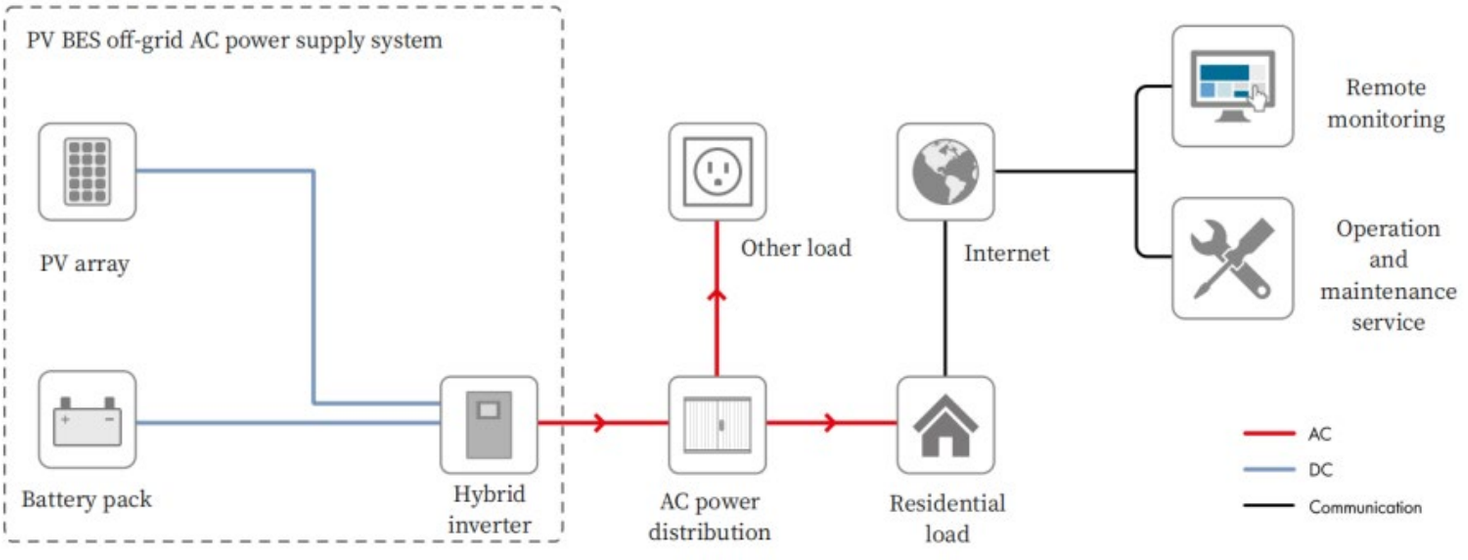
Smart Microgrid Power Solution

Reliable Power Supply in Remote Areas

We help people have access to reliable power supply in remote areas. Our hybrid power solution uses solar photovoltaic (PV) power generation and lithium battery energy storage technologies to support access and scheduling of grid, diesel generators, and third-party power supplies, ensuring 24-hour power supply security. Our intelligent management system supports remote management and O&M. It provides end-to-end power generation and operation solutions for off-grid and unreliable grid areas. It features fast deployment, simple O&M, and flexible expansion, facilitating electrification construction in remote areas.

Solution Architecture



Off-grid area

Remote Mining Town

Remote Village

Off-Grid Island

Scenario Features

- Mainly off-grid scenarios, and some unreliable grid scenarios;
- Regional, centralized power supply;
- The distributed generation (DG) works in active mode.

Unreliable grid areas

Bank

MOD

Scenario Features

- Unreliable grid scenarios are mainly used, and some are off-grid;
- Distributed outlet power supply;
- D.G. or lead-acid backup power

Solution Value

All scenarios applicable

- Available all geographical environment;
- Full power supply mode convergence;
- Applicable to full-grid environments;

All aspects reliable

- Multi-energy AI scheduling;
- Central equipment room environment, N+1 backup;
- Multi-reliability design;

