ARTIC TECH

Solar Energy

Solution Introduction

Residential

Solutions

Commercial & Industry

Solutions

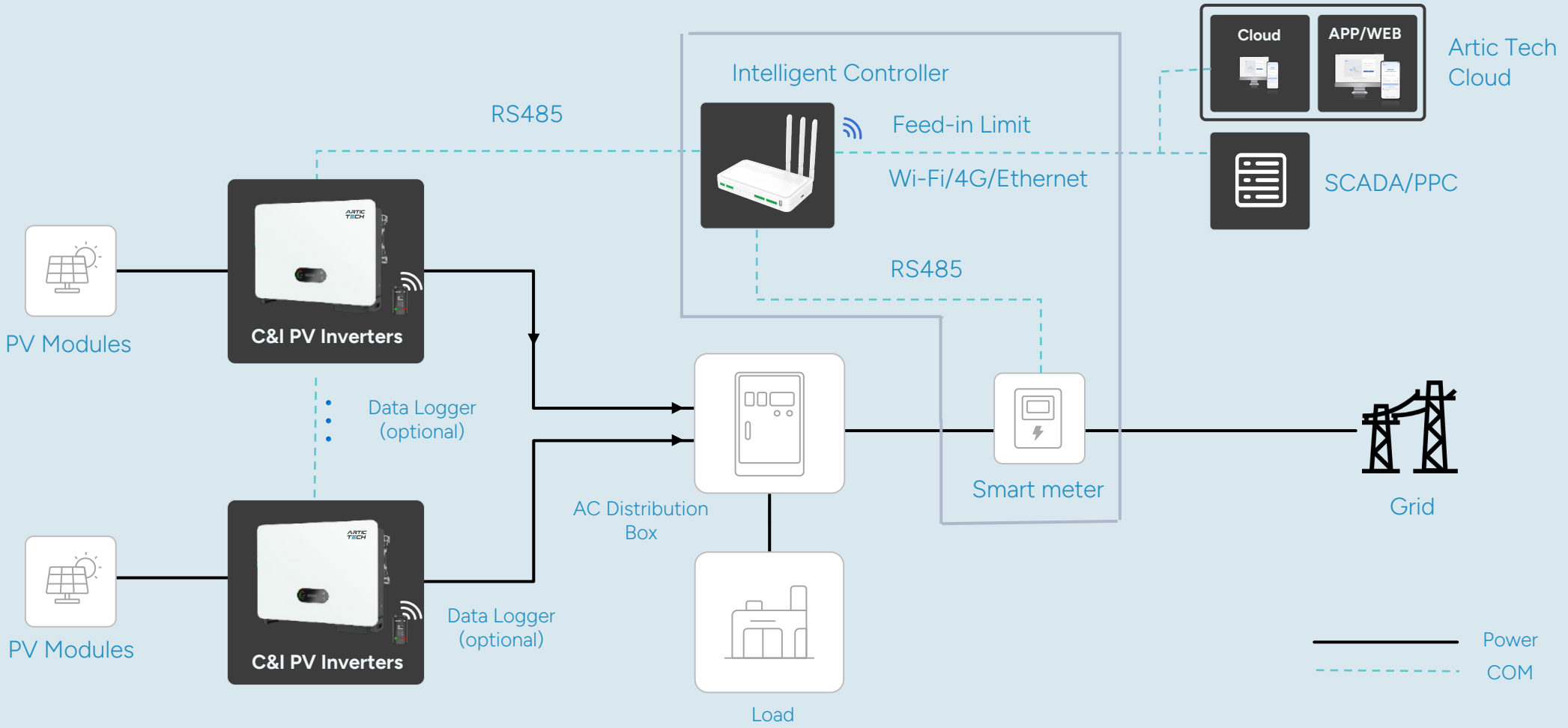
C&I PV Solution

Introduction

Market Claims

1. Realizing the goal of full-scene applications
2. With safer and smarter O&M solutions
3. Further reduce system costs and O&M costs

Networking solutions for C&I scenarios



Solutions Highlights

PV and battery energy management

- Feed-in Limit within 2s, avoiding penalty
- Supporting PCS and intelligent loads
- Intelligent management of PV and BESS

Increase customer pay-back

Supporting P&Q control by Grid

- Supporting Power Protocol Conversion
- P&Q response within 60ms
- Supporting PV plant control system

Ultimate simplicity in networking & O&M

- APP one-click networking and station building
- 24h monitoring and management
- Local Web Operation and Maintenance Tools
- One-click firmware upgrade for the whole station
- I-V scanning and string diagnostic

Low cost

- Supporting 60 devices for data collection.
- Multiple Q compensate method， saving on SVG investment
- Intelligent power factor compensation,avoiding penalty
- Supporting upload Wi-Fi data to

cloud,Save traffic cost

Safe & reliable

- Supporting emergency stop button access
- 1km reliable communication
- Inverter fault monitoring

Panoramic monitoring and control of distributed power plants

- Collection and display of all operation data
- Minute-level operation data sampling of PV Plant
- Integrated intelligent DC switch
- Supporting fast P & Q control

Products-Commercial and Industrial PV Inverter

Perfectly adapted to large PV modules

- Multiple MPPTs & high-current design.
- Suitable for high-efficiency, high-power modules and different roof designs.

Lower cost per kilowatt-hour (LCOE) for high-capacity-ratio designs

- Supports 1.5+ capacity ratio design.
- Long time 1.1 times stable output overload capability.

Intelligent protection for greater safety

- AFCI protection function prevents DC arcing from causing fire.
- I-V curve scanning and intelligent fault diagnosis to effectively detect abnormal PV modules.

