



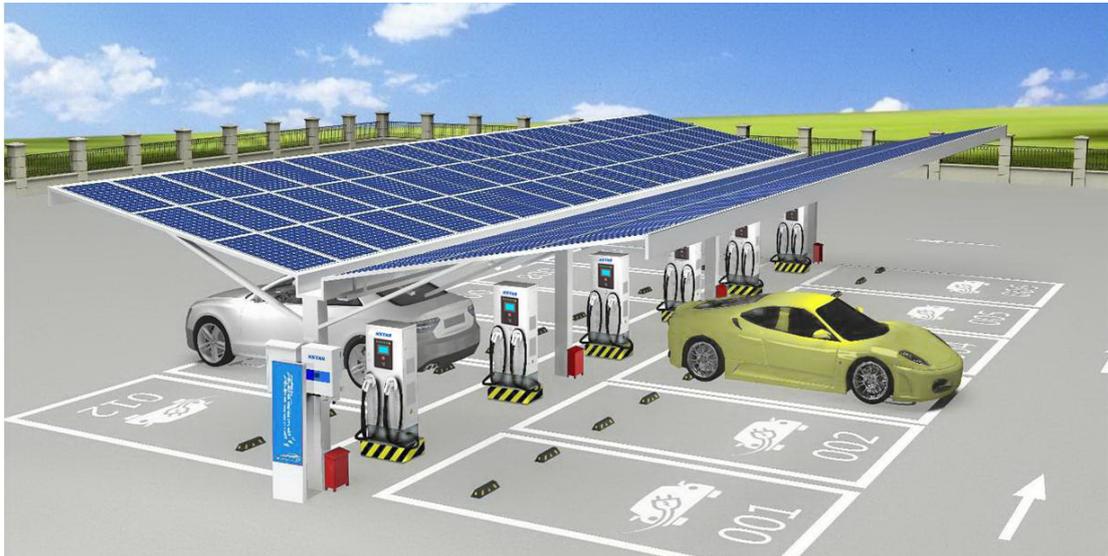
PV + Energy Storage System in EV Charging Station

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KSTAR combines its own product system and takes the charging system design of new-energy electric vehicles as the core, integrating solar energy and energy storage system to provide green power and create a more beautiful living space.



Diag. Sketch map of EV Charging Solution with Solar PV and Storage Battery

1. Solution Features

(1) Economical and Efficient

Photovoltaic installed on the parking shed is used to supplement the power source, to achieve peak and valley arbitrage, and to expand distribution capacity of charging stations.

(2) Multi-Functionalization

The system functions integrate the power generation of the photovoltaic system, the storage power of the energy storage system and the power consumption of the charging station, and operate flexibly in a variety of modes.

System design according to local conditions, customized.

(3) Intelligentize

The EV charging station receives the dispatching of different control layers such as local distribution dispatching and centralization micro-grid.

