2</sub> emissions: **27.99 tons**

Contributing once again to sustainable economic and environmental development



# Light Up Your Life

## Green Power Lights Up Every Grain of Sand

DAS Solar Supports Guangdong Hydropower in Xinjiang's Awati (400MW) Photovoltaic Power Project

128 Generating Arrays, 1,025,024 Photovoltaic Modules

High-quality and dependable N-type modules capture the value of each ray of sunlight in the desert

### 400MW

Awati, Xinjiang, China

Ground PV Plant | Desert DAS DH144PA-545



► **Extra Power Generation of 3.34%! DAS Solar Reveals Comparative Empirical Data of N-type TOPCon & P-Type PERC Technologies**

DAS Solar has partnered with TÜV SÜD for a year-long outdoor verification project (January 2023 – December 2023) at the CTC Hainan National Inspection Group's outdoor verification site. This project aims to comprehensively validate and study the power generation performance of N-type modules. The verification site is located in Ding'an County, Hainan Province. The demonstration PV plant is equipped with both N-type bifacial modules (utilizing DAS Solar's N-type TOPcon cells) and P-type PERC bifacial modules, each with an installed capacity of around 5 kW (both N-type and P-type modules are configured in sets of 9). The modules are connected to string inverters (SUN2000-60KTL) for grid-connected power generation.

With a combination of advantages such as low degradation rate, low temperature coefficient, and high bifacial efficiency, N-type modules exhibit superior power generation performance. The verification data for the testing period from January 2023 to April 2023 reveals that the average daily wattage per kilowatt (KWH/KW) generated by N-type modules and P-type modules were 3.40 KWH/KW and 3.29 KWH/KW, respectively. This indicates that N-type modules exhibited approximately a 3.34% higher generation per watt compared to P-type modules.

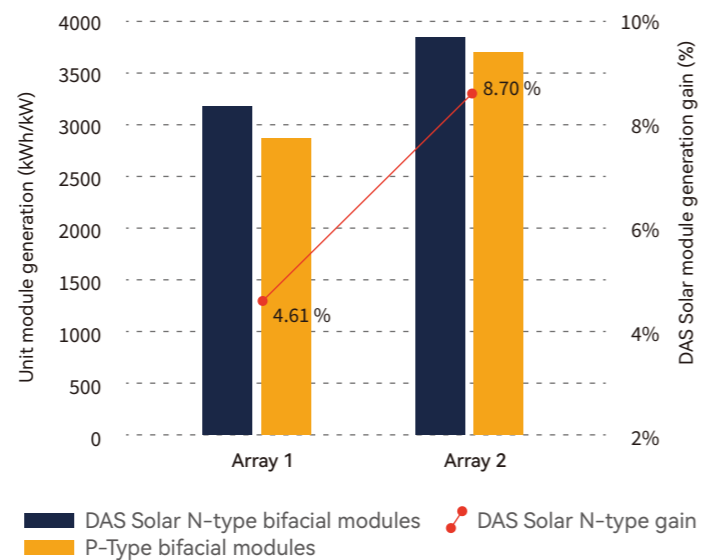


► **DAS Solar's N-type Module Verification Data Released**

After two years of stable operation, the Qinghai Ge'ermu Wutumeiren N-type TOPcon Bifacial Module Project, supplied by DAS Solar, has delivered remarkable power generation gains.

In this project, DAS Solar selected two arrays of modules with identical system designs and installation environments for comparison. The verification data shows that the power generation per kilowatt of N-type bifacial modules is approximately 4.61% higher and 8.7% higher compared to P-type bifacial modules under equivalent conditions. The exceptional performance of N-type modules significantly enhances photovoltaic power plant revenue and system yield.

