



**PARTNER**

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# Xpower ESS

3.8kW / 5kW / 6kW / 7.6kW  
10kwh~20kwh

All-in-one Residential Energy Storage Solution

# Xpower ESS FEATURES & COMPONENTS

## Safe & Reliable

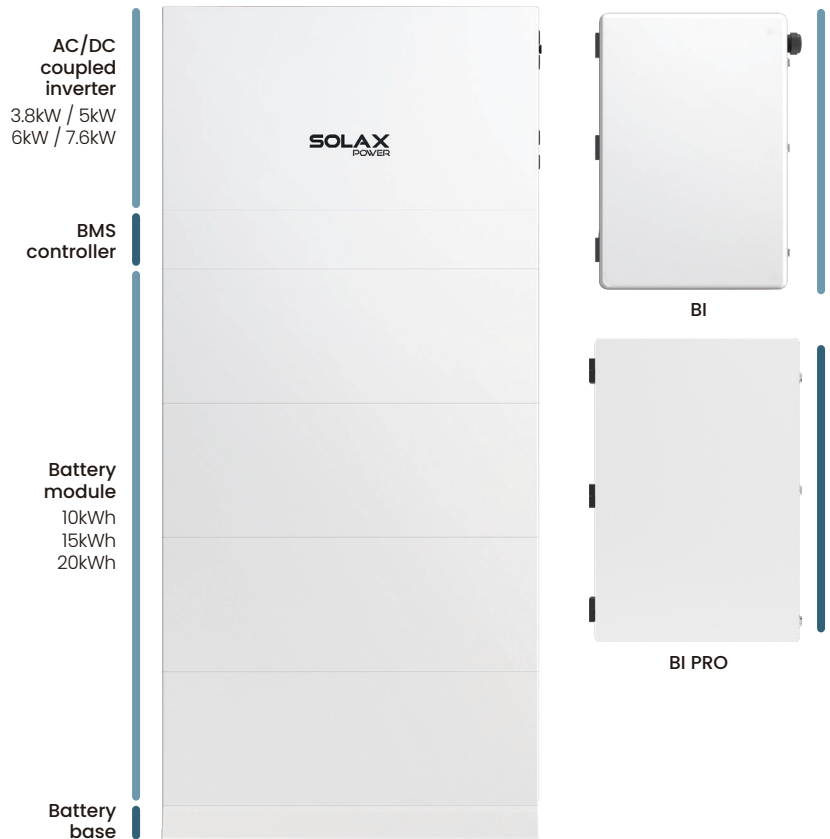
- Integrated ARC fault protection and rapid shutdown transmitter
- AC&DC SPD type II, always guarding the inverter
- NEMA 4X protection level<sup>①</sup>
- Automatic black start function

## Superior Performance

- Stacked installation, saving installation costs
- Up to 3 MPPTs
- Up to 200% oversizing allowed
- Maximum 16A PV input current, support high power solar panel
- Peak efficiency: 98%
- Up to 4 ESS in parallel
- Support Maximum 200A main panel

## Multi-function Integrated

- Max. 100A generator supported, depending on different BI Version
- Smart load management
- Micro-grid ready, supporting real-time power balance
- Support multiple power distribution solutions (Partial or Whole Home)
- VPP ready, SolaX cloud support resource aggregator (IEEE 2030.5, OpenADR)



① For inverters and batteries.