(4) Emergency power supply function

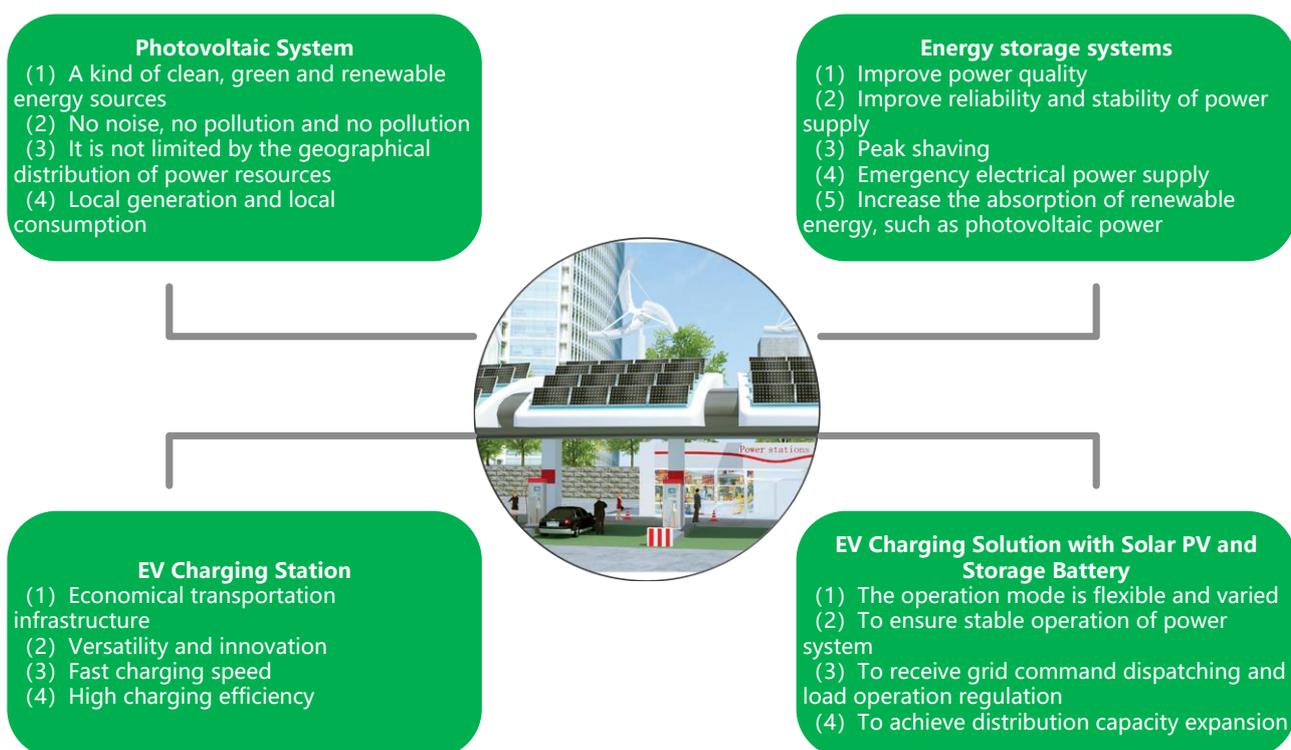
The energy storage system can provide emergency power supply for important loads such as EV chargers.

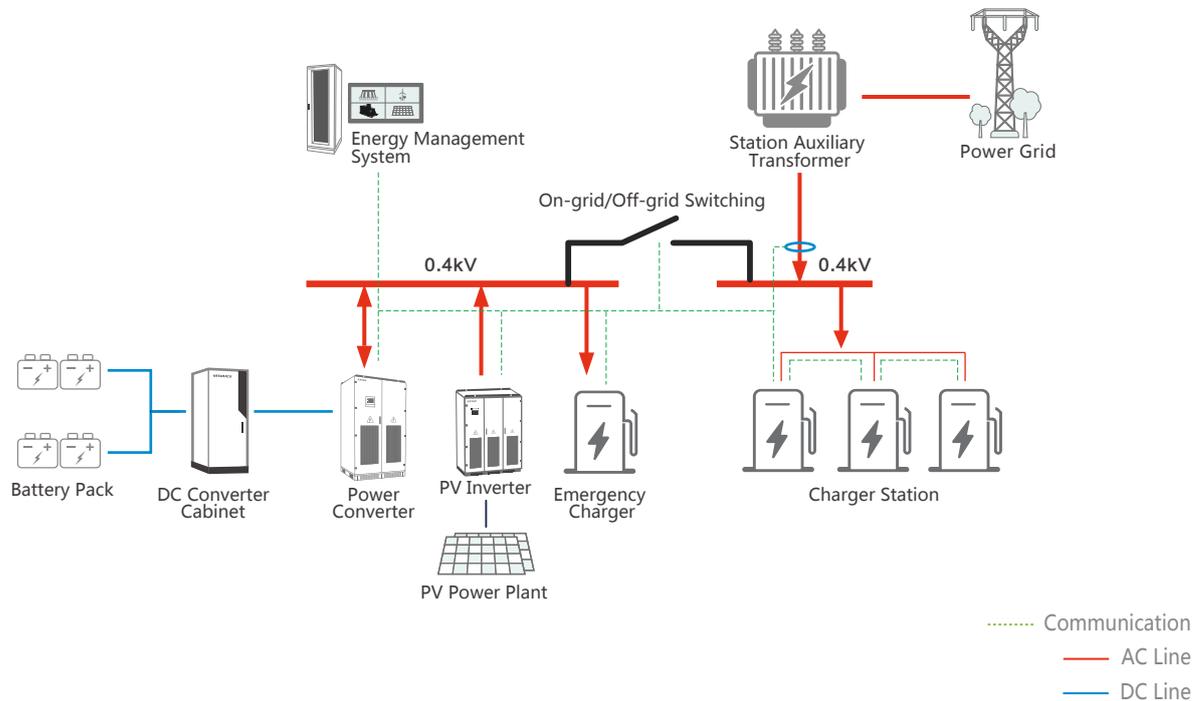
2. Application

(1) Applied in intercity expressway and expressway to achieve energy integration and economical transportation.

