

# GOODWE Whole Home Backup Solution (North America Only)

(SA-A-20220824-001)

According to US unique installation requirement and installation habit, it's difficult to install the conduit to an existing system and existing main panel is difficult to retrofit to install other CTs. Based on these demands, GOODWE developed ES US (hybrid inverter) and SBP US (AC-coupled inverter) series which have an output power ranging from 5 kW to 11.4 kW. Both of hybrid and AC-coupled system can support whole home back-up application.

## APPLICATION

### 1. Hybrid system solution

As shown in Figure 1, all the house loads are connected in the main panel. In principle, whole home backup system can back up every load in a house during a blackout. ABD will auto disconnect the grid when it detects there's a blackout. Then inverter will keep working when ABD finished disconnection.

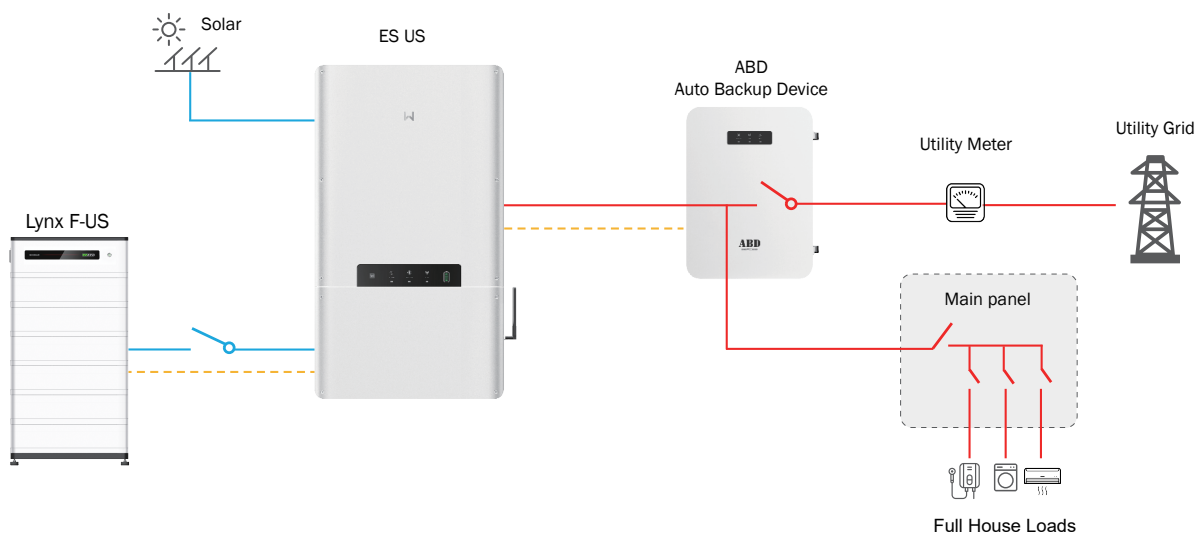


Figure 1. System Diagram of ES-US Whole Home Back-up Solution

#### Note:

1. GOODWE ABD is needed.
2. GOODWE Smart Meter and CTs have been pre-installed in ABD.
3. Loads don't need to be distinguished.

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	1. Self-consumption	2. Time of Use	3. Off-Grid	4. Back up
Whole Home back-up application	√	√	√	√
GOODWE EU US Operation Logic: Solar supply priority: Loads → Battery → Export Load Consumption priority: Solar → Battery → Grid				

Table 1. Application Scenarios of EU US Whole Home Back-up Solution

## 2. AC-coupled system solution

As shown in Figure 2, all the house loads are connected in the main panel. Besides loads, there's another 3rd party solar inverter connecting to the main panel. In this solution, 2 more CTs are necessary to be added to monitoring the 3rd party solar inverter energy production. With this four CT meter solution, accurate load monitoring can be realized.

SBP can transfer the power from AC to store in the battery. When there's a grid, 3rd party solar inverter can support loads, and excess energy can be stored in battery through SBP US. When there's a grid failure, ABD will disconnect from the grid. SBP US will turn to grid-forming mode, 3rd party solar inverter will keep working to prevent any energy loss. This is called micro-grid application.

