

SUNGROW

Clean power for all



Empowering Microgrids: Sungrow's ESS Solutions

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01 Introduction to Sungrow

02 Energy Internet Solutions

03 Application Case



Focus on 5 Fields & 10 Businesses



PV Inverter



Wind Power Converter



Energy Storage System



Charging Equipment



Renewable Hydrogen Production System



Floating PV System



NEV Driving System



Renewable Energy investment and Development Business



Intelligent PV Cleaning Robot

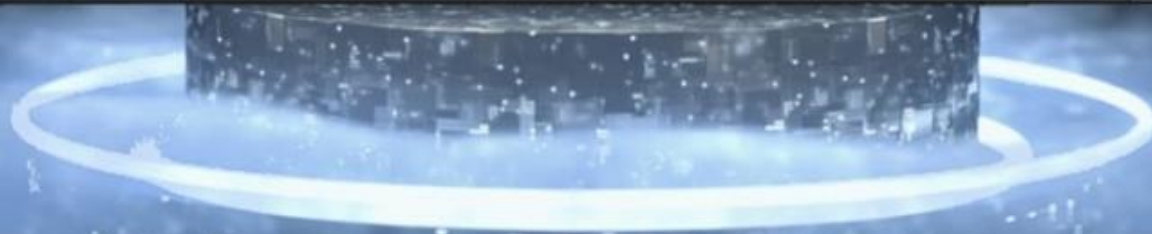


Smart Operation and Maintenance



PowerTitan 1.0

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PowerTitan 2.0

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1500v

2.5MW

5.0MWh

20ft



Liquid-cooled PCS

314Ah Cell

CTG

All in One

Stem-cell Grid Tech

Built-in PCS

Liquid-cooled Pack

PowerStack Series C&I Liquid-cooled ESS

Under the guidance of integrated electrochemistry, power electronics, and grid support technology, SUNGROW ESS integrates BMS, BSS, PCS, EMS to achieve data interoperability and consistent control logic. With modular design, it is also integrated with the new generation of intelligent EMS, intelligent liquid-cooled temperature controller, and AI big data algorithm, which make the whole system efficient, flexible, safe, and convenient for O&M.