(2) It can be applied to bus charging stations or public charging stations in the city to achieve efficient utilization and increase added value by using idle areas.

(3) It can be applied in other fields, such as idle roof, parking shed, power distribution capacity expansion of charging station, etc., which can be solved through integration of multiple power sources.



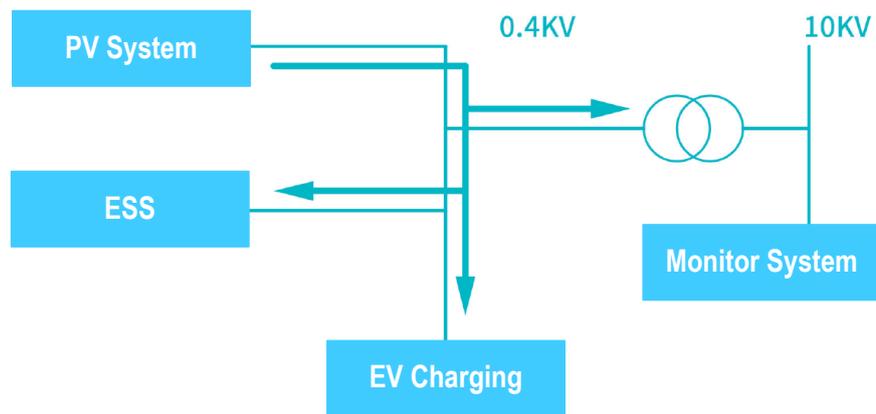


3. Operation Mode

3.1 Peak hours during the day

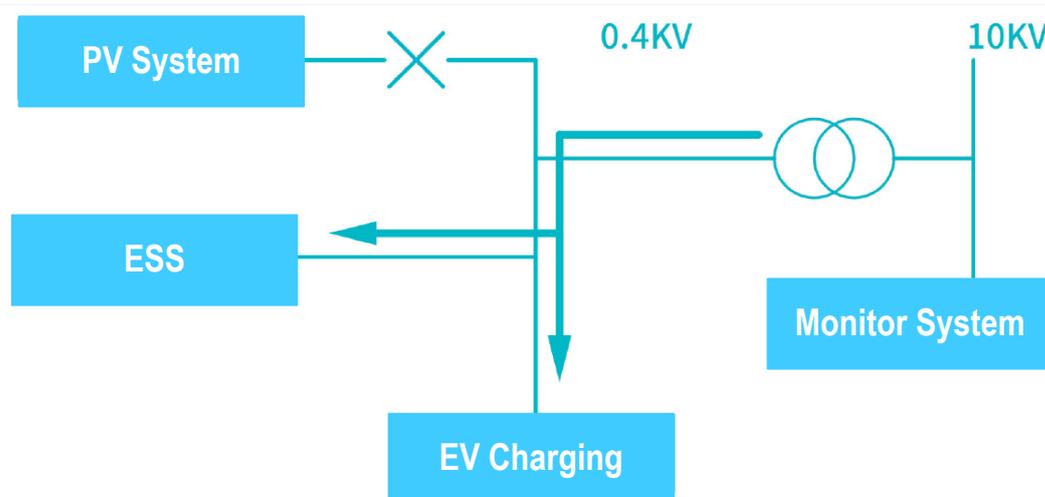
During peak hours of the day, photovoltaic power generation is used by charging stations, and excess power is stored in the energy storage system or fed back to the grid. When the photovoltaic power is insufficient, the energy storage system will discharge to supplement the distribution capacity of the charging station.

It can be mainly used to improve the income of new energy power generation, delay the cost investment of power distribution and capacity expansion, and obtain peak-valley arbitrage



3.2 Valley hours during the night

In the valley hours during the night, the photovoltaic system stops generating electricity, and at the same time, it is charged from the municipal power station to the charging station and energy storage system.