# Xpower SYSTEM OVERVIEW

System schematic



Rated Output Power [kW]	3.8 / 5.0 / 6.0 / 7.6		
Components (Hybrid Inverter / Battery Management System / Battery)	A1-G2 + TBMS-MCS60060 + 2*TP-HS50	A1-G2 + TBMS-MCS60060 + 3*TP-HS50	A1-G2 + TBMS-MCS60060 + 4*TP-HS50
Nominal Capacity [kWh] <sup>①</sup>	10	15	20
Usable Energy [kWh] <sup>②</sup>	9	13.5	18
Degree of Protection	NEMA 4X		
Net Weight [lb/kg]	345 / 156.5	464 / 210.5	583.1 / 264.5
Dimension (W x H x D) [in / mm]	33.5 x 49.7 x 5.8 / 850 x 1263 x 148	33.5 x 61.5 x 5.8 / 850 x 1563 x 148	33.5 x 73.3 x 5.8 / 850 x 1863 x 148
Altitude [ft / m]	9843 / 3000 MAX		
Cooling	Natural convection		
Topology	Transformerless		
Communication interfaces	RS485, CAN, WIFI (optional) / 4G (optional), Dry Contact		
Warranty	12 years <sup>③</sup>		

① Test Conditions: 0.2C charge & discharge at + 25 °C.

② Usable system energy may vary with different inverter settings.

③ The 12-year warranty is valid only in North America.

# DC/AC Coupled Inverter

AI-HYB/AC-3.8k-G2

AI-HYB/AC-5.0k-G2

AI-HYB/AC-6.0k-G2

AI-HYB/AC-7.6k-G2

## INPUT PV (HYB only)

Maximum recommended PV power [W]	7600	10000	10000	15200
Maximum DC voltage [V] <sup>①</sup>			550	
Maximum operating voltage [V] <sup>②</sup>			500	
Nominal DC operating voltage [V]			360	
Maximum input current [A]		A: 16 / B: 16		A: 16 / B: 16 / C: 16
Maximum short circuit current [A]		A: 20 / B: 20		A: 20 / B: 20 / C: 20
MPPT voltage range [V] <sup>③</sup>			90-500	
Start-up voltage [V]			120	
No. of MPP trackers, Strings per MPP tracker		2, 1 / 1		3, 1 / 1 / 1
DC disconnection switch			YES	

## INPUT/OUTPUT AC

Nominal / Maximum apparent AC power [VA]	3816 / 3816	5016 / 5016	6000 / 6000	7608 / 7608
Peak apparent AC power [VA] (10s, off-grid/backup) <sup>④</sup>	7632 / 7632	10032 / 10032	12000 / 12000	13680 / 13680
Nominal AC voltage [V] / Nominal AC frequency [Hz]			240 / 50 , 60	
Nominal AC current [A]	15.9	20.9	25	31.7
Displacement power factor			0.8 leading to 0.8 lagging	
Total harmonic distortion (THD, rated power)			< 3%	

## INPUT/OUTPUT BAT

Maximum output power [W]	3816	5016	6000	7600
Maximum charge / discharge current [A]			54	
Reverse-polarity protection			YES	

## ADDITIONAL FEATURES

AFCI <sup>⑤</sup>			YES	
Revenue Grade Metering, ANSI C12.20			0.5% revenue grade (optional)	
Rapid shutdown transmitter <sup>⑤</sup>			Integrated PLC controller to RSD	

## EFFICIENCY

CEC weighted efficiency <sup>⑤</sup>			97.50%	
Maximum inverter efficiency			98.00%	

## POWER CONSUMPTION

Nighttime power consumption [W]			< 3	
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## STANDARD

Safety	UL1741 PCS, UL1741, UL1741 SA, UL1699B, CSA - C22.2 No. 107.1-01, Canadian AFCI according to T.I.L. M-07			
Emissions	FCC Part 15 Class B			
Grid connection standards	IEEE1547, Rule 21, Rule14 (HI)			

## INSTALLATION SPECIFICATIONS

Protection class	NEMA 4X			
Operating temperature range [°F / °C]	-13 to +140 / -25 to +60			
De-rating start temperature [°F / °C]	113 / 45 or above			
Storage temperature range [°F / °C]	-13 to +167 / -25 to +75			
Relative humidity [%]	0 to 95			
Typical noise emission [dBA]	< 30			
Over voltage category	IV (electric supply side), II (PV side) <sup>⑤</sup>			

## GENERAL

Dimensions (W x H x D) [in / mm]	33.5 x 17.9 x 5.8 / 850 x 455 x 148			
Weight [lb / Kg]	75 / 34			
Communication interfaces	RS485, CAN, WIFI (optional) / 4G (optional), Dry Contact			

① The maximum input voltage is the upper limit of the DC voltage. Any higher DC input voltage will potentially result in damage to the inverter.

② Input voltage exceeding the operating voltage range may trigger inverter protection.

③ Any DC input voltage beyond the MPPT voltage range may result in inverter improper operation.

④ It is necessary to use the V2 version of the inverter and battery, and with different numbers of batteries, the peak power is also different.

⑤ The parameters on the PV side take effect only for HYB models.



## Stackable Batteries

### T-BAT H 10.0

### T-BAT H 15.0

### T-BAT H 20.0

MODEL	100Ah Lithium (LFP)		
Battery type	100Ah Lithium (LFP)		
Component	TBMS-MCS60060 + 2*TP-HS50	TBMS-MCS60060 + 3*TP-HS50	TBMS-MCS60060 + 4*TP-HS50
<b>NOMINAL CHARACTER</b>			
Voltage [V]	102.4	153.6	204.8
Operating voltage range [V]	90 - 116	135 - 174	180 - 232
Total energy [kWh]	10	15	20
Usable energy [kWh] <sup>①</sup>	9	13.5	18
Battery roundtrip efficiency [%] <sup>②</sup>	95%		
Maximum power [kW]	5.5	8.3	11.1
Maximum charge / discharge current [A]	54		
Cycle life (90% DOD)	6000 cycles		
<b>INSTALLATION SPECIFICATIONS</b>			
Charge / Discharge temperature range [°F / °C]	Charge: 32 to 127.4 / 0 to 53, Discharge: 14 to 127.4 / -10 to 53 <sup>③</sup>		
Storage temperature range [°F / °C]	6 months: 86 to 122 / 30 to 50, 1 year: -4 to 86 / -20 to 30		
Relative humidity [%]	0 to 100		
<b>STANDARD</b>			
Certification	UN38.3, UL1973, UL9540, UL9540A		
Hazardous materials classification	Class 9		
<b>GENERAL</b>			
Dimensions (WxHxD) [in / mm] - MCS60060 (BMS)	33.5 x 5.2 x 5.8 / 850 x 133 x 148		
Dimensions (WxHxD) [in / mm] - TP-HS50(BAT)	33.5 x 23.6 x 5.8 / 850 x 600 x 148	33.5 x 35.4 x 5.8 / 850 x 900 x 148	33.5 x 47.2 x 5.8 / 850 x 1200 x 148
Dimensions (WxHxD) [in / mm] - Base	33.5 x 3.0 x 5.8 / 850 x 75 x 148		
Weight [lb / kg]	TBMS-MCS60060: 22 / 10 +2*TP-HS50: 238 / 108 +Base: 10 / 4.5	TBMS-MCS60060: 22 / 10 +3*TP-HS50: 357 / 162 +Base: 10 / 4.5	TBMS-MCS60060: 22 / 10 + 4* TP-HS50: 476 / 216 +Base: 10 / 4.5

① Test Conditions: 90% DOD, 0.2C charge & discharge at + 25 °C.

② Maximum Charge/Discharge power may vary with different inverter models.

③ The working temperature could go down to -30°C with battery heating.

## Backup Interface

### A1-BI-200

<b>GRID INPUT</b>	
Nominal AC voltage [V]	120 / 240
Nominal AC frequency [Hz]	50 / 60
Maximum continuous AC input current [A]	160
<b>OUTPUT TO MAIN PANEL IN GRID TIED OPERATION</b>	
Nominal AC output voltage [V]	120 / 240
Maximum continuous AC input current [A]	160
<b>OUTPUT TO MAIN PANEL IN BACKUP OPERATION</b>	
Nominal AC output voltage [V]	120 / 240
Imbalance compensation in backup operation [VA]	5000
Split phase imbalance output current [A]	41.7
<b>INPUT FROM INVERTER</b>	
Maximum input overcurrent protection device [A]	200 x 1, 125 x 2
<b>GENERATOR</b>	
Maximum AC power [W]	15000
Maximum continuous input current [A]	63
Auto generator start	Yes

**GENERAL**

Maximum Supply Short Circuit Current [kA]	22
Dimensions (H x W x D) [in / mm]	27.8 x 17.7 x 5.9 / 706 x 450 x 151
Weight [lb / kg]	69.4 / 31.5
Energy meter accuracy	1%
Communication interfaces	RS485, CAN, Dry Contact
Cooling	Fan
Warranty	12 years

**STANDARD**

Safety	UL1741, UL67, UL869A, CSA 22.2, NO.107
Emissions	FCC part 15 Class B, ICES 003

**INSTALLATION SPECIFICATIONS**

Altitude [ft / m]	9842 / 3000 MAX
Operating temperature range [°F / °C]	-4 to +140 / -20 to +60
Protection class	NEMA 3R
Typical noise emission [dB]	< 50

## Backup Interface Pro

**GRID INPUT**

Nominal AC voltage [V] / Nominal AC frequency [Hz]	240 / 60
Maximum continuous input current rating [A]	160

**OUTPUT TO MAIN PANEL IN GRID TIED OPERATION**

Nominal AC output voltage [V] / Nominal AC frequency [Hz]	240 / 60
Maximum continuous output current rating [A]	160

**OUTPUT TO MAIN PANEL IN BACKUP OPERATION**

Nominal AC output voltage [V] / Nominal AC frequency [Hz]	240 / 60
Split phase imbalance output current [A]	41.7
Maximum output current [A]	160

**INPUT FROM INVERTER**

Max. number of inverter	4
Maximum input overcurrent protection device <sup>①</sup> [A]	200
Solar inverter production meter	Optional

**GENERATOR**

Maximum AC power [W]	24000
Maximum input overcurrent protection device <sup>①</sup> [A]	125
Maximum continuous input current [A]	100
Auto generator start	Yes

**SMART LOAD**

Number of "Maximum Smart Load 80A" branch [120V]	2
Number of "Maximum Smart Load 50A" branch [120V]	4
Combine 120V branches to 240V branch	Yes

**GENERAL INFO**

Maximum Supply Short Circuit Current [kA]	22
Number of dry contact	4
Number of communication RS485 ports	4
LED display	3
Weight [lbs / kg]	100.3 / 45.5
Maximum elevation [feet / m]	9842 / 3000
Noise [dB]	< 40
Operating temperature range [°F / °C]	-4 to +113 / -20 to +45
Protection rating	NEMA 3R
Dimensions [H x W x D] [in / mm]	32 x 22 x 7.3 / 813 x 559 x 185
Warranty [years]	12

