SOLINTEG ACADEMY

SOLINTEG C&I SOLUTION

Energy Storage System

INTEGRATE SOLAR INTELLIGENTLY

Solinteg C&I Solution

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Brief Introduction

Solinteg provides an innovative decentralized smart energy solution-Parkone, which is designed for commercial and industry customers. Compared with traditional PV energy storage systems, Parkone simplifies device number and system complexity, reduces the costs of installation and maintenance. Users can monitor, maintain and control the whole system in the monitoring APP, which offers them a more convenient and efficient solution.

Efficient

- Wide Power Range
- High Efficency
- 30A MPPT input
- Up to 10 units paralleling

Functional

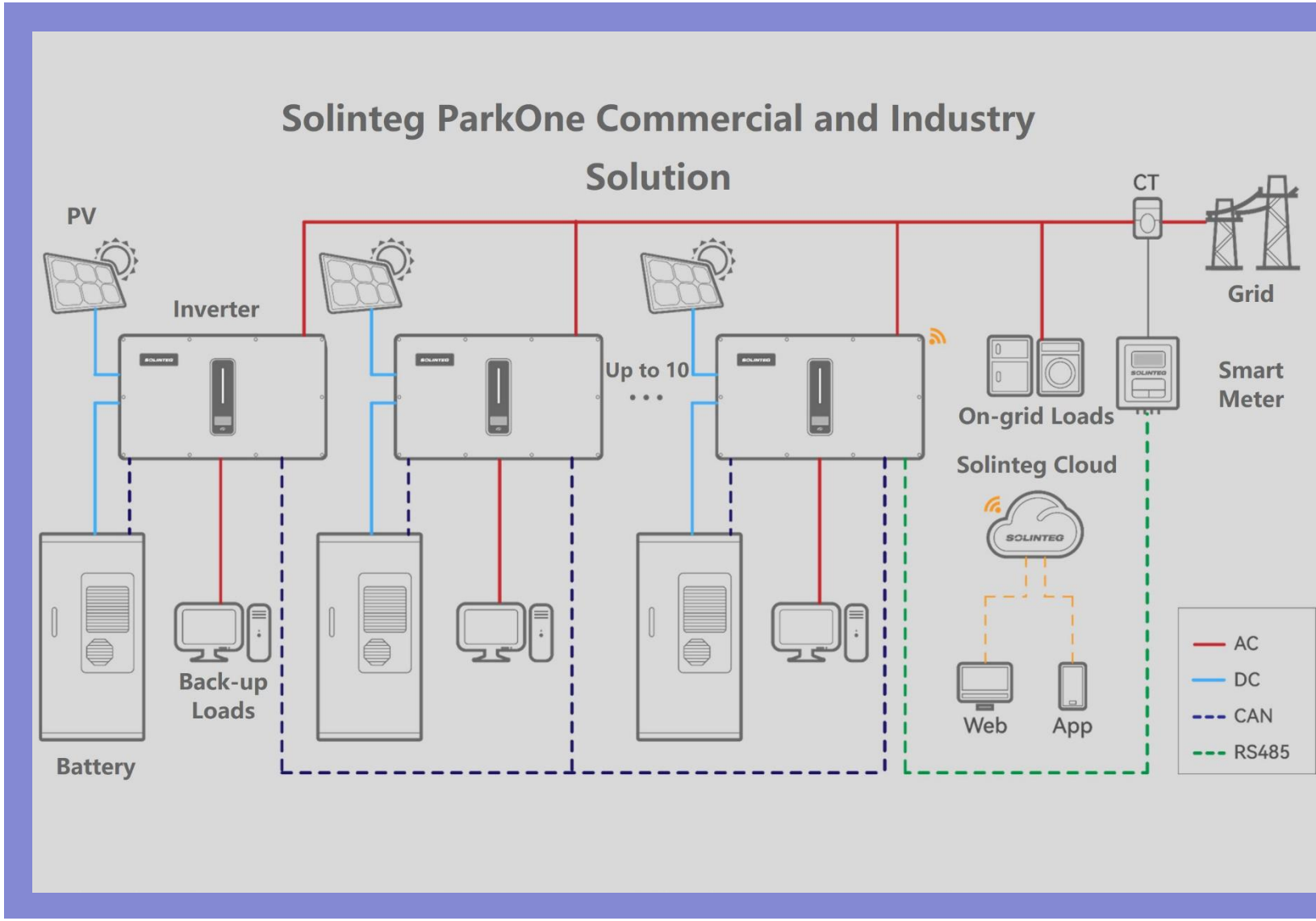
- UPS switching
- Unbalanced output
- Multiple Control
- DG Ready

Smart

- Smart EMS
- Intelligent Monitoring
- Smart Grid

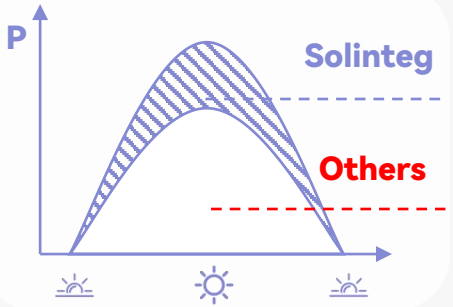
Safe

- Emergency stop
- 10+ protections
- IP 65

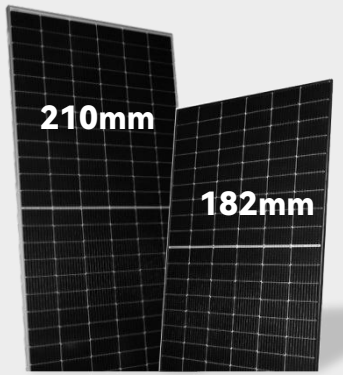


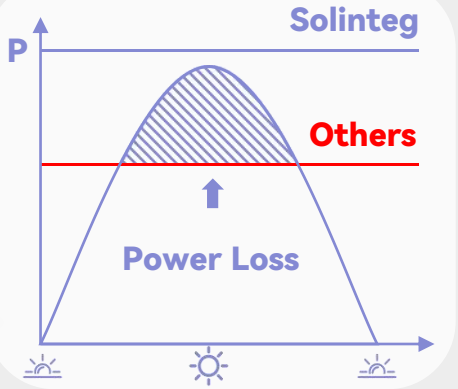
Efficient

Input

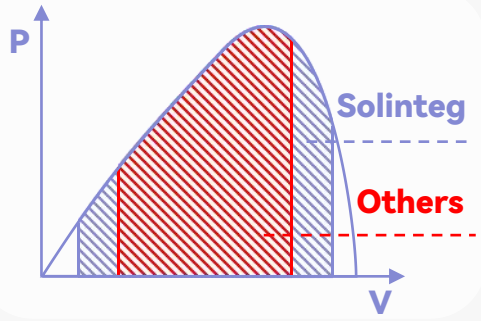


150% PV Oversizing





30A MPPT Input



200-850V MPPT

- **150% PV Oversizing**
  More power for loads and charge the battery at the same time, and more power in poor irradiation days
- **30A MPPT Input**
  Compatible with all kinds of big power PV panels, no power loss occurs
- **200-850V MPPT Voltage Range**
  Wider working voltage range for more possibility to track the max power point
- **Up to 4 MPPT**
  8 PV inputs and 4 MPPT make the PV connection more flexible

Efficient

Output

- **Wide Power Range**

25-50kW, suitable for different applications

- **High Efficiency**

Max. efficiency up to 98.8%, more generation, and less power loss

- **100A Charging and Discharging**

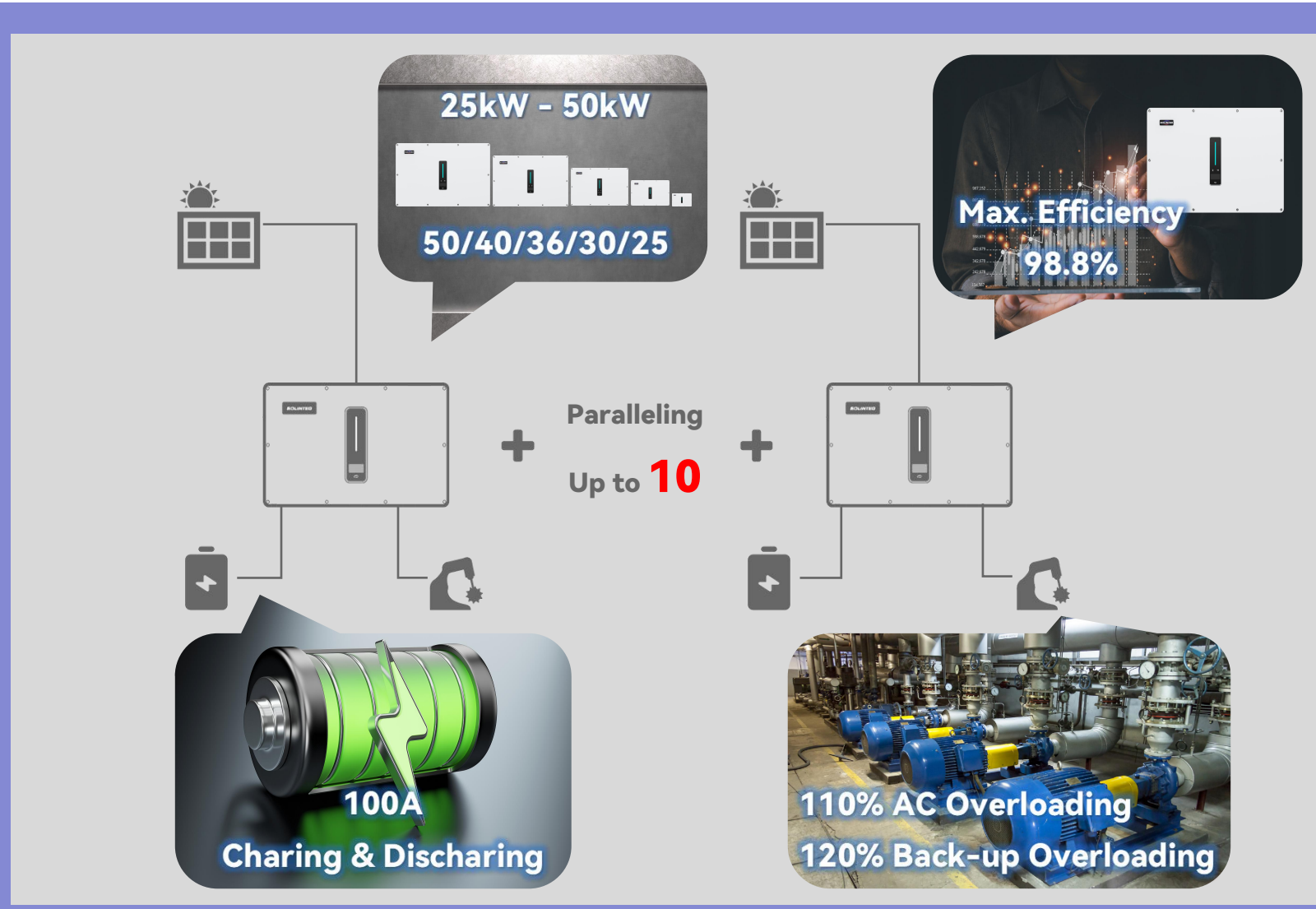
Shorter full charging time and bigger discharging power

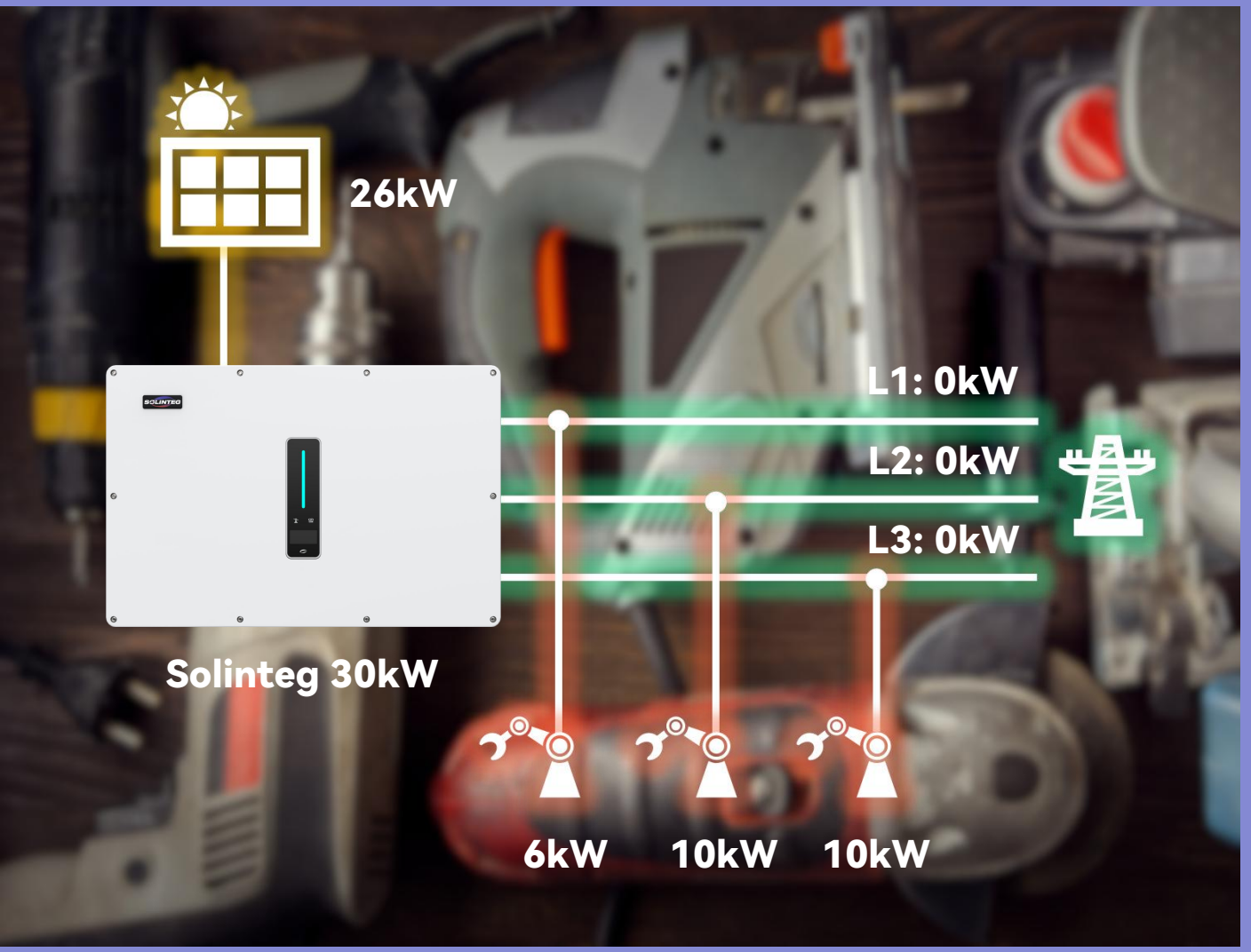
- **110% AC Overloading / 120% Back-up Overloading**

Bigger loads connection

- **Up to 10 Units Paralleling**

Expand the system from 25kW to 500kW flexibly





FUNCTIONAL

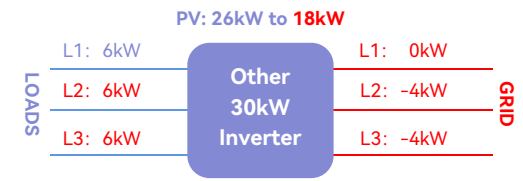
Unbalanced Output

In a three-phase system, it is common that different power loads will be used at the same time on different phases, which will cause the power consumption of the whole three-phase grid to be unbalanced.

Imagine a scene *(as shown in the pic):*

PV generation is 26kW. Where the power export is limited and there are three working loads of different phases, L1: 6kW; L2: 10kW; L3: 10kW.

What will happen when you are using a 30kW inverter without the unbalanced output function?



Due to the lack of unbalanced output function, and to ensure there is no power exporting to the grid, the inverter each phase output will be limited to 6KW. Therefore, the total power of the inverter is forced to decrease from 26KW to 18kw, and L2 and L3 phases require additional power purchase from the grid to fill the power gap.

Solinteg inverters support ***100% unbalanced output***.

So in this case, each phase can be fully supplied by the inverter, which can save energy bills and increase load flexibility.

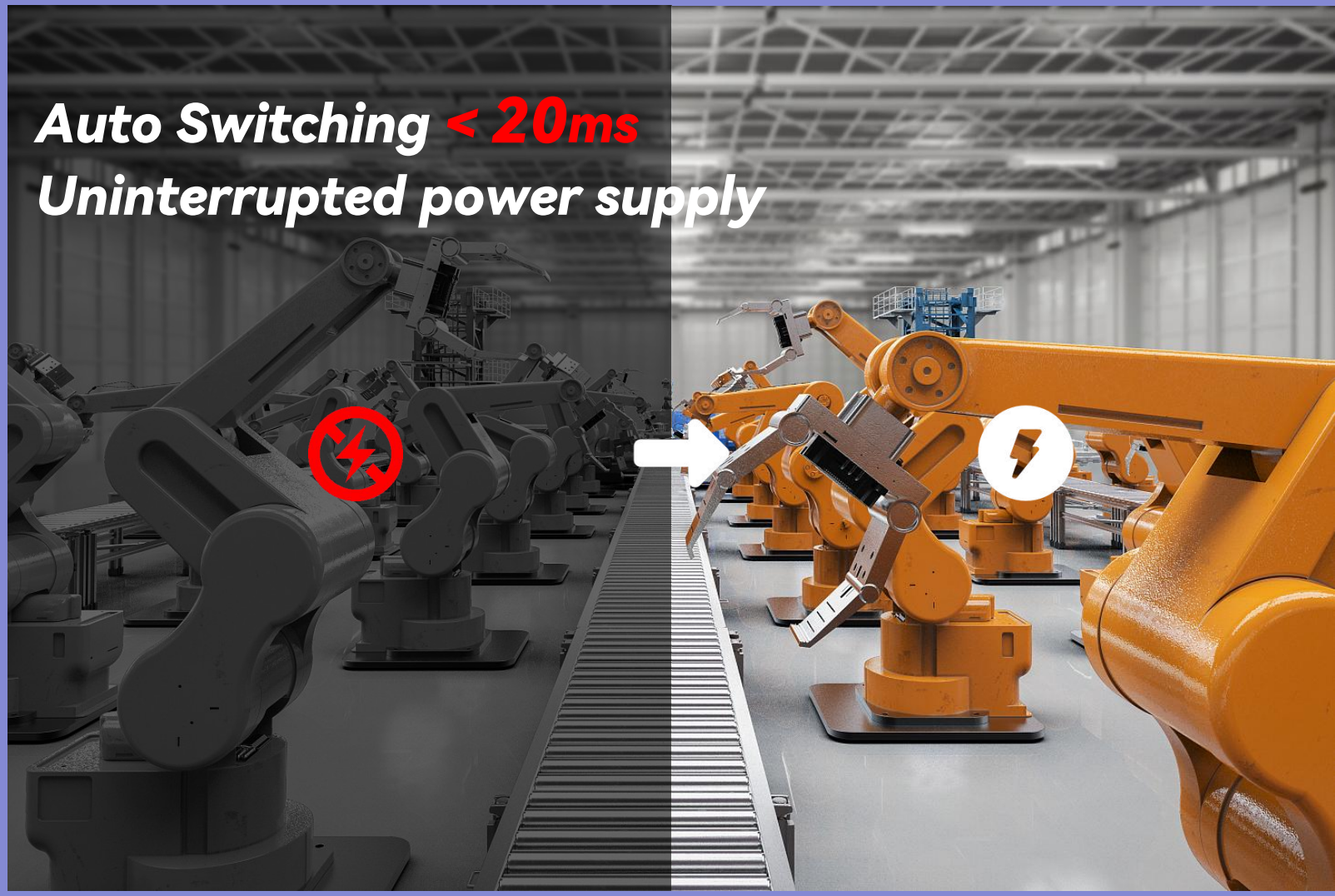
FUNCTIONAL

UPS Level Auto Switching

Solinteg hybrid inverters can switch your system to off-grid mode when the power blackouts.