BSS: ST500CP



PCS: SC250kW



EMS3000CP





Global Presence

150+






Countries

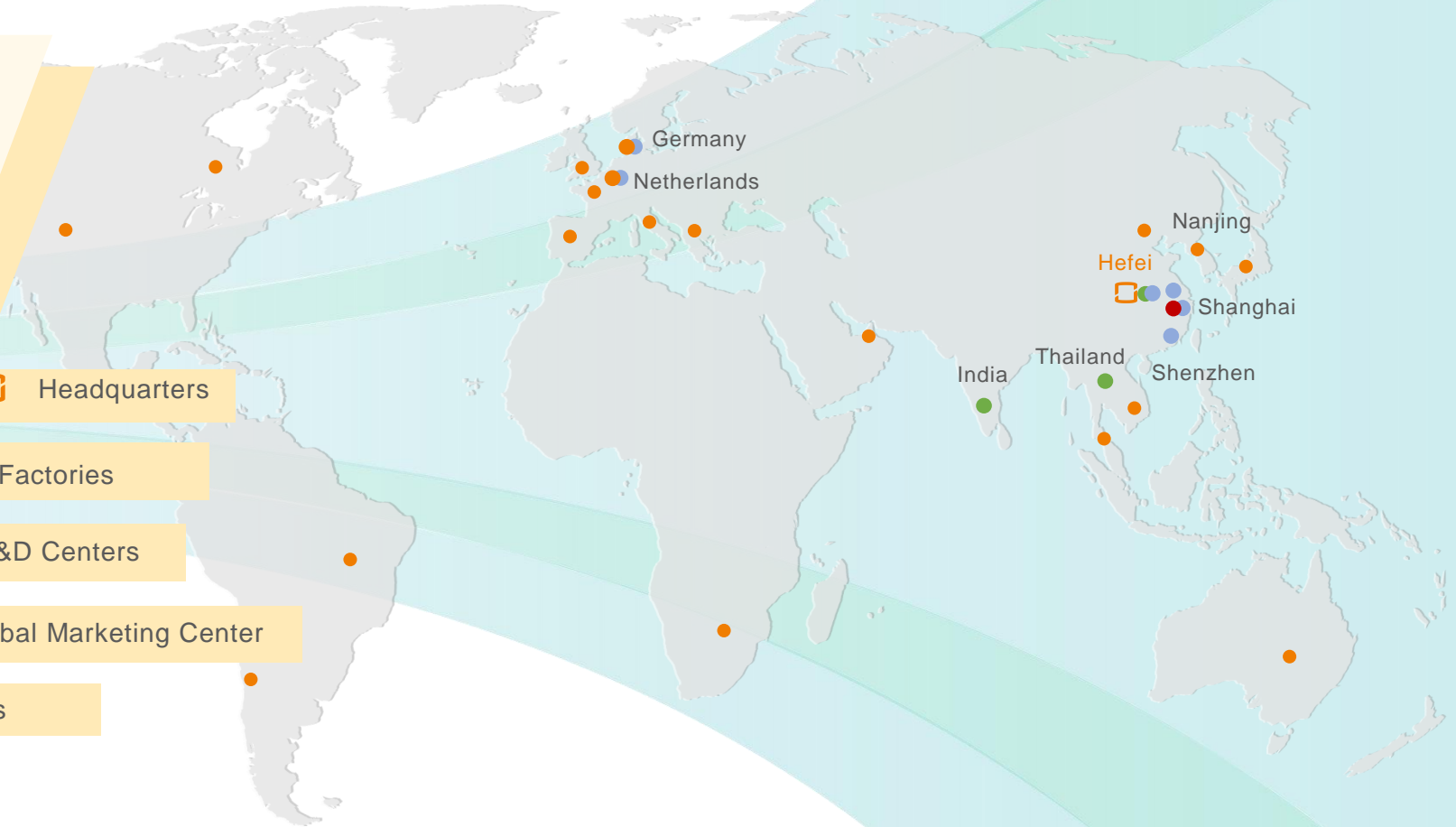
20+

Subsidiaries

370+

Service Outlets

-  Headquarters
-  Factories
-  R&D Centers
-  Global Marketing Center
-  Branches





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PowMart Smart Energy Solution

