



Company Brochure

State Power Investment Corp.

Solar Power Division



SPIC is a World-Class Clean Energy Enterprise with Competitiveness

- // No. 293 among the Fortune Global 500 in 2021
- // A Grades International Credit Ratings from S&P, MOODY's and FITCH
- // 130,000+ Global Employees
- // 62 affiliated companies including 5 listed in China's mainland, 1 listed in HK SAR and 2 in the National Equities Exchange and Quotations (NEEQ)
- // TOP5 Power Generation Company in China and holds over 200GW power plants.
- // The Largest Solar Power Generation Enterprise in the World.



国家电力投资集团有限公司
STATE POWER INVESTMENT CORPORATION LIMITED



State Power Investment Corporation (SPIC) is a large enterprise with a registered capital of USD 7.08 billion and total assets of USD 164.5 billion.

As the only integrated energy group in China that holds assets of hydropower, thermal power, nuclear power and new energy simultaneously, SPIC establishes itself with such industries as power, coal, aluminum, logistics, finance, environmental protection, high-tech industries, etc. SPIC has a total power installed capacity of 200GW, including 85GW of thermal power, 24GW of hydropower, 7GW of nuclear power, 40GW of solar power (ranking 1st in the world) and 38GW of wind power (ranking 2nd in the world), with clean energy accounting over 60% of the total.

SPIC Solar Power Division is a wholly-owned subsidiary of SPIC, has the production capacity of N-type TOPCon, P-type PERC, N-type IBC cells and module product at the same time, and the products have been certified by TUV, UL, CSA, JET/ JPEA and other international standards to ensure the product high quality and high reliability. SPIC Solar IBC module product got the **TOP-PERFORMANCE PV MODULES** in PVEL in 2021.

World's leading
manufacturer of
IBC products



SOLAR+

SPIC Solar Division is a comprehensive energy company with solar cell, module manufacture and solar project development, O&M and module recycle. Now we start a new SOLAR+ business, combined solar project with various technology and circumstance.

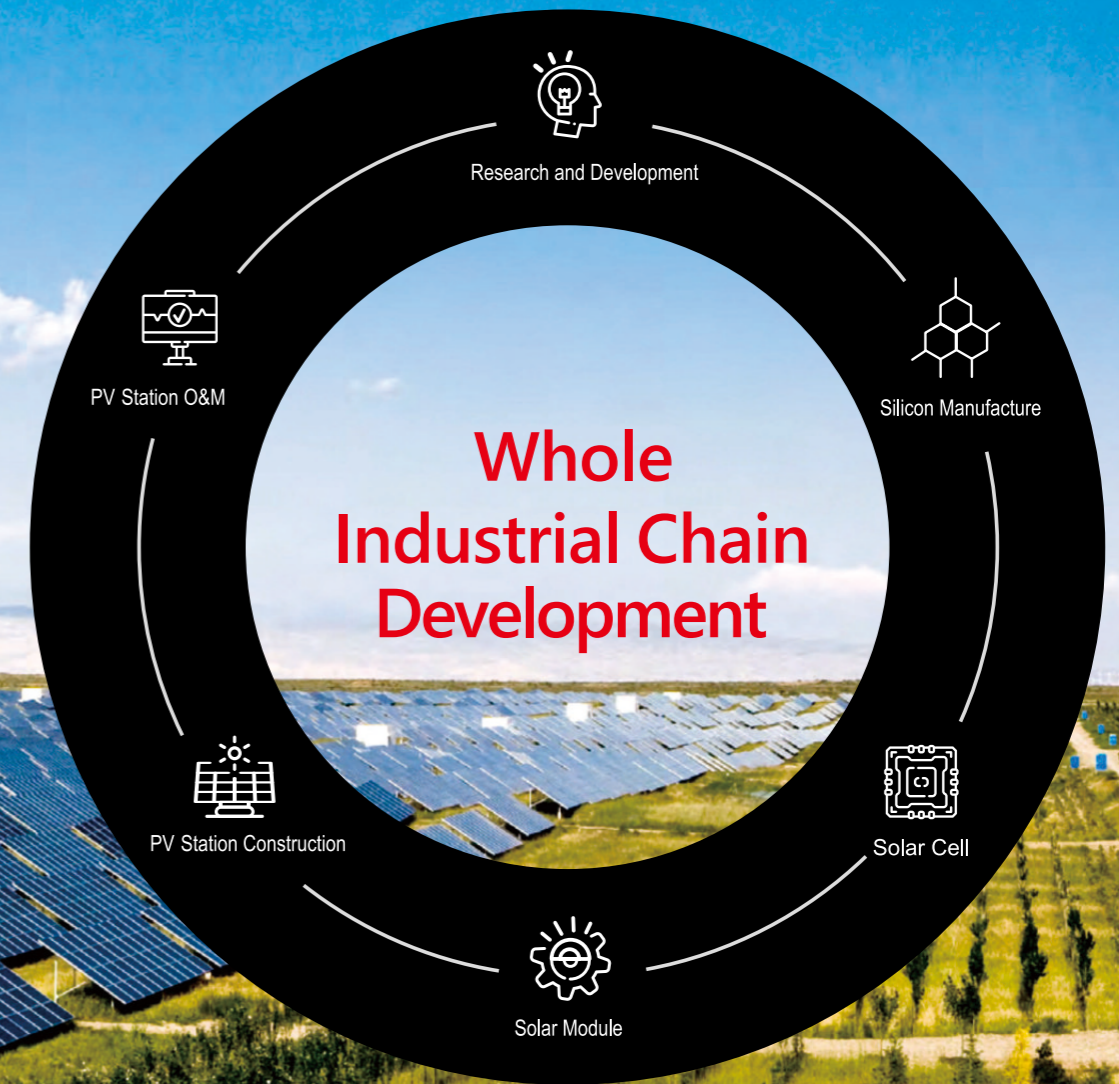
High performance and reliability solar product are more necessary for all projects, so we focused more on IBC technology from 2018 and started IBC technical route (cell and module) from 2019.