The whole switching process is managed automatically and can be activated within **20ms**.

It keeps your important devices running, and reduces losses caused by power outages.



FUNCTIONAL

DG Ready

It is possible that we may encounter extreme situations where the grid blackouts, the battery reaches SOC protection value, and the solar panels don't have higher generation due to bad weather.

Don't worry! Solinteg hybrid inverters support the use of a diesel generator as an AC source to supply loads and charge batteries in this situation.

Solinteg hybrid inverter can control the diesel generator through a dry contact terminal, which can manually or intelligently start the diesel generator remotely to respond to emergencies.

FUNCTIONAL

Multiple Control-DO/AO

Solinteg 25-50kW inverters offer multiple ways of control ways, which include three digital outputs and two analog outputs.

With these AO/DO contacts, you can remotely control the loads that are connected to our inverter on and off through our APP. For example, turn on or off the light at a certain time, preheating the room before you come to the house.

Also, we can connect a lot of heating storage devices through the DO & AO contacts such as heating pumps, towel heating racks, and boilers to efficiently use the power generated from the PV. For example, if there's excess power in the daytime, you can use it to increase the temperature of heat pumps or boilers and enjoy a warm home when you come back.

SMART

Intelligent Monitoring

Solinteg provides an intelligent and convenient remote control platform-- Solinteg Cloud.

You can easily manage and check your system and subordinate PV power station anytime and anywhere, including power generation status, battery status, load consumption information, etc. Also, multiple settings can be remotely configured through Solinteg Cloud and its portable version Solinteg App, such as turning on/off the inverter, firmware upgrading, parameters setting, operation mode setting, etc.

Our platform makes it possible for operators to monitor and control their system in a timely manner on PC and mobile phone.

SMART

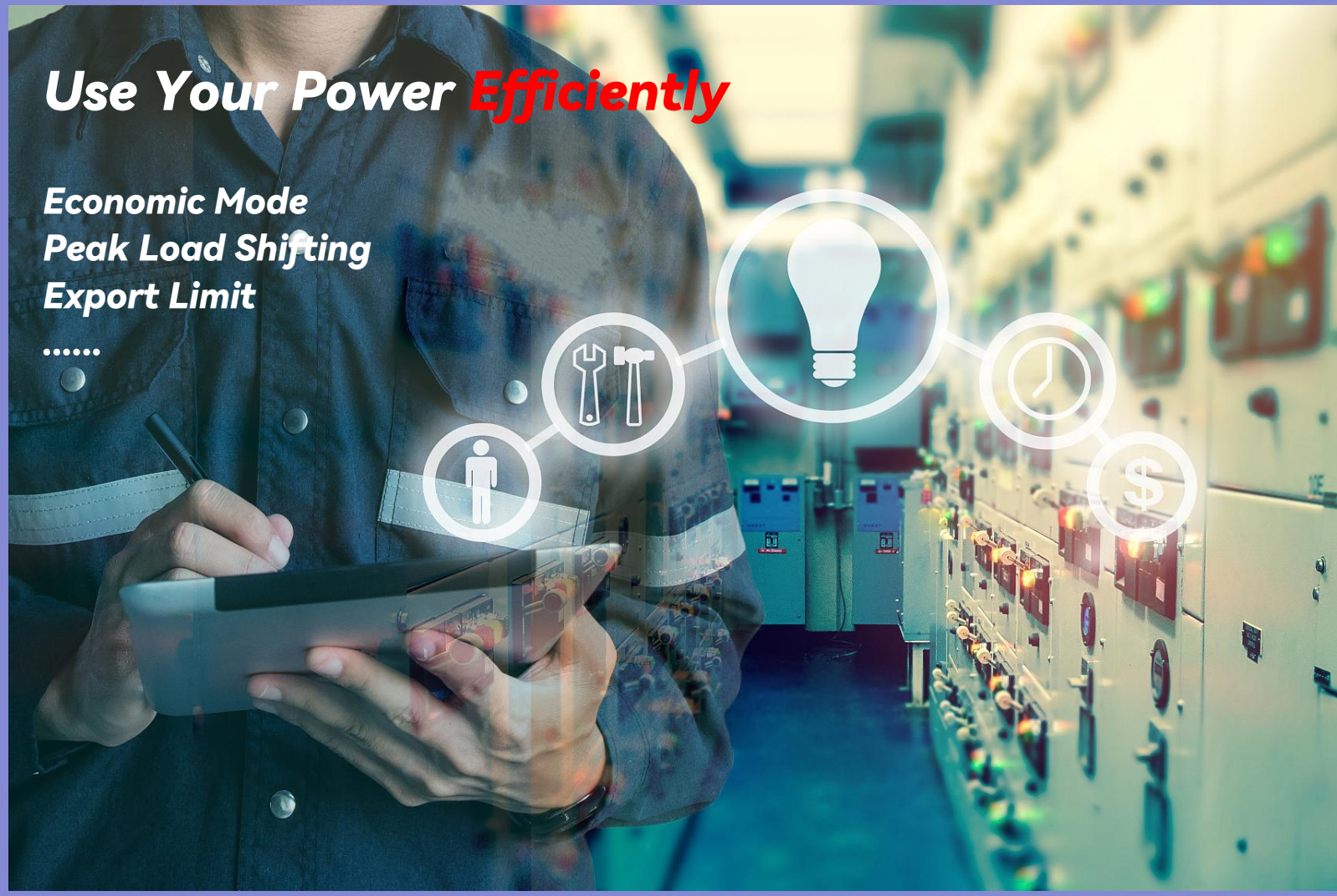
Smart EMS

Have you ever been troubled by the following PROBLEMS?