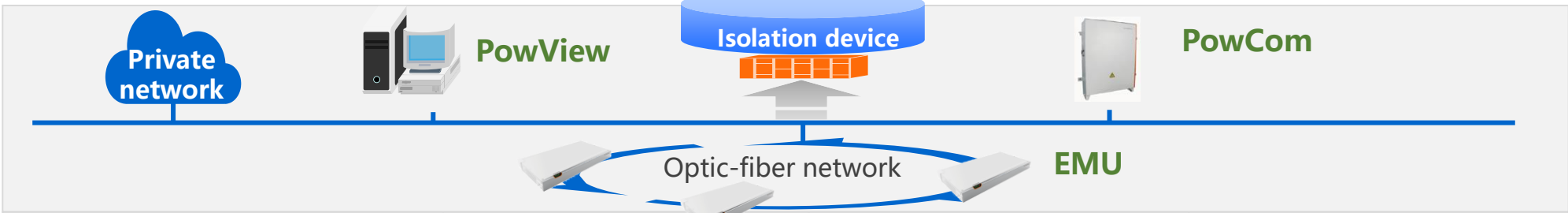
Advanced applications

PowMart

Group, enterprise management



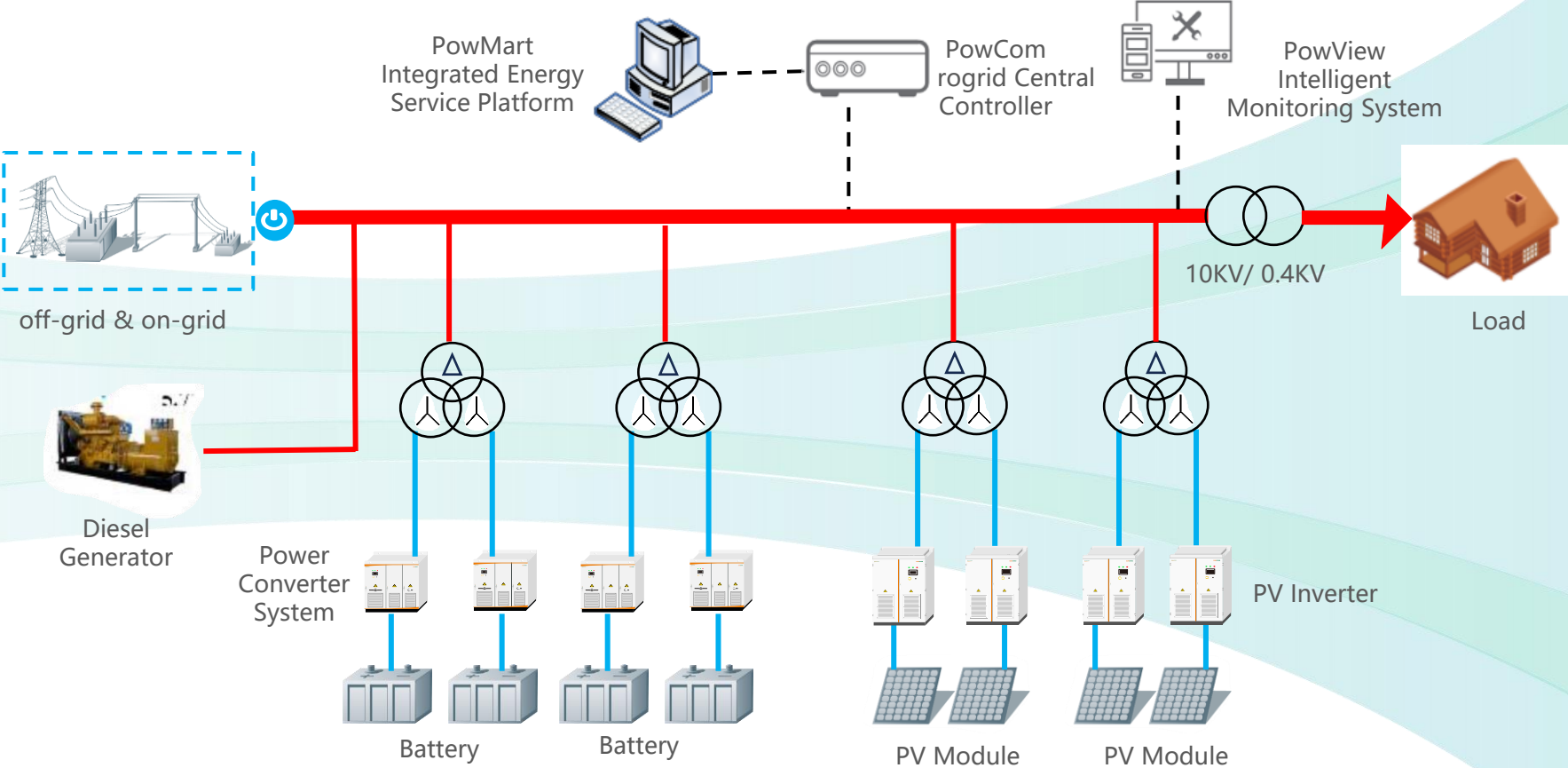
Local Management Platform



Intelligent equipment



Topology Diagram of the Microgrid Power Station System



- Promote renewable energy absorption
- Bidirectional energy flow
- Bidirectional information flow
- Use of multiple energy
- Increase reliability of power grid
- On-grid & off-grid operation



Key Functions

Advanced Functions

1

Peak load shifting

Reduce energy cost

2

Reduce capacity price

Reduce electricity cost

3

Improve power factor

power factor > 0.95

4

100% use of renewable energy

Nearby integration or storage of renewable energy

5

Black Start

Backup energy resource

Operating Principle

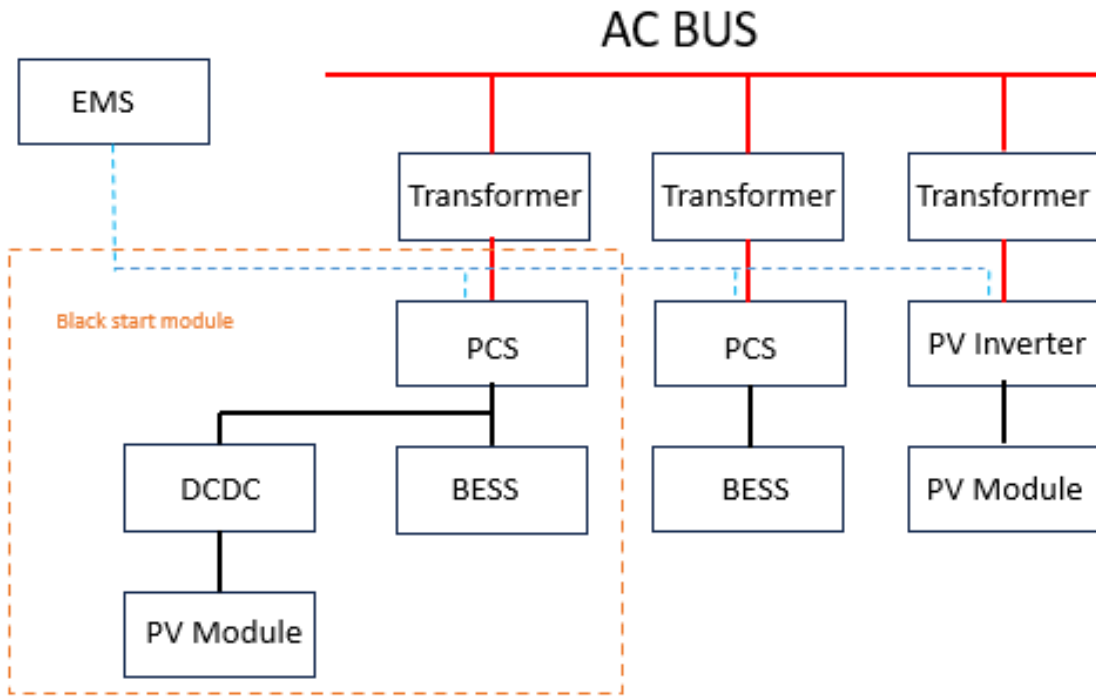
ESS PCS: Operates independently in off-grid mode, converting to AC voltage to supply the 10kV microgrid while intelligently managing battery charge/discharge cycles based on solar generation and load demand, enhancing battery longevity.