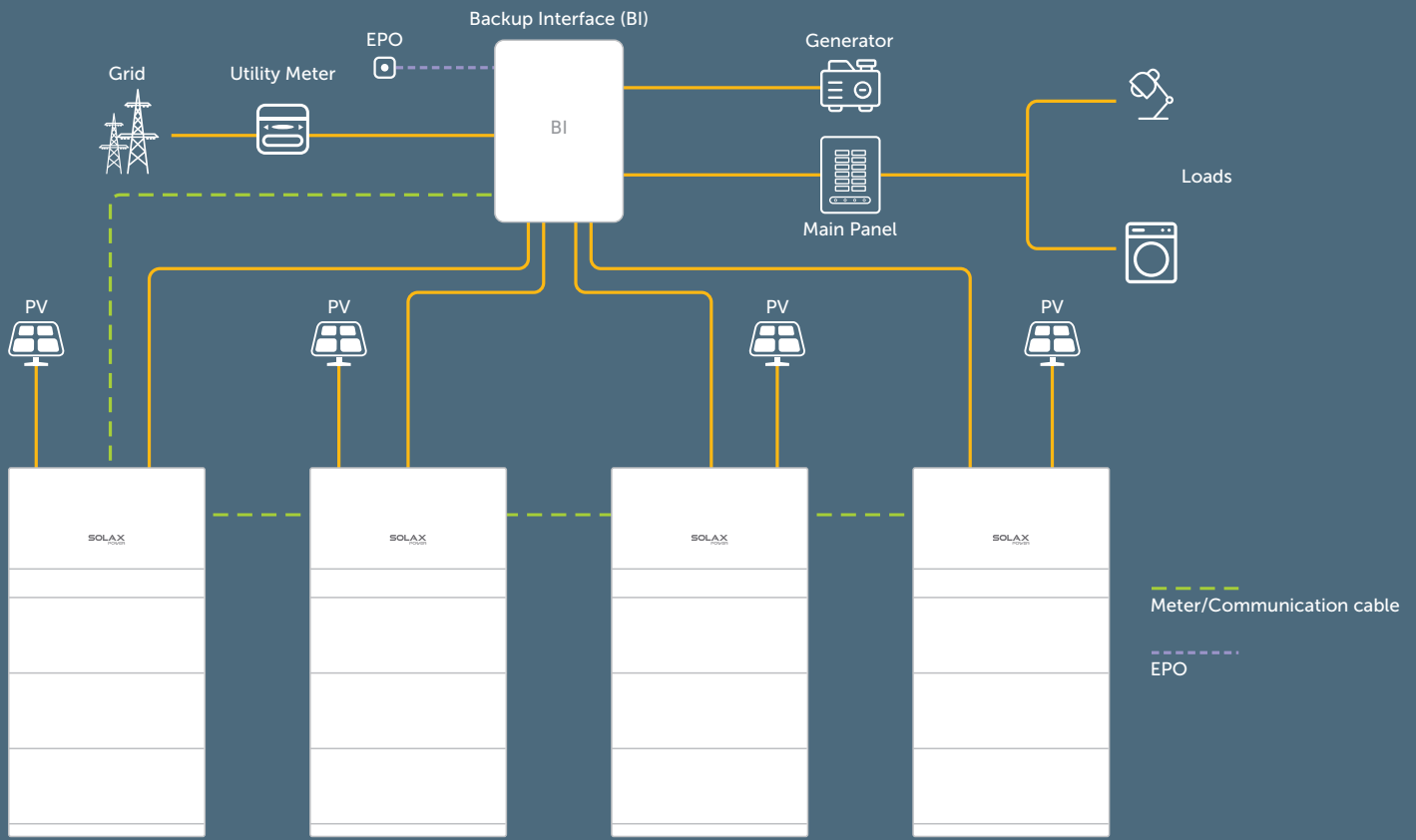
**STANDARD COMPLIANCE**

Safety	UL1741, CSA 22.2 NO.107, IEC62109-1, CSA C22.2 No.29, CSA22.2 205, CSA 22.2 0.19
Emissions	FCC part 15 Class B