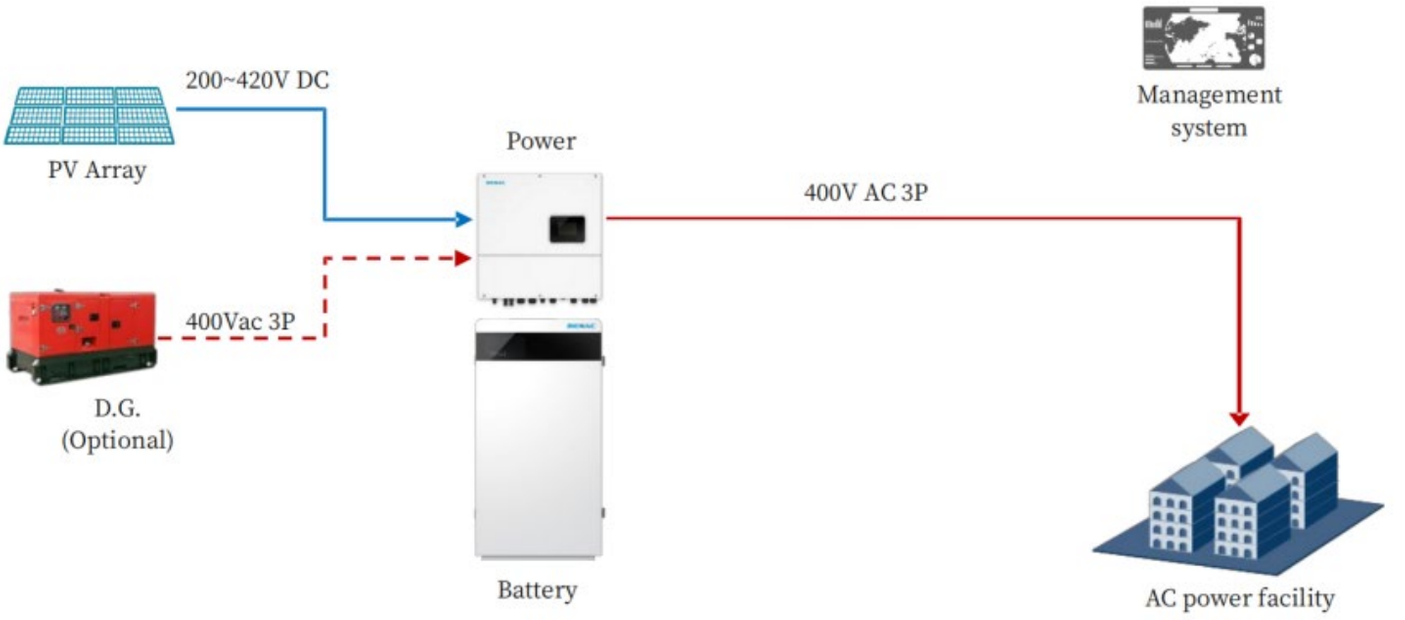
All lifecycle investment optimal

- Lowest electricity cost;
- Lowest construction cost;
- Lowest O&M cost;

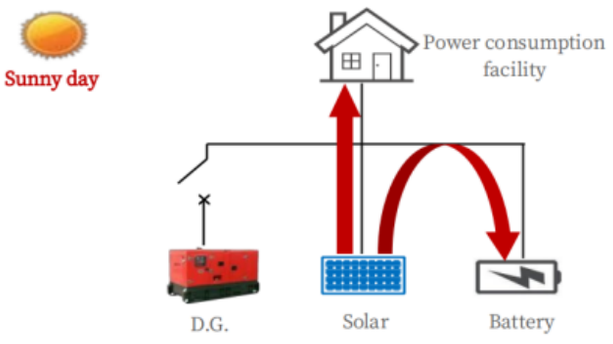
Working mode

Solution Architecture

Off-grid Area Solution Architecture

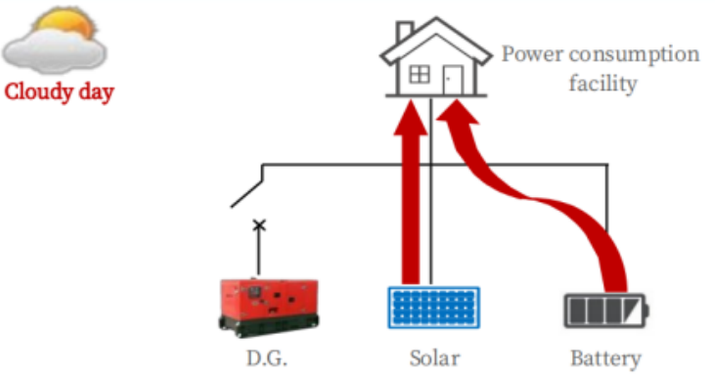


Working mode (priority: PV > battery > D.G.)