Comparison of unit module generation from January 2021 to December 2022



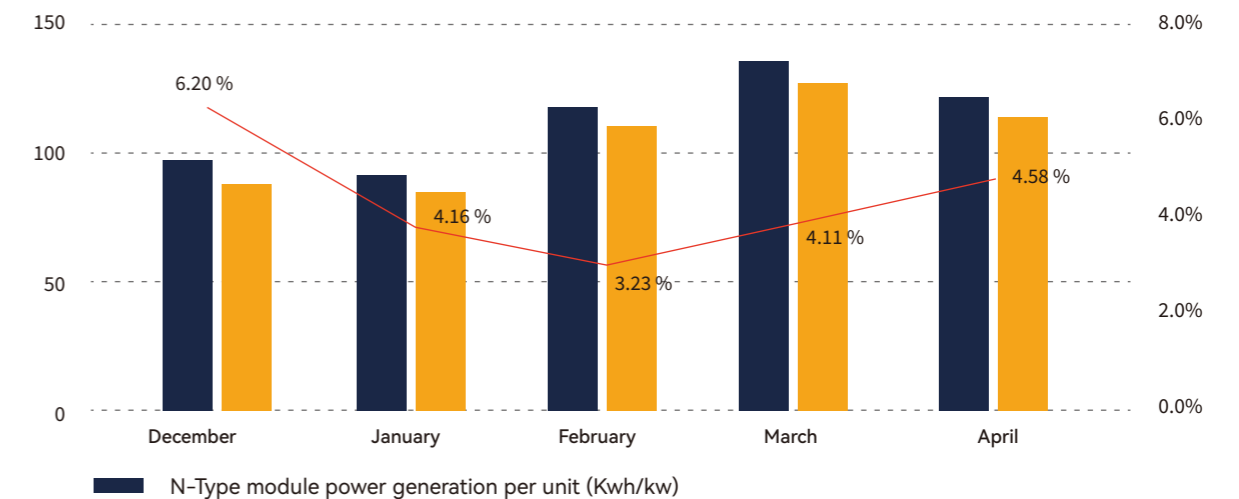
► **Extra 4.41% Power Generation: DAS Solar's Hainan N-type PV Plant Demonstrates Impressive Performance**

DAS Solar's N-type photovoltaic PV plant in Hainan achieved grid connection in the fourth quarter of 2022. After more than five months of stable operation, the N-type modules outperformed P-type modules with a power generation gain of 4.41%, further demonstrating their strength.

The DC capacity of the PV plant is approximately 100MW. The PV plant utilizes both DAS Solar's N-type TOPcon and P-type PERC bifacial photovoltaic modules. During the period from December 2022 to April 2023, the power generation data from the N-type TOPcon module array (inverter 24-11) and the P-type PERC module array (inverter 23-11), both operating under the same environmental conditions, showed that the N-type TOPcon modules consistently generated more power compared to the P-type PERC modules. The average power generation gain over the five-month period was 4.41%.

N-type TOPcon modules offer advantages such as low degradation, high-temperature power generation, high bifacial efficiency, and low irradiance power generation. Relative to P-type modules, the theoretical power generation gain of N-type modules ranges from 3% to 5%. Based on the assumption of a CNY 7 fen per watt higher cost for N-type modules compared to P-type modules, the levelized cost of electricity (LCOE) for the photovoltaic PV plant remains 2.3% lower, and the project's overall return on investment is higher by 0.34%.

Comparison of N-Type and P-Type module generation from December 2022 to April 2023





### ► DAS Solar Unveils Latest N-type 3.0 Series Products at Shanghai SNEC PV Conference

On May 24th, the 16th International Solar Photovoltaic and Smart Energy Conference and Shanghai New Energy Conference (SNEC) grandly opened at the Shanghai New International Expo Center. DAS Solar showcased its latest N-type 3.0 series products and comprehensive photovoltaic solutions for various scenarios.

# EVENTS



### ► The Grand Finale of DAS Solar's 2023 N-type 3.0 Launch Event and Global Customer Appreciation Evening

On May 22, the DAS Solar N-type 3.0 launch event and global customer appreciation evening took place in Shanghai. The event was attended by over 400 participants, including Mr. Xiong Limin, Chief Metrologist of the China Institute of Metrology Science, Mr. Song Haining, Vice President of TÜV NORD Greater China, Mr. Chen Weipeng, Regional Business President of Munich Reinsurance, Mr. Zhao Xiang, Senior Technology Analyzer of INFOLINK CONSULTING, Mr. Liu Yong, Chairman and President of DAS Solar, Dr. Song Dengyuan, CTO of DAS Solar, Mr. Fu Yawei, CFO of DAS Solar, Ms. Huang Weihong, Senior Vice President of DAS Solar, Mr. Cao Xiaorong, Senior Vice President of DAS Solar, and other industry leaders, clients, and colleagues.