- *Significant peak-to-valley electricity price*
- *Expensive electricity used in non-emergency time*
- *Excess power exports to the power grid without any payback or even being punished.*
- *…*

Solinteg smart EMS can provide you with solutions in these scenarios.

You can manually control some high-consumption loads on and off on Solinteg Cloud. Or you can intelligently control these loads by preset working modes or time periods and limit the export power to use your power more efficiently.



SMART

Smart Grid

There are different requirements for inverters in different regions. Some are related to safety, while others are related to the grid.

For example, RRCR in Germany. If the grid is overloaded, the utility company will send a command to the inverter through RRCR to ask the inverter to reduce its feed-in power to 0%, 30%, 60% of its rated power according to the command. If the grid is not overloaded, the inverter will be allowed to feed 100% of the power.

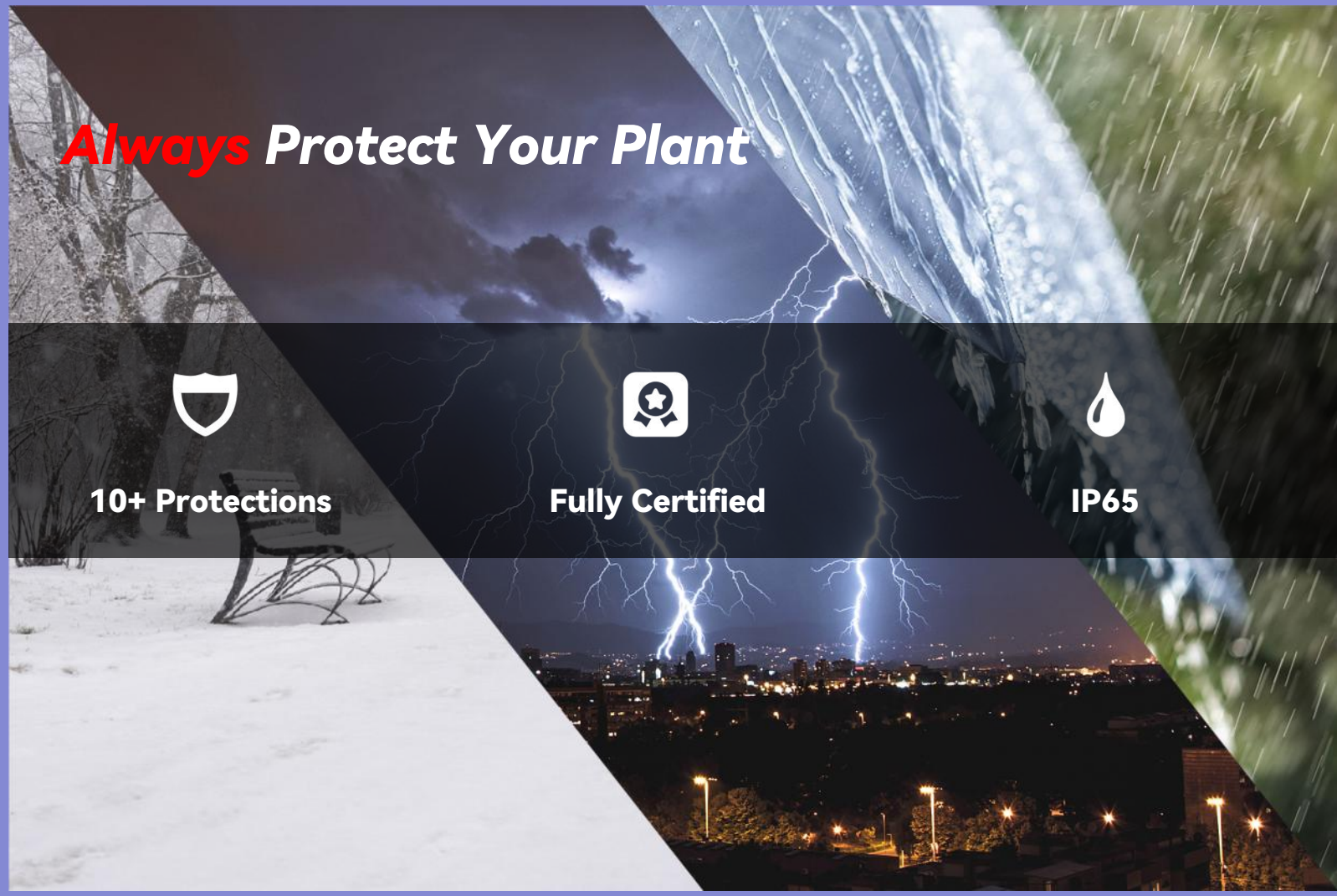
Solinteg has the integral solution to adapt to the different region's requirements. Such as DRED, RRCR, N-PE check, and so on.