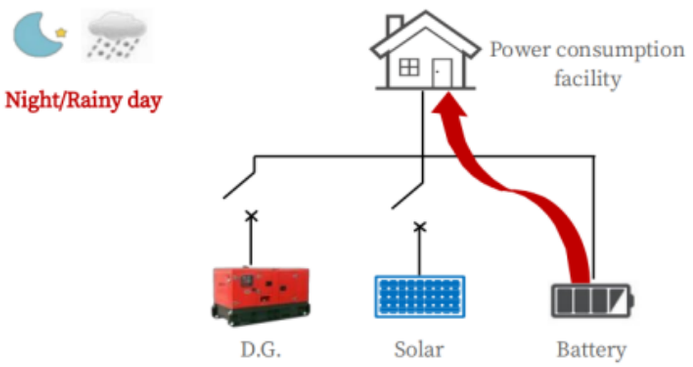
PV power generation > Power consumption (sufficient illumination)

The PV supplies power to the facility and charges batteries.



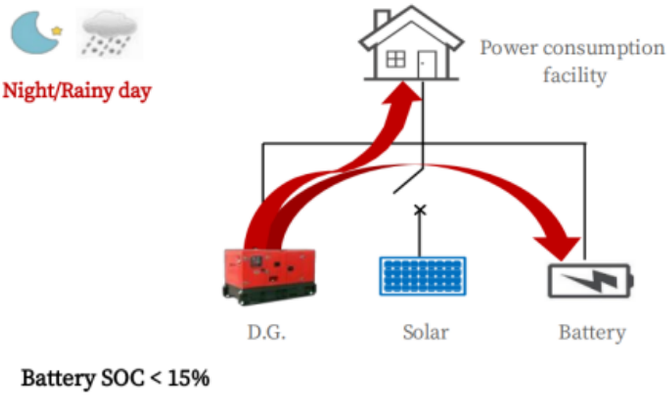
PV power generation < Power consumption (weak illumination)

The facility is powered by PV and battery.



Battery SOC > 15%

The facility is powered by batteries.