Intelligent I-V curve scanning

Adoption of high-precision

- PV Sstring voltage and current detection device

Detects multiple module failures

- hidden fracture
- hot pot
- shorts

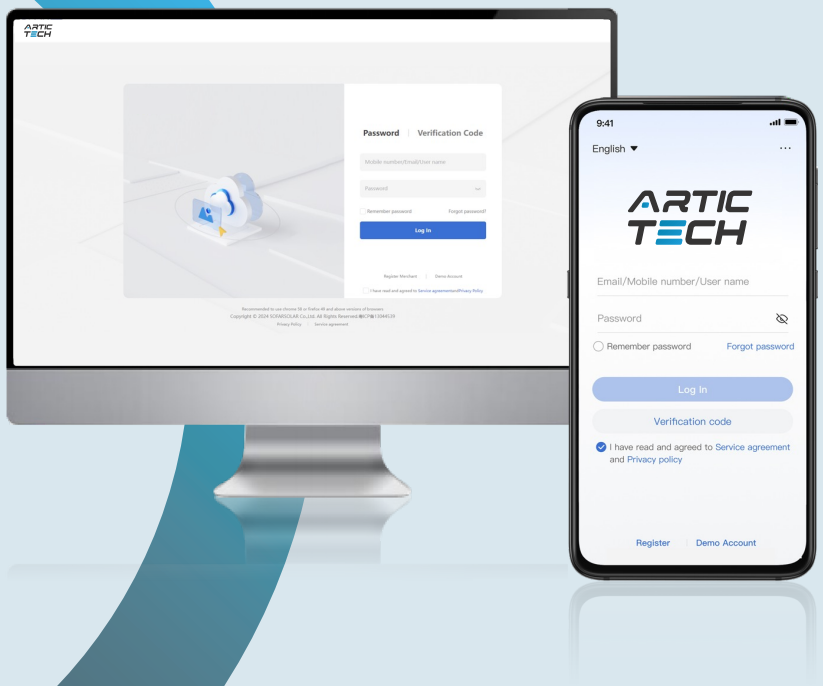
Realize intelligent judgment and accurate positioning of faulty components

- Providing early warning
- Improve O&M efficiency
- Reduce O&M costs

Reduce the scope and duration of the impact of failures

- To maximize power generation

Cloud Platform



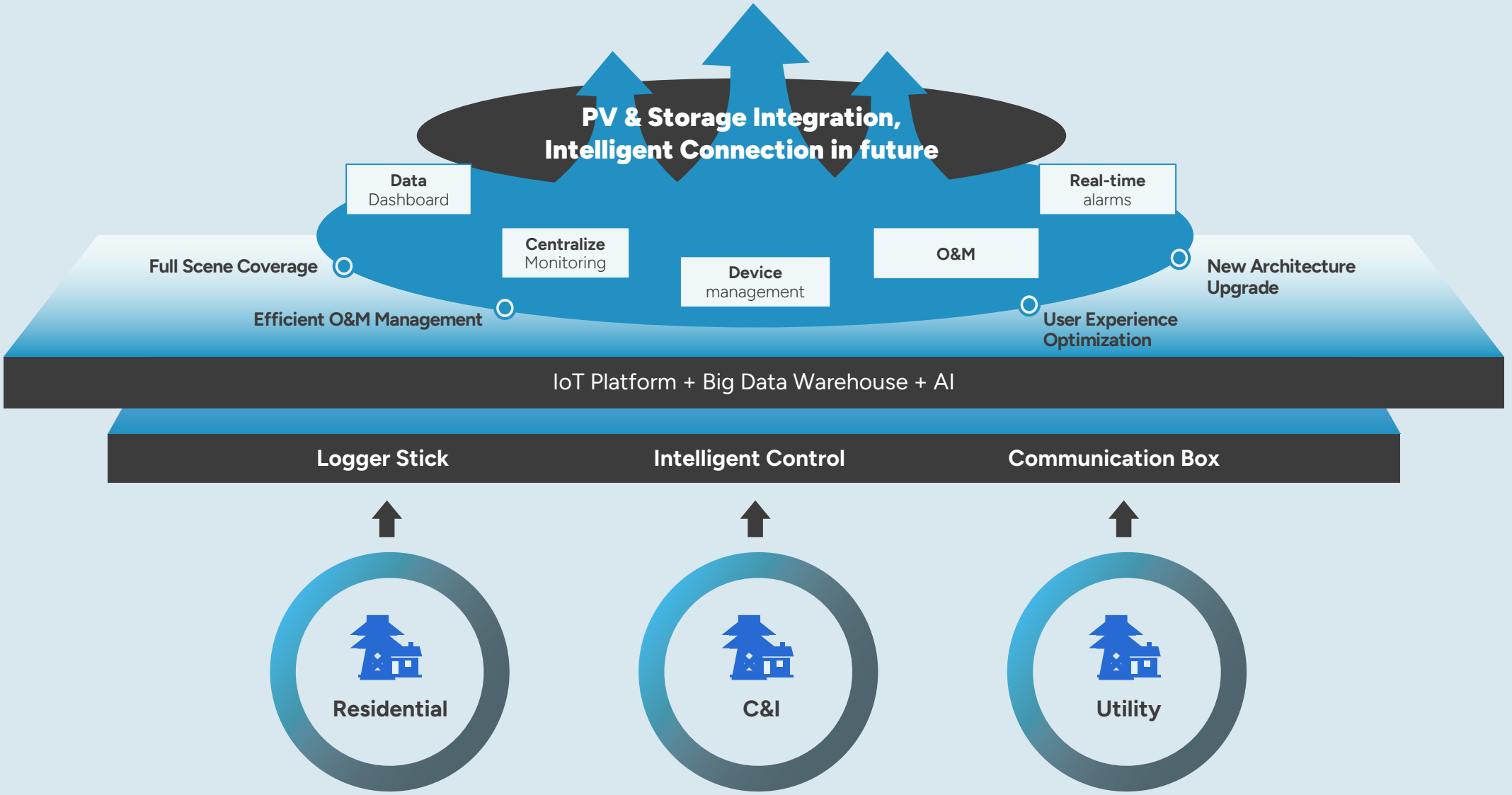
Efficient O&M

- Real-time status synchronization of status
- Minute update of operating parameters
- Online upgrade and equipment control
- Fault Recording for Precise Localization
- Minute level historical data retrospective
- Batch task processing, freeing up labor to reduce costs
- Real-time fault alerts with 500+ solutions

Mobile O&M

- Online monitoring, remote control, near-field operation and maintenance of a variety of ways Holding
- Inverters, box transformers and other equipment to access
- Visualization management, support App and Web multi-end online monitoring

Introduction – Cloud Platform



Utility PV Project
System Solution

What are the Top Challenges facing Utility-Scale PV Systems today?