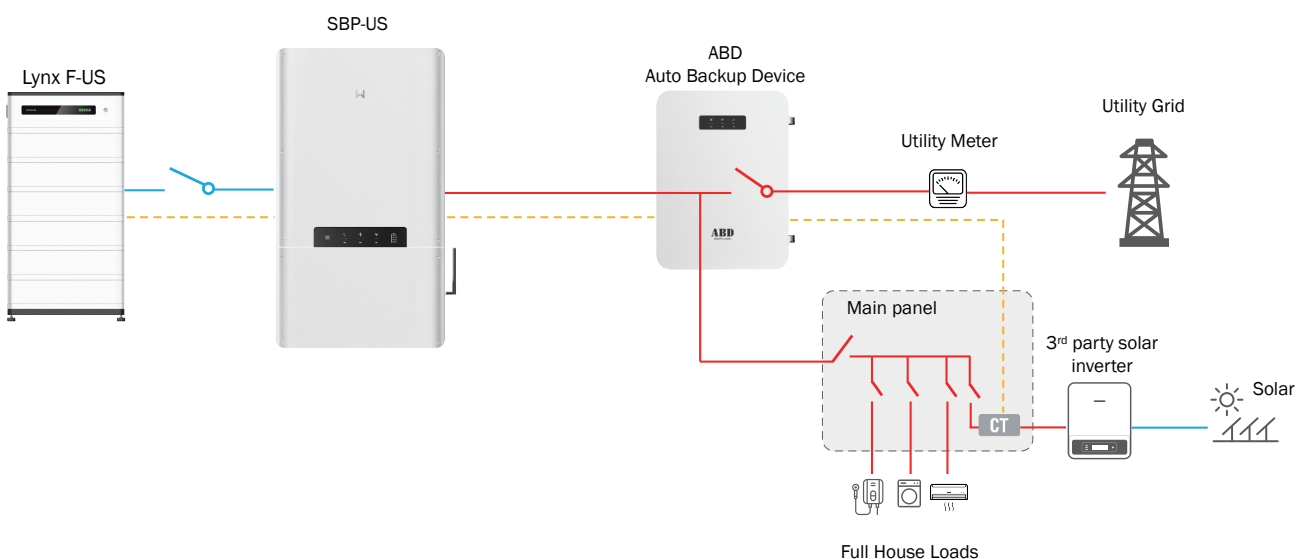


Figure 2. System Diagram of SBP-US Whole Home Back-up Solution

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### 3. Whole home backup solution + Generator mode

To enhance customer electricity safety, the system can not only support whole home backup solution or micro-grid solution, but also can add a generator to prevent any power failure in some extreme condition.

A separate auto transfer switch (ATS) and generator can be added between ABD and main panel. Normally, ATS will be recommended by generator company. Generator is connected to GOODWE inverter through a dry contact. ATS can auto transfer to generator side when there's no power from grid and inverter side. Inverter can send a signal to generator to ask for a start-up when battery energy running out during off-grid mode. Then generator will auto run to support whole home loads through ATS.

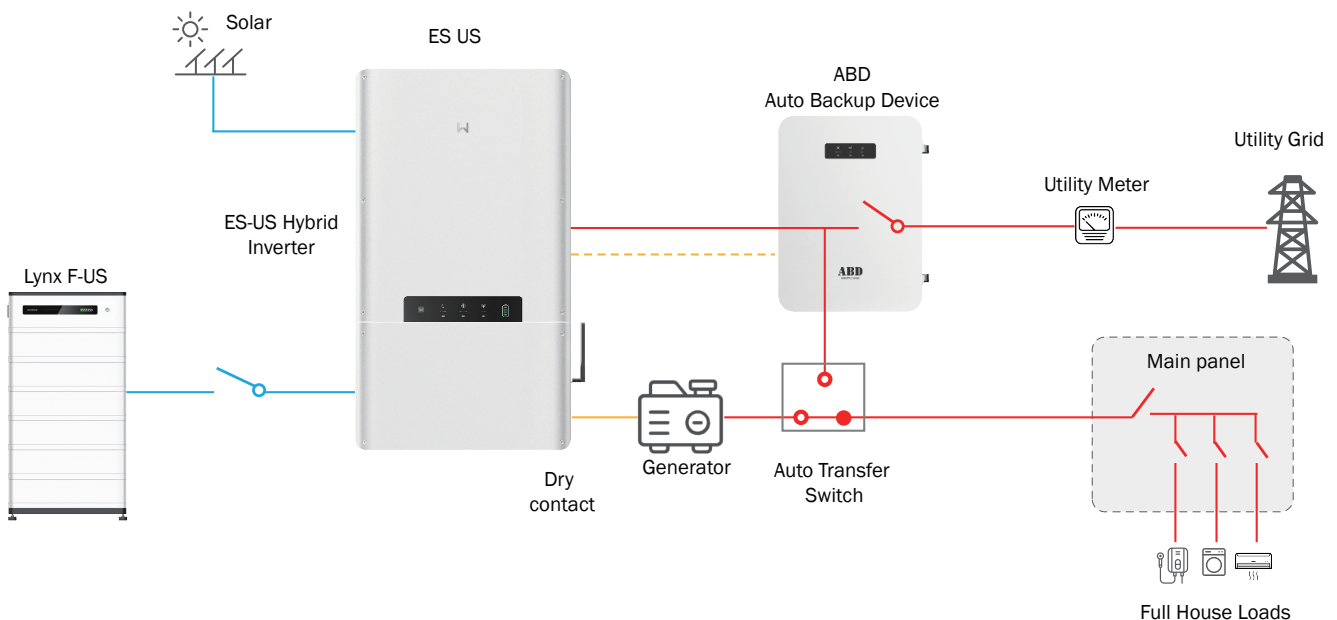


Figure 3. System Diagram of ES-US Whole Home Back-up Solution + Generator Mode

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