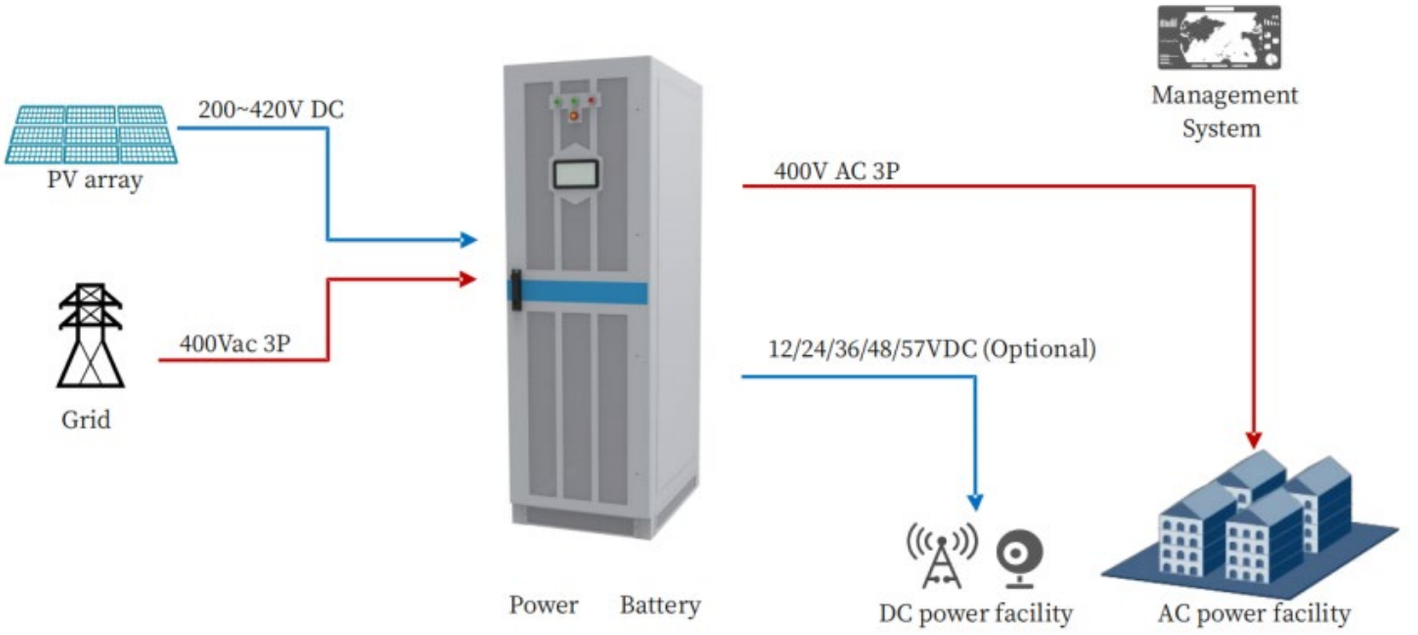


Battery SOC < 15%

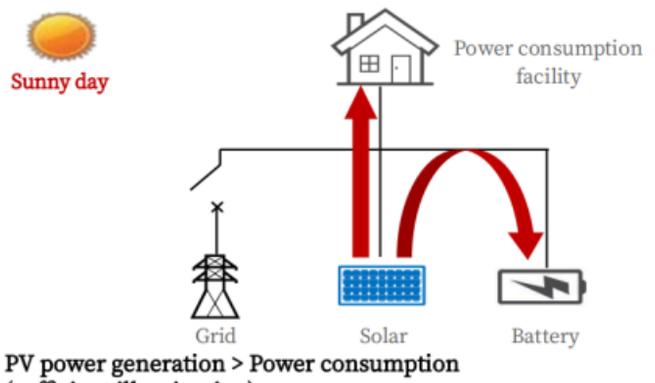
The D.G. supplies power to the facility and charges batteries.

Solution Architecture

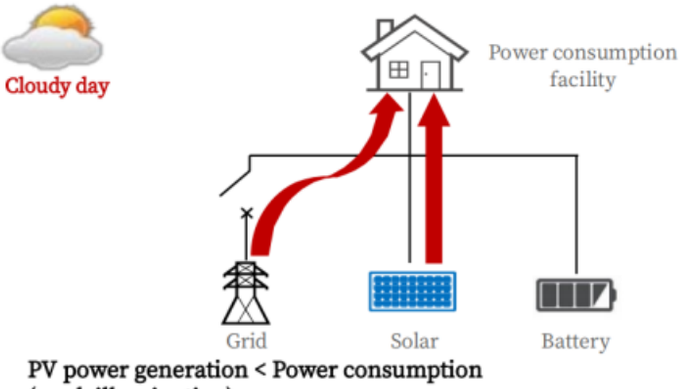
Unreliable Grid Area (without a D.G.) Solution Architecture



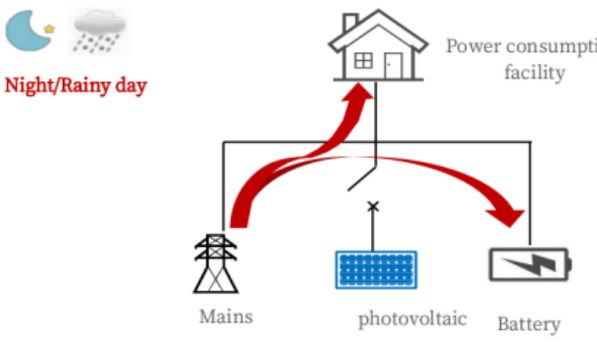
Working mode (priority: PV > grid > battery)



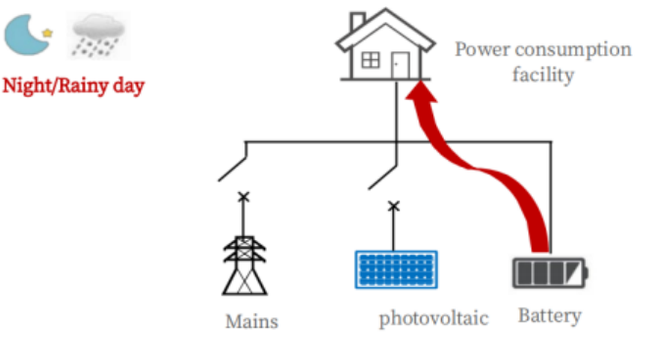
PV power generation > Power consumption (sufficient illumination)
The PV power supplies power to the electricity facility and charges batteries.



PV power generation < Power consumption (weak illumination)
The power facility is powered by PV and battery.