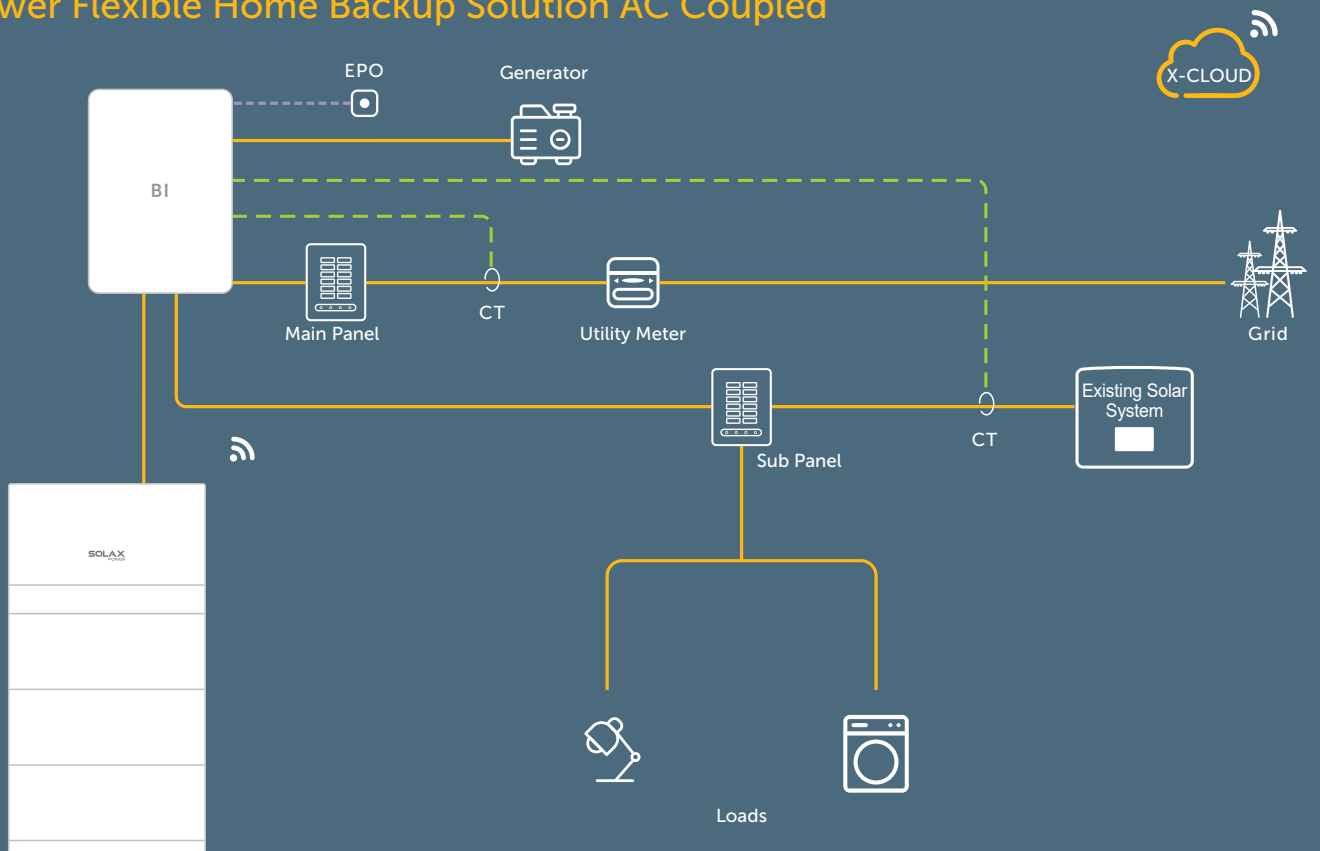
① Not included. Installer must provide correctly rated breaker as per circuit breaker list above.