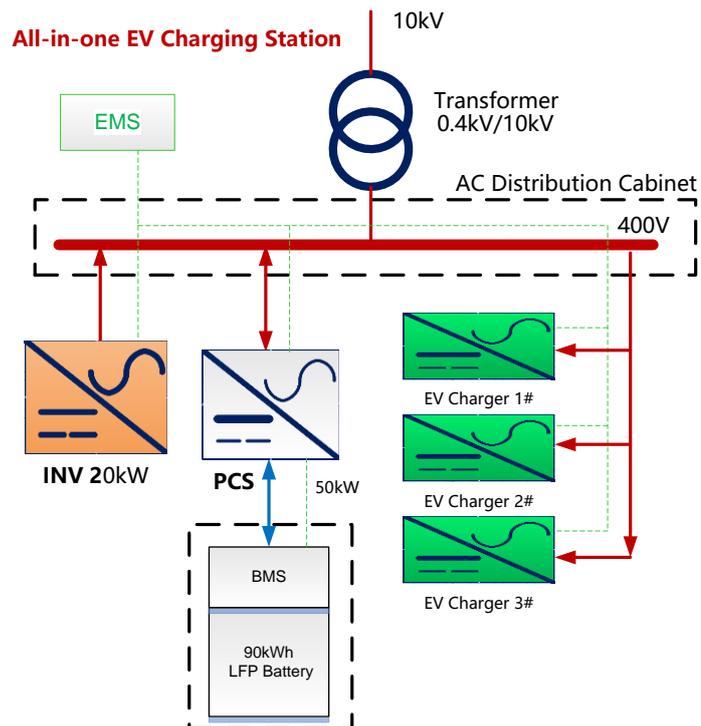


4. Project case

(1) Hebei Zhongtai 50kW/200kWh EV Charging Station with Solar PV and Storage Battery

Commercial Mode : Self-consumption+Backup+Peak-shaving

System topology diagram:



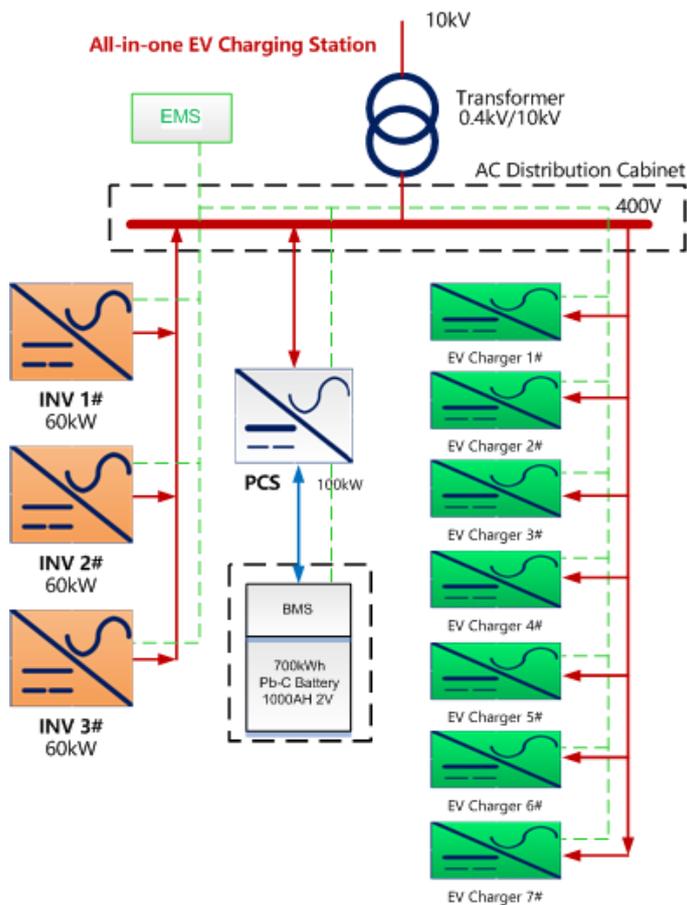
On-site photo:



(2) Harbin JZE 100kW/700kWh EV Charging Station with Solar PV and Storage Battery

Commercial Mode : Self-consumption + Backup + Peak-shaving

System topology diagram:



On-site photo:

