

Voksel + Solar + ESS + Charger Solution

CREATE EXCELLENCE
ADVOCATE CIVILIZATION

PT Voksel Electric Tbk.
Professional Energy Storage System Solution Provider

HARNESSING THE POWER OF NATURE

CONTENTS



1

Overview of Voksel



2

**Voksel
PV+ESS+EV Charger Solution**



1

Overview of Voksel

Overview of Voksel

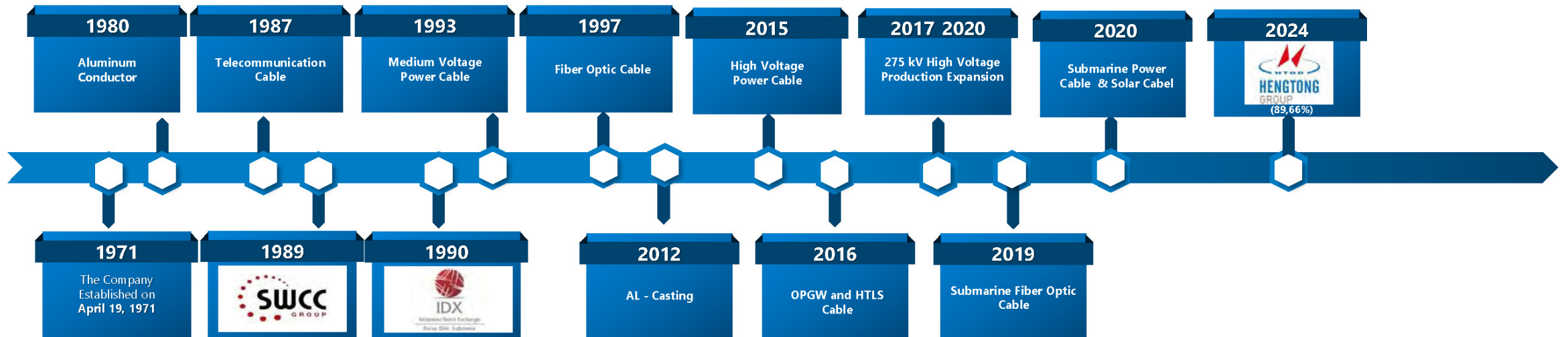
Established on April 19, 1971, PT Voksel Electric Tbk. is a leading cable solution provider in Indonesia. The company specializes in manufacturing power and telecommunication cables, as well as providing engineering, procurement, and construction (EPC) services for electricity and telecommunication infrastructure.

In 1989, the company transitioned to a foreign capital investment through a joint venture agreement with Showa Electric Wire & Cable Co. Ltd. ("Showa"), a prominent Japanese cable company that changed its name to SWCC Showa Cable Systems Co. Ltd. in 2006. On December 20, 1990, the company conducted its initial public offering on the Jakarta Stock Exchange (now the Indonesia Stock Exchange) and the Surabaya Stock Exchange.

In 2016, Hengtong Optic-Electric International Co., Ltd. joined the company and contributed to the development and research of new products. In 2020, the company expanded its capacity and production area by adding high-voltage business lines.

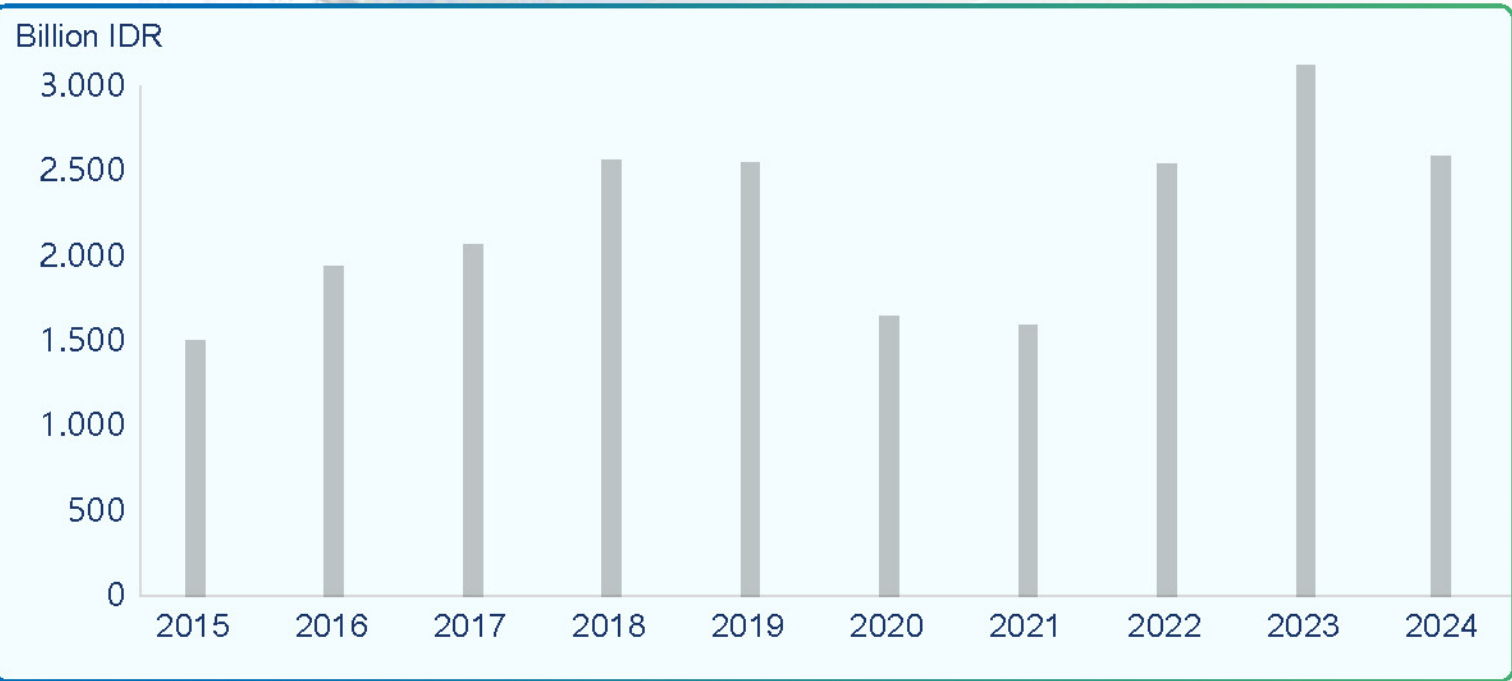
On December 22, 2023, Hengtong Optic-Electric International Co., Ltd. significantly increased its investment in the company by acquiring a 42.97% stake. This strategic move aligns with the company's vision To be a World Class Total Cable Solution Provider in Indonesia. The substantial investment underscores Hengtong Optic-Electric's commitment to driving innovation, expanding global reach, and enhancing its competitive edge in the market. This acquisition is expected to reinforce the company's resources, capabilities, and overall market position, paving the way for future growth and success on an international scale.

Voksel Historical Milestones

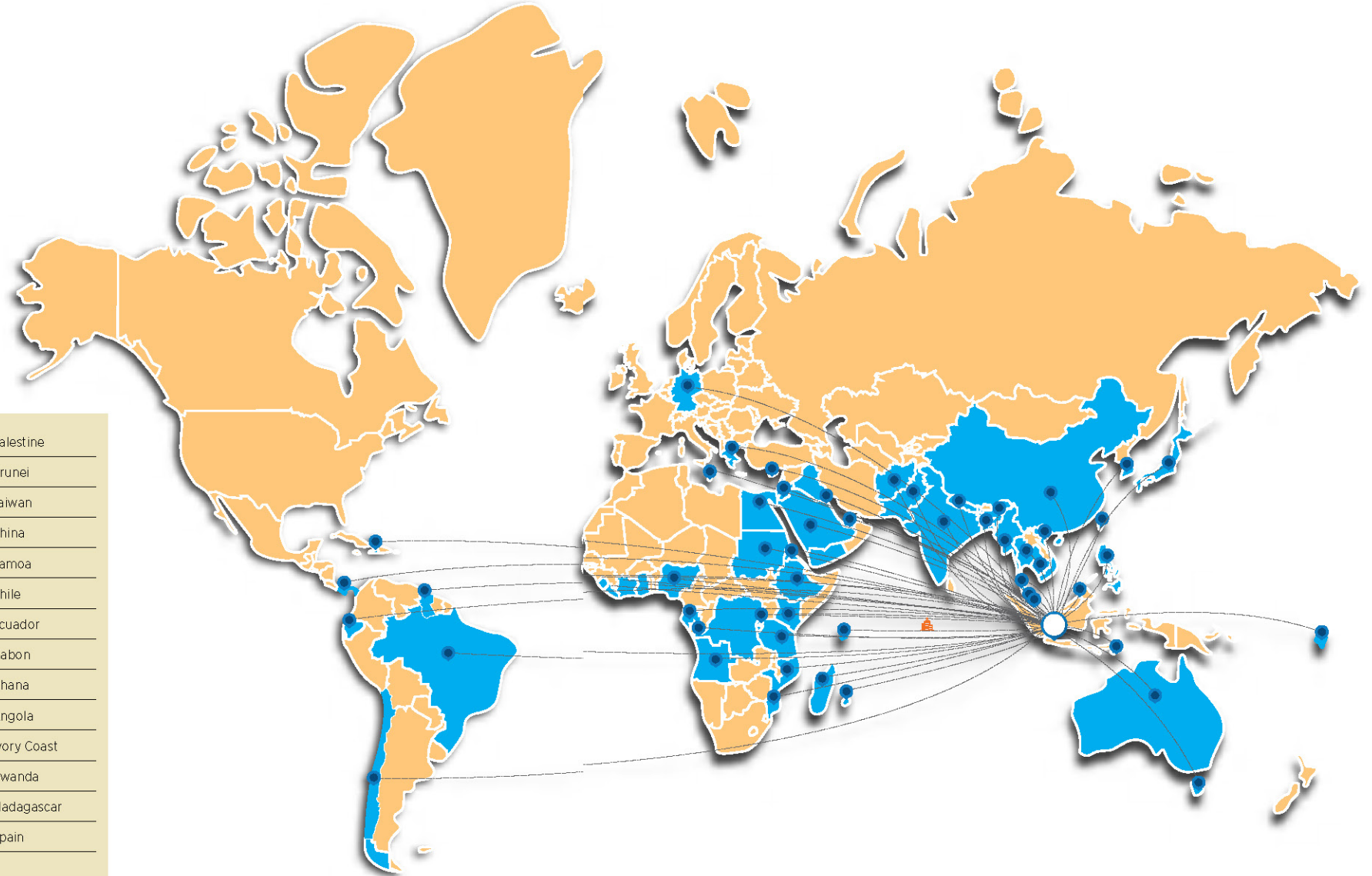


Annual Revenue

Voksel Annual Revenue



World Wide Market

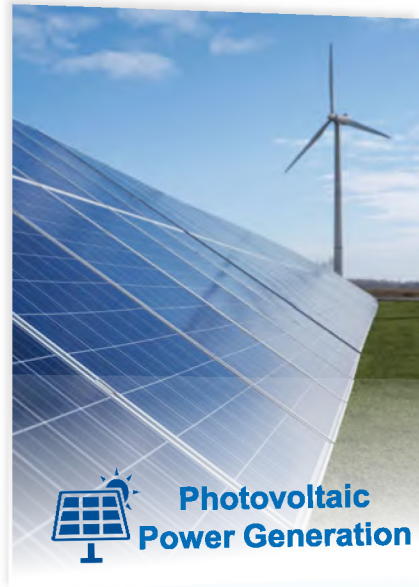


Singapore	Afghanistan	Rep of Congo	Palestine
Malaysia	UAE	Nigeria	Brunei
Timor Leste	Saudi Arabia	Ethiopia	Taiwan
Philippines	Qatar	Mozambique	China
Thailand	Jordan	Uganda	Samoa
Vietnam	Egypt	Eritrea	Chile
Cambodia	Japan	Malta	Ecuador
Nepal	South of Korea	Mauritius	Gabon
Bhutan	Australia	Cyprus	Ghana
India	Panama	Seychelles	Angola
Sri Lanka	Brazil	Liberia	Ivory Coast
Bangladesh	Kenya	Haiti	Rwanda
Pakistan	Tanzania	Suriname	Madagascar
Turkey	Ukraine	Germany	Spain

Renewable Energy Business Layout



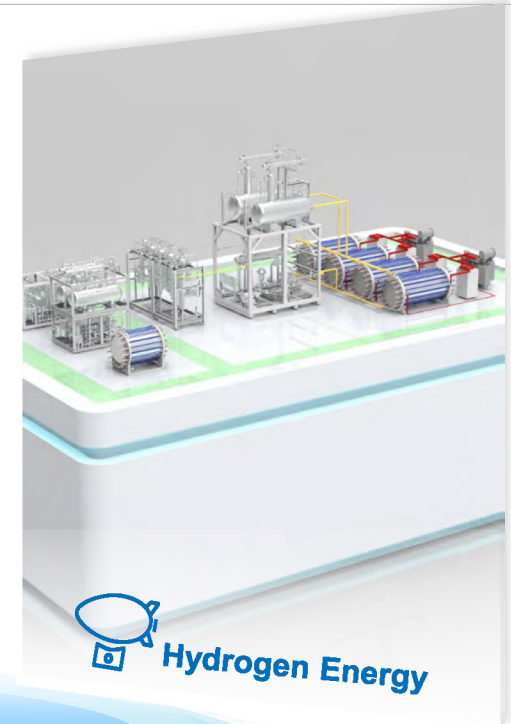
Renewable Energy Storage System



Photovoltaic Power Generation



Comprehensive Energy Services



Hydrogen Energy

Renewable Energy Business Layout

- ✓ Electrochemical energy storage
- ✓ Battery anode material

- ✓ Distributed photovoltaic
- ✓ Centralized photovoltaic

- ✓ EV charger
- ✓ Renewable energy vehicle charging service

- ✓ Hydrogen production device

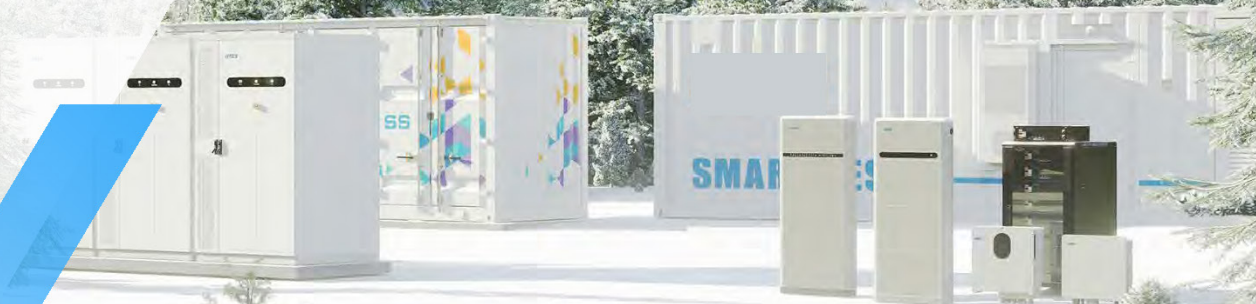
Voksel Energy Storage

Committed to providing customers


“Efficient Energy”


“Clean Energy”

“Safe Energy”




Equipment
Supplier


System
Integrator


Developer
and
Operator

Introduction to Energy Storage System



Household energy storage

Low-voltage version of system
 High voltage version of system

Industrial and commercial energy storage

100kW/233kWh
 372kWh

Containerized energy storage

2.5-5MWh
 20 Feet liquid cooling containerized energy storage system

Communication base station battery

4850、48100、48150

Product function



Backup power supply



Frequency modulation and peak shaving.



Peak-valley arbitrage



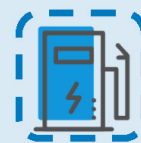
Demand charge



Wind power generation



Photovoltaic power generation



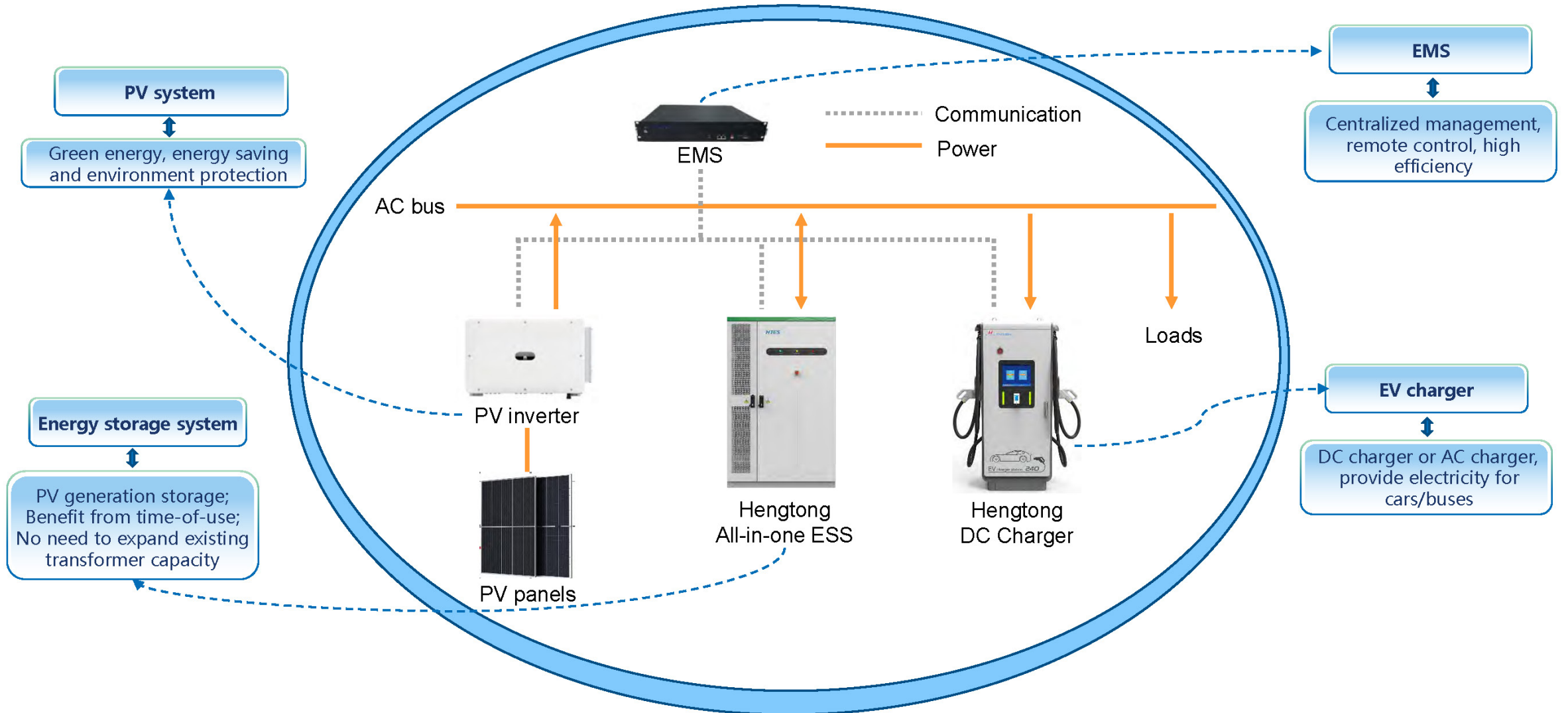
Dynamic expansion



2

**Voksel
PV+ESS+EV Charger
Solution**

Overview of Charging Station



List of Equipment

No.	Item	Specification	Remark
1	PV system	Installed capacity **kWp	Local EPC/ PV provider
1.1	PV panel	Monocrystalline silicon	
1.2	PV inverter	**kW	
1.3	Accessories	Including mounting brackets, cables, connectors, etc.	
2	Hengtong All-in-one ESS cabinet	100kW/233kWh, 380V/50Hz	Hengtong
2.1	PCS	Rated power 100kW	
2.2	Battery system	Rated capacity 232.96kWh, integrated BMS	
2.3	Thermal management system	Liquid cooling	
2.4	Fire distinguishing system	Including sensors, aerosol	
2.5	EMU	Energy management unit for single cabinet	
2.6	Accessories	Including power distribution, UPS, etc.	
3	EV charger	DC/AC charger	Local EPC
4	Monitoring system	EMS for Solar+ESS+EV Charger	
5	Grid-tied cabinet	Including circuit breakers, metering, etc.	
6	Installation	Including necessary materials and tools	

References



Industrial and Commercial Energy Storage System

