



TONGWEI
FOR BETTER
LIFE

📍 中国·成都·天府大道中段588号通威国际中心(TIC)

☎ 028-85188888 📠 028-85199999 👤 800-8866888 400-8080888 ✉ 610093

Address: Tongwei International Center (TIC), No.588, Middle Section of Tianfu Avenue, Chengdu, China

Phone: 028-85188888 Fax: 028-85199999

Service Hotline: 800-8866888; 400-8080888 Postcode: 610093

🌐 www.tongwei.com

通威 为了生活更美好





目 录

C O N T E N T S

01 关于通威

About Tongwei

P03.通威股份简介
About Tongwei

P05.公司治理
Corporate Governance

P07.发展历程
Development History

P13.双绿色产业布局
Dual Green Industry Layout

02 发端水产 深耕农业

Originated from aquacultural products, deep plowing agriculture

P19.通威绿色农业产业链
Tongwei Green Agriculture Industry Chain

P21.原料稳定, 质量如一
Stable Raw Materials, Consistent Quality

P25.集约养殖, 环境友好
Intensive Breeding, Environment-Friendly

P27.健康食品, 全程监控
Healthy Food, Whole-process Monitoring

03 光伏兴业 再造龙头

Developing with PV, Rebuilding Industrial Leader

P31.中国光伏引领全球
Chinese PV, Leading the World

P35.通威绿色新能源产业链
Tongwei New Energy Industry Chain

P39.高纯晶硅, 问鼎全球
Polysilicon, Wins the World

P47.智能制造, 标杆崛起
Intelligent Manufacturing, Rise in Benchmark

P53.高效组件, 通威智造
Smart Module by Tongwei

P57.清洁能源, 惠及万家
Clean Energy, Benefiting Million Households

04 发现通威

Discover Tongwei

P67.领导关怀
Care from Leaders

P89.荣誉资质
Honors and Qualifications

P91.社会责任
Social Responsibility

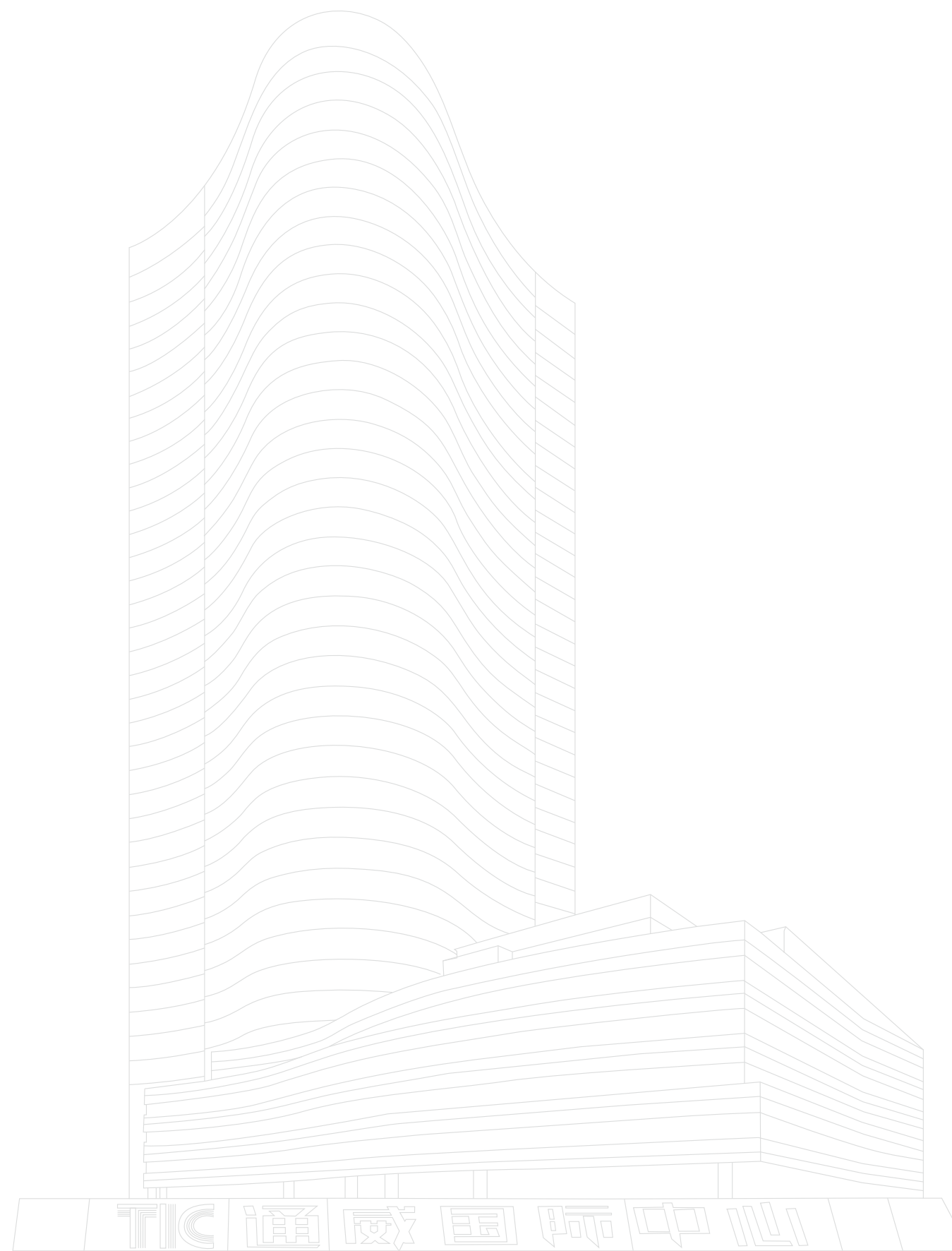
ABOUT
TONGWEI



01

Part

关于通威



通威股份有限公司

Tongwei Co., Ltd

通威股份有限公司由通威集团控股，是绿色农业和绿色能源高效协同发展的大型民营科技型上市公司。经过多年跨越式发展，公司已成为农业产业化国家重点龙头企业、全球领先的水产饲料生产企业及重要的畜禽饲料生产企业、全球高纯晶硅龙头企业及全球太阳能电池龙头企业。

Tongwei Co., Ltd., controlled by Tongwei Group, is a large-scale private technology-based listed company featuring the high-efficient and coordinated development of the dual main businesses of green agriculture and new energy. After years of leaping development, Tongwei has become a national critical leading enterprise in agricultural industrialization, a world-leading aquatic feed manufacturer, an important livestock and poultry feed manufacturer, a global polysilicon leader, and a global solar cell leader.



200余家分子公司
遍布全球

More than 200 subsidiaries
worldwide



全球员工
4万余人

Over 40,000 employees
worldwide



太阳能电池年产能
超70GW

Annual production capacity
of solar cells of more than 70GW



以“渔光一体”为主的光伏电站
累计装机并网规模3.4GW

The cumulative installed capacity of grid-
connected photovoltaic power stations based on
“Fishery & PV Integration” exceeds 3.4 GW



饲料年产量
1000万吨

Annual feed production
of 10 million tons



高纯晶硅年产能
超26万吨

Annual production capacity of
polysilicon of 260,000 tons



组件产能14GW
2023年组件产能规划80GW

Annual module production capacity of 14GW
Planned module production capacity of 80
GW for 2023



高纯晶硅年产能预计
达80-100万吨

Annual production capacity of
polysilicon is expected to reach 0.8-1 million
tons in 2024-2026.

2024-2026



太阳能电池年产能预计
达130-150GW

Annual production capacity
of solar cells is expected to be
130-150GW in 2024-2026.

公司治理 CORPORATE GOVERNANCE

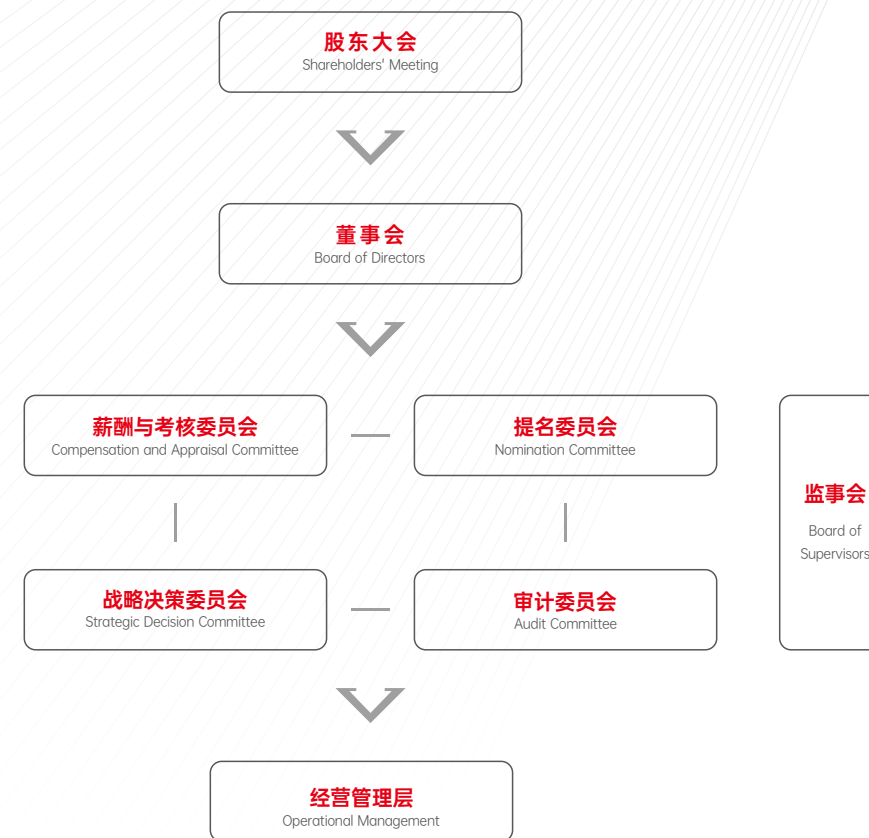
通威股份不断完善公司治理结构，建立了由股东大会、董事会、监事会和经理层协调运作、规范有序的法人治理结构，形成了权力机构、决策机构、监督机构和执行机构之间权责分明、相互协调和相互制衡的治理机制，保障公司稳定高效运作。

Tongwei continuously improves the corporate governance structure. By establishing a standardized and orderly corporate governance structure that is coordinated and operated by the shareholders' meeting, the board of directors, the board of supervisors, and managers, Tongwei has formed a governance mechanism with clear powers and responsibilities, mutual coordination, and checks and balances between power agencies, decision-making agencies, supervision agencies, and executive agencies, ensuring the stable and efficient operation of the company.



CORPORATE GOVERNANCE STRUCTURE

公司治理结构





发展历程 DEVELOPMENT HISTORY

发端于水产，成长于农牧，跨越于新能源
从1982年到2023年，通威稳健发展四十一年
是中国民营经济发展史的一个缩影

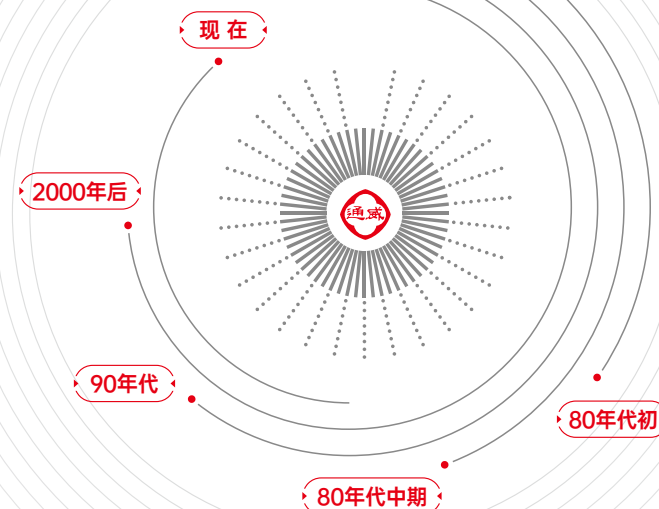
Originating in aquacultural products, growing in agriculture and animal husbandry, and spanning into new energy.
From 1982 to 2023, Tongwei developed steadily for 41 years, which is a microcosm of the development history of China's private economy.

80年代初

刘汉元主席在中国大西南乡村中一条小河沟中开始试验流水网箱养鱼，铸就通威以实干为基底的发展基因。

Early 1980s

Chairman Liu Hanyuan began experimenting with cage fish culture in a small river ditch in a rural area in southwest China, casting Tongwei's development DNA of hardworking and practicality.



80年代中期

1986年3月10日，通威前身——眉山县鱼用配合饲料厂（科力饲料厂）建成投产，以科研创新推动饲料配方不断优化。1991年初，“科力”正式更名“通威”，“通威牌”饲料迅速被评定为“四川省饲料行业优秀产品”，迅速成为家喻户晓的名牌产品。

Mid 1980s

On March 10, 1986, Meishan Fish Complex Feed Factory (Keli Feed Factory), the predecessor of Tongwei, was completed and put into production, which promoted the continuous optimization of feed formula through scientific research and innovation. At the beginning of 1991, "Keli" officially changed its name to "Tongwei." "Tongwei Feed" was quickly rated as an "Excellent Product in Sichuan Feed Industry" and became a household name.



90年代

1994年，迅速扩大的通威正式将集团总部迁移至成都，开启全国扩张步伐，走出川西，先后在华东、华南、华中等主要水产养殖区设立分公司一百余家，在当地的市场占有率和盈利水平全线飘红。

1990s

In 1994, the rapidly expanding Tongwei officially relocated its group headquarters to Chengdu and started the pace of national expansion. Tongwei went out of western Sichuan and successively set up more than 100 branches in major aquaculture areas in east, south, and central China and became popular in the local market share and profit level.



2000年后

进入新千年，通威实现上市、产业拓展等里程碑式的发展成就。尤其是在新能源领域，通威先后收购乐山永祥股份、合肥赛维太阳能等重大项目，并建立北京渔光一体等终端公司，实现了在整个光伏产业上、中、下游全产业链的完整布局。

After 2000

Entering the new millennium, Tongwei has achieved milestone development achievements such as listing and industrial expansion. Especially in the field of new energy, Tongwei has successively acquired major projects such as Leshan Yongxiang and Hefei Saiwei LDK Solar and established terminal companies such as Beijing Fishery & PV Integration to achieve a complete layout of the industry chain in the entire photovoltaic industry from the upstream, midstream, to downstream.



现在

目前，随着永祥股份乐山、包头、保山基地和通威太阳能成都、合肥、眉山、金堂基地项目的陆续建成投产，以及“渔光一体”战略的不断落地，通威将继续巩固在光伏新能源领域业已形成的领导地位，为全人类生活品质的不断提高贡献更大的力量。

Now

At present, with the Leshan, Baotou, and Baoshan bases of Yongxiang and Chengdu, Hefei, Meishan, and Jintang base projects of TW Solar being completed and put into operation one after another, and the continuous landing of the "Fishery & PV Integration" strategy, Tongwei continues to consolidate its established leadership position in the field of photovoltaic new energy and contribute more to the continuous improvement of the quality of life of all human beings.

TONGWEI CHRONICLE

通威大事记

1982, 1994

1982年，刘汉元主席开始试验发明“渠道金属网箱式流水养鱼技术”

1982 Chairman Liu Hanyuan began experimenting and invented "Channel Metal Cage Fish Cultivation Technology."

1986年，刘汉元主席成立眉山县渔用配合饲料厂即通威前身

1986 Chairman Liu Hanyuan established the Meishan Fisheries Complex Feed Factory, the predecessor of Tongwei.

1992年，四川通威饲料有限公司成立

1992 Sichuan Tongwei Feed Co., Ltd. was established.

1994年，通威集团总部从眉山移师成都

1994 Tongwei Group Headquarters moved from Meishan to Chengdu.

2002, 2009

2002年，中国第一条品牌鱼——“通威鱼”上市

2002 China's first brand fish - "Tongwei Fish" launched.

2004年，通威股份在上交所隆重上市

2004 Tongwei was grandly listed on the Shanghai Stock Exchange.

2006年，通威进军光伏新能源主业

2006 Tongwei started operations in the central business of photovoltaic new energy.

2009年，首家海外全资子公司越南通威竣工投产

2009 Tongwei Vietnam, the first wholly-owned overseas subsidiary, was completed and put into operation.

2013, 2018

2013年，通威太阳能（合肥）有限公司投产通威正式进入高效晶硅太阳能电池片环节

2013 TW Solar (Hefei) Co., Ltd. was put into production, and Tongwei officially entered the link of high-efficiency crystalline silicon solar cells.