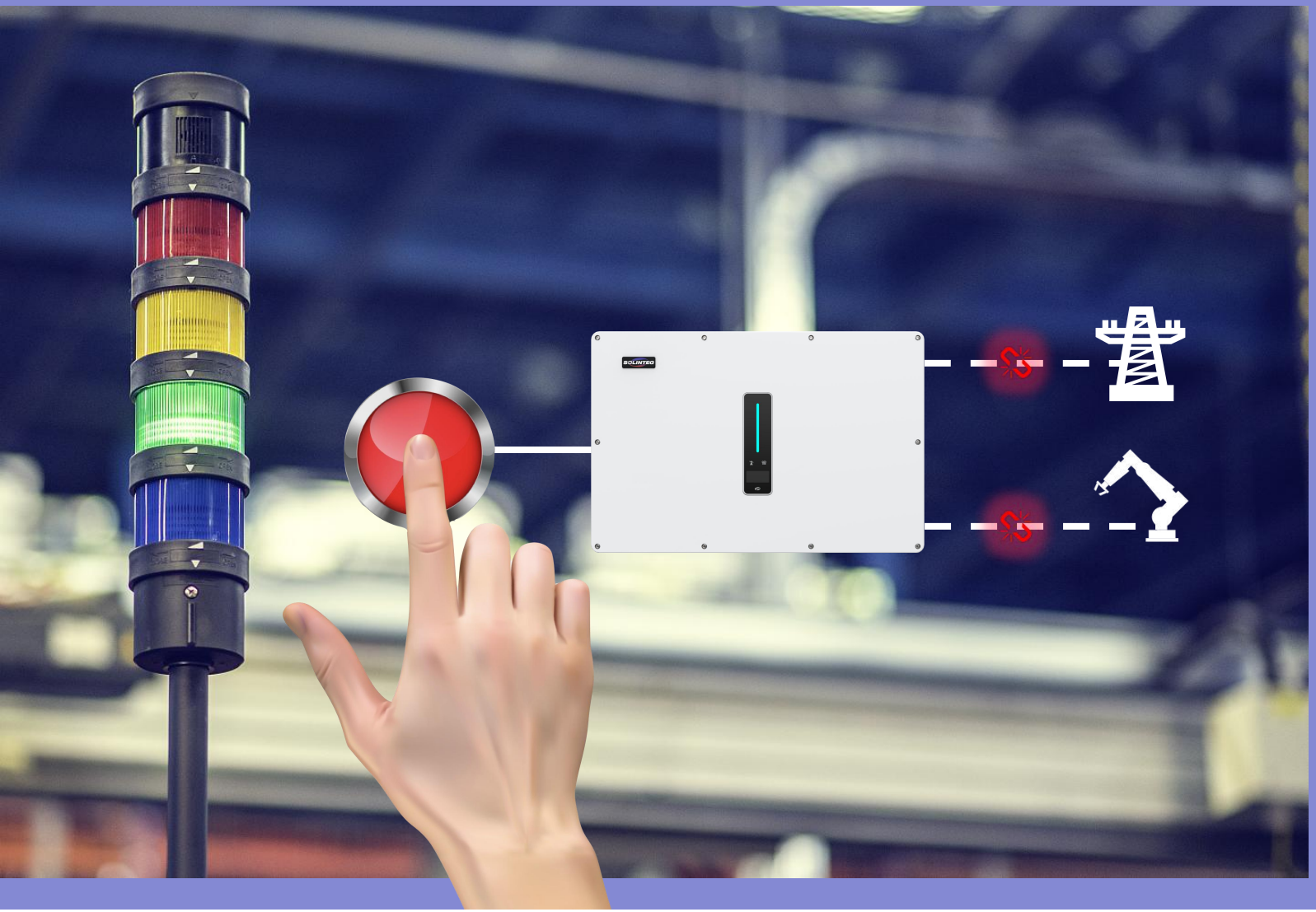
SAFE

Multiple Protection

Solinteg inverters have an elegant outlook design with IP65 class protection and over 10 kinds of safety protection, such as surge protection, DC reverse polarity protection, over-temperature protection and so on, which ensure our inverters perform stable and safely.

Complete protection and certifications make sure that our customers choose our products without worry.





SAFE

Emergency Stop

When an accident occurs, it usually takes you several minutes to turn off the DC switch, battery switch, and AC switch.

Solinteg hybrid inverter comes to stand with an emergency stop function, which can cut off all outputs rapidly.

You can stop the inverter with a press when an accident occurs and avoid system damage being enlarged.

Applications

Commercial Buildings

For some commercial buildings, an energy storage system can help them build a self-running power system, which can not only reduce their electricity bills, but also help some remote buildings use power independently without a grid.