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Product installation, O&M inconvenience

- Complex Terrain: Difficulties arise in installation, operation, and maintenance due to challenging landscapes.
- Troubleshooting Issues: Power plants are often hard to diagnose and repair efficiently.

High product safety requirements

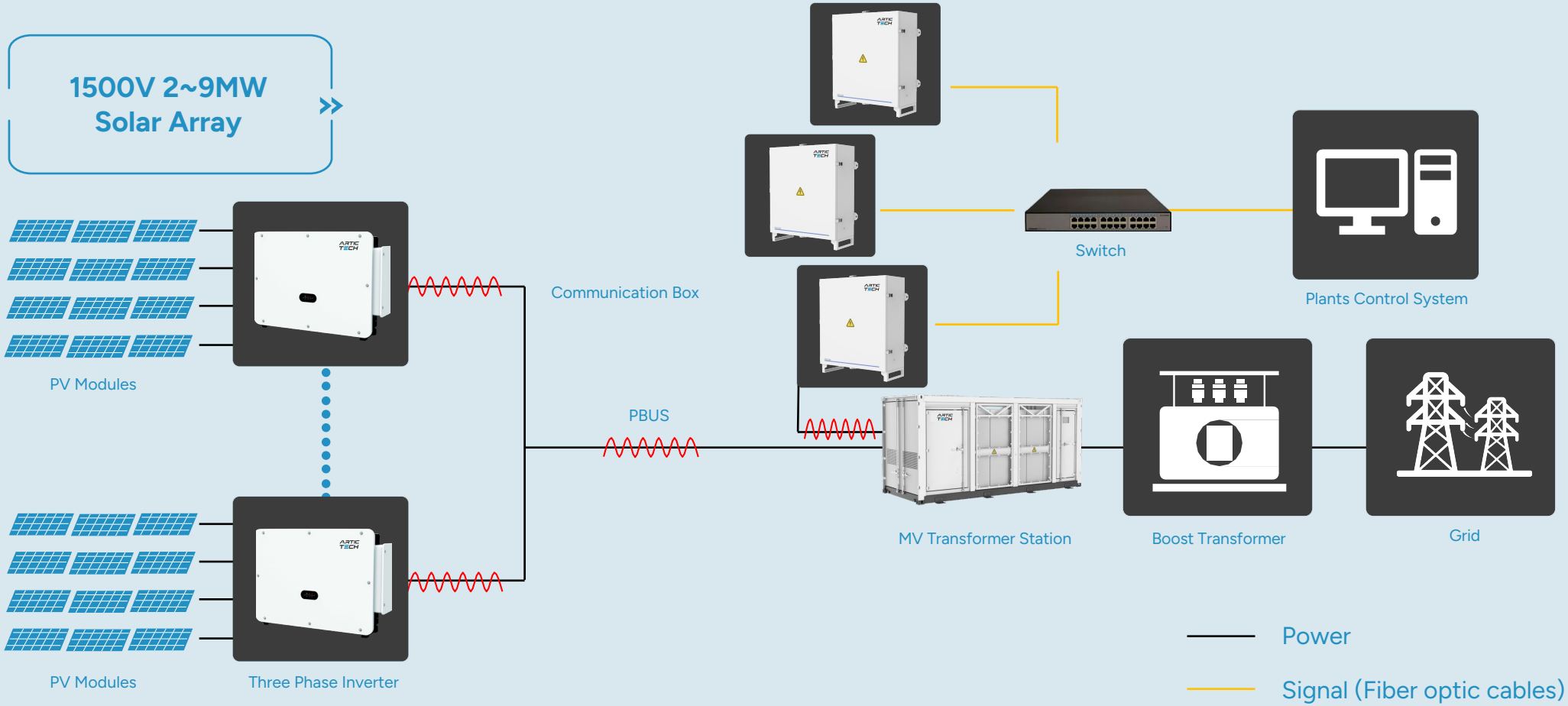
- Harsh Environments: High temperatures, pressure, and dusty conditions demand robust safety features.
- PID Effect: Potential-Induced degradation (PID) in PV reduces power generation.
- Insulation Demands: Strict Insulation standards are critical for operational safety.

Power generation revenues is affected

- Installation Complexity: Long communication distance and high costs hinder system performance.
- Compatibility Issues: Diverse product models often lack seamless integration, affecting efficiency.