## Xpower Energy Storage System (Parallel Operation)

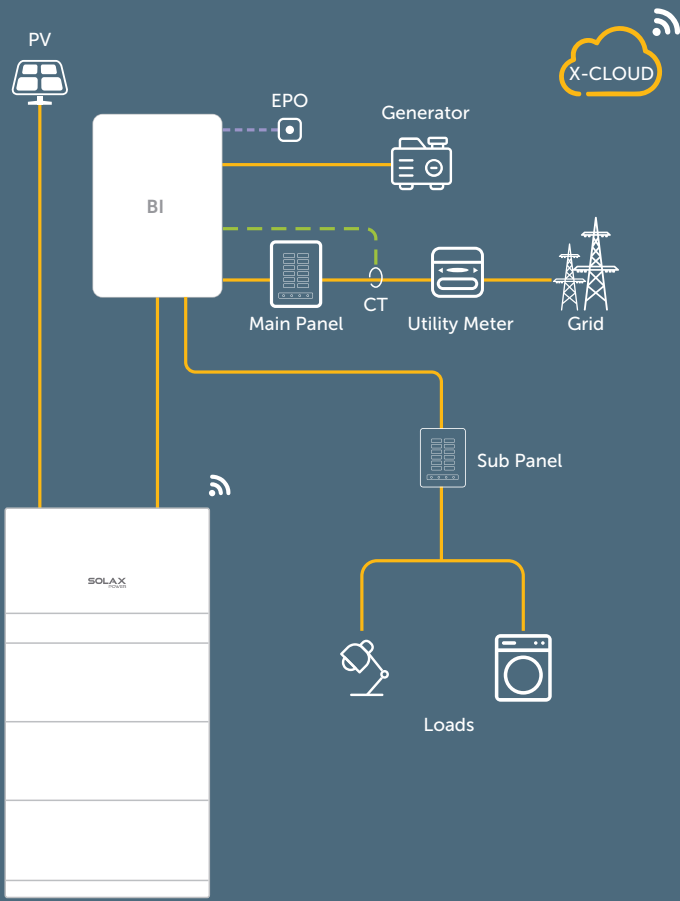
- Compatible with existing PV system
- Up to 4 battery modules stackable, 20kWh each system
- Up to 4 systems in parallel, 7.6kW \*4 =30.4kW, 20kWh\*4=80kWh
- 160A BI supported



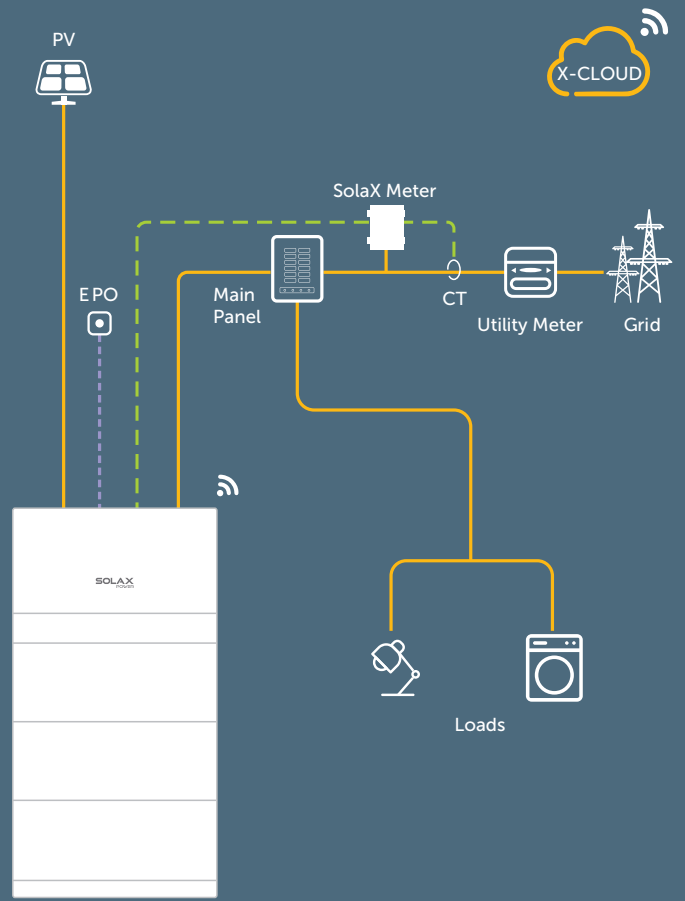
## Xpower Flexible Home Backup Solution AC Coupled