2015年，第五代永祥法技改项目顺利投产；通威首个“渔光一体”项目（江苏如东）正式并网发电

2015 The 5th Generation Yongxiang Method Technological Reform Project was successfully put into operation; Tongwei's first "Fishery & PV Integration" project (Rudong, Jiangsu Province) was officially connected to the grid for power generation.

2017年，通威太阳能世界首条工业4.0高效电池片生产线正式投产

2017 The world's first industrial 4.0 high-efficiency cell production line of TW Solar is officially put into production.

2018年，通威形成8万吨高纯晶硅产能

2018 Tongwei forms 80,000 tons of polysilicon production capacity.

2019, 2022

2019年，通威太阳能全球首个10GW高效太阳能电池生产基地在成都诞生

2019 The world's first 10GW high-efficiency solar cell production base of TW Solar was born in Chengdu.

2020年，通威市值、品牌价值双双突破千亿大关

2020 Tongwei's market and brand values broke through the 100 billion mark.

2022年，通威股份市值最高突破3000亿

2022 Tongwei market value exceeded 300 billion yuan.

2023年，永祥股份高纯晶硅产能已超26万吨/年通威太阳能现有年产能超70GW

In 2023, Yongxiang's annual production capacity of polysilicon is well above 260,000 tons, and the annual production capacity of TW Solar registers 70 GW.

Green² FUTURE HIGH-QUALITY DEVELOPMENT

双绿色未来 高质量发展

通威绿色农业产业链 GREEN AGRICULTURE INDUSTRY CHAIN



打造世界级
健康安全食品供应商
Build a world-class
supplier of health&safe food

饲料研发生产
Feed R & D And
Production

绿色养殖
Green Farming

水产品贸易与加工
Aquacultural Product Trade
And Processing

通威绿色新能源产业链 TONGWEI GREEN NEW ENERGY INDUSTRY CHAIN



打造世界级
清洁能源运营商
Building a world-class clean
energy supplier

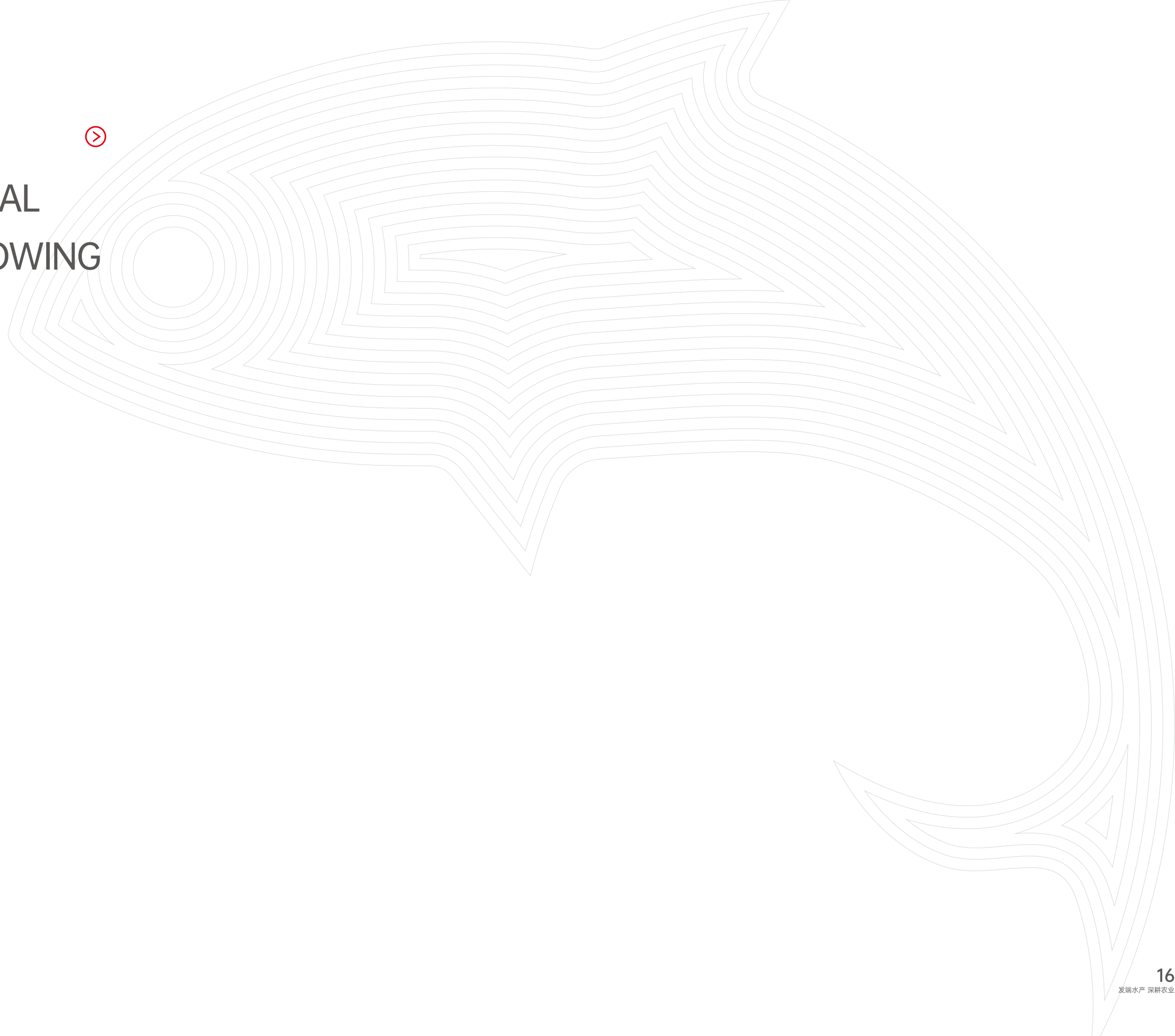


ORIGINATED
FROM AQUACULTURAL
PRODUCTS DEEP PLOWING
AGRICULTURE



02 Part

发端水产 深耕农业



TONGWEI AGRICULTURAL INDUSTRY LAYOUT

通威农业 产业布局



自1982年创立至今，通威始终坚持深耕水产，深度参与并见证了中国水产养殖业和饲料工业发展壮大。公司以饲料工业为核心，种苗繁育、饲料研发生产、动物保健、渔业设施、水产养殖、检测加工等各环节齐头并进，建立了安全可追溯现代水产产业链。通威着力打造知名鲜活鱼品牌——“通威鱼”，实现了“从源头到餐桌”的全程质量监控和追溯，致力于打造世界级安全食品供应商，持续改善人类生活品质。

Since its establishment in 1982, Tongwei has always adhered to the deep cultivation of aquacultural products and deeply participated in and witnessed the development and growth of China's aquaculture and feed industries. Tongwei takes the feed industry as the core and develops all links, including seedling breeding, feed development and production, animal health, fishery facilities, aquaculture, testing, and processing together, and has established a safe and traceable modern aquatic product industry chain. Tongwei strives to build a well-known brand of fresh and live fish - "Tongwei Fish," and has realized the whole process of quality monitoring and traceability from source to table. Tongwei is committed to building a world-class safe food supplier and continuously improving the quality of human life.

- 华东一区**

 - 大丰通威
 - 大丰通威开发区分公司
 - 扬州通威
 - 江苏巴大
 - 淮安通威
 - 连云港通威
- 华东二区**

 - 南通巴大
 - 无锡通威
 - 无锡通威特种料分公司
 - 绍兴通威
 - 南通巴大宝鼎
 - 池州通威
- 华南一区**

 - 广东通威
 - 惠州通威
 - 高明通威
 - 珠海海壹
- 华南二区**

 - 揭阳通威
 - 厦门通威
 - 福州通威威廉
- 华西一区**

 - 通威股份特种料分公司
 - 蓉峡通威
 - 德阳通威
 - 四川通威
- 华西二区**

 - 重庆通威
 - 长寿通威
 - 昆明通威
- 华北一区**

 - 沈阳通威
 - 长春通威
 - 哈尔滨通威
 - 天津通威
- 华北二区**

 - 河南通威
 - 山东通威
 - 淄博通威
 - 廊坊通威
- 华中二区**

 - 黄冈通威
 - 武汉通威
 - 洪湖通威
 - 天门通威
 - 沙市通威
- 华中三区**

 - 常德通威
 - 汉寿通威
 - 沅江通威
- 虾特料片区**

 - 南宁通威
 - 茂名通威
 - 阳江海壹
 - 宾阳通威
 - 海南海壹
- 预混料片区**

 - 四川通威预混料厂
 - 广东通威预混料厂
- 拜欧玛片区**

 - 通威拜欧玛（无锡）
 - 珠海海为
- 越南一区**

 - 越南通威
 - 越南天邦
 - 同塔通威
 - 前江通威
- 越南二区**

 - 印尼通威
 - 孟加拉通威
 - 海阳通威
 - 和平通威
- 小业态**

 - 海南威尔检测
 - 四川威尔检测
 - 湛江海先锋
 - 成都通威动物营养
 - 通威农业担保
 - 成都通威三新药业
 - 湛江海壹水产种苗
 - 四川渔光物联
 - 海南海壹水产种苗
 - 四川通广建设
- 通威食品**

 - 海南莱克食品
 - 成都通威鱼
 - 通威宴
 - 成都春源食品
 - 通威全农惠
 - 通威三文鱼
 - 成都新太丰农业
 - 通威水产
 - 通威三联水产
 - 通威（成都）水产
 - 通威（海南）水产
- 通威渔业科技有限公司**

 - 成都通威自动化
 - 通威水产养殖管理组
 - 通威水产养殖技术研发组
 - 成都通威水产种苗
 - 南京通威水产科技
 - 成都通威水产科技
 - 天门通威水产科技
 - 青岛海壬
 - 通威渔业对虾沾化项目
 - 东营通威渔业有限公司
- 通威天邦特区**

 - 宁波天邦
 - 青岛七好
 - 盐城天邦
 - 蚌埠天邦
 - 南宁艾格菲
 - 湖北天邦
 - 盐城天邦水产营销公司
 - 安徽天邦水产营销公司
- 农牧总部直管公司**

 - 海南生物
 - 南昌分公司
 - 合肥通威
 - 南昌生物

通威绿色农业产业链

GREEN AGRICULTURE INDUSTRY CHAIN



饲料研发生产 —— 做好一颗料

FEED R&D AND PRODUCTION - MAKING A GOOD FEED

通威以科技驱动可持续发展，不断改进饲料的营养配比，准确识别养殖户本质需求，围绕每一种养殖动物，精准定位产品。

Tongwei drives sustainable development with science and technology, constantly improves the nutritional ratio of feed, accurately identifies the essential needs of farmers, and accurately locates products around each breeding animal.



渔业设施 —— 环保、生态、低碳

FISHERIES FACILITIES - ENVIRONMENT-FRIENDLY, ECOLOGICAL, AND LOW-CARBON

通威一直致力于开展环保、生态、低碳水产养殖，渔业工程装备及电化水装置制备与应用技术的研究，同时提高养殖行业自动化水平及智能化程度，拥有自主知识产权的大批渔业设施应用于养殖生产实践。

Tongwei has been committed to researching environment-friendly, ecological, low-carbon aquaculture, fishery engineering equipment and preparation, and application technology of electrochemical water devices while improving the aquaculture industry's automation level and intelligent degree. Many fishery facilities with independent intellectual property rights have been applied to aquaculture production practices.



种苗繁育 —— 推进良种选育

SEED BREEDING - PROMOTING THE BREEDING OF IMPROVED SEEDS

通威拥有自己的优质种苗繁育生产标准化基地，打造水产良种研究与推广创新平台，获得3个自主知识产权的国家水产新品种：吉富罗非鱼“中威1号”、翘嘴鲈“华康1号”、凡纳滨对虾“王海1号”。

Tongwei has its standardized breeding and production base for high-quality seedlings, builds a platform for research and promotion of improved aquatic products, and obtains three new national aquatic products with independent intellectual property rights: Jifuluo tilapia "Zhongwei No.1", Qiaozui "Huakang No.1" and Penaeus vannamei Boone "Renhai No.1."



水产养殖 —— 聚焦工厂化养虾

AQUACULTURE - FOCUSING ON INDUSTRIALIZED SHRIMP CULTURE

通威发力水产养殖业务，计划在未来3-5年内进一步聚焦南美白对虾、加州鲈、黄金鲫等市场接受度高、适宜集约化的养殖品种，探索不同养殖条件下的设施化、工厂化养殖模式。

Tongwei has launched its aquaculture business, and plans to further focus on Penaeus vannamei, Micropterus salmoides, golden crucian carp, and other high-acceptance, suitable intensive breeding varieties in the next 3-5 years and explore facilitation and factory breeding models under different breeding conditions.



动物保健 —— 绿色无公害

ANIMAL HEALTH - GREEN AND POLLUTION-FREE

为保障无公害水产养殖的持续发展，通威整合旗下动物保健研究所、成都通威三新药业有限公司、海南海壹生物技术有限公司、湛江海先锋生物科技有限公司等团队，打造绿色强势动保品牌。

To ensure the continuous development of pollution-free aquaculture, Tongwei integrates its Animal Health Research Institute, Chengdu Tongwei Sanxin Pharmaceutical Co., Ltd., Hainan Haiyi Biotechnology Co., Ltd., Zhanjiang Haifengfeng Biotechnology Co., Ltd. and other teams to build a green and strong brand for animal health and protection.



水产品贸易与加工 —— 中国第一条品牌鱼

TRADE AND PROCESSING OF AQUACULTURAL PRODUCTS - FIRST BRAND FISH IN CHINA

通威全力打造的品牌鱼——通威鱼，在全国已经具备较高的知名度和美誉度，在开拓“通威鱼”品牌鲜活水产品市场的基础上，通威食品加快推进水产品深加工与贸易业务，打通从养殖端到消费端的产业链条，聚焦多种等核心水产品运营，着力沿养殖—批发—零售—消费端路径拓展，实现养殖、生产、加工、贸易的全覆盖。

Tongwei Fish, a brand fish created by Tongwei, has already won high recognition and reputation in China. Based on opening up the market of "Tongwei fish" branded fresh fish products, TW Food accelerates the deep processing and trade of aquatic products, opens up the industry chain from the breeding end to the consumer end, focuses on operations of various core aquatic products, and strives to expand along the path of breeding-wholesale-retail-consumer end to achieve full coverage of breeding, production, processing, and trade.



原料稳定 质量如一

STABLE RAW MATERIALS CONSISTENT QUALITY



通威多年来始终坚持以科技驱动可持续发展，以创新锻造企业核心竞争力，引领行业进步，不断改进饲料营养配比，不断提升饲料科技含量，以精准营养、精准饲喂引领“无抗时代”的到来。

For many years, Tongwei has always adhered to sustainable development driven by science and technology, promoted core competitiveness through innovation, and led the industry's progress. Tongwei has been continuously improving the nutrition ratio of feed, continuously increasing the scientific and technological content of the feed, and leading the arrival of the "zero-antibiotic era" with precise nutrition and feeding.