Now we are the TOP2 manufacturer in the world who have high performance IBC product line and product.

PV Installed Capacity

40GW

NO.1 in the World



SPIC Hainan 1GW multi-energy complementary projects, China

IBC Technology

IBC is a newer type of technology in the PV industry. It has a better appearance because there are no electrodes and busbars in front, and the first glance is a complete black color.

Compared with traditional technology product (PERC, HJT, TOPCon), IBC module could provide system owner a lower BOS and better system yield on account of the performance below:

Higher module efficiency

Better temperature-coefficient

Lower degradation rate

Longer product guarantee



Without Busbar in front and black backsheet

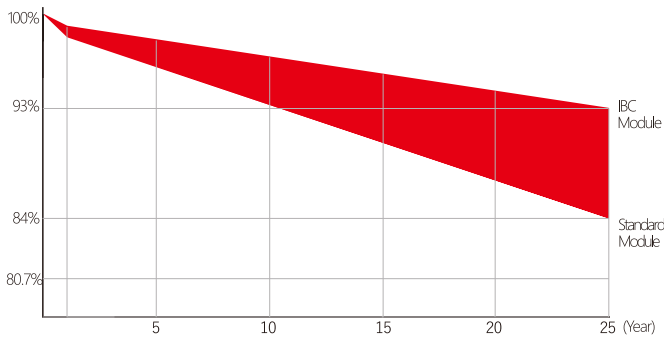


SPIC Solar Whole Black IBC Project in Munich, Germany

IBC Additional Value



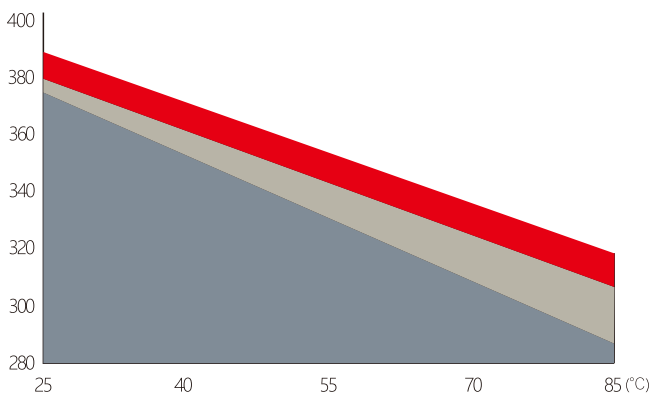
SPIC Solar IBC Residential Project in HongKong



Compared with standard module, IBC technology module has a lower degradation rate.