### ► DAS Solar's 2023 Investment Promotion Launch Event Ignites with Enthusiasm

On March 19, the DAS Solar 2023 Investment Promotion Launch Event took place in Jinan, Shandong, attracting over 200 dealers. Mr. Huang Weihong, Senior Vice President of Marketing at DAS Solar, was joined by industry leaders such as Mr. Zhang Xiaobin, Executive Vice President of the Shandong Solar Energy Industry Association, and Mr. Ma Xianli, Secretary-General of the Hebei Photovoltaic New Energy Chamber of Commerce, to kick off the event.



### ► DAS Solar Shines Brightly at the 18th China (Jinan) International Solar Energy Utilization Conference

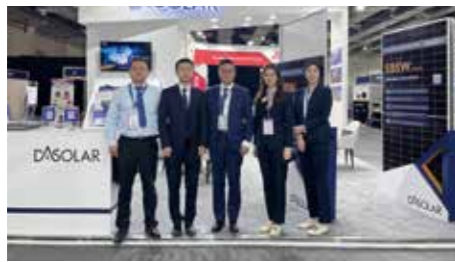
The 18th China (Jinan) International Solar Energy Utilization Conference commenced on March 20 in Jinan, Shandong. DAS Solar showcased its N-type Pro, N-type 3.0, lightweight tile, and other module products, along with comprehensive solutions for various scenarios, capturing the attention of numerous visitors.





► **DAS Solar Makes a Strong Presence at the 2023 SOLAR SHOW MENA**

From May 9 to 10, the 4th Egypt Solar Show MENA was held at the Cairo International Convention and Exhibition Center. DAS Solar proudly showcased its N-type series modules and other star products, attracting numerous visitors and inquiries.



► **DAS Solar Unveils the Next-Gen N-type 3.0 Black Thru Series Modules at Munich International Solar Energy Exhibition**

The three-day Munich International Solar Exhibition (INTERSOLAR EUROPE) commenced on June 14th at the Munich International Trade Fair Center. DAS Solar showcased its N-type 3.0 series black thru high-efficiency modules and other products at booth C4.230. The combination of cutting-edge technology, exquisite design, and high-performance features garnered attention from both domestic and international customers.



► **DAS Solar Presents N-type Series and Lightweight Module Products at PV EXPO Japan**

On March 15, the PV EXPO Japan opened at the Tokyo Big Sight International Exhibition Center. DAS Solar made its overseas debut, presenting its N-type black thru module, lightweight module, and other high-impact products.



► **DAS Solar Invited to Attend and Deliver Keynote Speech at the Concurrent Forum of the 2023 Spain Solar and Energy Storage Exhibition**

From May 10 to 11, the 2023 Spain Solar & Storage took place in Barcelona. DAS Solar was invited to participate in the forum, where discussions centered on DAS Solar's decentralized manufacturing strategy and its strategic layout in the European market.



► **DAS Solar Showcases the New N-type 3.0 Series Products at the 2023 World New Energy and New Materials Conference**

From June 28 to 29, the World New Energy and New Materials Conference was held at the Inner Mongolia Ordos International Convention and Exhibition Center. DAS Solar exhibited its new N-type 3.0 series modules and lightweight modules, attracting a large number of visitors.

► **2023 Renewal! DAS Solar Official Website Launches with a Major Upgrade!**

On January 12, the newly upgraded Chinese and English versions of the DAS Solar official website were launched simultaneously. With enhanced functionality, richer content display, streamlined design, and easy browsing, the website provides comprehensive information and timely updates, offering more convenience to partners and clients. This new official website upgrade aimed to convey the DAS Solar's spirit in a more open and friendly manner, expand into the global market with a more international perspective, and allow partners to enjoy more thoughtful details and reliable services.