The diagram illustrates the internal structure of the HTES (High Voltage Energy Storage) system. On the left is the external cabinet, and on the right is a cutaway view showing the internal components. Labels point to the following parts:

- UPS
- High voltage box
- Liquid cooling unit
- Inlet and outlet Liquid pipe
- PACK
- PCS

Product function

- Photovoltaic power generation
- Benefit from time-of-use
- Backup power supply
- Dynamic expansion

Product Specification		
Rated capacity	233kWh	372kWh(DC)
Voltage range	DC728V~936V	DC1164.8V~1497.6V
AC power	100kW	/
Efficiency	≥88%	≥93%
DOD	90%DOD	
IP class	Entire cabinet IP55, PACK IP67	
Noise	< 75dB	
Communication	CAN/RS485	
Thermal management method	Liquid cooling (Temperature difference≤3°C)	
W*D*H	1345*1396*2350mm	1345*1396*2350mm
Weight	2.8t	3.8t

Industrial and Commercial Energy Storage System

All-in-one integrated design, 3S high energy density system (BMS-PCS-EMS).

UPS function: Support black start;

High-efficiency PCS: Support 3-phase unbalanced load, no isolated transformer needed for grid-tied;

Thermal Management: Liquid cooling, minimum 3°C temperature difference between battery cells;

Easy installation: No external auxiliary power design;



Modular design



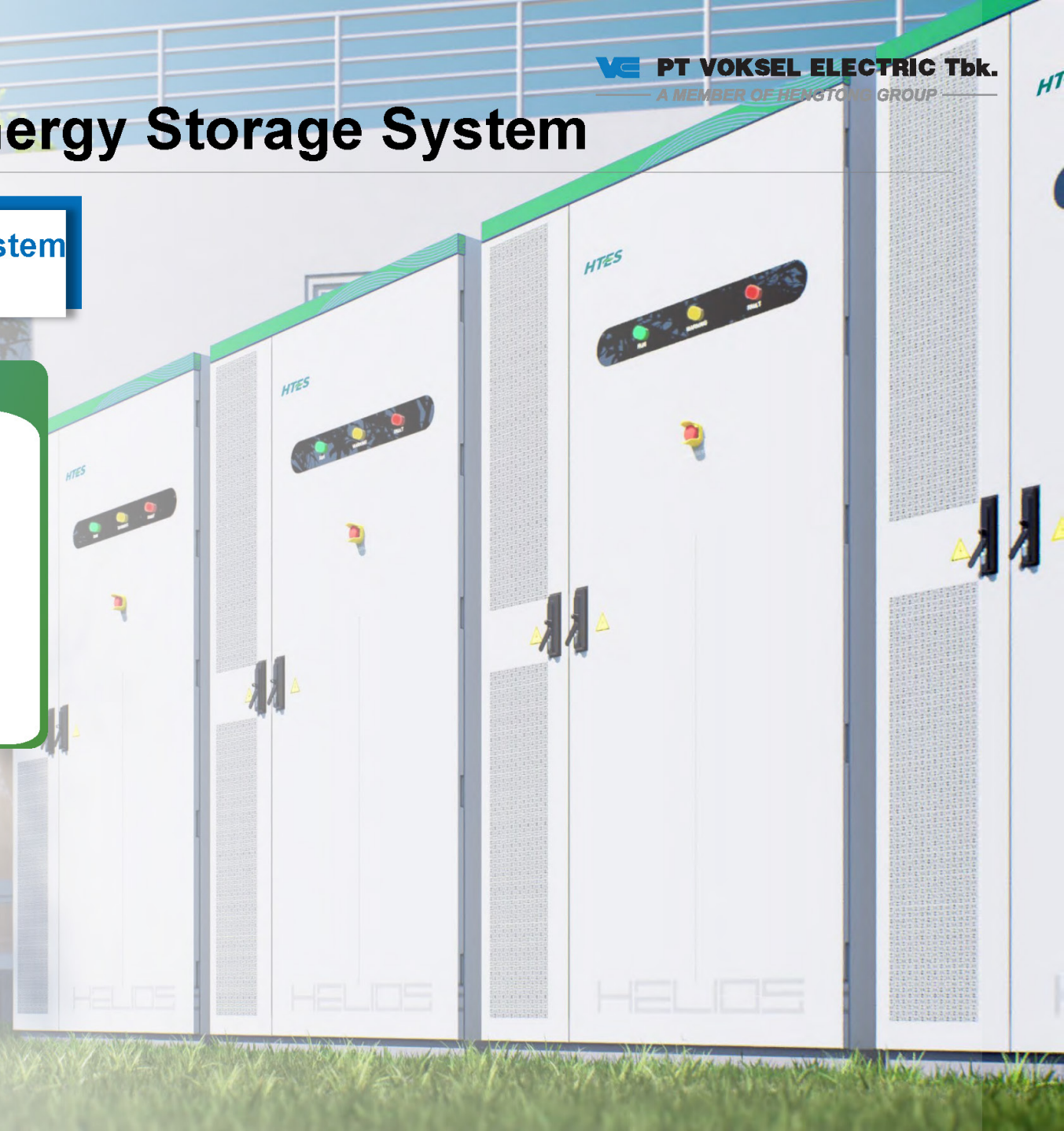
Flexible power expansion



Cluster management

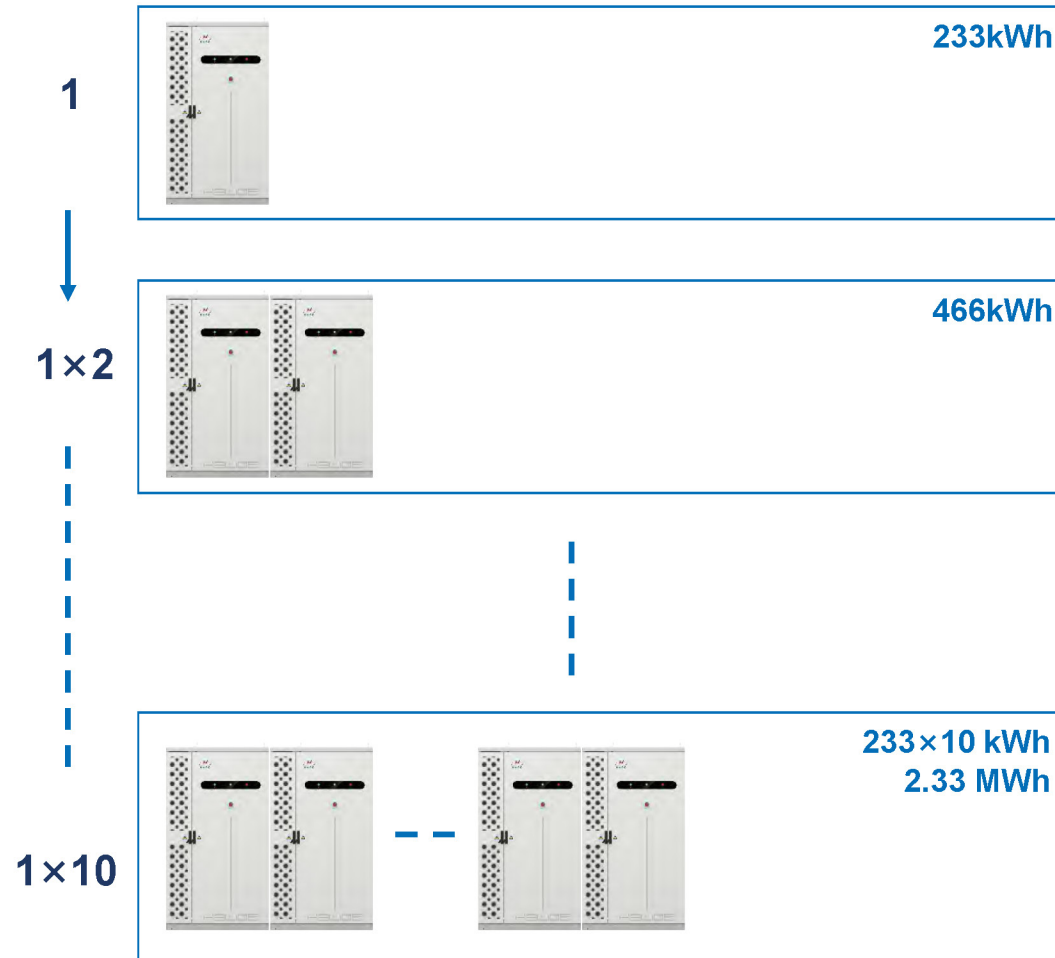


Safe and efficient



Flexible Capacity Expansion

1×N Combined Cabinets Energy Storage System



Multiple cabinets connected in parallel
+
Independent management for each string

↓
Depth of discharging exceeds **90%**

EV Charger



Integrated Functionality

Streamlines charging, billing, payment, communication, and data collection into one seamless solution.



Diverse Payment Options

Accepts credit cards, RFID cards, e-wallets, and more for convenient payment experiences.



User-Friendly Design

Features intuitive interfaces and guided operations for effortless charging, plus convenient cable management.



Robust Communication & Compatibility

Offers wireless 4G, Ethernet, RS232, RS485 interfaces for real-time monitoring and is compatible with Linux-based software and mainstream modules.

Intelligent Manufacturing Factory - Annual Capacity 2GWh

Hardware

5G network communication, stable transmission;

High-precision sensors, better processing management

AGV system, more automatic and intelligent;



5G Smart Factory

Software

ERP: Manufacturing efficiency increased by 25%;

MES: On-time rate increased by 20%;

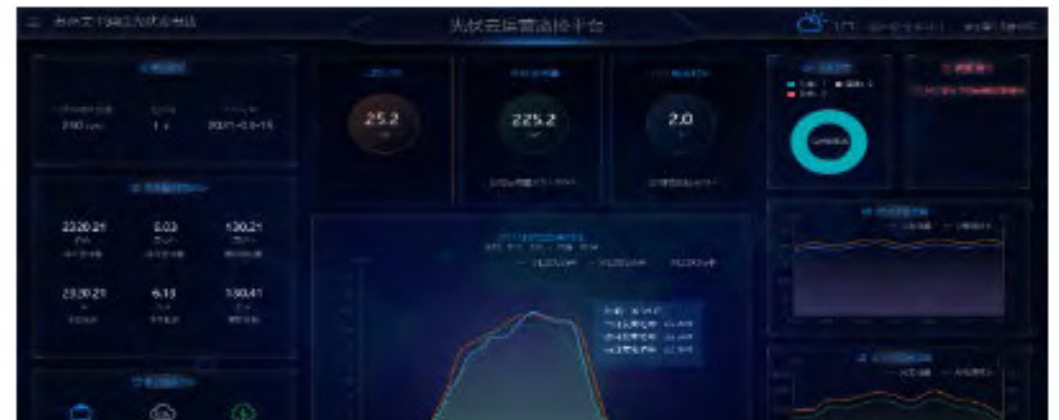
WMS: Digital management, operation efficiency increased by 35%;



Digital Energy Management System



Electric Energy Storage Management Platform



Photovoltaic Management Platform



Charging Management Platform



Microgrid Management Platform



**Create a safe and efficient intelligent energy storage system
Become a well-known energy storage system solution service provider!**

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