



TBEA
特变电工

TBEA Profile and Solar Inverter Solutions



PART 1

Who We Are?

- Introduction to TBEA Group

Core Business of TBEA Group



TBEA 特变电工



Power Transmission & Distribution Industry

TBEA's T&D industry has covered five major types of products and services: transformers, wires & cables, HV switch, supporting components and EPC contracting. Its annual production capacity of transformers is 266 million kVA, Ranking Top1 in the world.



Traditional energy

TBEA has established a complete coal industry chain, including large-scale open-pit coal mining, coal-electricity integrated industry and coal chemical industry.



New Material Industry

TBEA fabricates deep-processing aluminum products such as high purity aluminum, electronic aluminum foil, electrode foil with independent patents. The products are widely applied to aerospace, heavy industry, IT and other fields. Ranking Top1 in China.



Renewable Energy Industry

TBEA has established a complete PV industry chain including poly-silicon, wafer, solar inverter, statcom and integrated solutions. TBEA has constructed more than 5000 on-grid solar/wind plants with installed capacity of more than 18GW in China, Ranking TOP1 three years in a row..

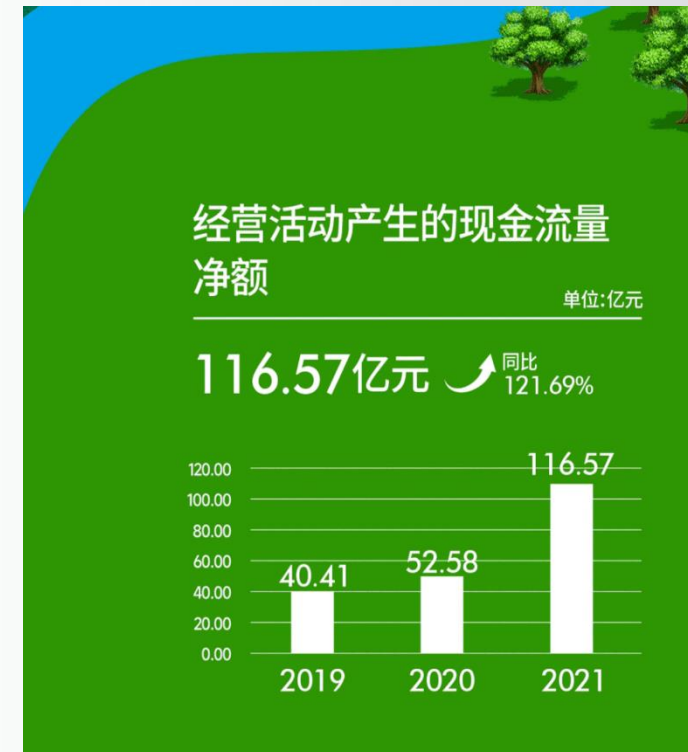
3 stock listed company in Power Transmission and Distribution, Renewable Energy and New material



Sales Revenue 61.278 Billion RMB, equals to 8.754 Billion Euros, 37.5% increment compared to year 2020



Net Profit 9.814 Billion RMB, equals to 1.402 Billion Euros, 213.31% increment compared to year 2020



Cash flow 11.657 Billion RMB, equals to 1.665 Billion Euros, 121.69% increment compared to year 2020

Domestic & Foreign Industrial Parks



TBEA 特变电工



HQ Science & Technology R&D Center



TBEA International Engineering Contracting Company (Beijing)



Xiong'an Technology Company (Hebei)



The Northwest Industrial Park



The Northeast Industrial Park (Liaoning)



The Southern China Industrial Park (Hunan)



The Northern China Industrial Park (Tianjin)



Shanghai EHV Electrical Science and Technology Industrial Park (Shanghai)



The Eastern China Industrial Park (Shandong)



The Southwest Industrial Park (Sichuan)



TBEA Intelligent Electrical Industrial Park



Nanjing Intelligent Electrical Industrial Park (Jiangsu)



New Energy Industrial Park



Poli-silicon Industrial Park



Xi'an Electrical Science and Technology Industrial Park (Shanxi)



Joinworld New Material Industrial Park



Zhudong Coal Power Energy Base



Zhongjiang Changji International Logistics Park



India 765kV EHV Power T&D Hi-tech Industrial Park



Tajikistan Energy Company



PART 2

What TBEA Xi'an do?

– TBEA Solar Inverter Solutions



TBEA Xi'an is the wholly owned subsidiary of TBEA group, acting as the main body of TBEA renewable energy equipments manufacturing and services provider, focusing on the R&D, manufacturing and sales of solar inverter solutions(with totally more than 40GW installation worldwide, having both central and string solutions), BESS, Micro-grid, Statcom (with more than 13GVar installation worldwide) , SCADA and TB-eCloud smart O&M platform.



TBEA Xi'an Renewable Energy Industrial Park

TBEA 特变电工



TBEA Xi'an renewable energy industrial park, the total investment is **4.3 billion RMB** (equal to 614.285M Euros)

装备中国 装备世界



Manufacturing Capability (18GW+)

TBEA North Industrial Park
302,000 m² facilities, which
4,000m² are allocated to
Inverter for national market.
(2GW/year)

TBEA India inverter
factory had come into
production in 2019.
(3GW/year)

TBEA Xi'an Industrial Park 306,000 m², which 8,000 m² are
allocated to inverters (18GW/year)



Ongoing... industrialization and adaptation of two TBEA MV transformer manufacturers to IEC standards in order to supply full TBEA solution with inverters and transformers in-house... meanwhile, we count with the best partners for MV stations





PART 3

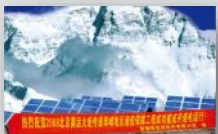
What Do We Have?