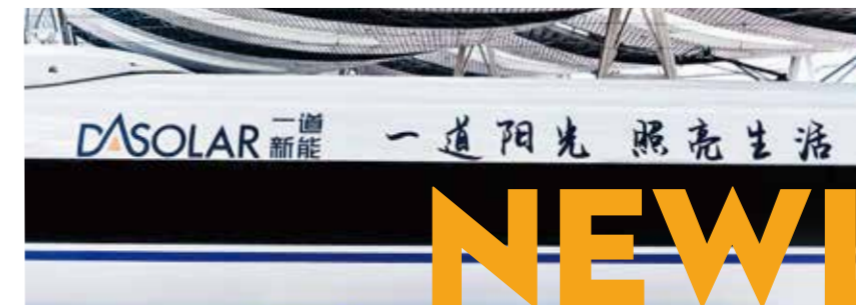
► **Forge Ahead in the Direction of Light  
DAS Solar's 2023 Brand Video Now Online**

On March 20, DAS Solar 2023 global brand video was officially unveiled. Radiating vitality and energy, the video embodies our commitment to light, innovation, and sustainable development. As a pioneer and advocate of green energy, DAS Solar empowers a greener future through technology innovation, delivering the energy of light in every photon.

► **N-Type Acceleration  
Inaugural Journey of 'DAS Solar' High-Speed Rail on the Beijing-Shanghai Line**

On May 16, under the morning sun, the "DAS Solar" high-speed rail embarked on its maiden journey from Beijing South Station, symbolizing the surge of green energy. DAS Solar Chairman Mr. Liu Yong, Vice Chairman of DAS Solar, Ms Shi Si, Vice Chairman of DAS Solar, Ms. Huang Weihong, Senior Vice President of Marketing of DAS Solar, Mr. Zhu Guixiang, Assistant Vice President of DAS Solar, Mr. Zhang Junyi, Vice President of Media Development of Huatie Media, and other leaders attended the launch ceremony.

Collaborating with China High-Speed Rail, DAS Solar aims to combine on the Beijing-Shanghai line. DAS Solar's cutting-edge technology is integrated into the train's interior, including body design, seat cushions, luggage racks, table boards, magazines, and voice announcements, bringing the concept of photovoltaic new energy to cities along the route and promoting green and low-carbon economic development.



**NEWLOOK**



# AWARDS



THE 5<sup>TH</sup> GOLD PANTHER AWARD - GOLDEN MODULE CATEGORY



NO. 8 OF 2023 CHINA TOP 20 PV MODULE ENTERPRISES



BEST GROWTH GIFT FOR PV BRAND (NEW ENERGY THINK TANK, CENTURY NEW ENERGY NETWORK)



2023 TOP 20 PV MODULE COMPANIES IN CHINA



PVBL TOP 100 GLOBAL BRANDS



APVIA FOR ENTERPRISE



PV ACHIEVEMENT (APVIA)



TOP 10 INFLUENTIAL MODULE BRANDS (THE 6<sup>TH</sup> DISTRIBUTED PV CONFERENCE)



2023-05 PV ACHIEVEMENT (APVIA)



GREEN SUSTAINABILITY CONTRIBUTION AWARD



GW-CLASS GOLD AWARD (SNEC ORGANIZING COMMITTEE)



WITNESS THE MILESTONE OF CUMULATIVE PV MODULE OUTPUT OF 15GW BY 2022



GOLD MEDAL IN THE GW-CLASS





# TRAINING & EDUCATION



"Three Lives, Three Worlds" of Photovoltaics

Song Dengyuan, CTO of DAS Solar



The Past and Present of Photovoltaics and DAS Solar's Preparedness

Piao Songyuan, COO of DAS Solar



Unchanging Commitment in the Changing World

Huang Weihong, Senior Vice President of DAS Solar



Cultural Propagation Team

Uniting Hearts and Efforts, Moving Forward Together: DAS Solar Joins Hands for a Win-Win Future at Taizhou and Bengbu Stations



Turnaround Plan: More Opportunities, More Responsibilities, Courage to Shoulder Heavy Tasks, Unity in Strength

First Phase Training of DAS Solar "Turnaround Plan Boot Camp"