As power consumption can be supplied by PV generation at daylight time, small capacity batteries are enough to supply critical devices at night for many commercial scenarios.

As the project shown in the right picture, this is a small commercial energy system designed for UNICEF, which can generate about 160kWh of energy a day and save over 58.4MWh energy a year.

Applications

Industry

Many factories have large roofs without any shade. It's a natural perfect place to install solar panels. When combining the big roof with an energy storage system, it can make many profits for the investor.

For the big capacity solar panels, we can build a parallel system with Solinteg inverters. With suitable batteries, the system can not only supply sufficient power for the factory 24 hours a day but also import the surplus power to the grid to make huge profits.

As the project shown in the left pictures, a parallel system with 6 units of 50kW Solinteg inverter can generate more than 333MWh a year for the investor.

Applications

Large Scale

To ensure the stability of the electrical grid and the availability of reserve power in case of an emergency. Some large-scale solar projects in China are required to include a certain percentage of energy storage. Typically, the whole system energy storage percentage is between 10 and 20%.

Solinteg hybrid inverter 25-50kW can be paralleled up to 500kW to include in a 5MW large-scale project with a requirement of coupling 10% energy storage.

Applications

On-grid Revamping

There are many on-grid solar systems that were installed under the stimulation of the high subsidy and FIT. When the policy changes, there are no more profits for exporting the power into the grid. So, revamping their on-grid system to an energy storage system is a good choice.

Using Solinteg's inverters and smart meters, with suitable batteries, they can revamp their system easily, and monitor the whole system in Solinteg Cloud.

Just like the system in the left picture, a 500kW on-grid system is transformed into an energy storage system by adding a Solinteg 50kW hybrid inverter and Pylontech 100kWh batteries..

Applications

EV Charging Station

With the development of the electric vehicle industry, there will be more demands for EV charging stations. It is an ideal solution to combine the charging station with an energy storage system.

A storage system with sufficient batteries can run an EV charging station independently without a grid at daylight and evening.

The picture on the right shows an EV charging station which can generate about 700kWh in a good irradiation day. So, for a 50kWh battery EV, the station can charge over 20 cars' battery from 20% to 90%.

Applications

Investment & Return

How fast can the solar investment be returned?

Here we use a small commercial system built in a mall in Germany as a demonstration. They built an energy storage system with 260kW PV, 4 units 50kW inverter and 200kWh batteries. The total investment of this system is about 450,000 euros. We consider the generation time a day to be about 3-4 hours, so the total generation is about 260MWh a year. In this way, it could save about 78,000 euros on electricity a year. So, the return time is about 5.77 years. If there are any other subsidies, this time will be shorter, but if there're loans, the return time will be longer.

Different areas have different electricity prices. So, the return time may be more or less different. But the huge return and the priceless effort of environmental protection never change.

C&I Solutions

Solinteg + Pylontech

Force H1	Powercube X	Powercube H	Powercube M
H1-V2 **1 Rack:** 14.2-24.9kWh **6 Racks:** Up to 149.4kWh	**X1-V2** **1 Rack:** 9.6-31.2kWh **6 Racks:** Up to 187.2kWh	**H1-V2** **1 Rack:** 12-31.2kWh **6 Racks:** Up to 187.2kWh	**M1** **1 Rack:** 28.4-94.8kWh **6 Racks:** Up to 568.8kWh
H2-V2 **1 Rack:** 7.1-14.2kWh **6 Racks:** Up to 85.2kWh	**X2-V2** **1 Rack:** 14.2-46.2kWh **6 Racks:** Up to 277.2kWh	**H2-V2** **1 Rack:** 17.8-46.2kWh **6 Racks:** Up to 277.2kWh	**M2** **1 Rack:** 22.7-96.6kWh **6 Racks:** Up to 579.6kWh
			M3 **1 Rack:** 22.7-96.6kWh **6 Racks:** Up to 579.6kWh

*: Recommended only. For specific matching capacity, please consult the relative company.

C&I Solutions

Solinteg + Dyness

Tower	HV1	HV2	HV4
Not suggest to use with MHT 25-50kW	**1 Rack:** 9.6-31.2kWh **10 Racks:** Up to 312kWh	**1 Rack:** 14.4-46.8kWh **10 Racks:** 468kWh	**1 Rack:** 20.5-66.6kWh **10 Racks:** Up to 666kWh

*: Recommended only. For the specific matching capacity, please consult the relative company.

C&I Solutions

Solinteg+Weco

5K3XP	14K3XP
1 Rack: 20.8-62.4kWh **4 Racks** Up to 249.6kWh	**1 Rack:** 171.6-185.9kWh **4 Racks:** Up to753.6kWh

*: Recommended only. For the specific matching capacity, please consult the relative company.

C&I Solutions

Solinteg+Lithium Valley

LV-BST-H2.56	LV-BST-H5.12	LV-IESS
1 Rack: 7.68-25.6kWh	**1 Rack:** 15.36-30.72kWh	**1 Rack:** 30.72-143.36kWh **4 RACKS** Up to 573.44kWh

*: Recommended only. For the specific matching capacity, please consult the relative company.

END

Visit Solinteg website to find out more

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