PV Inverter: Automatically monitors DC input and AC output parameters; switches from off-grid to on-grid (PQ control) mode when grid requirements are met on both sides.

Diesel Generator: At night, the PV inverter ceases generation, and the ESS PCS takes over to power the load. If the battery's charge is low, the diesel generator acts as a backup power source for the load.



Black-Start Solution for Microgrid



An extra set of PV + ESS DC Bus System

PV Charging

Energy Storage Inverter/Grid Setup

Controlled Recovery Without External Sources



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7MW/23.5MWh PV Storage and Diesel Microgrid Project in Shuanghu, Tibet

At present, the world's highest altitude, largest scale and most difficult to construct optical storage and firewood microgrid power station in the powerless area.



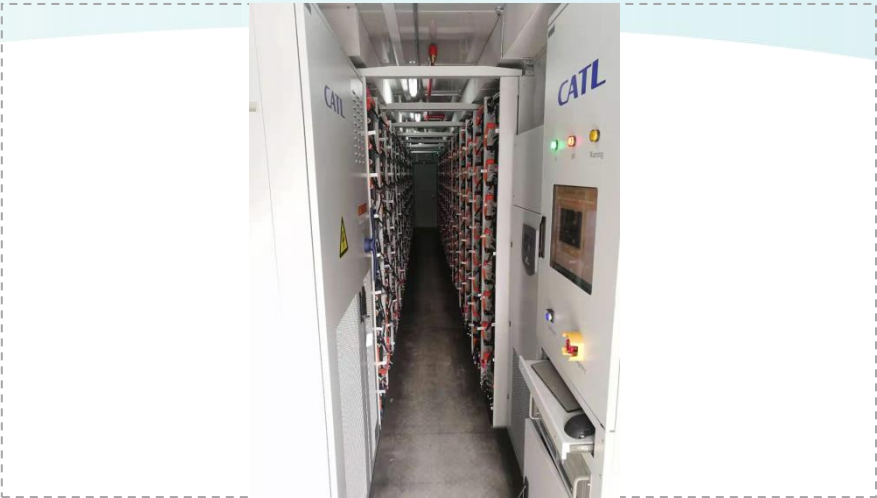
Time	2016
Location	Shuanghu County, Tibet
Component	13 MW PV inverter, 7 MW PCS and 13.6 MWh ternary lithium battery
Significance	<ul style="list-style-type: none"> • PV storage and diesel microgrid with the highest elevation (5000m), the largest scale and the most difficulty in construction • Microgrid energy management, cooperative, control technology, energy management with lithium battery; • Virtual motor networking technology based on parallel connection of multi-group inverters, compatible with rotary generating equipment such as diesel generator set.

Island Microgrid-PV Storage and Diesel Microgrid Project in Maldives



Time	2016
Location	Maldives
Component	2.7MWp PV, 700kW/333kWh Energy Storage
Significance	<ul style="list-style-type: none"> • With advanced energy management system and intelligent control, the intelligent seamless switching of multiple operation modes between PV storage power generation and diesel power generation can be realized, and the power quality and stability of the power station can be greatly improved. • It has greatly improved the local energy consumption structure and promoted the coordinated development of resources, environment and economy.

Conch Energy Storage Power Station Project in Huai'an, Jiangsu Province



Time	2018
Location	Huai'an, Jiangsu
Component	3MW PCS+12MWh LFP Battery
Significance	<ul style="list-style-type: none"> The advanced energy management system is adopted to schedule and manage the energy of the whole system in time sharing, to cut peak and fill valley, and to optimize peak and valley combined with user load, so as to improve the benefit of the whole project. Connecting to PowMart integrated energy service cloud for monitoring and management of energy storage power station, the system has higher reliability with massive O&M data management and real-time alarm.

Mission

Clean power for all

Vision

To be the global leader of clean energy conversion technology

Core values

Sincere & Pragmatic

Innovative & Respectful

Precise & Open

Customer Oriented