Team Leader Empowerment Training



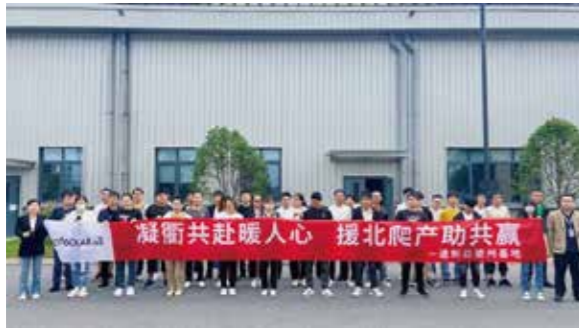
TTT Training Certification



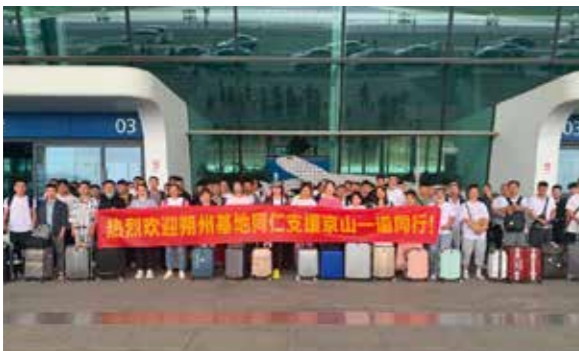
# TEAM WORK

## ► Cross-Base Support

Since the launch of the "Cross-Base Communication and Mutual Assistance" management philosophy within the group, various major bases including Jingshan, Bengbu, Beihai, Quzhou, Zhangzhou and Luoyang have responded successively. Despite the geographical distances, they have united with practical actions to embody the core corporate values of "Synergy and Win-Win." Behind these efforts to "cross mountains and seas," "bidirectional support," and "united struggle" lies the reflection of DAS Solar's speed, strength, and spirit, showcasing the warmth and unity of DAS Solar employees.



In May, the Beihai base officially began production, and to assist in achieving the set production target, the Quzhou base adhered to the "Collaboration and Mutual Success" value system and policy of increased cross-base communication and mutual assistance. On May 25, 43 outstanding frontline employees were selected to travel 1515 kilometers to Beihai.



In June, the Jingshan base received heartwarming support from the Shuozhou base, which is thousands of kilometers away. Since the first module rolled off the line on March 28, the Jingshan base has consecutively launched six production lines in the span of two months, making increased production our greatest challenge.

In the spirit of "Cross-base Communication and Mutual Assistance," the Bengbu and Shuozhou bases within the group have provided support with a total of over 120 individuals.

## ► DAS Solar's Speed Meets the Passion of Off-road Vehicles Guizhou DAS Solar Changtong Off-Road Vehicle Race Concluded Successfully in Weining

On April 22, the "Sunshine Weining · Romantic Grassland" DAS Solar Changtong New Energy 2023 Guizhou Weining 4th National Off-Road Vehicle Championship ignited with enthusiasm.



## ► Building Friendships through Competitive Spirit, Showcasing Excellence DAS Solar vs. Smart Manufacture New City Management Committee Basketball Friendship Match Successfully Concluded

On the evening of April 8th, DAS Solar and Quzhou Smart Manufacture New City Management Committee basketball teams held a friendly match at the Committee's staff activity center.



## ► The Sports Posture is the Most Youthful DAS Solar Group Badminton Competition Successfully Concluded

On May 7, after two days of intense competition, the DAS Solar Group Badminton Competition concluded on a high note.





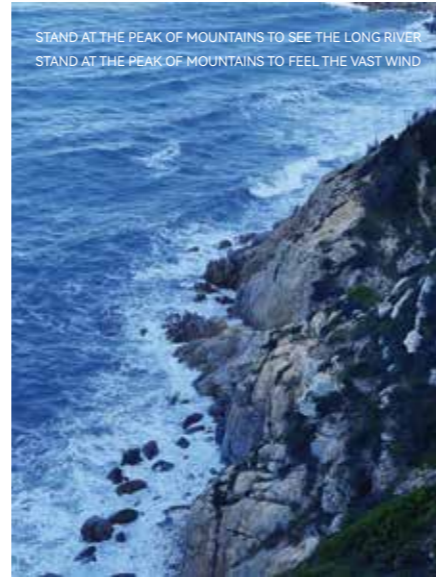
► **Photography Contest**

On the afternoon of March 21, the "DAS Solar Silhouette" Photography Contest award ceremony was held at the headquarters. The contest, launched on January 16, 2023, received a total of 535 photography works from across the group. After the initial selection of 70 outstanding works by the judging panel, an online vote involving all staff members resulted in 50 outstanding works. Finally, following a review by the executive team, 30 winning works were selected.