生产自动化
Automated Production



业务数字化
Digital Business



作业标准化
Standardized Operation



早在1996年，通威在中国饲料行业中率先按ISO9001质量管理体系要求，建立和实施通威质量管理体系。将饲料生产现场管理由原来无序、无章可循、因人而异的管理，向规范、科学、相互协调的现代质量管理转变，并数十年一以贯之。2020年，通威再次修订通威质量方针和目标，并通过“标准化建设”打造产品质量最好、成本最低、效率最优的核心竞争力，实现生产自动化、业务数字化、作业标准化的标准化运营，并最终实现满产满销的规模优势，助力用户实现养殖效益最大化，更引领饲料工业从“质造”走向“智造”新生态。

As early as 1996, Tongwei took the lead in China's feed industry in establishing and implementing the Tongwei quality management system according to the ISO9001 quality management system requirements. Tongwei transformed the field management of feed production from the original disorderly, unruly, and random management to the standardized, scientific, and mutually coordinated modern quality management, which has been consistent for decades. In 2020, Tongwei revised its quality policy and goals again. Tongwei strives to create core competitiveness with the best product quality, the lowest cost, and the best efficiency through standardization, to realize standardized operations of production automation, business digitization, and standardization of operations, and finally realize the scale advantage of full production and full sales, thereby helping users to maximize breeding benefits, and leading the feed industry from "quality production" to the new ecology of "intelligent production."

通威农业发展有限公司

TW AGRICULTURAL DEVELOPMENT CO., LTD.

通威农业发展有限公司由通威股份控股，以饲料生产和水产养殖为核心业务，并同时涉及水产苗种繁育、养殖服务、动物保健、农业检测、渔业设施与装备、融资担保等诸多领域。截至目前，通威农发年饲料生产能力超过1000万吨，是全球领先的水产饲料生产企业及重要的畜禽饲料生产企业。通威农发拥有70余家涉及饲料业务的分、子公司，生产、销售网络已布局全国大部分地区及越南、孟加拉、印度尼西亚等东南亚国家。

Tongwei Agricultural Development is held by Tongwei and has focused on feed production and aquacultural product breeding. At the same time, it has involved many fields such as aquacultural product seedling and breeding, raising services, animal health, agricultural testing, fishery facilities and equipment, and financing guarantees. Up to now, the annual feed production capacity of TW Agricultural Development has exceeded 10 million tons, and it is a leading aquacultural feed manufacturer and a critical livestock feed manufacturer in the world. TW Agricultural Development has more than 70 branches and subsidiaries in the feed business. Its production and sales network has been distributed in most parts of China and Southeast Asian countries, such as Vietnam, Bangladesh, and Indonesia.

七大研发试验基地

Seven major R&D and test bases



每年研发费用超过1亿元

R&D expenses exceed 10 million yuan per year



十余个国家级、省级技术创新平台

More than a dozen national and provincial technology innovation platforms



三度荣获“国家科技进步二等奖”

Won the "National Second Prize for Scientific and Technological Progress" three times



农业技术创新成果



AGRICULTURAL TECHNOLOGICAL INNOVATION ACHIEVEMENTS



通威始终坚持以科技研发驱动可持续发展，先后投入数亿元建立了七大研发试验基地，拥有“国家级企业技术中心”、“国家认可实验室”、“国家级检测中心”、“水产养殖动物疾病防控技术国家地方联合工程实验室”、“农业部水产畜禽营养与健康养殖重点实验室”、“水产健康养殖四川省重点实验室”、“四川省水产工程技术研究中心”等十余个国家级、省级技术创新平台，并先后三度荣获“国家科学技术进步二等奖”、两度获得农业农村部“全国农牧渔业丰收奖一等奖”、农业农村部“中华农业科技奖一等奖”，以及“四川省科技进步一等奖”等多项殊荣。

TW Agricultural Development has seven major research and development experimental bases and more than ten national and provincial technological innovation platforms, including "National Enterprise Technology Center," "National Accredited Laboratory," "National-Local Joint Engineering Laboratory for Aquaculture Animal Disease Prevention and Control Technology," "Key Laboratory for Aquaculture Livestock Nutrition and Healthy Breeding of the Ministry of Agriculture," "Sichuan Key Laboratory for Aquaculture Healthy Breeding" and "Sichuan Aquaculture Engineering Technology Research Center." Tongwei has won the second prize in National Science and Technology Progress three times, the first prize in the National Agriculture and Animal Husbandry and Fisheries Harvest Award of the Ministry of Agriculture and Rural Affairs twice, the first prize in the China Agricultural Science and Technology Award of the Ministry of Agriculture and Rural Affairs, the first prize of the Sichuan Provincial Science and Technology Progress Award, etc.

通威近年共申请专利800余件，其中发明专利329件（含2件PCT）；主持或参与制修订7项国家标准、5项行业标准、6项地方标准、1项团体标准；获得3个国家水产新品种；拥有2项国家新兽药证书；出版9本专著，发表192篇论文，其中SCI20篇。

Tongwei has applied for more than 800 patents, with 329 of them being invention patents (including 2 PCTs); has presided over or participated in the formulation and revision of seven national standards, five industry standards, six local standards, and a group standard; has obtained the approvals of three national new aquatics and two National New Veterinary Drug Certificates; has published nine monographs and 192 papers, including 20 SCI papers.

集约养殖 环境友好

通威一直致力于环境友好型水产养殖模式的应用推广，积极探索、研究行业发展变化趋势，为现代渔业转型升级提供规模化、集约化、标准化、生态化的养殖综合解决方案。

Tongwei has been committed to applying and promoting environment-friendly aquaculture models, actively exploring and studying the industry's development and change trends, and providing comprehensive large-scale, intensive, standardized, and ecological aquaculture solutions for the transformation and upgrading of modern fisheries.

INTENSIVE
BREEDING
ENVIRONMENT-FRIENDLY



近期，通威组建通威渔业科技有限公司，发力水产养殖业务。计划在未来3-5年内进一步聚焦南美白对虾、加州鲈、鮰鱼等市场接受度高、适宜集约化的养殖品种，探索不同养殖条件下的设施化、工厂化养殖模式，形成技术突破和规模、品牌效应，构建通威水产产业链系统竞争能力，并通过搭配“渔光一体”模式，水上产出清洁能源，水下产出绿色水产品，助力水产行业升级转型。目前，通威农发在山东东营启动全新的南美白对虾工厂化养殖项目，首个基地规模20万立方水体，建设定位为循环水、自动化、数字化，年产对虾1万吨以上，从而启动百万吨对虾工程，真正实现行业新引领，夯实通威世界级水产龙头企业地位。

Recently, Tongwei established Tongwei Fisheries Technology Co., Ltd. to develop an aquaculture business. Tongwei plans to further focus on *Penaeus vannamei*, *Micropterus salmoides*, golden crucian carp, and other high-acceptance, suitable-intensive breeding varieties in the next 3-5 years, explore facilitation and factory breeding models under different breeding conditions, form technological breakthroughs and scale and brand effects, and build the competitiveness of Tongwei aquacultural products industry chain system. Collaborating with Tongwei's "Fishery & PV Integration" model, clean energy is produced on water, and green aquacultural products are produced underwater, which will help the upgrading and transformation of the aquacultural industry. TW Agricultural Development has started a brand-new *Penaeus vannamei* factory culture project in Dongying, Shandong Province. The first base has a scale of 200,000 cubic meters of water, with a construction positioning of water circulation, automation, and digitization and an annual prawn output of more than 10,000 tons. With this, Tongwei starts a million-ton prawn project, achieves new industry leadership, and consolidates Tongwei's status as a world-class aquatic product leader.



作为行业内唯一一家设立设施渔业工程研究所的大型饲料企业，通威将拥有自主知识产权的大批渔业设施应用于养殖生产实践，通过设计融合现代化高科技水产养殖系统，以设施化解决方案引领水产养殖智能高效。

同时，通威近年来借助双主业发展优势，加快推进“渔光一体”下的养殖业务发展，探索设施化模式研究和推广，在西昌、扬中、崇州等基地试点示范，协同推进大水面设施化养殖和“渔光一体”养殖项目，助力水产行业升级转型，真正夯实通威中国水产龙头企业地位。

As the only large-scale feed enterprise in the industry to set up a facility of fishery engineering research institute, Tongwei has applied a large number of fishery facilities with independent intellectual property rights to breeding production practices and led the intelligent and efficient aquaculture by designing and integrating modern high-tech aquaculture systems with facility-based solutions.

At the same time, in recent years, Tongwei has taken advantage of its dual-main business, accelerated the development of aquaculture business under "Fishery & PV Integration," explored the research and promotion of facilitation models, piloted the demonstrative projects in Xichang, Yangzhong, Chongzhou, and other bases. Tongwei coordinated the promotion of large water surface facility aquaculture and "Fishery & PV Integration" projects to help the aquaculture industry upgrade and transform, and truly consolidate Tongwei's position as a leading aquaculture enterprise in China.

健康食品 全程监控

HEALTHY FOOD
WHOLE-PROCESS
MONITORING

通威食品是通威股份旗下主要涉足水产品和畜禽产品研发、生产和销售的业务板块，始终致力于成为世界级的健康安全食品供应商，为消费者提供健康、安全、美味的优质食品。通威食品旗下拥有“通威鱼”、“鱼本家”、“虾乐荟”、“通威鲜”、“通威美鲶鱼”、“猫无刺”、“春源”、“新太丰”、“醉牙尖”、“微膳”等多个品牌，为确保每一款产品的健康安全，通威食品多年来全力整合行业资源，在产业链上实现了从养殖、加工到销售的全过程品质监控。

TW Food is a business segment of Tongwei that is mainly involved in the research and development, production, and sales of aquacultural products and livestock and poultry products. It has always been committed to becoming a world-class health and safety food supplier, providing consumers with healthy, safe, delicious, high-quality food. TW Food has many brands such as "Tongwei Fish," "Yubenjia," "Xialehui," "Tongwei Fresh," "Tongwei Meihuiyu," "Maowuci," "Chunyuanyuan," "Xintaifeng," "Zuiyajian" and "Weila." To ensure the health and safety of each product, TW Food has integrated industry resources for more than years and has realized the whole-process quality monitoring on the industry chain from breeding and processing to sales.



通威食品打造的中国知名品牌鱼——“通威鱼”已经实现了全产业链管理，公司在中国建立了多个优质养殖基地，并在成都、海南等地建有产品深加工基地，加工过程严格执行ISO、HACCP管理体系以及欧盟和美国FDA认证标准，每一道生产环节都经过严格检测和控制，从而确保每件产品的卓越品质。

The well-known Chinese brand fish made by Tongwei Food - "Tongwei Fish" has achieved complete industry chain management. Tongwei has established several high-quality breeding bases across China and deep processing bases for products in Chengdu and Hainan. The processing process strictly implements the ISO standards, HACCP management systems, and FDA certification standards of the European Union and the United States. Each production link has been rigorously tested and controlled to ensure each product's outstanding quality.



匠心培育
Hearty
Cultivation



安全检测
Safety
Detection



国家专利
National
Patent



品质保障
Quality
Assurance



全程可溯
Full
Traceability

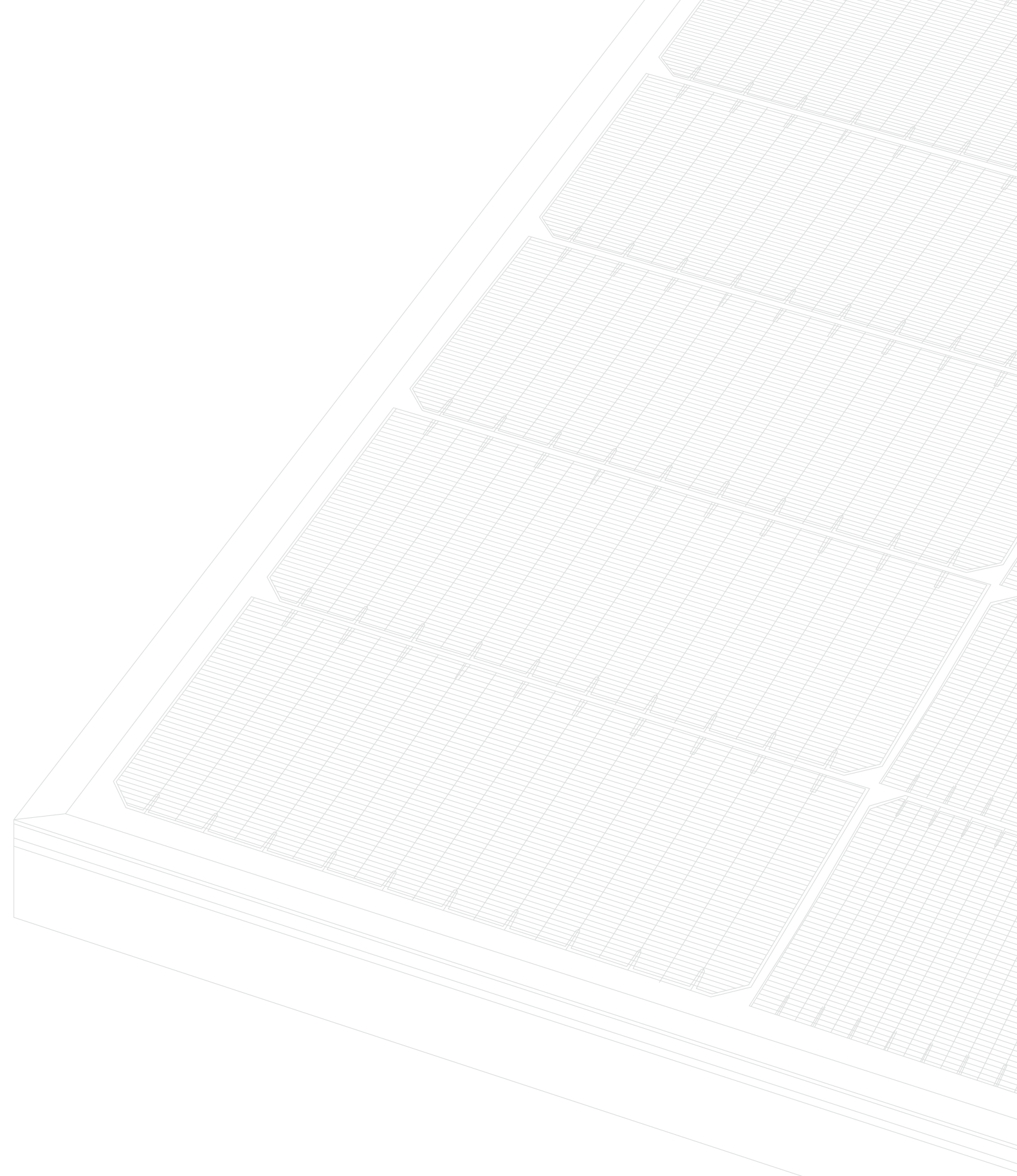


DEVELOPING WITH PV
REBUILDING INDUSTRIAL
LEADER

03

Part

光伏兴业 再造龙头



中国光伏引领全球

CHINA PV LEADS THE WORLD



2020年9月22日，习近平主席在联合国大会上庄严宣布中国2030年前实现碳达峰、2060年前实现碳中和的目标，向世界展现了中国积极应对气候变化的信心、雄心和决心，获得了欧盟及世界各国的高度赞誉。

从经济性、碳减排、能源的投入产出，以及维护国家能源和外汇安全体系等多个角度思考，光伏发电都已经具备了大规模应用、替代化石能源的总体条件，成为了推动双碳目标实现、推进全球能源转型升级的主力军。近年来，我国在能源转型和气候治理方面取得了举世瞩目的成就，充分体现了中国作为负责任大国的道义和担当。