– Product Portfolio



Product portfolio (String and Central inverter)

TBEA 特变电工



2000
Off-grid inverter
products
successfully
applied to Everest
project



2009 – 1000
V TC500KH
and
TC630KH
developed a
500 kVA
centralized
inverter
independently

2010 – 1000 V
TC1250KH
Product evolution



2012 – 1000
V TC1250KS
Commissioning
in Hainan
Project



2018
Development and
application of the
world's largest
single outdoor
unit 5 MVA

2017
Market
penetration 50
kVA string
inverter



2018
2.5 MVA-6.25 MVA
series all-in-one
products are used
in many projects at
international
market



2019
String inverter
highest power
size up to 250
kVA

2020
Outdoor
Central inverter
3.125 MVA



2022
Most powerful
string inverter
360 kVA at 30 °C

Sales evolution during last 7 years



2021 was the first year that more than 50% of the shipments were with string inverter

NEW COMERS!

C&I Inverters

Q4 2022

BESS

Q2 2023

Central Inv V02

Q1 2023



International track record

Country	MW
China	32000
India	6500
Pakistan	350
Vietnam	145
Thailand	162
Algeria	118
Lesotho	25
CAR	15
Uganda	22
Bulgaria	125
Spain	741
Portugal	36
Greece	153
Italy	20
Chile	264
Brasil	294
Australia	40
Saudi Arabia	300
Oman	100
UAE	100
Philippines	80



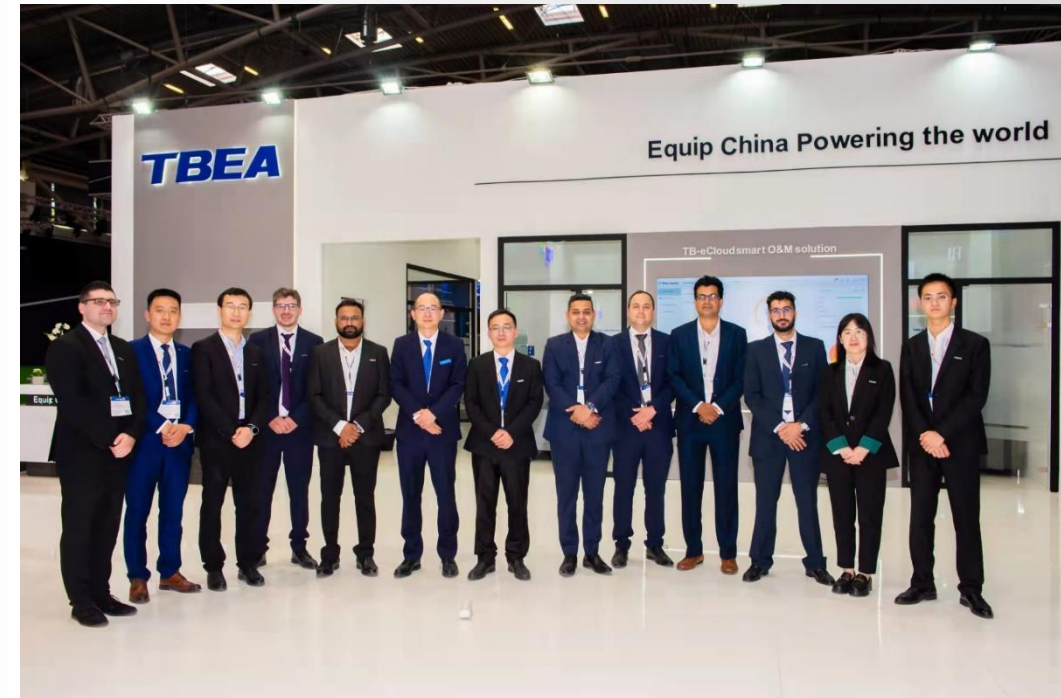
- ✓ **40GW+ inverter supplied around the world!!!**
- ✓ **More than 1GVar Statcom supplied in Middle East, Ranking No.1 in renewable statcom application**



European Structure & Capability

- Spain as main operating center and location for European activities
 - Country manager*1 + Technical Director*1 + Project fulfillment Manager*1 + 2 x O&M engineers
 - New comers: 2 x KAM + + Product manager (within Q4,2022)
- Presence in Italy: Country manager*1 + Technical Manager*1) , New comers: 1 x KAM (within Q4,2022)
- Presence in Portugal: Integration and Service Partner *1
- Presence in Greece (Distribution and Service Partner*1)... soon France and Poland
- Spares warehouse in Spain-PICKPACK, warehouse in Netherland-Q4,2022
- O&M partners to complement our service engineers: Solarig, Reveryg, Irradia, iQuord, JDC, Sunbank

TBEA 特变电工



1500V Outdoor Solutions



India:
Rajasthan 420MW
Karnataka 250MW
UP 275MW



Vietnam:
Binh An 116MW
Vina 30MW



Chile:
145MW
105MW



Site Pictures-Outdoor Inverter Solutions-2.5MVA/3.75MVA/5MVA

TBEA 特变电工





Site Pictures-Outdoor Inverter Solutions-2.5MVA/3.75MVA/5MVA

TBEA 特变电工





Refex 110MW



Site Pictures-ITS Solutions of 2.5MVA/3.125MVA



Bulgaria 25MW
Vietnam 160MW



Bosch 8.7MW



DATANG 12MW



String Inverter Station on one of our Spanish sites



Spain 626MW+15.2MW Project



Site Pictures-String Inverter Solutions of 208kW

TBEA 特变电工



GCL YINGSHAN 100MW



POWERCHINA JIANGXI 150MW

Thank You !