WHEN A MAN STANDS ON TIPTOE TO GET CLOSER TO THE SUN, NO ONE CAN BLOCK HIS RADIANCE.

FIRST PRIZE - SCENERIES PASSED BY QZHZHOU BASE | WU XIAOWEN



STAND AT THE PEAK OF MOUNTAINS TO SEE THE LONG RIVER  
STAND AT THE PEAK OF MOUNTAINS TO FEEL THE VAST WIND

LISTENING TO THE SEA  
ZHANGZHOU BASE | EQUIPMENT DEPARTMENT | WU XIULI



LEARN FROM THE PAST BEFORE EMBARKING ON A JOURNEY  
KEEP WALKING AND NEVER SLACK TO FINISH THE JOURNEY

THE SUN AND MOON SHINE TOGETHER  
QZHZHOU BASE | ZHOU ZHERU



SECOND PRIZE - ORDINARY STARS IN THE SKY  
HUMAN RESOURCES DEPARTMENT | FU MINHANG



A PERSON CAN TRULY HARNESS THEIR STRENGTH ONLY  
WHEN HE INTEGRATES HIMSELF WITH HIS CAREER.

THE MOST BEAUTIFUL DONGSHAN ISLAND  
ZHANGZHOU BASE | INFORMATION TECHNOLOGY DEPARTMENT | HE SHUNYONG

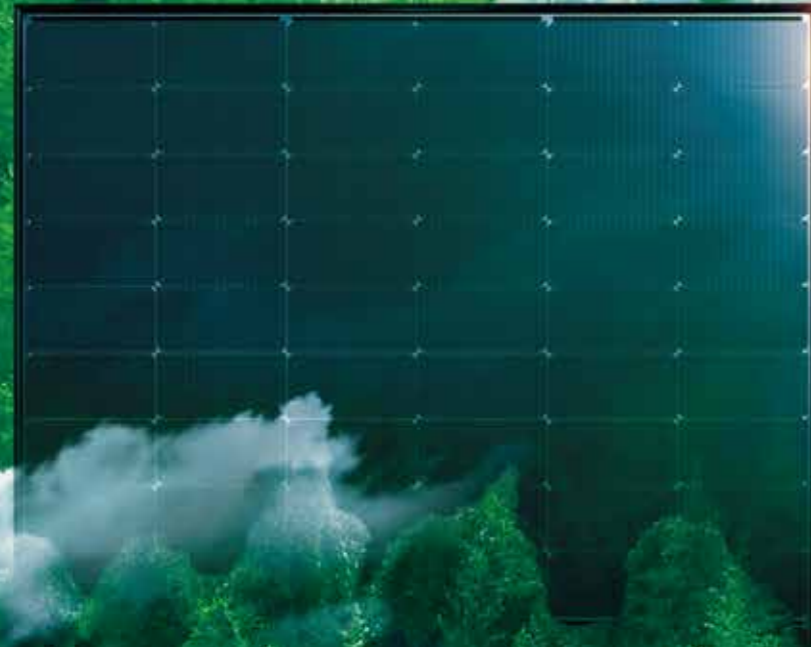


THE SLOWEST PACE IS NOT A SMALL STEP, BUT HESITATION.  
THE FASTEST STRIDE IS NOT A SPRINT, BUT PERSEVERANCE.