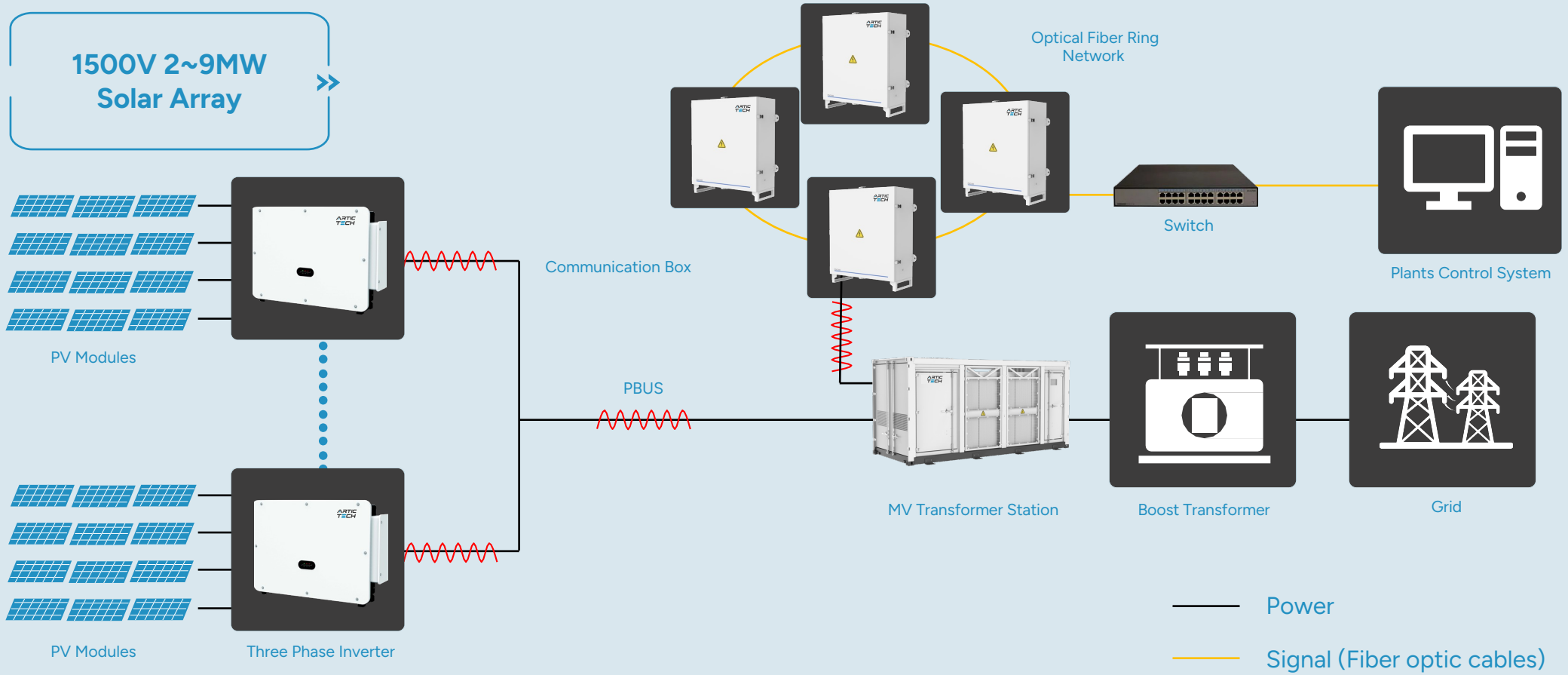
Utility PV Project System Solution

Star Form Network Solution



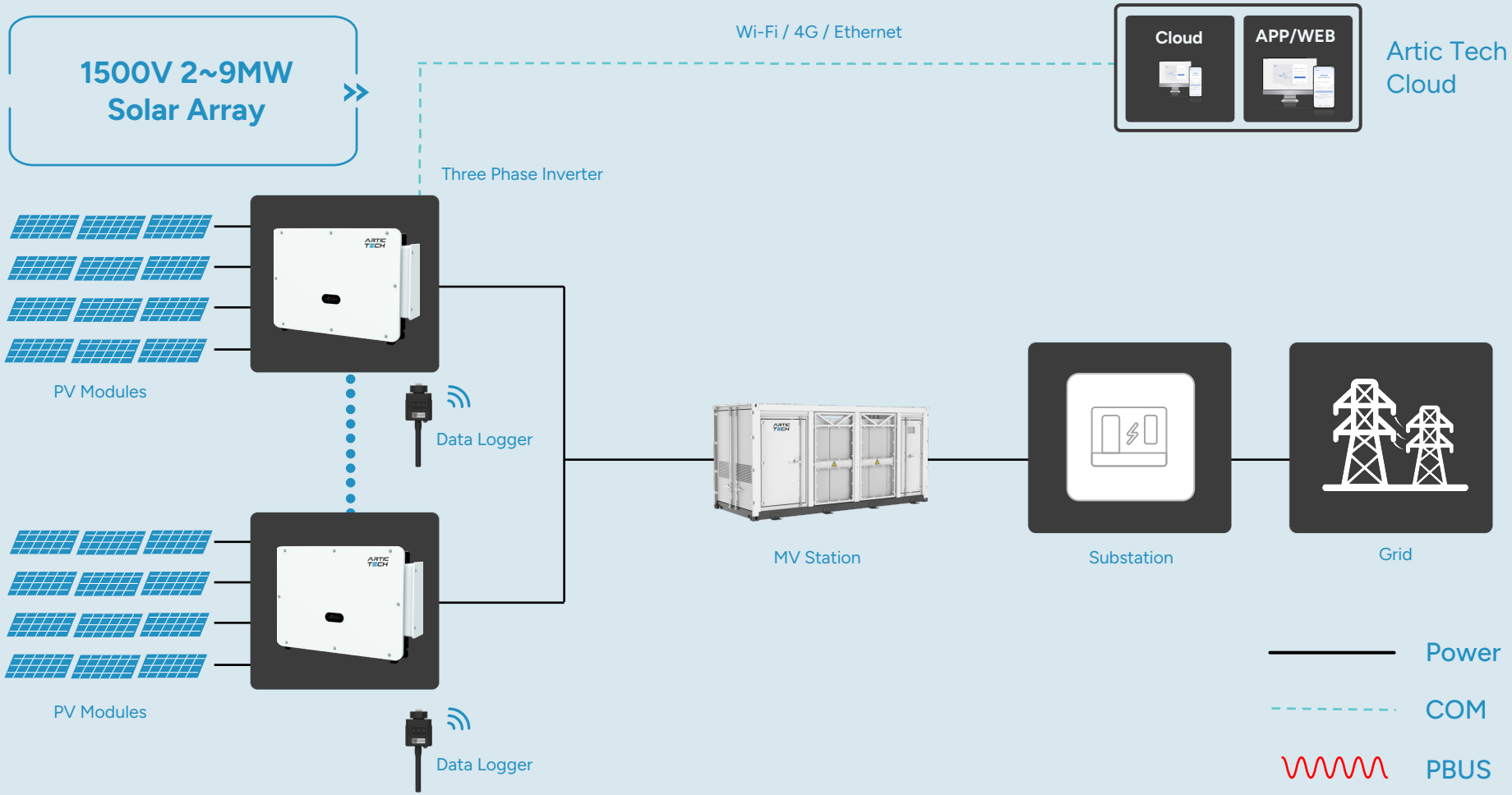
Utility PV Project System Solution

Optical Fiber Ring Network Solution



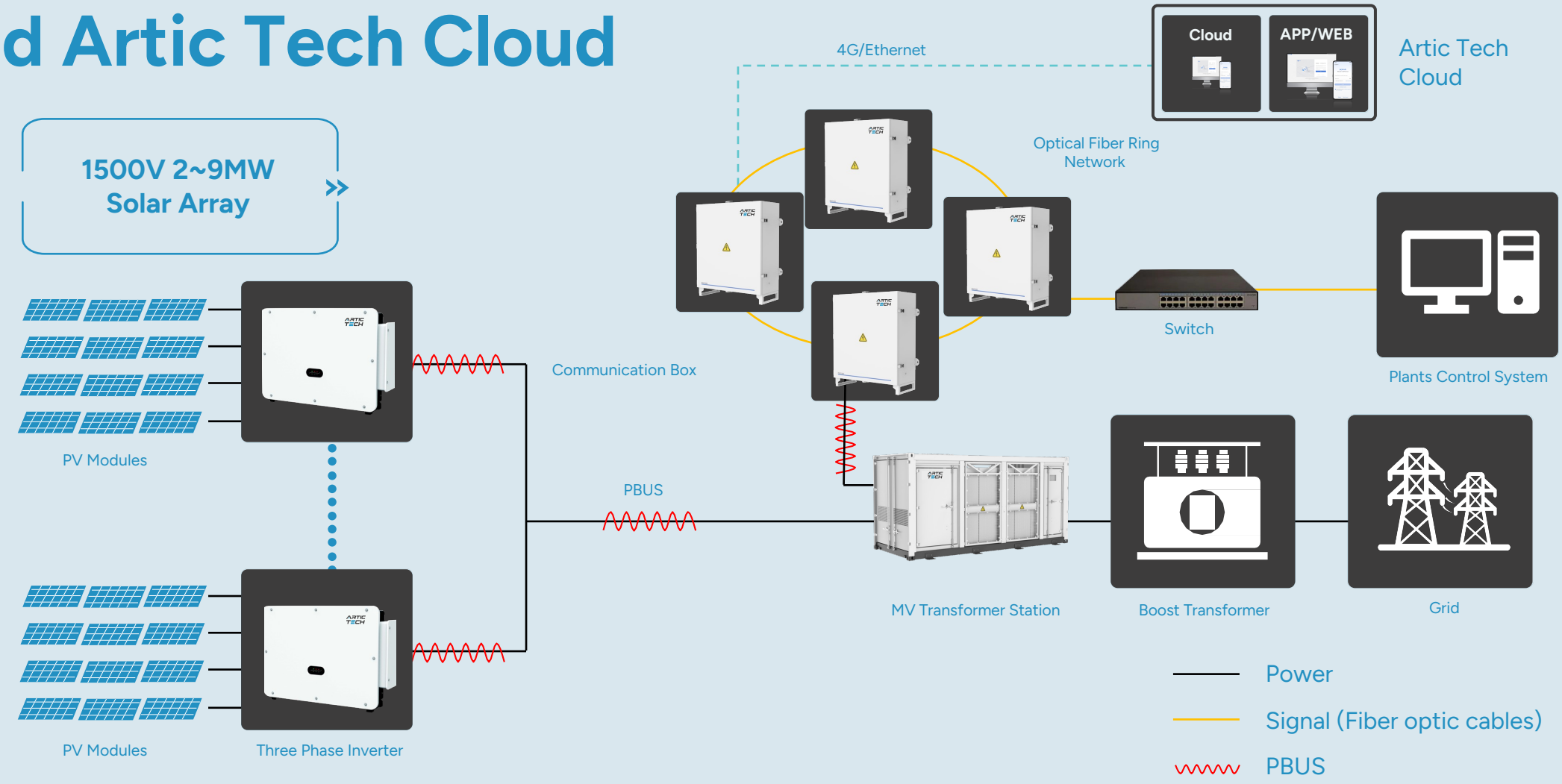
Utility PV Project System Solution

DTU Solutions of Artic Tech Cloud



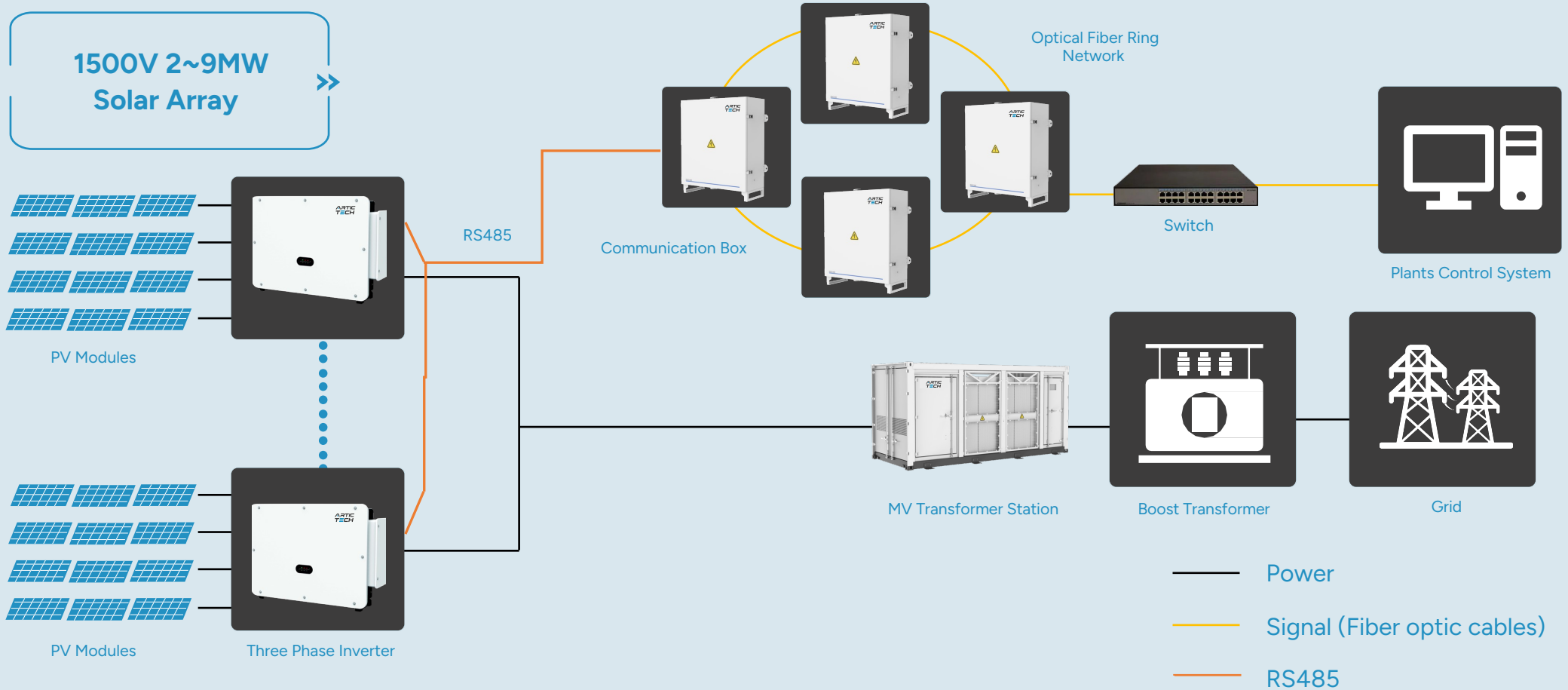
Utility PV Project System Solution

Optical Fiber Ring Network Solution and Artic Tech Cloud



Utility PV Project System Solution

Optical Fiber Ring and RS485 Network Solution



ARTIC TECH Utility Station Product Catalog

Provide solutions for power conversion, Communication monitoring, PID protection, and other complete products

225/250/255kW
Three-phase inverter

320/330/350kW
Three-phase inverter

Intelligent
communication box

Concentrate PID

MV Transformer Station

Energy Management
System

EMS System Solution Introduction

Application Scenarios

The installation methods are different depending on the power plant site location.

It can be applied to:

- Large flat PV power plants.
- General mountain PV power plants.
- Complex mountain PV power plants.
- Water surface PV power plants.