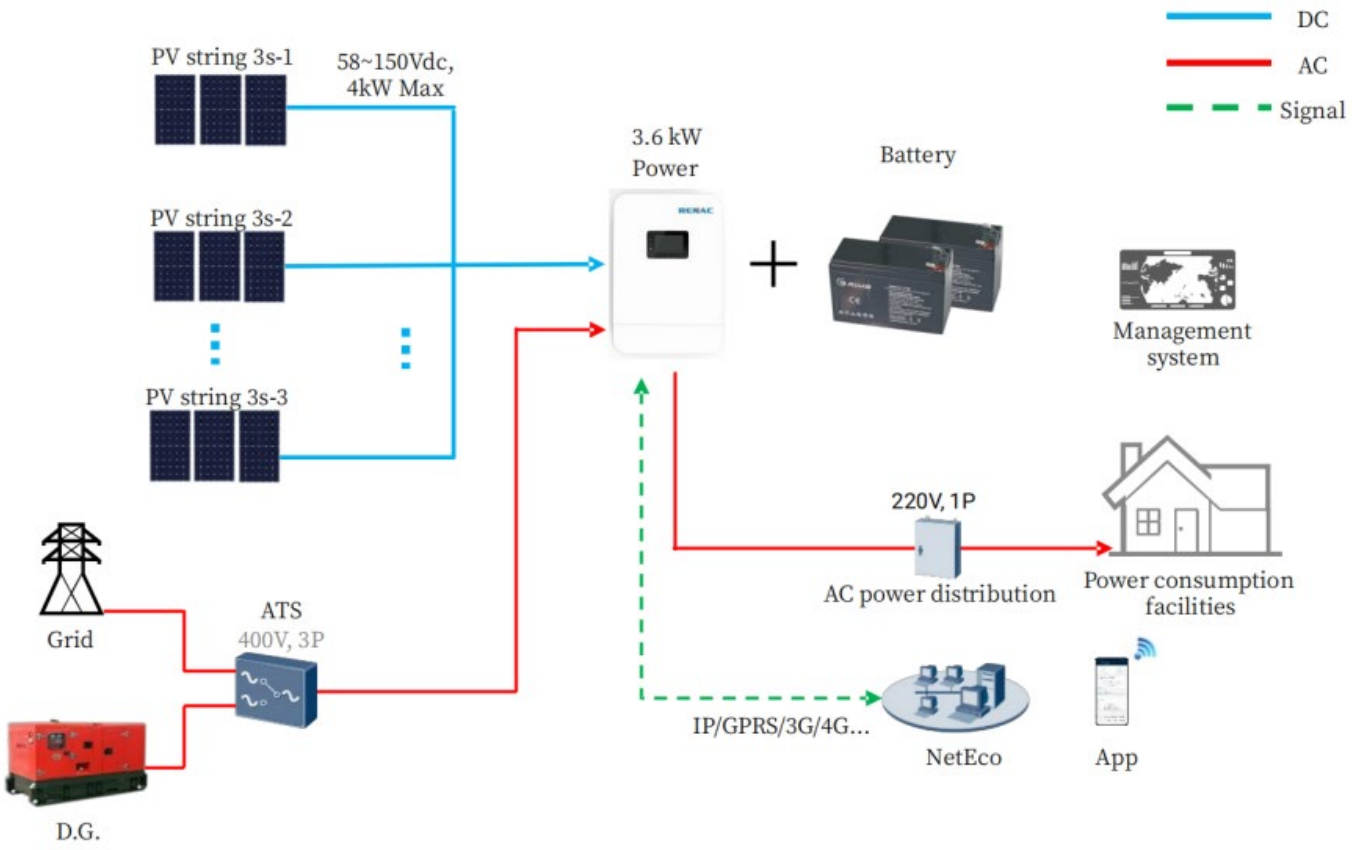


Mains available
The mains supplies power to the power facilities and charges batteries.



The mains is unavailable.
Batteries supply power to the electrical facility.

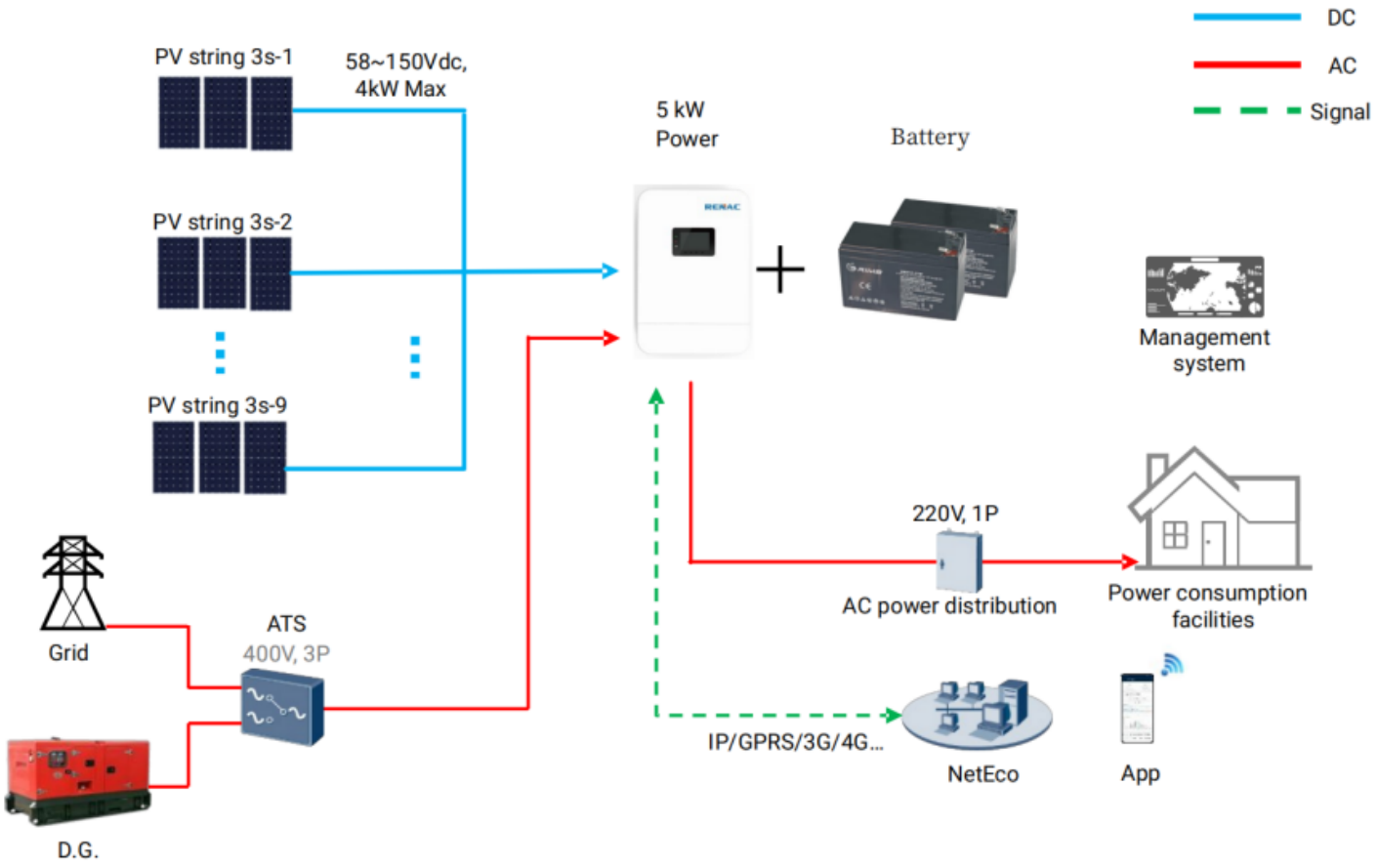
Configuration Typical-1: 6kVA indoor power solution



System Configuration

Project	Unit	Quantity
Configuration		
PV	kWp	2.46
Battery (Lead - Acid gel batteries)	kWh	12
Power	kW	3.6
Specifications		
PV power generation * average effective illumination time = 5h / day Transmission loss = 0.8	kWh	9.84
Battery backup time: 100% load Charge-Discharge ratio = 0.6	h	2
Battery backup time: 50% load Charge-Discharge ratio = 0.6	h	4

Configuration Typical-2: 12kVA indoor power solution



System Configuration

Project	Unit	Quantity
Configuration		
PV	kWp	4.2
Battery (Lead - Acid gel batteries)	kWh	24
Power	kW	5
Specifications		
PV power generation * average effective illumination time = 5h / day Transmission loss = 0.8	kWh	16.8
Battery backup time: 100% load Charge-Discharge ratio = 0.6	h	2.88
Battery backup time: 50% load Charge-Discharge ratio = 0.6	h	5.76