IMPRESSIONS OF SOUTHERN FUJIAN  
ZHANGZHOU BASE | POWER, SAFETY AND ENVIRONMENT DEPARTMENT | WENG HUANGJIE

**ACTIVITIES**





# ESG

[www.das-solar.com](http://www.das-solar.com)

# SOCIAL RESPONSIBILITY

## ► Innovation Leads the Way to Steady Progress DAS Solar Releases the 2022 Environmental, Social, and Governance (ESG) Report

In April, DAS Solar released the 2022 Environmental, Social, and Governance (ESG) Report. The report provides a comprehensive overview of the company's methods and performance in environmental, social, and governance aspects for the year. The report aims to disclose the company's commitment to sustainable development to external stakeholders and address their concerns.

### Governance: Robust Operation

Sound corporate governance is the cornerstone of achieving stable and sustainable development. Based on a careful assessment of operational risks and development opportunities, DAS Solar has constructed a well-defined, scientifically efficient, transparent, and fair corporate governance framework. The company has established an effective risk management system and internal control mechanisms.

In terms of intellectual property management, DAS Solar adheres to the intellectual property policy of "Promoting enterprise upgrading and development through technological innovation, and protecting enterprise technological advantages through intellectual property rights." The company has built an intellectual property system centered on patent protection and supported by trademark rights and trade secrets. Currently, the company has filed more than 400 patent applications.

### Innovation: Leading Industrial Development

DAS Solar regards innovation as the driving force behind its development. The company emphasizes research and development investment and collaboration among academia, industry, and research. Approximately 5% of sales investment is dedicated to product research and development. Centered around the core driver of high-efficiency

N-type technology, the company actively explores photovoltaic application scenarios and has developed three major series of full-scenario photovoltaic system solutions: Ecological Photovoltaics, Urban Photovoltaics, and Offshore Photovoltaics.

### Environment: Painting a Low carbon Future

DAS Solar upholds the concept of green sustainable development and integrates it into the entire lifecycle of photovoltaic module production, including module research and development, raw material manufacturing, production line processes, module production, transportation energy consumption, and module recycling. The company actively addresses the challenges brought by climate change and continuously improves climate change management mechanisms. DAS Solar has joined China's Climate Action and the United Nations Global Compact. The company saves approximately 7.18 million tons of standard coal annually. By the end of 2022, it has reduced carbon dioxide emissions by approximately 17.95 million tons.

### Social Responsibility: Building a Better Home

DAS Solar is committed to safeguarding the rights and interests of employees. It provides multiple channels for democratic communication, implements diversified incentive subsidies, establishes a comprehensive employee training system, and enhances a sound occupational health management mechanism. Simultaneously, DAS Solar actively promotes high-quality supply chain management, establishes a green supply chain management system, and supports sustainable development of business partners.



► **Practicing Social Responsibility**  
**DAS Solar Won SA8000 Social Responsibility System Certification**

In March, DAS Solar successfully completed the first and second stages of SA8000 audit and ultimately obtained certification. The SA8000:2014 social responsibility system certification was granted by TÜV NORD and accredited by Social Accountability International (SAI).

As a leading company in the solar industry, DAS Solar introduced the SA8000 system certification in early 2022 to enhance its corporate social responsibility framework. This move aims to further elevate the company's core competitiveness and market reputation. After undergoing several months of internal auditing and improvements, DAS Solar successfully obtained the SA8000 system certification. Embracing the pace of global development, DAS Solar consistently places people at the heart of its values, actively upholds social responsibility, and has proudly joined both the United Nations Global Compact and the China Enterprise Climate Action initiative. With the recent achievement of the SA8000 social responsibility certification, this marks not only the attainment of a certificate but also the commencement of a fresh chapter. Looking ahead, our company remains committed to prioritizing occupational health and safety, safeguarding employee rights, and steadfastly fulfilling responsibilities towards employees, customers, shareholders, suppliers, partners, the environment, and society. This commitment exemplifies DAS Solar's dedication to contributing to the worldwide transformation of energy structures and promoting green, low-carbon, and sustainable development.