- <1% First year degradation
- 0.25% 2-25 year degradation
- 93% After 25year

*Data Source: ISC Konstanz



IBC module has the best temperature-coefficient compared with PERC, TOPCon module, and will get more solar energy outside.

- IBC Module maximum efficiency could reach 22.2%
- 25Years product and performance warranty

World's leading manufacturer of IBC products



PV Module Recycle

Photovoltaic energy is currently an important source of electricity, and the capacity will grow substantially. SPIC Group is the largest holder of photovoltaic power plants in the world. And with the expired of PV power plants year by year, there will be a large number of PV modules expired.

As a responsible company, SPIC Group Huanghe Hydropower Development Co., Ltd started the research of silicon module recycling from 2017 and built the first module recycling line in China in 2021. Through technological development, we can utilize more than 90% of components from expired PV modules, including silicon, silver, copper, aluminum and other materials.



SPIC Huanghe Company Silicon Module Recycle Line

Enormous Demonstration Data Support



SPIC Group started the PV demonstration program in 2013 and completed 2 demonstration projects in Gonghe City, Qinghai Province and Daqing City, Heilongjiang Province.

SPIC Group started the Gonghe demonstration base in 2013 and completed it in 2016, the base was built with 148 kinds PV products and the total capacity reached 143MW.

And SPIC Group started the Daqing demonstration base program from 2021, the total design capacity will be more than 1GW and selected 640 kinds of PV and storage products. 200MW PV plants were completed in 2021.

SPIC Group is the largest PV plant holder in the world, and all the data from the demonstration base will be the basis for our equipment selection and technology route.

SPIC Ultra-High Voltage Clean Energy Base

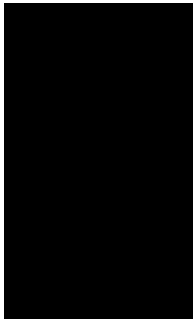


Based on the $\pm 800\text{kV}$ ultra-high voltage(UHV) line from Qinghai province to Henan province, more than 40billion kW·h clean energy from SPIC Group Hainan clean energy base could be transmitted more than 1,000km.

The UHV line is the first green energy transmission line in China. SPIC Group has obtained 2.4GW PV power plant and 1.65GW wind power plant targets, also including the world's largest single photovoltaic power plant, 2.2GW Tala Shoal PV plant.

As more and more power bases, plants and power stations are built. The renewable energy generation capacity of SPIC Group exceeds 100GW, and the installed rate of clean energy exceeds 60%.

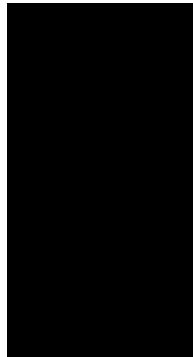
Elegant Series Mono/ Dual Glass Series



SPIC 120Half-Cell Black

// Mono-Glass :380/385/390W

// Dual-Glass:375/380/385W



SPIC 132Haf-Cell Black

// Mono-Glass :415/420/425W

// Dual-Glass:410/415/420W

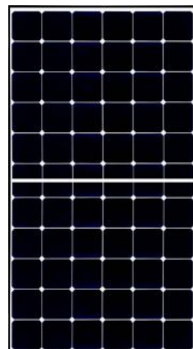
High Performance Series Mono/ Dual Glass Series



SPIC 120Half-Cell White

// Mono-Glass :385/390/395W

// Dual-Glass:380/385/390W

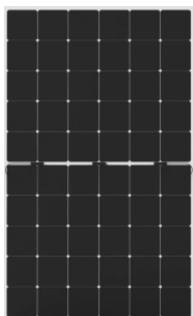


SPIC 132Half-Cell White

// Mono-Glass :425/430/435W

// Dual-Glass:420/425/430W

BIPV Series



SPIC 120Half-Cell Flexible

// 355/360/365W



SPIC 64Half-Cell Flexible

// 190/195W



SPIC 120Half-Cell BIPV Module

// 360/365W

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**INNOVATION
DRIVES
THE FUTURE**