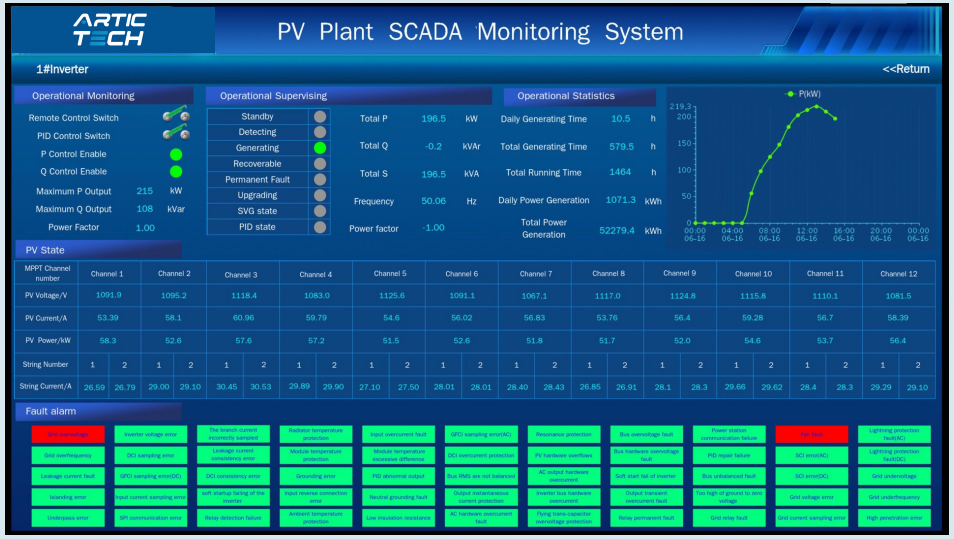
System function

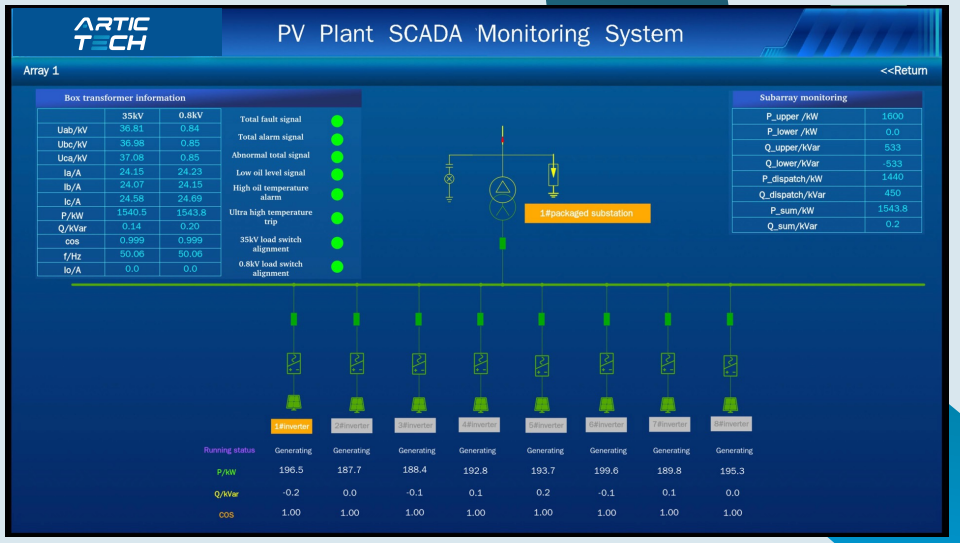
- Data acquisition and processing can be realized.
- Data report and curve management.
- User rights management.
- Fault alarm management.
- Service screen editing and browsing.
- AGVC.
- Primary FM control.
- Adjustment voice alarm.
- System self-recovery.
- Intelligent diagnosis of I-V curve and rendering of backward parts and other functions.

Value

- Centralized management to improve operation and maintenance efficiency.
- Remote monitoring and control to enhance environmental safety and equipment reliability.
- Helping power station managers identify problems on time in a timely manner, improving the power generation efficiency and economic benefits of power stations.

Operation Monitoring





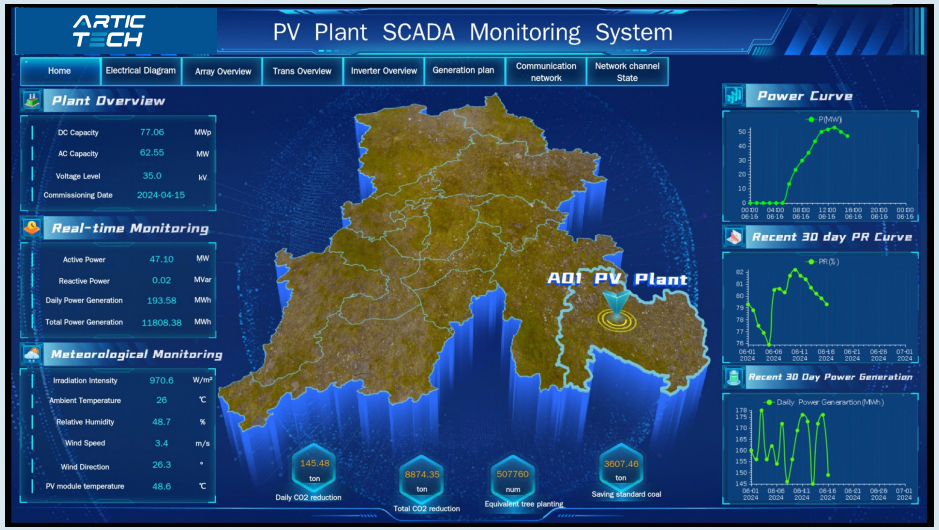
Interface

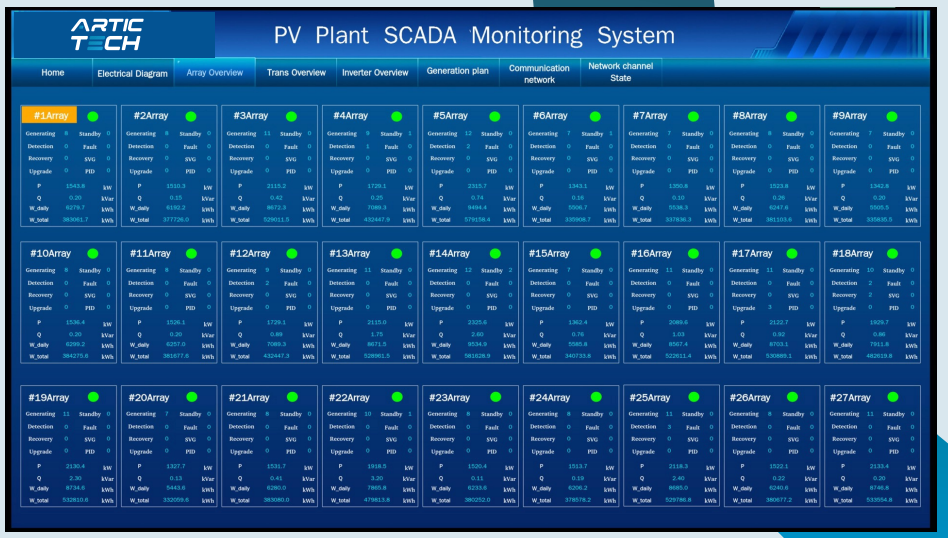
- Demonstrate the overview of ground-mounted photovoltaic power plant, installed volume, active, reactive power and power generation data, and weather detector irradiance and other information.
- Demonstrate the power generation on the same day, 30-day PR curve and power generation curve, energy saving and emission reduction data.

Subarray List

- The data of network communication channel status, total active power, total reactive power, total power generation, total active total reactive power and total power generation of each party of the power station are shown.

Operation Monitoring





Sub array Wiring Diagram

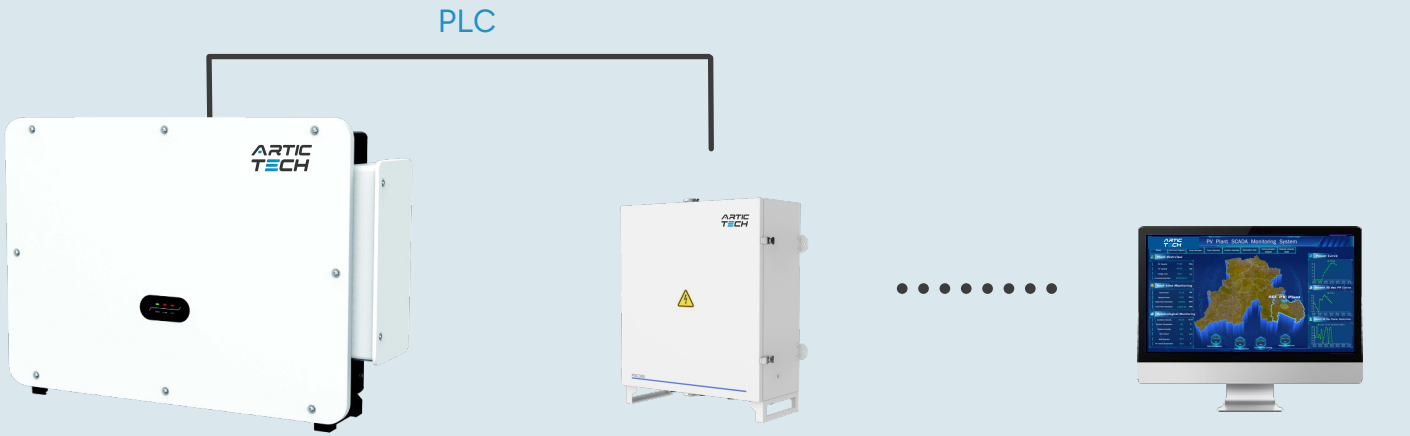
- Shows the electrical wiring diagram of the inverter and the step-up box transformer under the PV square array.
- Showing the main operation monitoring information such as active power and reactive power of the box transformer and the inverter.

Inverter Details

- The display mainly shows the inverter operation control information, operation monitoring information, operation statistics information, daily power curve of the inverter, voltage, current and power of each PV string. Fault alarm information shows whether the inverter fault alarm occurs or not.

Core Technology Highlights - Lower LCOE

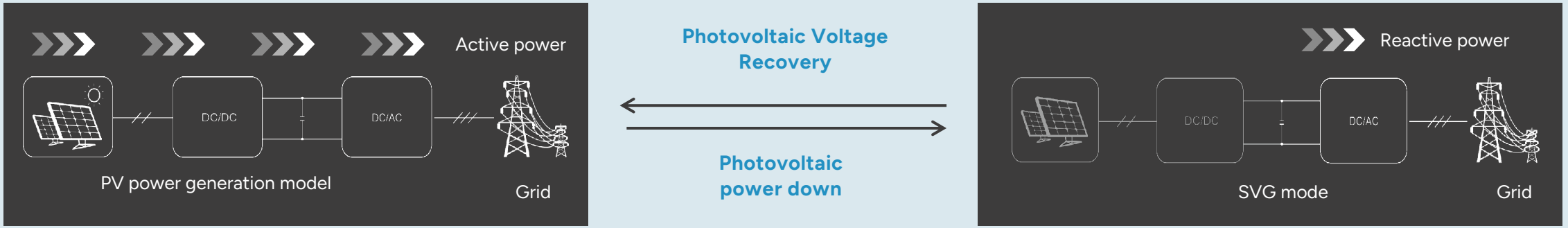
Inverter communication box integrated PLC communication: reduces investment and installation costs.



Supports PLC communication.
No additional communication cables.
Reduced system investment and installation costs.

Core Technology Highlights - Lower LCOE

Night SVG function, night reactive power support, reduce power station investment.



The traditional capacitor compensation method requires the addition of reactive power compensation equipment with high LCOE.

ARTIC TECH night SVG function, through the judgment of DC input voltage, can realize switching between PV power generation mode and night SVG mode, realizing night reactive power support and greatly reducing LCOE.

Core Technology Highlights – Efficient Power Generation

Three-level Convert boost + Intelligent modulation control algorithm, industry-leading inverter efficiency.

Adopting 3L FC high efficiency boost topology, higher efficiency compared to traditional symmetrical three-level, inductor frequency doubling. Lower inductor cost and lower ripple current

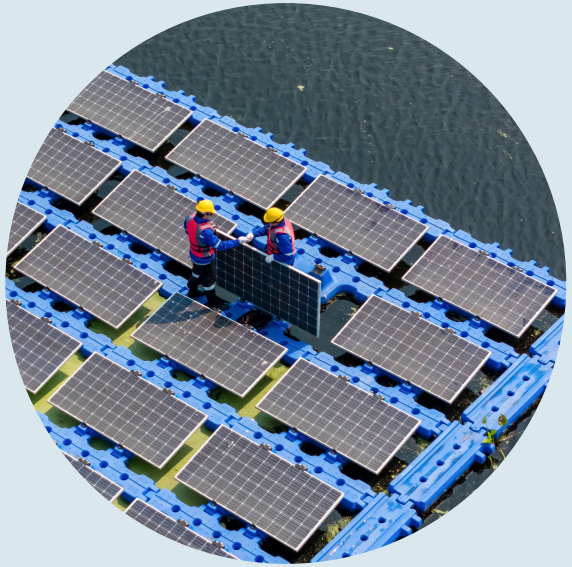
Adoption of highly efficient three-level Converter modulation algorithms, significantly reducing inverter losses compared to traditional methods

Intelligent adaptive control strategy, always make the inverter work at the optimal efficiency point

Market Application

Hilly Solar Farm

Large C&I



Floating Solar Farm

Flat ground

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