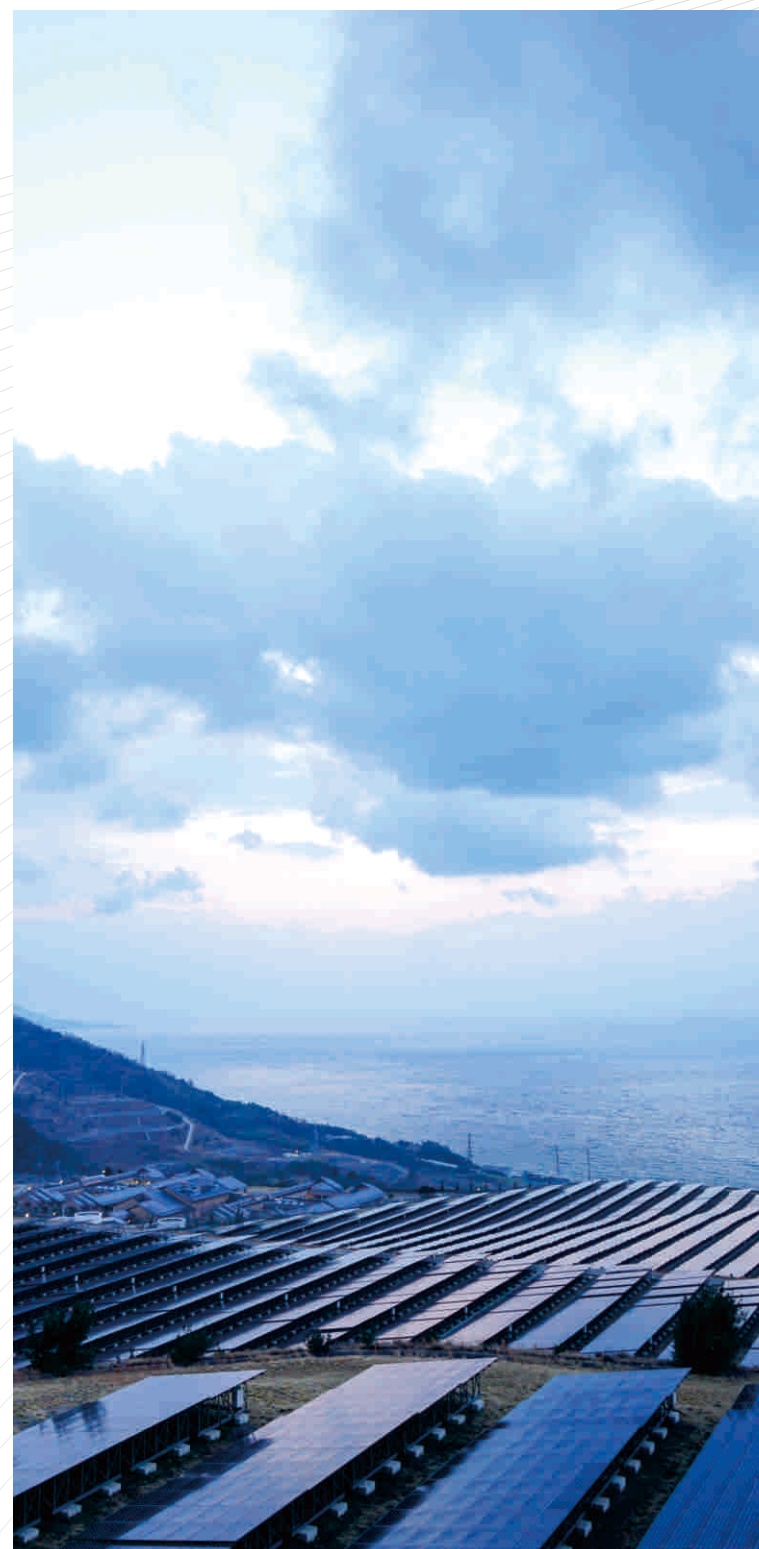
On Sept 22, 2020, President Xi Jinping solemnly announced at the UN General Assembly China's goal of reaching a carbon peak by 2030 and achieving carbon neutrality by 2060, demonstrating to the world China's confidence, ambition, and determination to actively tackle climate change, which has won high praise from the EU and other countries in the world.

From the economic, carbon emission reduction, energy input and output, maintaining the national energy and foreign exchange security system, and other perspectives, photovoltaic power generation has had the overall conditions for large-scale application, replacing fossil energy. It has become the leading force in promoting the realization of the dual-carbon goal and accelerating global energy transformation and upgrading. In recent years, China has made remarkable achievements in energy transition and climate governance, profoundly reflecting China's morality and responsibility as a responsible power.



过去十年中，全球光伏制造格局发生了重大转变，根据2022年国际能源署（IEA）最新报告，2010年至2021年间，由于政策引导、产业规模化效应及成本优势，中国进一步巩固了其作为硅片、电池片和组件制造商的领先地位，而其全球硅料产能几乎增长了两倍，目前中国在全球光伏制造产业链的总份额超过80%。中国已形成具有国际竞争力的完整光伏产业链，助推全球光伏行业快速发展，成为了全球光伏产业的领导者。

The global PV manufacturing landscape has significantly transformed over the past decade, with China further consolidating its leading position as a manufacturer of silicon wafers, cells, and modules between 2010 and 2021 due to policy guidance, industry scale effects, and cost advantages, while its global silicon capacity has almost tripled and China's total share of the global PV manufacturing chain now exceeds 80%, according to the latest 2022 International Energy Agency (IEA) report. China has formed a complete PV industry chain with international competitiveness, fueling the rapid development of the global photovoltaic industry. China has become a global PV industry leader.



2021年全球光伏累计装机容量超942GW，中国排名第一，累计安装量高达308.5GW。2021年全球光伏新增装机超175GW，中国以54.9GW的新增位居全球第一，美国（26.9GW）、印度（13GW）紧随其后。据彭博社预测，2022年全球光伏装机量将增加30%，有望达到250GW，而全球光伏累计装机量将接近1太瓦。各国际机构也在俄乌危机事件发生后，也纷纷上调光伏装机预期，这将是能源转型道路上令人印象深刻的里程碑。

In 2021, the cumulative installed photovoltaic capacity in the world exceeded 942GW. China ranked first with a cumulative installed capacity of 308.5GW. In 2021, the newly installed photovoltaic capacity in the world exceeded 175GW. China ranked first with 54.9GW, followed by the United States (26.9GW) and India (13GW). According to Bloomberg's forecast, the global photovoltaic installed capacity will increase by 30% in 2022 and is expected to reach 250GW, while the cumulative global photovoltaic installed capacity will approach 1TW. International agencies have also raised their photovoltaic installation expectations after the Russian-Ukrainian crisis, which will be an impressive milestone on the road to energy transformation.



通威绿色新能源产业链

通威于2006年进军光伏新能源产业，历经10余年快速发展，已成为拥有从上游高纯晶硅生产、中游高效太阳能电池片及组件生产、到终端光伏电站建设与运营的光伏企业，形成了完整的拥有自主知识产权的光伏新能源产业链条，拥有领先的规模、技术、成本、质量优势。公司不断做强做大优势环节，制造端重点布局高纯晶硅、高效电池及组件产品，应用端着力打造“渔光一体”创新发展模式，已成为中国乃至全球光伏新能源产业发展的重要参与者和主要推动力量之一。

Tongwei entered the market of photovoltaics (PV) in 2006. After more than ten years of rapid development, Tongwei has become a integrated PV enterprise with high-purity polysilicon production in upstream and high-efficiency solar cell production in midstream and high-efficiency PV module production in downstream, as well as experience in PV power station construction and operation. It has formed a complete PV new energy industry chain with independent intellectual property rights and a leading position in scale, technology, cost, and quality advantages. Tongwei continues to strengthen and enlarge its advantages, focusing on the layout of high-purity polysilicon, high-efficiency cells, and module products on the manufacturing side and on building a "Fishery & PV Integration" innovative development model on the application side. Tongwei has become one of important participants and significant driving forces for the development of China and even the global photovoltaic new energy industry.



TONGWEI GREEN
NEW ENERGY INDUSTRY
CHAIN

2006-2023



上游-高纯晶硅生产

永祥股份——循环经济产业链
高纯晶硅出货量全球第一

Upstream – Polysilicon Production: Yongxiang – Circular economy industry chain; Ranking first in Polysilicon shipments worldwide.



中游-高效太阳能电池片及组件产品生产

通威太阳能——高效太阳能电池片产能规模、出货量全球第一
全柔性、低铅型、环境友好型组件产品
远销海外40+国家与地区

Midstream – High-efficiency solar cell and module production: TW Solar – Ranking first in high-efficiency solar cells production capacity and shipment worldwide; Fully flexible, low-lead, environmentally-friendly modules are exported to over 40 countries and regions overseas.



下游-光伏电站建设与运营

通威新能源——全球首创“渔光一体”创新发展模式
实现“渔、电、环保”三丰收

Downstream – Photovoltaic power station construction and operation: Tongwei New Energy – The world's first "Fishery & PV Integration" innovative development model to achieve triple win of "fishing, electricity, and environmental protection."

通威光伏技术研发布局

TONGWEI PV
TECHNOLOGY R&D
LAYOUT



光伏技术研发布局·四川

PV Technology R&D Layout: Sichuan

光伏技术研发布局·安徽

PV Technology R&D Layout: Anhui

光伏技术研发布局·四川

PV Technology R&D Layout: Sichuan

<p>成都双流 Shuangliu, Chengdu</p> <p>异质结电池中试线 Pilot test line for HJT cell</p> <p>全背接触电池中试线 Pilot test line for full-back contact cell</p> <p>先进金属化试验线 Advanced metallization test line</p> <p>组件研发中试线 Pilot test line for module R&D</p> <p>钙钛矿叠层实验室 Perovskite Laminated Laboratory</p> <p>光伏检测中心 Photovoltaic testing center</p>	<p>成都金堂 Jintang, Chengdu</p> <p>1GW异质结生产线 1GW HJT production line</p> <p>切片研发线 Cutting R&D line</p>	<p>乐山 Leshan</p> <p>永祥硅材料研发中心 Yongxiang Silicon Material R&D Center</p> <p>晶体生长研发线 Crystal Growth R&D Line</p>
<p>眉山 Meishan</p> <p>TOPCon电池研发线 TOPCon cell R&D line</p>		

光伏技术研发布局·安徽

PV Technology R&D Layout: Anhui

<p>安徽·合肥 Hefei, Anhui</p> <p>异质结电池中试线 Pilot test line for HJT cell</p>	<p>组件研发中心 Module R&D Center</p>	<p>组件户外实证基地 Module outdoor experiment base</p>
---	---	--

平台资源

Platform Resources

<p>国家级企业技术中心 State-certificated Enterprise Technology Center</p>	<p>四川省工程技术研究中心 Sichuan Engineering Technology Research Center</p>	<p>四川省工程研究中心 Sichuan Engineering Research Center</p>
<p>成都光伏检测中心 (CNAS认证) Chengdu Photovoltaic Testing Center (CNAS Certification)</p>	<p>合肥光伏实验中心 (CNAS认证) Hefei Photovoltaic Experimental Center (CNAS Certification)</p>	

光伏技术研发知识产权

Photovoltaic Technology R&D Intellectual Property Rights

<p>授权专利1484件 (截止2022年) 1484 patents granted (as of 2022)</p>	<p>国家知识产权优势企业 National Intellectual Property Advantageous Enterprise</p>	<p>中国专利奖优秀奖 China Patent Award Excellence Award</p>
		<p>四川省专利奖一等奖 First prize of the Sichuan Patent Award</p>

POLYSILICON WINS THE WORLD

高纯晶硅，问鼎全球



通威旗下永祥股份抢抓全球能源转型和国家双碳目标带来的产业发展机遇，在高纯晶硅领域不断壮大，产能规模、技术优势、成本指标均处于行业领先水平，目前，公司高纯晶硅产能超过26万吨/年，产销量全球第一。

Yongxiang, a subsidiary of Tongwei, has seized the industrial development opportunities brought by the global energy transition and the national double carbon target. It has continued to grow in the high-purity crystalline silicon field with its production capacity scale, technical advantages, and cost indicators all at the top level in the industry. Now, with an annual production capacity exceeding 260,000 tons, Yongxiang is the world's No.1 producer and seller of polysilicon.

公司高纯晶硅产能已超26万吨/年，预计2023年底达到38万吨，进一步巩固高纯晶硅全球龙头地位。

Tongwei's polysilicon production capacity has reached 260,000 tons/year. It is expected to reach 380,000 tons by the end of 2023, further consolidating its leading global position in polysilicon.



永祥股份

YONGXIANG CO., LTD



四川永祥股份有限公司经过多年发展，形成了从“盐卤、烧碱、聚氯乙烯到电石渣水泥”和从“氯化氢、三氯氢硅到多晶硅新能源”的新能源与化工完整结合的循环经济产业链。

After years of development, Sichuan Yongxiang has formed a circular economy chain that combines new energy and chemical industries from "halogen, caustic soda, polyvinyl chloride to calcium carbide slag cement" and from "hydrogen chloride, silicon trichloride to polysilicon new energy."



高纯晶硅
26万
吨/年
Polysilicon
260,000t/year

离子膜烧碱
15万
吨/年
Ion-exchange membrane caustic
soda 150000t/year

单晶拉棒
15
GW/年
Monocrystalline rod
15 GW/year

电石渣水泥
100万
吨/年
Calcium carbide slag cemen
1,000,000t/year

聚氯乙烯
10万
吨/年
PVC 100,000t/year

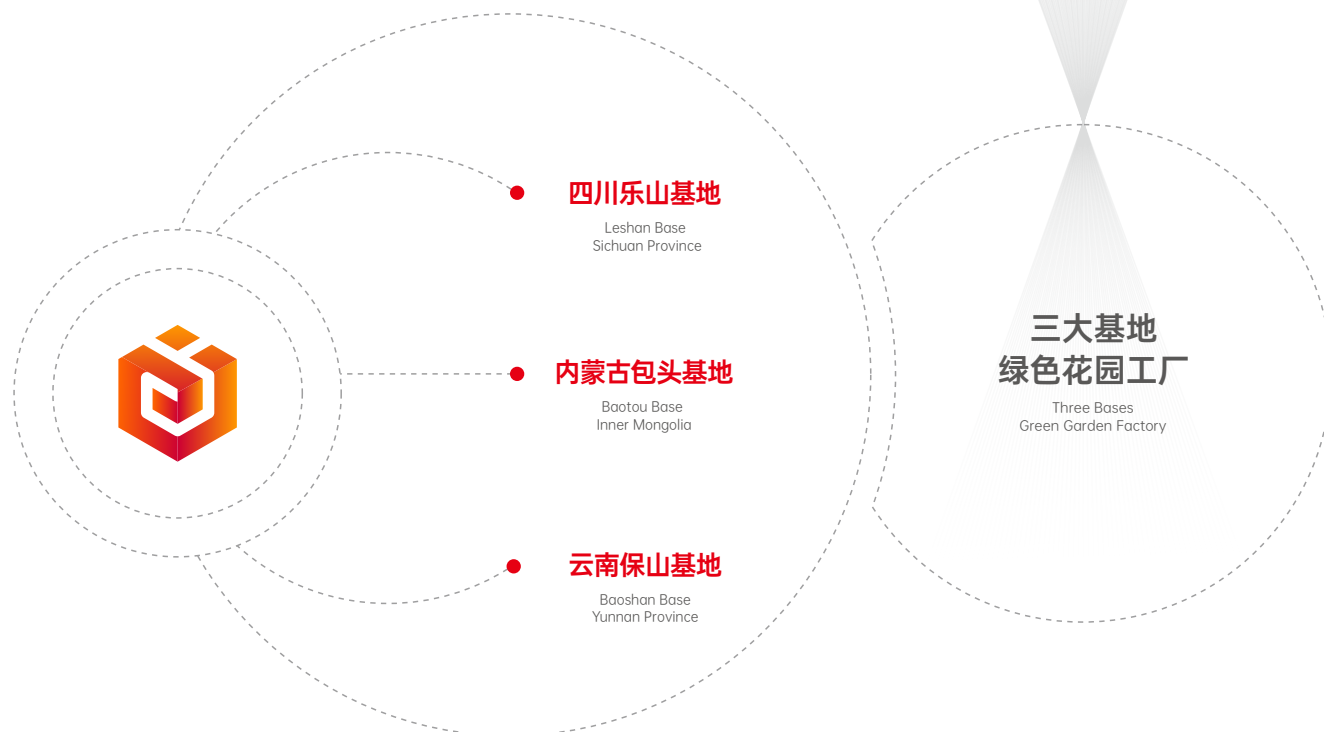
“绿色电力”培育“绿色硅谷” 高纯晶硅实现“中国智造”



GREEN POWER CULTIVATES
GREEN SILICON VALLEY,
POLYSILICON REALIZES "CHINESE INTELLIGENCE"

随着规模不断扩大，永祥股份聚集效应凸显，形成了“以商招商”的良好发展态势，吸引产业链上下游高纯晶硅、拉棒、切片、电池等细分领域近万亿市值的上市公司汇集于乐山“中国绿色硅谷”，打造以高纯晶硅为核心的优势光伏产业集群。

With the continuous expansion of the scale, the Yongxiang aggregation effect has become prominent, forming a good development trend of "attracting investment by business," attracting listed companies with a market value of nearly one trillion yuan in the upstream and downstream of polysilicon, pull rods, slices, cells, and other segments of industry chain to gather in Leshan's "China Green Silicon Valley" to build an advantageous photovoltaic industry cluster with polysilicon as the core.



永祥股份拥有四川乐山、内蒙古包头、云南保山三大高纯晶硅生产基地
公司产品涵盖了电子级和太阳能级，实现高纯晶硅“中国智造”。

Yongxiang has three major polysilicon production bases in Leshan, Sichuan, Baotou, Inner Mongolia, and Baoshan, Yunnan. Yongxiang's products cover electronic and solar levels, realizing polysilicon "intelligent manufacturing in China."



四川乐山基地

目前乐山二期5万吨已投产，首批出炉产品各项质量指标均达到太阳能特级品标准，一次性达到行业领先水平。乐山三期12万吨项目预计2023年投产，单位投资成本更低，工艺设计更优，智能化水平更高，将进一步夯实公司质量和成本优势。

Leshan Base in Sichuan: The 50,000-ton Leshan Phase II has been put into production. The quality indicators of the first batch of products have reached the solar special grade standard, which has reached the industry-leading level at one time. The Leshan Phase III project is expected to start operation in 2023. The lower unit investment cost, better process design, and higher level of intelligence will further consolidate Tongwei's quality and cost advantages.

内蒙古包头基地

公司一期项目于2018年12月底正式投产，产能3万吨/年。二期5万吨项目预计2022年投产。

Baotou Base in Inner Mongolia: The project's first phase was officially put into operation at the end of December 2018, with an annual production capacity of 30,000 tons. The 50,000-ton Phase II project is expected to be in production in 2022.

云南保山基地

云南通威水电硅材高纯晶硅绿色能源项目，设计年产18万吨高纯晶硅，项目计划总投资205亿元，预计2025年全部建成投产。

Baoshan Base in Yunnan Province: The polysilicon green energy project of Yunnan Tongwei Hydropower Silicon has a designed annual output of 180,000 tons of polysilicon. The total planned investment of the project is 20.5 billion yuan, and it is expected to be completed and put into operation in 2025.

高纯晶硅产品核心优势

呈现灰色金属光泽，密度2.32~2.34g/cm³，熔点1410℃，沸点2355℃，是半导体工业、电子信息产业、太阳能光伏产业的最重要的、最基础的功能性材料。电性方面，产品纯度可达到99.9999999%以上，满足P型单晶、N型单晶硅片及半导体使用要求。

Grey metal luster, density 2.32 ~ 2.34 g/cm³, melting point 1410 °C, boiling point 2355 °C, is the most essential and fundamental functional material of the semiconductor industry, electronic information industry, and solar photovoltaic industry. The purity of the product can reach more than 99.9999999% in terms of electrical performance, which meets the requirements of P-type monocrystalline, N-type monocrystalline silicon wafers, and semiconductors.



技术优势 Technology Advantages

- 结合国内成熟工艺进行多晶硅新工艺开发和改进成功研发“永祥法”升级至第八代
Combining mature domestic processes to develop and improve new polysilicon processes, successfully developed the "Yongxiang Method" and upgraded to the eighth generation.
- 冷氢化、三氯氢硅合成、反歧化、大型节能精馏
Cold hydrogenation, silicon trichloride synthesis, disproportionation, large-scale energy-saving rectification
- 高效还原、尾气回收、电器自动化控制技术、氯氢元素闭路循环
High-efficiency reduction, tail gas recovery, automatic control technology of electrical appliances, closed-circuit circulation of hydrogen chloride
- 热能综合利用技术、分析检测技术等方面
Thermal energy comprehensive utilization technology, analysis and detection technology, etc.
- 具有自主知识产权的多项成果处于国内先进水平
Many achievements with independent intellectual property rights are at the advanced level in China.



POLYSILICON
PRODUCT
CORE ADVANTAGES



质量行业领先
Industry Leader
in Quality



生产成本行业领先
Industry Leader in
Production Cost



综合指标行业领先
Industry Leader in
Comprehensive Indicators



300多项
拥有自主知识产权专利成果
Owns more than 300 patents with
independent IPR



90%以上
N型单晶达到电子级晶硅水平
More than 90% of N-type monocrystals
reach the level of electronic grade



99.999999999%
产品关键性杂质元素纯度达
The purity of key impurity elements of
the product reaches 99.999999999%.



NO.1
全球产销量第一
The world's No.1 producer and seller



INTELLIGENT MANUFACTURING RISE IN BENCHMARK

智能制造，标杆崛起

通威太阳能深度切入太阳能发电核心产品的研发、制造和推广，已成为全球光伏行业工艺技术和生产设备最先进、自动化和智能化程度最高、规模最大的晶硅太阳能电池生产企业。2017年9月20日，通威太阳能世界首条工业4.0高效电池片生产线正式投产，标志着通威制造正式步入工业4.0时代，树立了行业智能制造的新标杆。

TW Solar has deeply engaged in the R&D, manufacturing, and promotion of core solar power generation products. It has become the world's largest crystalline silicon solar cell manufacturer with the most advanced technology, production equipment, and the highest level of automation and intelligence in the PV industry. On Sept 20, 2017, the world's first industry 4.0 high-efficiency cell cutting production line in TW Solar was officially put into operation, marking the formal entry of Tongwei manufacturing into the Industry 4.0 era and setting a new benchmark of smart manufacturing for the industry.



公司现拥有安徽公司、双流、眉山、金堂四个基地及通合项目，在职员工16000余人，现有产能70GW。

TW Solar has four bases in Anhui, Shuangliu, Meishan, and Jintang and has Tonghe projects, with more than 16,000 employees and a production capacity of 70GW.


70GW+
现有产能
Production capacity over 70GW

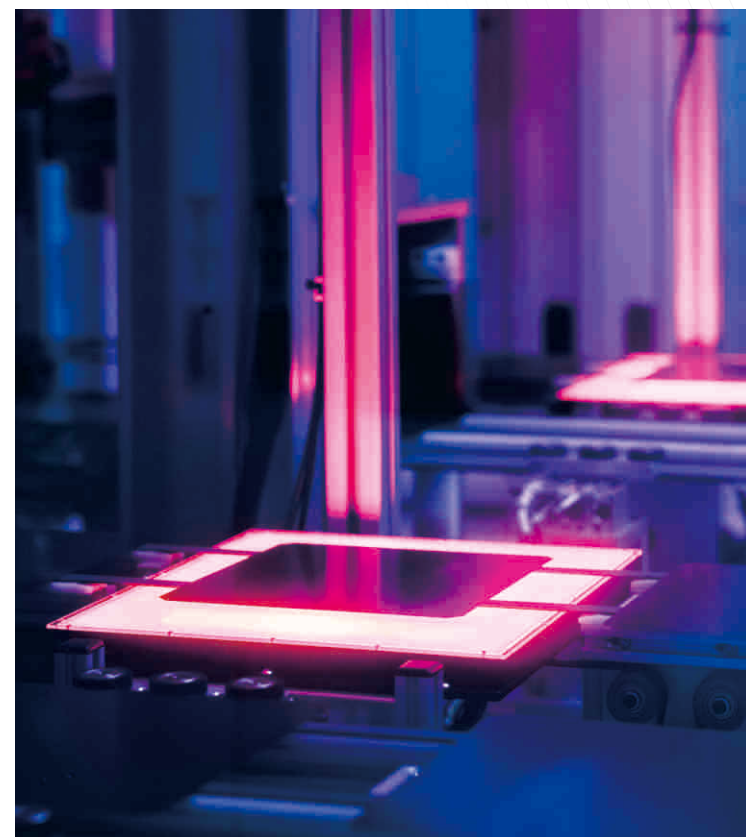

100GW+
截至2022年Q2全球出货量
Global Shipments 100GW+ as of Q2, 2022


100%
开工率
Operating Rate 100%

全球领先的高效晶硅太阳能电池企业
The world's leading high-efficiency crystalline silicon solar cell company

太阳能电池出货量连续六年蝉联全球第一
Solar cell shipments ranked 1st in the world for six consecutive years

- 
产能规模最大
largest production capacity
- 
开工率最高
highest operating rate
- 
出货量最大
largest shipments
- 
建设速度最快
fastest construction
- 
成本最低
lowest cost



四大基地及通合项目

FOUR MAJOR
BASES
AND TONGHE PROJECTS



安徽公司 Anhui Company

2013年11月18日投产，安徽一期项目于2019年1月8日建成，该项目全面采用背钝化技术，以高效单晶电池无人智能制造路线为主。

Anhui Company – Put into operation on Nov 18, 2013, the first phase of the Anhui base was completed on Jan 8, 2019. The back-passivation technology is thoroughly used in the Hefei base, and the project focuses on the unmanned smart manufacturing of high-efficiency single-crystal cells.

双流基地 Shuangliu Base

项目建设速度多次刷新纪录，实现当年开工、当年建设、当年投产，再次刷新了全球单车间产能规模纪录，是目前工艺技术和生产线、自动化和智能化程度都领先的晶硅电池车间，也是全球光伏行业智能化工厂、数字化车间的样板工程。项目四期共16条全封闭的智能制造高效晶硅电池片自动化生产线，为通威太阳能智能化、数字化、现代化、精细化管理再添新动能。

Shuangliu Base – The project construction speed has repeatedly set new records, with the construction and production starting in the same year, once again setting a new global record for the scale of single workshop production capacity. It is currently the leading crystalline silicon cell workshop in technology, production lines, automation, and intelligence. It is also a model workshop for smart factories and digital workshops in the global PV industry. A total of 16 fully enclosed automation production lines of intelligent manufacturing high-efficiency crystalline silicon cells in the fourth phase of this project will boost the intelligent, digital, modernized, and refined management of TW Solar.



通威安徽公司实景拍摄
Anhui Company

眉山基地 Meishan Base

2020年4月21日，一期项目建成投产，二期项目同步开工。随着其建成投产，通威太阳能眉山基地产能达15GW，进一步夯实通威电池龙头企业地位。

Meishan Base – The first phase of this project was completed and put into operation on April 21, 2020, and the second phase started at the same time. With its completion and putting into operation, TW Solar Meishan Base has reached a production capacity of 15GW, further consolidating TW's leading status in the cell industry.



通威眉山基地实景拍摄
Meishan Base



通威双流基地实景拍摄
Shuangliu Base

金堂基地 Jintang Base

30GW高效晶硅电池及配套项目将分期实施，在未来3-5年内逐步建成投产。一期6.6GW项目于2020年3月25日启动建设，第一张电池片于2021年5月下线。通威将以金堂项目为试点，积极开展5G在工业互联网领域应用，打造金堂项目成为5G+先进制造业典范，并依托通威工业制造场景，推进光伏绿色智慧小镇建设。

Jintang Base - The construction of a 30GW high-efficiency crystalline silicon cell project and supporting projects will be implemented in phases, gradually completed, and put into production in the next 3-5 years. The construction of the first phase of the 6.6GW project started on March 25, 2020, and the first cell cutting went offline in May 2021. With the Jintang project as a pilot, Tongwei will actively carry out 5G applications in the industrial Internet field, building the Jintang project as a model of 5G+ advanced manufacturing and promoting the construction of PV green smart town by relying on the industrial manufacturing scene of Tongwei.



通威金堂基地实景拍摄
Jintang Base

通合项目 Tonghe Project

由通威太阳能及天合光能共同投资建设，建设年产15GW高效晶硅电池及15GW切片配套生产基地。该项目是双方联合一体化布局，也是实现原料供应和产业链稳定的重要手段，既保障天合光能大尺寸电池、组件生产，又保障通威产品外销和降本增效，扩大全球市场占有率。

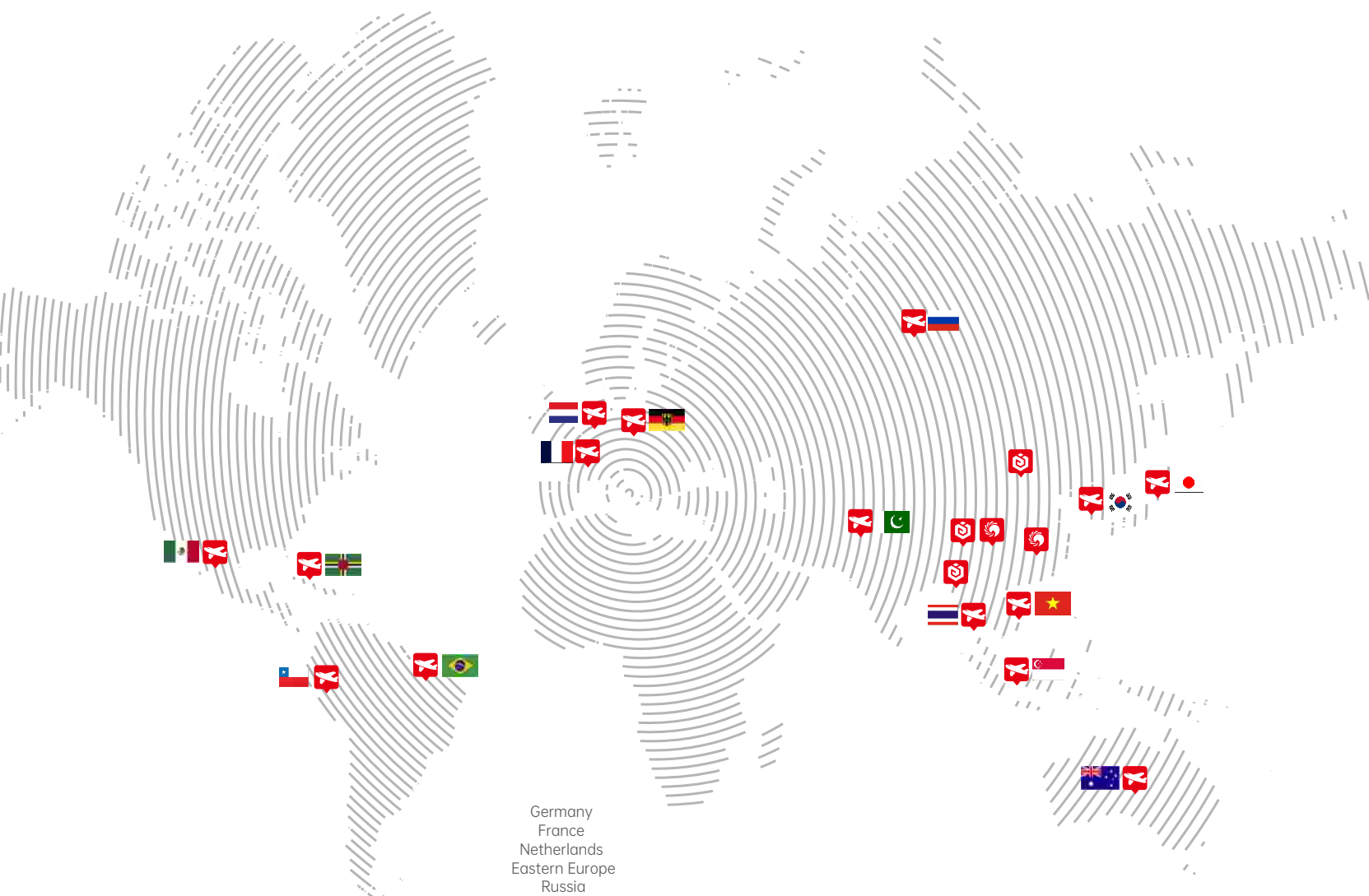
Tonghe Project - Jointly invested and constructed by TW Solar and Trina Solar to build a supporting production base with an annual output of 15GW high-efficiency crystalline silicon cells and 15GW cuttings. The project is a joint and integrated layout of the two sides and an essential method to achieve the stability of raw material supply and industrial chain. It guarantees the production of large-size cells and modules of Trina Solar, the export of Tongwei products, reducing TW's costs, and promoting efficiencies, leading to the enlargement of global market share.



通威通合项目实景拍摄
Tonghe Project

SMART MODULE BY TONGWEI

高效组件，通威智造



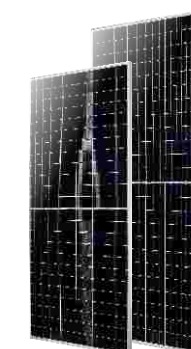
依托强劲完善的产业链上游储备，通威股份2013年涉足组件业务，经过几代技术沉淀，已形成具有通威特色的全柔性、低铅型、环境友好型叠瓦组件及全方位覆盖市场需求的半片组件产品，远销海外40+国家与地区，广泛应用于户用屋顶、工商业分布式及大型地面电站等场景，满足全球客户对清洁能源日益增长的需求。

With the solid and robust upstream reserves within the industry chain, Tongwei entered the module business in 2013. After multiple rounds of technical iterations, TW Solar has formed a series of fully-flexible, low-lead, environment-friendly shingled modules with TW Solar's characteristics and a range of half-cell module products covering market demand at all levels. The products are exported to more than 40 overseas countries and regions and are widely used in residential rooftops, industrial and commercial distributed, and utility-scale ground power stations to meet the growing needs of global customers for clean energy.



通威高效叠瓦组件

Tongwei high-efficiency shingled module



通威高效半片组件

Tongwei high-efficiency half-cell module



组件出口国

Countries of module export

欧洲 — 阿尔巴尼亚、爱尔兰、奥地利、保加利亚、比利时、波兰、波斯尼亚、黑塞哥维那、德国、俄罗斯、法国、芬兰、荷兰、克罗地亚、罗马尼亚、马耳他、葡萄牙、瑞典、瑞士、斯洛文尼亚、土耳其、乌克兰、西班牙、希腊、匈牙利、意大利、英国

Europe — Albania, Ireland, Austria, Bulgaria, Belgium, Poland, Bosnia, Herzegovina, Germany, Russia, France, Finland, Netherlands, Croatia, Romania, Malta, Portugal, Sweden, Switzerland, Slovenia, Turkey, Ukraine, Spain, Greece, Hungary Italy, United Kingdom

亚洲 — 巴基斯坦、格鲁吉亚、韩国、黎巴嫩、马来西亚、日本、塞浦路斯、沙特阿拉伯、新加坡、也门、约旦、越南

Asia — Pakistan, Georgia, Korea, Lebanon, Malaysia, Japan, Cyprus, Saudi Arabia, Singapore, Yemen, Jordan, Vietnam

美洲 — 墨西哥、多米尼加、智利、巴西

Americas — Mexico, Dominica, Chile, Brazil

大洋洲 — 澳大利亚、斐济、新西兰

Oceania — Australia, Fiji, New Zealand



硅料基地

Silicon Material Base

永祥多晶硅

Yongxiang Polysilicon

永祥新能源

Yongxiang New Energy

内蒙古通威

TW Inner Mongolia

云南通威

TW Yunnan



电池基地

Cell bases

合肥基地

Hefei base

成都基地

Chengdu base

金堂基地

Jintang base

眉山基地

Meishan base



组件基地

Module Base

合肥基地

Hefei base

盐城基地

Yancheng

南通基地

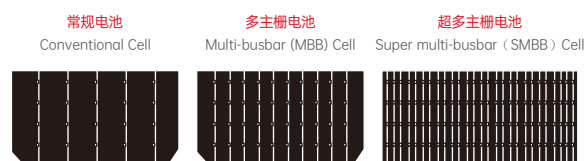
Nantong base

金堂基地

Jintang base

通威高效组件设计优势

DESIGN ADVANTAGES OF TONGWEI HIGH-EFFICIENCY MODULE



多主栅及超多主栅设计

降串增能，密线降损，栅线密布，受力均匀，提高电流的汇集能力，降低电池自身损耗。输出功率较常规电池提升5W以上；

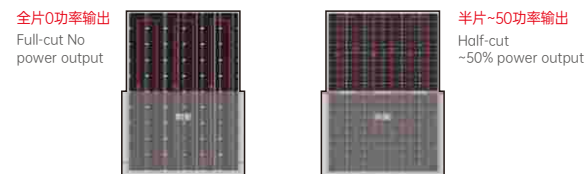
Multi-busbar (MBB) and Super multi-busbar (SMBB) design: Decreasing series and increasing energy, dense line and decreasing loss, dense grid lines, even stress; Improving the cell's current collecting ability for the reduction of loss and raising the cell's output power to at least 5W higher than that of conventional cells.



半片切割-降流减损

电流密度降低1/2，内部功率损耗降低为常规组件的1/4，额定输出功率增加5-10W，同时可以有效降低户外实际运行时的热斑风险；

Half-cell cutting - lower the current and loss: Current density is reduced by 1/2, internal power loss is reduced to 1/4 of conventional modules, and the rated output power is increased by 5-10W. Also, the risk of hot spots in the outdoor operation is effectively decreased.



串并联设计 遮阴不遮能

上下对称先串联后并联的组件设计，有效减少遮挡引起的电流失配，降低组件整体的输出功率损失，如下遮挡，发电量输出提升50%；

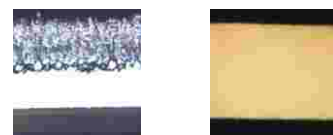
Serial and parallel design, shading, without lowering output: Up-down symmetrical parallel module design featuring the series-parallel connection effectively reduces current mismatch due to shading and the output power loss of the whole module. As shown in the shading instance below, the power output is raised to 50%.



高密度封装技术

采用先进的高密度组件封装技术，进一步提升组件有效面积的利用率，保证效率与可靠性的完美平衡，组件效率提升0.15%以上。

High-Density Encapsulation Technology: Adopting advanced high-density encapsulation technology to improve the utilization rate of module surfaces and to ensure the perfect balance of efficiency and reliability. Module efficiency is increased by more than 0.15%.



无损切片

无损切片技术，无机械损伤，有效降低制程带来的隐裂风险，微隐裂降低50%以上，保障组件在户外长期可靠运行；

Lossless cutting: Lossless laser cutting technology and no mechanical damage effectively reduce the risk of cracking in manufacturing. Low cell cracking risks, micro-cracking is reduced by more than 50%, ensuring the long and reliable outdoor operation of modules.

通威高效组件系统优势

SYSTEM ADVANTAGES OF TONGWEI HIGH-EFFICIENCY MODULE



更低的工作温度 Lower working temperature

半片组件户外工作温度较普通组件低2~3°C，同等条件下功率输出提升0.5%以上。

The outdoor temperature range of the half-cell module is 2~3°C lower than that of conventional modules, and the power output increases by more than 0.5% under the same conditions.



优越的载荷能力 Superior load capacity

整体组件通过2400Pa风载及5400Pa雪载。

The overall module passes 2400Pa wind load and 5400Pa snow load tests;



更高的转换效率 Higher conversion efficiency

通过出众的电池技术和领先的制造工艺，TNC高效组件转换效率达22.2%以上。

With outstanding cell technology and leading processing techniques, the conversion efficiency of the TOPCon high-efficiency module is over 22.0%.



优异的弱光性能 Excellent low-light performance

TNC高效组件能在阴天、早晨和傍晚等弱光条件下输出更多的电量。

TOPCon high-efficiency module outputs more power in low-light conditions such as cloudy, morning, and evening situations.



卓越的抗PID能力 Superior Anti-PID Capability

通过电池生产技术优化及材料管控将PID现象造成的衰减几率降低至最小。

Possibilities of degradation caused by PID is minimized by optimization of cell production technology and material management.



Tongwei "Fishery & PV Integration," Achieving Triple Win of "Fishing, Electricity, and Environmental protection"



通威“渔光一体”，实现“渔、电、环保”三丰收



清洁能源，惠及万家

CLEAN ENERGY, BENEFITING MILLION HOUSEHOLDS



在新能源终端，通威紧跟国家绿色发展战略部署，将光伏发电与现代渔业有机融合，于全球首创“上可发电、下可养鱼”的“渔光一体”发展模式。通过筛选优质水面资源，并确保电力消纳为前提，探索新型水产养殖模式，不断推动“渔光一体”基地规模化、专业化、智能化发展，不断降低光伏系统装机成本。

通威及合作伙伴、养殖户控制的池塘水面大约400万亩，经过规模化、智能化成片改造后，可架设120-150GW的光伏电站，同时每年产出健康优质的通威水产品1000万吨。

As for the downstream of new energy, Tongwei follows China's green development strategy, organically integrates PV power generation with modern fisheries, and pioneered the "Fishery & PV Integration" development model where power generates on the top and fish is fed at the bottom. By screening high-quality water surface resources and on the premise of ensuring power consumption, Tongwei explores new aquaculture models, continuously promotes the large-scale, professional, and intelligent development of the "Fishery & PV Integration" bases, and constantly reduces the installation costs of PV systems.

Tongwei, partners, and farmers control about 4 million mu of pond surface. After large-scale and intelligent transformation, the ponds can support PV power stations of 120-150GW and produce 10 million tons of healthy and high-quality Tongwei aquacultural products every year.

400 万亩
池塘水面
4 million mu of pond
water surface

120-150 GW
光伏电站
120-150GW of the photovoltaic
power station

1000 万吨
通威水产品
10 million tons of Tongwei
aquacultural products



投资开发

INVESTMENT DEVELOPMENT

通威新能源是通威光伏产业终端投资平台，以“光伏改变世界”为核心理念。以通威新能源有限公司、通威新能源（深圳）有限公司、通威新能源科技（北京）有限公司为主体，专注“渔光一体”投资开发。

Tongwei New Energy is Tongwei's terminal investment platform for the PV industry, with "PV changes the world" as its core concept. It takes Tongwei New Energy, Tongwei New Energy (Shenzhen), and Tongwei New Energy Technology (Beijing) as the main entities and focuses on the investment and development of "Fishery & PV Integration."

目前，通威新能源已在包括江苏泗洪、如东、扬中，江西南昌、高安，安徽怀宁、和县，广西钦州、东兴，广东台山、山东滨州、东营，湖北天门、湖南常德、内蒙古土左旗、黑龙江大庆等全国20多个省市开发建设了超过51个以“渔光一体”为主的光伏发电基地，并网规模超过3.4GW。

At present, Tongwei New Energy has developed and built more than 51 photovoltaic power generation bases based on "Fishery & PV Integration" in more than 20 provinces and cities in China, including Sihong, Rudong, and Yangzhong in Jiangsu, Nanchang and Gao'an in Jiangxi, Huaining and Hexian in Anhui, Qinzhou and Dongxing in Guangxi, Taishan in Guangdong, Binzhou and Dongying, Shandong, Tianmen in Hubei, Changde in Hunan, Tumote zuoqi in Inner Mongolia, and Daqing in Heilongjiang. The total power output connected to the grid exceeded 3.4GW.

新能源：拥有组合索夹、安转系统与安装装置等在内的20余项专利，是新能源发展和创新的重要参与者。

新渔业：配备通威智能水产养殖解决方案，渔业养殖人均管理养殖面积从20-200亩提升至500-1000亩

新农村：多元化产业叠加，空间创造无限可能

New Energy: TW has more than 20 patents, including combined cable clamps, rotation systems, and installation devices, and is an essential participant in the development and innovation of new energy.

New Fishery: Equipped with Tongwei Intelligent Aquaculture Solution, the per capita management and breeding area of fishery breeding has increased from 20-200 mu to 500-1000 mu.

New Country: Diversified industry overlay, space creates unlimited possibilities.

52

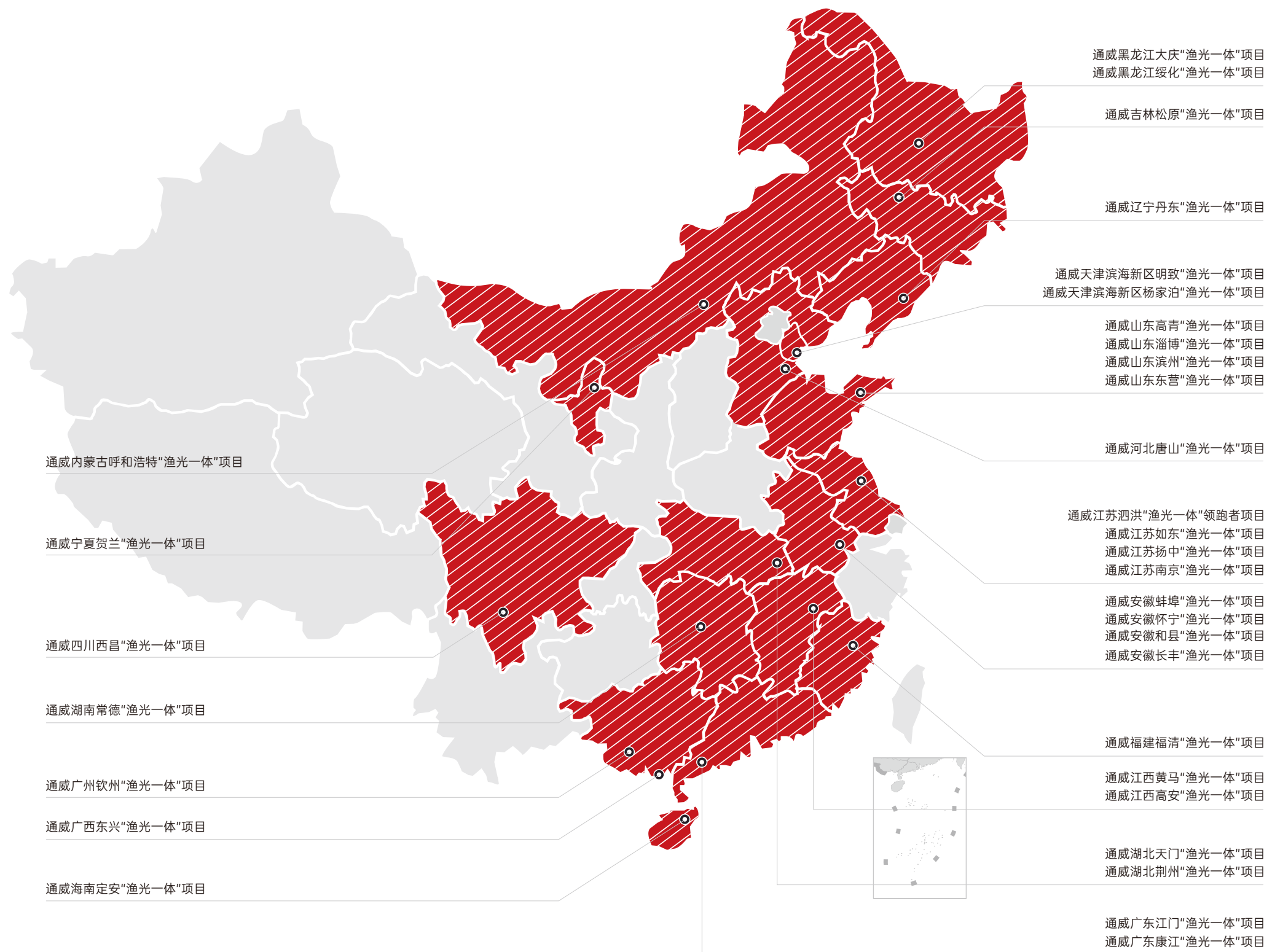
52个以“渔光一体”为主的光伏电站
52 PV power stations featuring "Fishery & PV Integration"

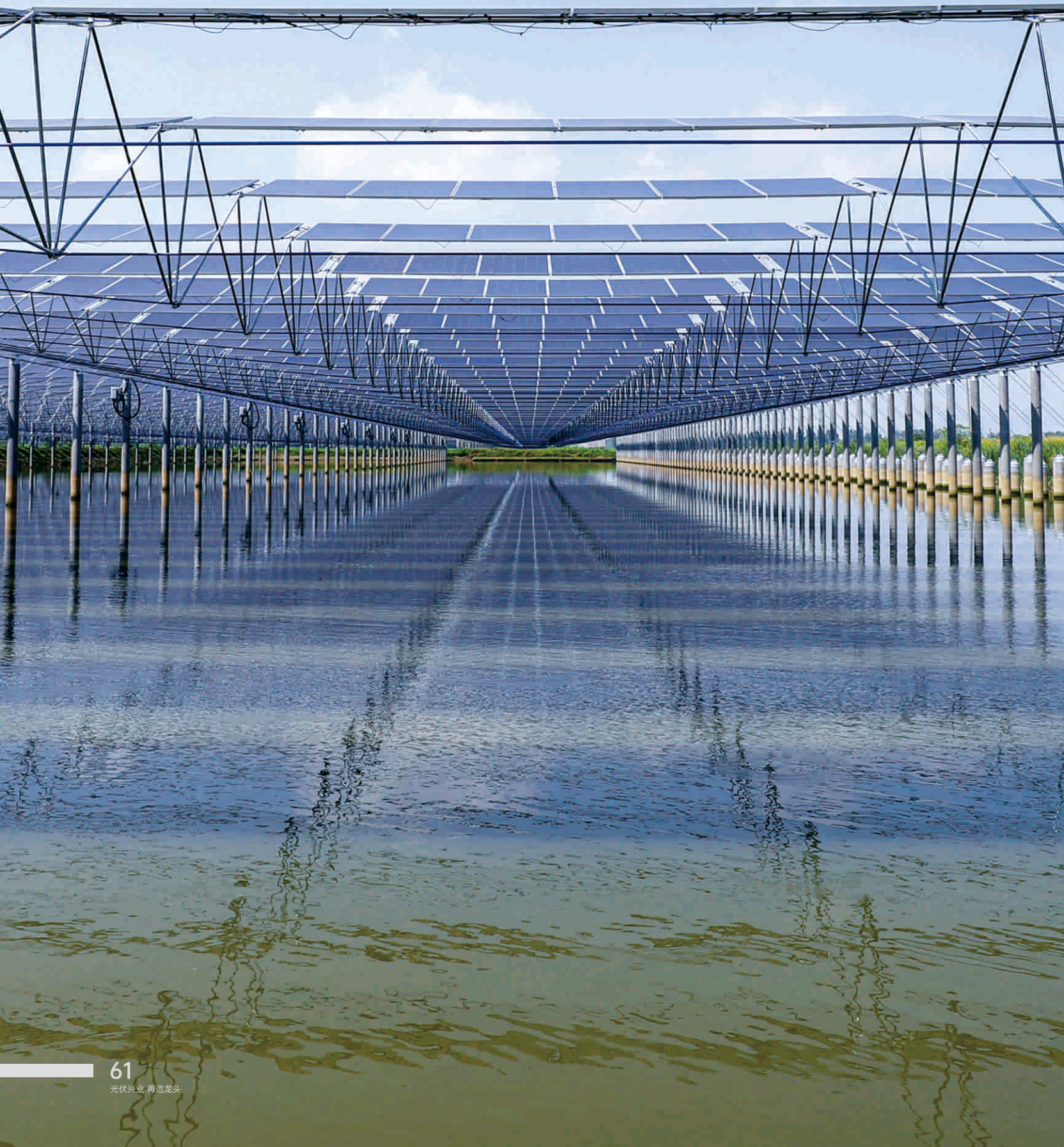
20+

20个省市
20 provinces and municipalities

3.4GW

3.4GW并网项目
总规模
More than 3.4GW of grid-connected projects





规划设计 PLANNING DESIGN

通威新能源工程设计四川有限公司专注光伏终端技术领域研发和电站设计,业务覆盖电力投资、项目开发、规划咨询、勘察设计、工程建设等新能源产业链各环节,致力于提供全球一流的清洁能源全生命周期解决方案。

Tongwei New Energy Engineering Design Sichuan Co., Ltd. insists on taking market demand as the guide, taking technological innovation as the power source for enterprise development, focusing on R&D in the PV terminal technology and power station design. Its business covers all aspects of the new energy industry chain, including power investment, project development, planning consulting, survey and design, engineering construction, etc. It is committed to providing world-class full-lifecycle solutions for clean energy.

通威柔性支架安全稳定 实现土地高效利用

Tongwei flexible bracket is safe & stable Realizes efficient land use

在通威研发团队的努力下,经过研发,通威开创全球先河的V型索系结构,独特的反拱工艺,突破性的实现了组件低受力和零扰度组件安装平台,7级风下无抖动和风颤以及独特的低索力+高寿命设计。

Thanks to the efforts of the Tongwei R&D team, Tongwei has created the world's first V-shaped cable system structure with a unique anti-arch technology and made a breakthrough in the realization of module low-stress and zero-disturbance module installation platform, which has no shaking and wind trembling under moderate gale and has a unique low-cable force and long-service design.

大跨度、高净空为未来创造无限可能

Large span and high clearance create infinite possibilities for the future

50根

立柱/MW
50 posts/MW

7.0m

净空
7.0 m clearance

60米

净跨度
60m clear span

智能运维

INTELLIGENT OPERATION AND MAINTENANCE



四川渔光物联技术有限公司专注于光伏电站运维，深耕“渔光一体”智能运营，项目覆盖全国40多座城市。在安徽、江苏、广东、湖北、内蒙古等全国多个省市运营“渔光一体”基地，在水面光伏项目市场上，依托通威超过10%的“渔光一体”占有率，规模化的“渔光一体”运营基地也在全国遍地开花。

Sichuan Yuguang Wulian Technology Co., Ltd. focuses on PV power station operation and maintenance and profoundly explores the "Fishery & PV Integration" intelligent operation. The project layout covers more than 40 cities across China. It operates "Fishery & PV Integration" bases in Anhui, Jiangsu, Guangdong, Hubei, Inner Mongolia, and other provinces and cities across China. In the surface PV project market, based on Tongwei's "Fishery & PV Integration" market of more than 10%, large-scale "Fishery & PV Integration" operating bases have also emerged throughout China.



40+

在运分布
40+ Cities in operation

在运分布40+ 运维电站覆盖全国40多座城市，以中部、东部地区为主，已形成示范效应，辐射西部地区。

在运数量50+ 目前运维50多个电站，主要为渔光一体电站，也包括少数山地、地面和分布式电站。

在运容量2.5GW+ 运维电站总量超2.5Gw，包括多个百兆瓦级项目。
安全生产天数1980天 创新打造“渔光一体智能+”的运营模式，提供优质运维服务，截止到2021年6月1日，电站安全生产天数达1980天。

50+

在运数量
50+ Stations in operation

The O&M power stations cover over 40 cities across China, mainly in the central and eastern regions, and have formed a demonstration effect to radiate the western part.

Tongwei is currently operating more than 50 power stations, mainly "Fishery & PV Integration," as well as a few mountainous, ground, and distributed power stations.

The total output of O&M power stations exceeds 2.5GW, including several 100MW-level projects.

Tongwei creatively initiates the "Fishery & PV Integration and intelligence plus" operation mode and provides high-quality O&M services. As of June 1, 2021, the safe production days of power stations reached 1980.

2.5GW

在运容量
2.5GW Installed capacity in operation

1980天

安全生产
1,980 Days of safe operation

DISCOVER
TONGWEI



04

Part

发现通威



领导关怀



CARE FROM LEADERS

稳健发展壮大的过程中，通威得到了各级政府、领导、社会各界的悉心关怀与大力支持。

In its steady expansion and development, Tongwei has received strong support and care from governments, leaders, and the community at all levels.



■ 中共中央总书记、国家主席、中央军委主席习近平视察通威（海南）水产食品公司，并亲切接见通威集团董事长刘汉元先生
■ Xi Jinping, General Secretary of the CPC Central Committee, Chinese President, and Chairman of the Central Military Commission, visited Tongwei (Hainan) Aquatic Food Company and cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 国务院总理李强视察通威如东“渔光一体”基地
■ Li Qiang, Premier of the State Council, visited Tongwei Rudong's "Fishery & PV Integration" base.



■ 时任国家主席胡锦涛亲切接见通威集团董事局主席刘汉元先生
■ Hu Jintao, then Chinese President, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 时任国务院总理李克强亲切接见通威集团董事局主席刘汉元先生
■ Li Keqiang, the then Premier of the State Council, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 时任国务院总理温家宝视察武汉通威
 ■ Wen Jiabao, then Premier of the State Council, visited Tongwei Wuhan.



■ 十九届中共中央政治局常委、十三届全国人大常委会委员长栗战书亲切接见通威集团董事局主席刘汉元先生
 ■ Li Zhanshu, a member of the Standing Committee of the Political Bureau of the 19th CPC Central Committee and Chairman of the 13th Standing Committee of the National People's Congress, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 十九届中共中央政治局常委、十三届全国政协主席汪洋亲切接见通威集团董事长刘汉元先生
 ■ Wang Yang, a member of the Standing Committee of the Political Bureau of the 19th CPC Central Committee and chairman of the 13th CPPCC National Committee, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 十八届中共中央政治局常委、十二届全国政协主席俞正声亲切接见通威集团董事长刘汉元先生
 ■ Yu Zhengsheng, a member of the Standing Committee of the Political Bureau of the 18th CPC Central Committee and Chairman of the 12th CPPCC National Committee, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 十八届中共中央政治局常委，时任国务院副总理张高丽亲切接见通威集团董事局主席刘汉元先生
 ■ Zhang Gaoli, a member of the Standing Committee of the Political Bureau of the 18th CPC Central Committee and then vice premier of the State Council, cordially met Mr. Liu Hanyuan, chairman of the board of directors of Tongwei Group.



■ 十六届、十七届中共中央政治局常委，十届、十一届全国政协主席贾庆林亲切接见通威集团董事局主席刘汉元先生
 ■ Jia Qinglin, a member of the Standing Committee of the Political Bureau of the 16th and 17th CPC Central Committee and Chairman of the 10th and 11th CPPCC National Committee, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 十六届、十七届中共中央政治局常委，十届、十一届全国人大常委会委员长吴邦国亲切接见通威集团董事局主席刘汉元先生
 ■ Wu Bangguo, a member of the Standing Committee of the Political Bureau of the 16th and 17th CPC Central Committee and Chairman of the Standing Committee of the 10th and 11th National People's Congress, cordially met Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 十七届中共中央政治局常委、时任中纪委书记贺国强与通威集团董事局主席刘汉元先生亲切握手
 ■ He Guoqiang, a member of the Standing Committee of the Political Bureau of the 17th CPC Central Committee and then Secretary of the Central Commission for Discipline Inspection, and Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group, shook hands cordially.



■ 中共中央政治局委员、北京市委书记尹力与中共中央委员、吉林省委书记省人大常委会主任景俊海调研通威
 ■ Yin Li, a member of the Political Bureau of the CPC Central Committee and party secretary of Beijing Municipality, and Jing Junhai, a member of the CPC Central Committee, Secretary of the Jilin Provincial Party Committee, and Director of the Standing Committee of the Provincial People's Congress, investigates Tongwei.



■ 中共中央委员、全国人大常委会副委员长王东明视察通威太阳能（成都）有限公司
 ■ Wang Dongming, a member of the CPC Central Committee and Vice Chairman of the Standing Committee of the National People's Congress, visited Tongwei Solar (Chengdu) Co., Ltd.



■ 中共中央政治局委员、中央书记处书记，全国政协副主席，中央统战部副部长石泰峰莅临内蒙古通威调研
 ■ Shi Taifeng, a member of the Political Bureau of the CPC Central Committee, secretary of the Central Secretariat, Vice Chairman of the CPPCC, and the head of the Central United Front Work Department, visited Tongwei Inner Mongolia for investigation.



■ 全国人大常委会副委员长、民建中央主席郝明金莅临通威调研
 ■ Hao Mingjin, Vice Chairman of the Standing Committee of the National People's Congress and Chairman of the Central Committee of the China Democratic Construction Association, visited Tongwei for investigation.



■ 全国政协副主席、全国工商联主席高云龙莅临通威调研
 ■ Gao Yunlong, Vice Chairman of the CPPCC National Committee and Chairman of the All-China Federation of Industry and Commerce, visited Tongwei for investigation.



■ 十九届中共中央政治局委员、时任国务院副总理孙春兰莅临通威太阳能(成都)有限公司视察
 ■ Sun Chunlan, a member of the 19th Political Bureau of the CPC Central Committee and the then Vice Premier of the State Council, visited Tongwei Solar (Chengdu) Co., Ltd.



■ 全国政协副主席、民进中央常务副主席朱永新莅临通威太阳能调研
 ■ Zhu Yongxin, Vice Chairman of the CPPCC and vice chairman of the China Association for Promoting Democracy, visited Tongwei for investigation.



■ 十九届中共中央政治局委员、十三届全国人大常委会副委员长王晨莅临内蒙古通威调研
 ■ Wang Chen, a member of the 19th Political Bureau of the CPC Central Committee and Vice Chairman of the Standing Committee of the 13th National People's Congress, visited Tongwei Inner Mongolia for investigation.



■ 十一届、十二届全国人大常委会副委员长，民建中央原主席陈昌智调研通威集团管理总部
 ■ Chen Changzhi, Vice Chairman of the Standing Committee of the 11th and 12th National People's Congress and former Chairman of the Central Committee of the China Democratic Construction Association, investigated the management headquarters of Tongwei Group.



■ 十二届全国政协副主席刘晓峰莅临通威
 ■ Liu Xiaofeng, Vice chairman of the 12th CPPCC, visited Tongwei.



■ 十九届中共中央政治局委员、十三届全国政协副主席刘奇葆莅临永祥新能源调研
 ■ Liu Qibao, a member of the 19th Political Bureau of the CPC Central Committee and Vice Chairman of the 13th CPPCC, visited Yongxiang New Energy for investigation.



■ 十届全国人大常委会副委员长顾秀莲莅临通威调研
 ■ Gu Xiulian, Vice Chairman of the Standing Committee of the 10th National People's Congress, visited Tongwei for investigation.



■ 十一届、十二届全国政协副主席罗富和莅临通威调研
 ■ Luo Fuhe, Vice Chairmen of the 11th and 12th CPPCC National Committees, visited Tongwei for investigation.



■ 十二届全国政协副主席王家瑞莅临永祥新能源调研
 ■ Wang Jiarui, Vice Chairman of the 12th CPPCC National Committee, visited Yongxiang New Energy for investigation.



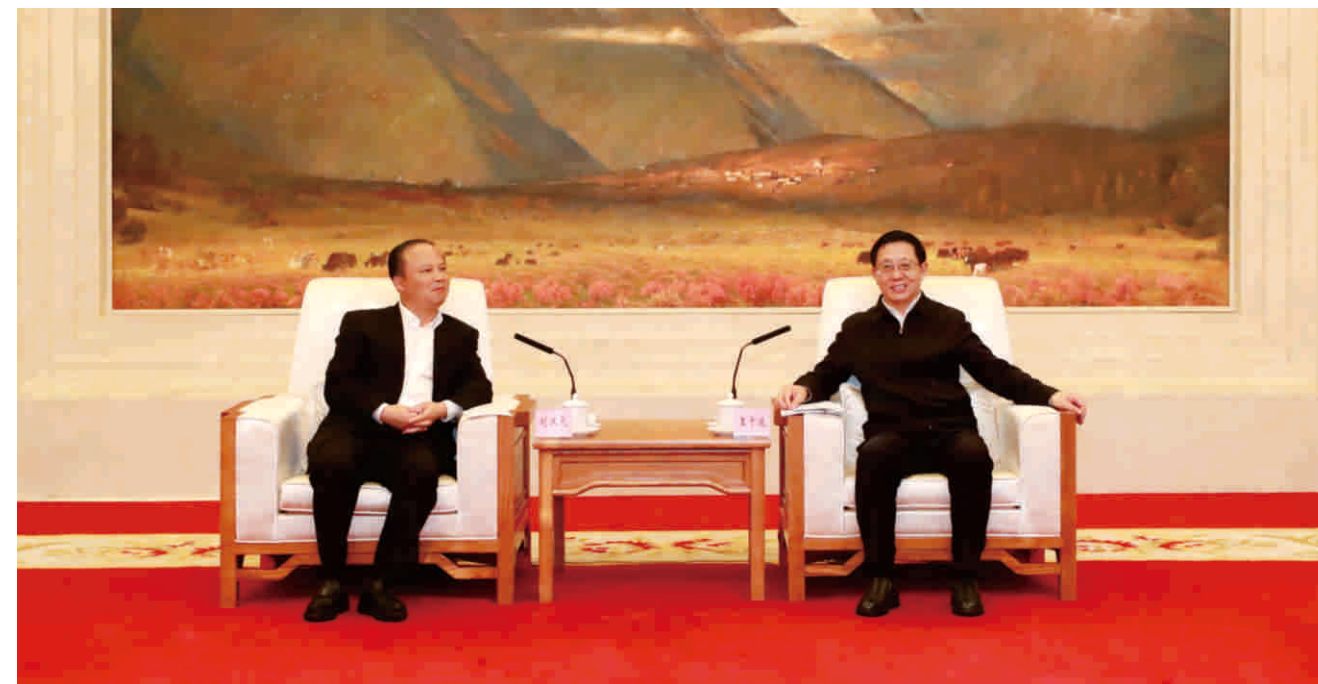
■ 十二届全国政协副主席杜青林与通威集团董事局主席刘汉元先生亲切交谈
 ■ Du Qinglin, Vice Chairman of the 12th CPPCC National Committee, and Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group, had a cordial conversation.



■ 十三届全国政协副主席辜胜阻一行莅临通威太阳能(成都)有限公司调研
 ■ Gu Shengzu, Vice Chairman of the 13th CPPCC, visited Tongwei Solar (Chengdu) Co., Ltd with his party.



■ 中共中央委员，云南省委书记、省人大常委会主任王宁莅临云南通威视察
 ■ Wang Ning, a member of the CPC Central Committee, Party Secretary of Yunnan and Chairman of the Standing Committee of Yunnan People's Congress, visited Yunnan Tongwei for investigation.



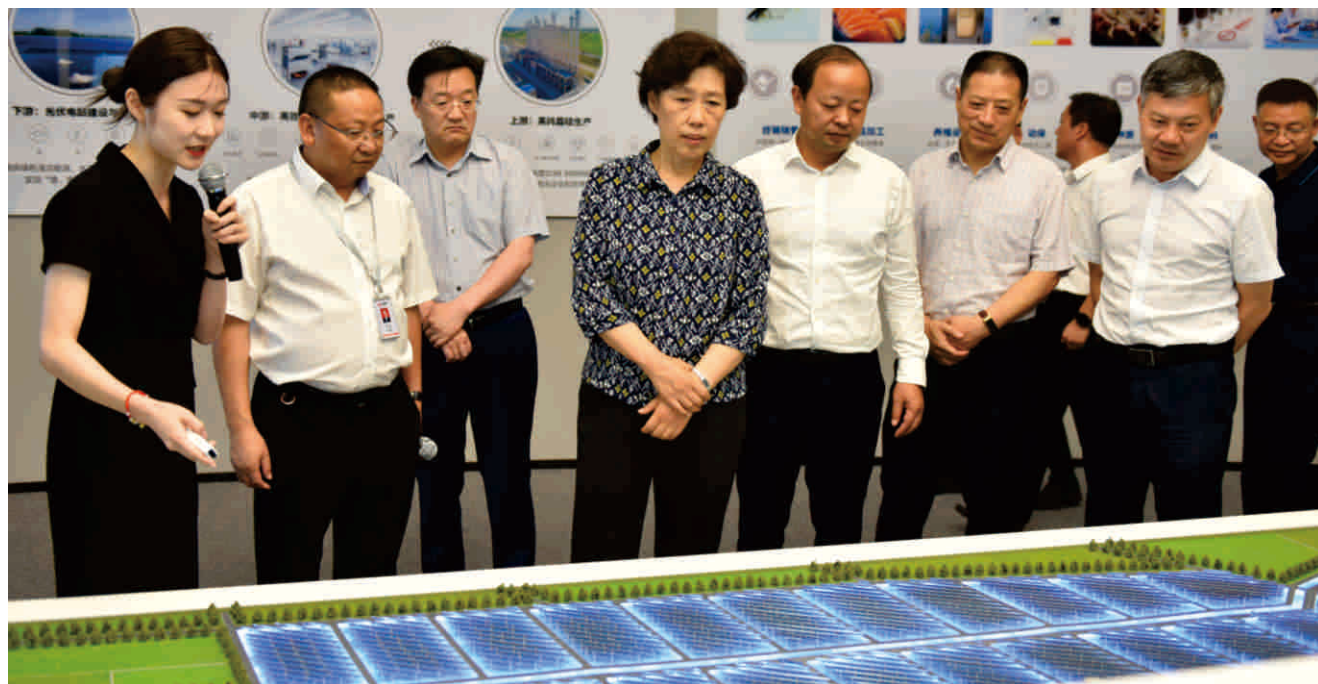
■ 中共中央委员，云南省委副书记、省长王予波与刘汉元主席举行工作会谈
 ■ Wang Yubo, a member of the CPC Central Committee, Vice-Secretary of the CPC Central Committee, and Governor of Yunnan, holds a work conference with Mr. Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group.



■ 中共中央委员，四川省委副书记、省长黄强莅临永祥新能源调研
 ■ Huang Qiang, a member of the CPC Central Committee, Deputy Secretary of the Sichuan Provincial Party Committee, and Governor of Sichuan, visited Yongxiang New Energy for investigation.



■ 中共中央委员，广东省委副书记、深圳市委书记孟凡利莅临内蒙古通威公司调研
 ■ Meng Fanli, member of the Central Committee of the Communist Party of China, deputy secretary of the Guangdong Provincial Party Committee, and secretary of the Shenzhen Municipal Party Committee, visited Inner Mongolia Tongwei Company for investigation.



■ 四川省政协主席田向利一行莅临永祥股份调研
 ■ Tian Xiangli, Chairman of the Sichuan Provincial Committee of the CPPCC, and his party visited Yongxiang for investigation.



■ 四川省委常委、成都市委书记施小琳莅临通威太阳能双流基地调研
 ■ Shi Xiaolin, a member of the Standing Committee of the Sichuan Provincial Party Committee and Secretary of the Chengdu Municipal Party Committee, visited TW Solar's Shuangliu Base for investigation.



■ 四川省委常委、省委统战部副部长、省政协党组副书记、省总工会主席赵俊民莅临永祥股份调研
 ■ Zhao Junmin, a member of the Standing Committee of the Sichuan Provincial Party Committee, the head of the Front Work Department of Sichuan Province, Deputy Secretary of Sichuan CPPCC, and Chairman of the Sichuan Provincial Federation of trade unions, visited Yongxiang for investigation.



■ 全国政协委员，内蒙古自治区人民政府副主席白清元莅临内蒙古通威调研
 ■ Bai Qingyuan, a member of the CPPCC and vice governor of the Inner Mongolia Autonomous Region, visited Tongwei Inner Mongolia for investigation.

HONORS AND QUALIFICATIONS

荣誉资质



农业产业化
国家重点龙头企业
Key National Leading Enterprise for
Agricultural Industrialization

胡润世界500强
Hurun Global 500

中国节能
减排先锋企业
Pioneer in China's energy conservation
and emission reduction

国家级
绿色供应链管理示范企业
National Green Supply Chain Management
Demonstration Enterprise

全球新能源
最具贡献企业500强
Top 500 Most Contributed Enterprises
to Global New Energy

国家级企业技术中心
State-certificated Enterprise
Technology Center

国家级
高新技术企业
State-level high-tech
enterprise

国家级绿色工厂
National Green Factory

国家科技进步
二等奖
The Second Prize of the State Scientific and
Technological Progress Award

中国企业500强
China Top 500 enterprise

中国民营
上市公司100强
Top 100 Chinese Private
Listed Companies

AAA级信用企业
China AAA Credit
Certificated Enterprise

中国最具竞争力
民营企业50强
Top 500 Most Competitive Private
Enterprises in China

国家知识产权
体系贯标
Standard Implementation Certification
of Intellectual Property
Rights Management System

中国最具影响力
绿色企业品牌
China's Most Influential Green
Enterprise Brands

全国五星级现场
National Five-star Production Site

国家知识产权
优势企业
National Intellectual Property
Advantageous Enterprise



社会责任 SOCIAL RESPONSIBILITY

“在企业实现可持续发展的同时，如何站在时代高度，将企业发展与国家期望、社会需要紧密结合起来，这是通威今后发展道路上将持续回应的问题。”

通威集团董事局刘汉元主席

"While the enterprise achieves the goal of sustainable development, we are considering how to stand at the height of the times and closely integrate corporate development with national expectations and social needs. It is a question that Tongwei will continue to respond to in the future."

Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group



通威集团董事局刘汉元主席荣获“中华思源慈善奖”，并与十一届、十二届全国人大常委会副委员长、时任民建中央主席陈昌智合影留念

Liu Hanyuan, Chairman of the Board of Directors of Tongwei Group, won the "China Siyuan Charity Award" and took a photo with Chen Changzhi, Vice Chairman of the Standing Committee of the 11th and 12th National People's Congress and then Chairman of the Central Committee of China Democratic Construction.



通威的使命及社会责任

Tongwei's Mission and Social Responsibility



科学治理

我们不断完善可持续管理体系，加强可持续管理制度建设；持续提高信息披露质量，经营公开透明；不断深化反腐工作，防范风险。



战略协同

我们响应国家绿色发展战略，持续致力于“农业+光伏新能源”两大产业协同整合，为国家实现碳中和目标贡献通威力量。



科技赋能

我们以“创新”二字不断赋予自身发展新机遇，明确数字化转型和智能化发展的重点方向，并在转型过程中协同推进绿色发展。



创新共赢

我们优化供应商管理体系，将环境和社会因素纳入供应商管理机制，降低供应链的环境、社会风险，携手供应商实现可持续发展。



生态为底

我们强化全生命周期的环境管理，严守环境“红线”，以实际行动践行环保理念，推动生态文明建设。



以人为本

我们高度重视专业人才、技术人才和管理人才梯队的建设，致力塑造健康安全的工作环境，同时积极维护员工应有权益，协同员工共促发展。

Scientific Governance

We continue to improve our sustainable management system and strengthen our sustainable management system; Continue to enhance the quality of information disclosure and operate openly and transparently; Continue to deepen our anti-corruption efforts to prevent risks.

Strategic Synergies

In response to the national green development strategy, we continue to work on the coordinated integration of the two significant industrial associations of "agriculture+PV new energy," contributing to the country's goal of carbon neutralization.

Empowering with Technology

Sticking on the word "innovation," we continue to seek new development opportunities, clarify our critical directions of digital transition and intellectual development, and collaborate to promote green development during the transition.

Win-Win in Innovation

We optimize our supplier management system, incorporate environmental and social factors into the supplier management mechanism, reduce environmental and social risks in our supply chain, and work with suppliers to achieve the goal of sustainable development.

Ecology, the Bottom Line

We have strengthened our environmental management throughout the life cycle, strictly adhered to the "red line" of environmental protection, taken practical action on the concept of environmental protection, and promoted the construction of ecological civilization.

People-oriented

We attach great importance to constructing professional, technical, and managerial talent echelons. We are committed to shaping a healthy and safe working environment while actively protecting our employees' rights and interests and cooperating with them to enhance enterprise development.



环境、社会、治理

ENVIRONMENT, SOCIETY, GOVERNANCE

- 通威始终贯彻绿色发展理念，积极践行双碳战略目标，致力于促进社会可持续、高质量发展。
- 通威始终坚持联合国可持续发展目标（SDGs），高度重视员工发展与价值实现、产品责任与生产安全、绿色供应与社区建设，始终心系慈善公益事业。
- 通威始终持续提升公司治理水平，将稳健透明的公司治理作为公司实现基业长青的基石。



绿色发展理念
Green Development
Concept



可持续发展目标
Sustainable
Development Goals



提升治理水平
Improve
Governance Level



Tongwei has consistently implemented the green development concept, actively practiced the dual-carbon strategic goals, and is committed to promoting sustainable and high-quality development of society.

Tongwei always adheres to the UN Sustainable Development Goals (SDGs), attaches great importance to employee development, value realization, product responsibility, production safety, green supply, and community building, and always cares about charity and public welfare.

Tongwei has continuously improved corporate governance and regards stable and transparent corporate governance as the cornerstone of the company's everlasting foundation.



助推绿色能源转型

Boost green energy transition

通威是光伏行业首家完成100GW电池出货体量的企业，以通威生产的100GW高效光伏电池计算：

Tongwei is the first company in the PV industry to reach the shipment of 100GW cells, calculated based on 100GW efficient photovoltaic cells produced by Tongwei.

相当于种植阔叶林

715351 公顷

Equivalent to planting 715,351 hectares of broad-leaved forest

生产清洁能源电力
1387 亿度

Generate clean energy of 138.7 billion KWh

满足城乡家庭1年用电需求
8215.1 万户

Meet the annual electricity demand of 82.15 million urban and rural households

年节约标准煤
4181 万吨

Save 41.81 million tons of standard coal annually

减少二氧化碳排放量
CO₂ 1.31 亿吨

Reduce carbon dioxide emissions by 131 million tons

减少二氧化硫排放量
SO₂ 1.4 万吨

Reduce sulfur dioxide emissions by 14,009 tons



■ 捐赠5000万元，支援泸定地震受灾地区救灾救援
 ■ Donated 50 million yuan to support disaster relief and rescue in the Luding earthquake-stricken area

公益捐赠

迄今为止，通威各种公益捐赠总额已超过5亿元人民币，以自身力量助力社会公益，用绿色能源点亮世界。

So far, Tongwei's charity donations have exceeded 0.5 billion yuan, helping public social welfare and lightening up the world with green energy.

CHARITY DONATION



■ 捐赠5000万元成立“中华思源工程·阳光计划”
 ■ Donated 50 million yuan to set up "Chinese Siyuan Project - Sunshine Plan"



■ 捐资1200万元支持汶川灾后重建
 ■ Donated 12 million yuan to support reconstruction in Wenchuan



■ 理塘捐建光伏发电系统，造福当地藏族同胞
 ■ Donated photovoltaic power generation system in Litang to benefit local Tibetan compatriots



■ 通威股份向BioMar集团捐赠防护物资
 ■ Tongwei donated protective materials to BioMar Group



■ 捐赠300万元健康食品，支持抗疫一线医务工作者
 ■ Donated 3 million yuan of food to support frontline medical workers fighting COVID-19



■ 孟加拉通威为当地村庄捐赠修建道路
 ■ Tongwei Bangladesh donated a road to the local village