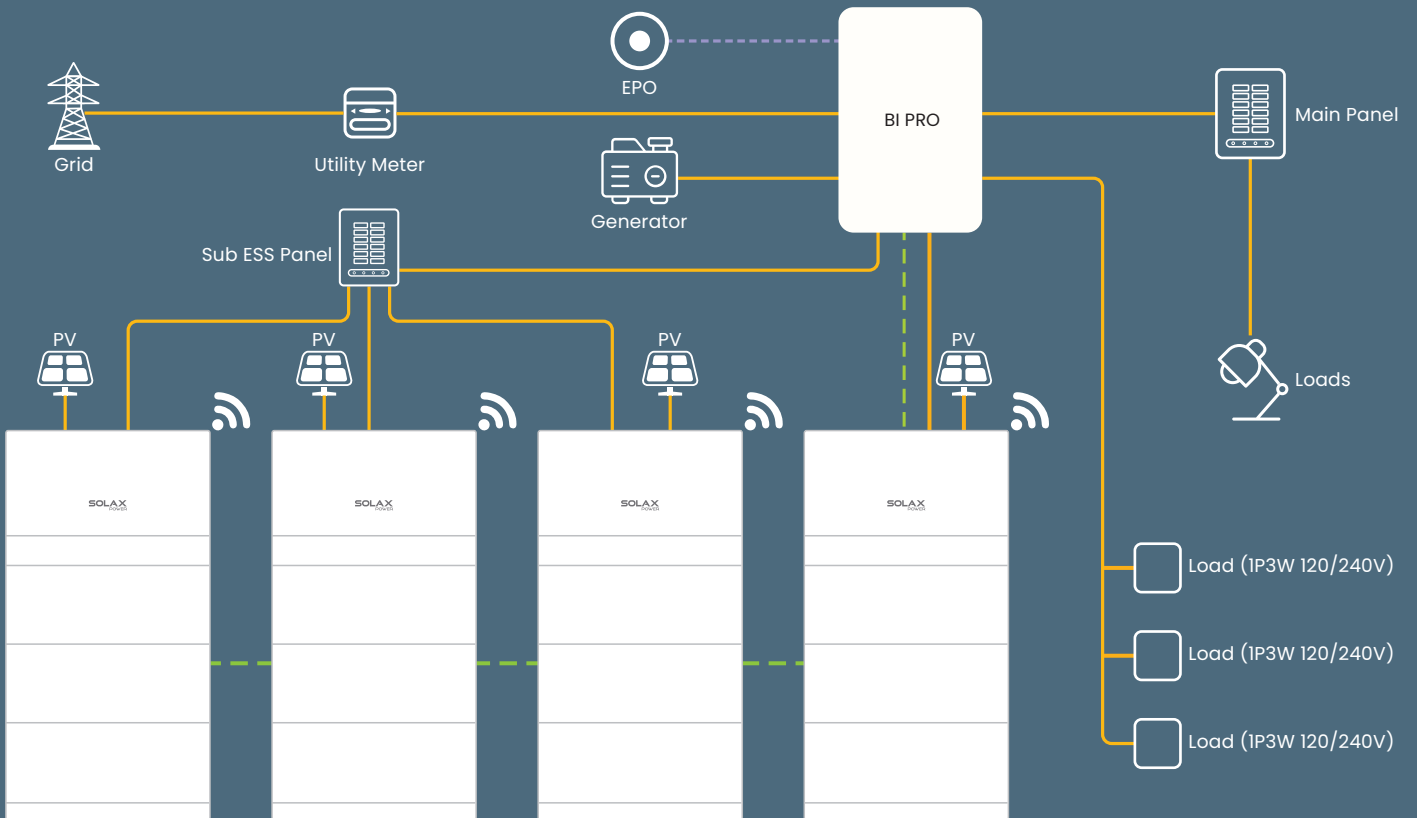
## Xpower Flexible Home Backup Solution



## Xpower Flexible Home On-grid Solution



## Xpower Energy storage system (parallel operation)





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V2.0. Information may be subject to modify without notice.

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