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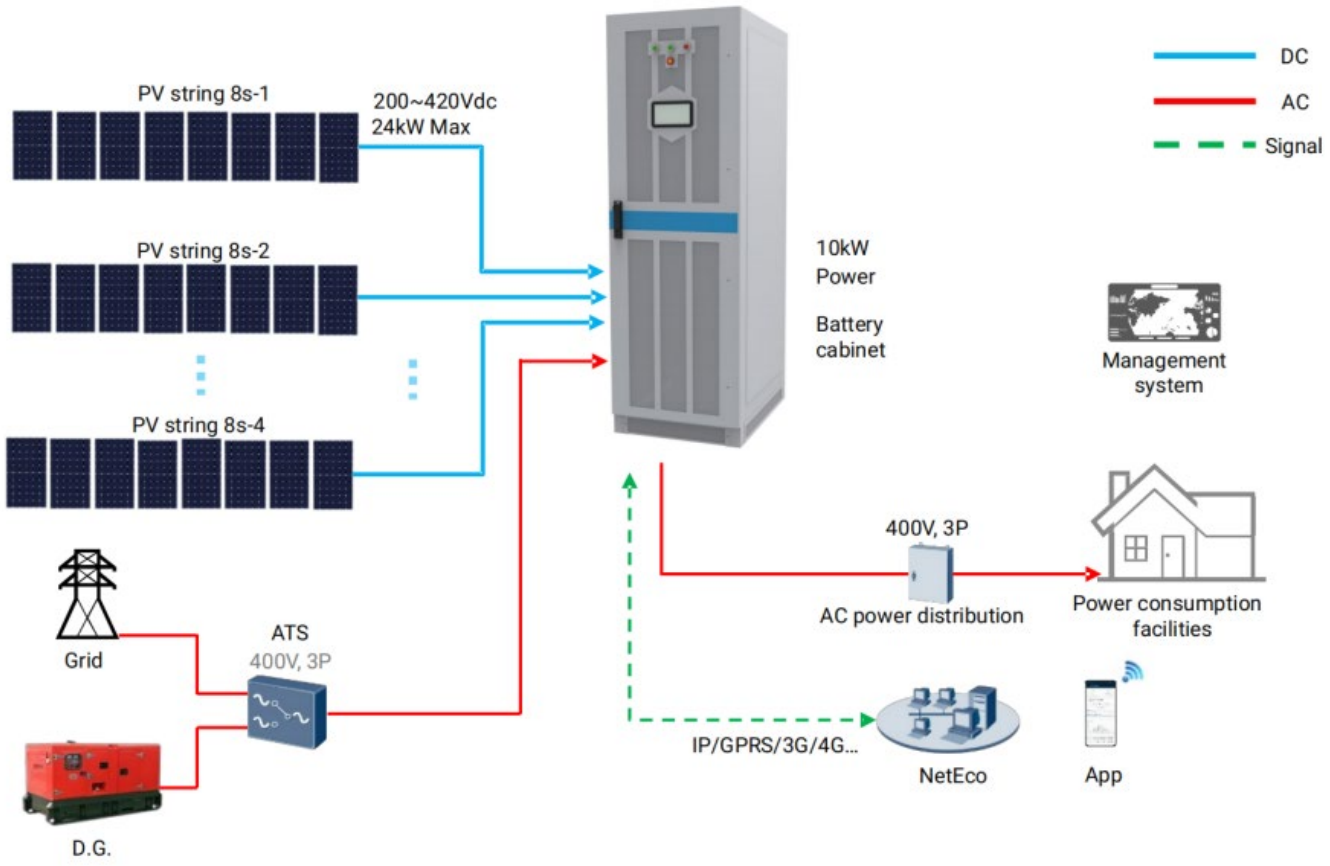
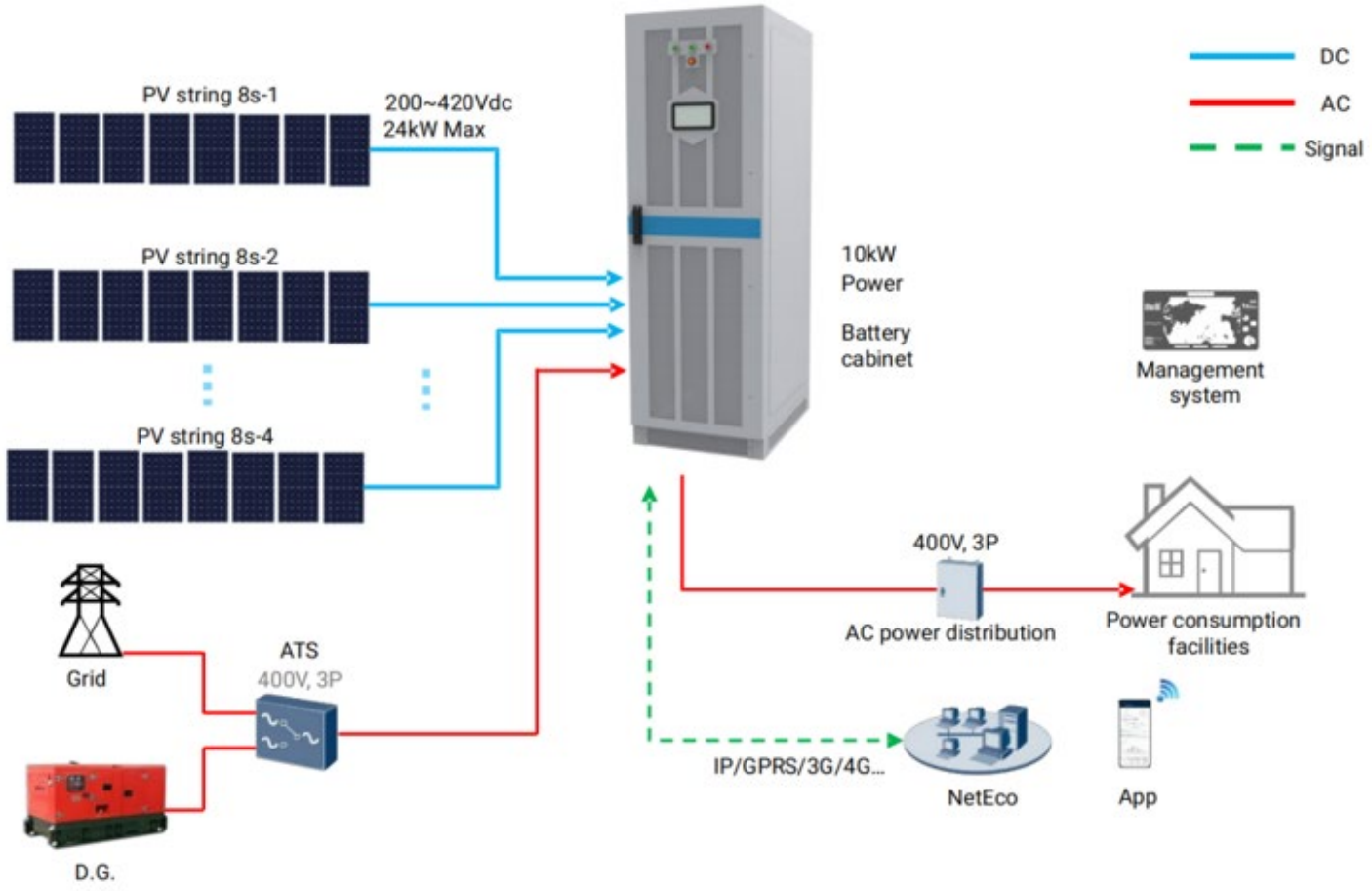
Configuration Typical-3: 18kVA indoor power solution



System Configuration

Project	Unit	Quantity
Configuration		
PV	kWp	8.2
Battery (Lead - Acid gel batteries)	kWh	33.6
Power	kW	10
Specifications		
PV power generation * average effective illumination time = 5h / day Transmission loss = 0.8	kWh	32.8
Battery backup time: 100% load Charge-Discharge ratio = 0.6	h	2.6
Battery backup time: 50% load Charge-Discharge ratio = 0.6	h	5.2

Configuration Typical-4: 54kVA indoor power solution



System Configuration

Project	Unit	Quantity
Configuration		
PV	kWp	24.24
Battery (Lead - Acid gel batteries)	kWh	93.6
Power	kW	30
Specifications		
PV power generation * average effective illumination time = 5h / day Transmission loss = 0.8	kWh	96.96
Battery backup time: 100% load Charge-Discharge ratio = 0.6	h	2.6
Battery backup time: 50% load Charge-Discharge ratio = 0.6	h	5.2

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