► **N-Type Empowering Sustainable Development**  
**DAS Solar Won France Carbon Footprint ECS Certification**

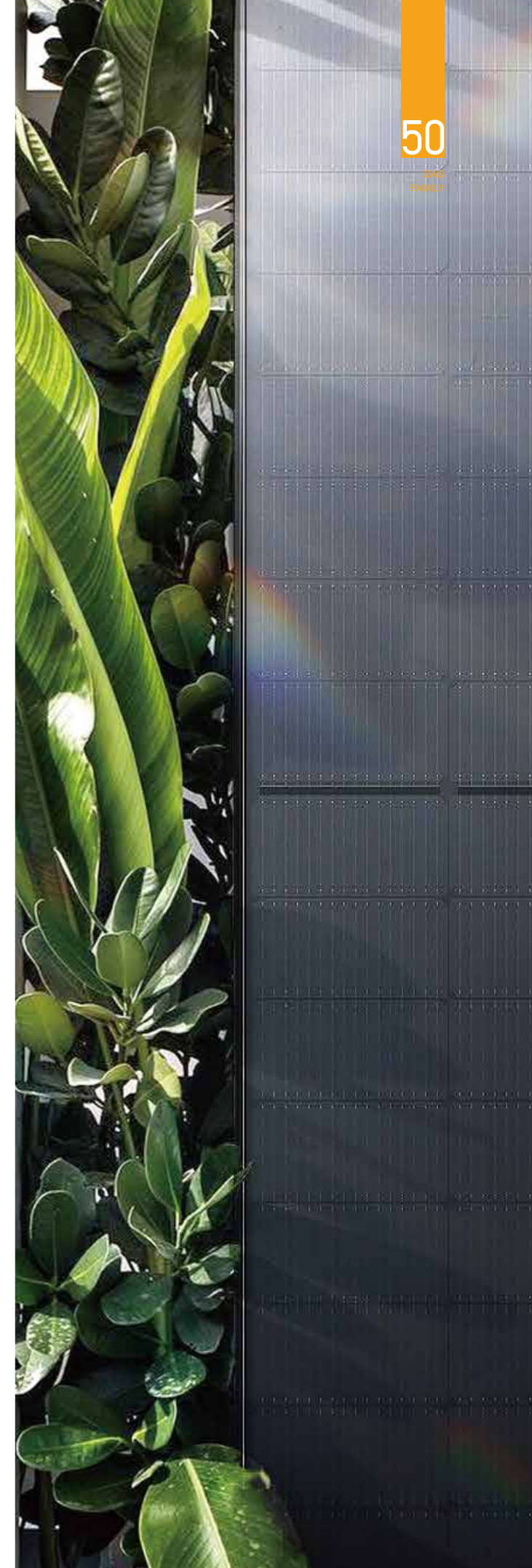
In April, DAS Solar photovoltaic module products passed the TÜV Nord audit and were granted the France Carbon Footprint ECS certification. This certification empowers DAS Solar with a low-carbon advantage to explore the European market and injects vibrant energy into the company's global strategic layout.



► **N-Type Empowering Sustainable Development**  
**DAS Solar Participated the United Nations Global Compact & China Climate Action**

In February, DAS Solar announced its participation in the United Nations Global Compact (UNGC) and China Company Climate Action (CCCA), actively practicing corporate social responsibility and taking another solid step on the path of sustainable development.

As a disseminator and practitioner of new energy, DAS Solar consistently upholds low-carbon sustainable development. Green intelligent manufacturing enhances operational efficiency, and energy conservation and emission reduction are integrated into every step of DAS Solar's production, achieving the highest utilization efficiency throughout the product life cycle. Energy structure transformation is a long-term choice for global economic and social development. In the future, DAS Solar will actively fulfill its social responsibilities, aiming for sustainable development, promoting technological progress in the photovoltaic industry, and using the industry's most cost-effective N-type products to contribute to the creation of a shared "zero-carbon" home.





## Forge Ahead in the Direction of Light

With hope sparkling as bright in their eyes as the dawning, the like-minded souls translated their dreams into DAS Solar.

From non-being to being, steady progress towards the goals, convey the energy of each light.

Each step of the road from shimmering to shining is firm and solid. We move onward until we reach a place of light, where we meet, enjoy, and become light. We then take use of all the gifts that nature has to offer.

As the sunshine brightens all things, the starlight witnesses how we perceive the warmth of light and convey its energy.