SolaX
SMART EV CHARGER

Phrasios

SMART EV CHARGER

X1-EVC-7.2K / X3-EVC-11K / X3-EVC-22K

The Smart EV-Charger series products are mainly used for **home smart charging**, which able to guarantee **dynamic load balancing** and **grid current limit**, also are capable **with grid-connected inverters** for self-use, and use PV power generation as much as possible to charge electric vehicles, **reducing the purchase** of electricity from the grid. Smart EV Charger performs much better in functions and convenience when being used with Solax inverters due to the proper compatibility and perfect synchronization.

SMART EV CHARGER

X1 - EVC - 7.2K(P X H / P L H / P X C / P L C / S X C / S X H)

X3 - EVC - 11K (P X H / P L H / P X C / P L C / S X C / S X H)

X3 - EVC - 22K (P X H / P L H / P X C / P L C / S X C / S X H)

- **Product series**

  There are X1-EVC-7.2K / X3-EVC-11K / X3-EVC-22K

  22K refers to 22kW

- **Plug or Socket Type**

  “P” refers to Plug type; “S” refers to Socket type

- **LCD screen**

  “L” : With LCD screen (coming soon), “X” : No LCD screen

- **OCPP capability**

  “H” : Home edition, multiple work modes;

  “C” : Commercial edition, OCPP valid (coming soon)

SMART EV CHARGER

X1-EVC-7.2K / X3-EVC-11K / X3-EVC-22K

Feature:

· Charging cable with type 2 connector or socket outlet selectable

· Built-in 30mA type A RCD and 6mA DC protection

· Integrated with PEN protection and no earth rod

· Encrypted communication based on TLS

· Indoor and outdoor easy installation

· Export Power Control with SOLAX system

· Capable with 100% green energy generated from your solar or wind generation.

· Multiple work modes to fit different situations

· Integrated RFID function

· Remote setting and monitoring with APP and website

· Smart dynamic load balance control

· Set timers to reduce your cost during peak and valley price

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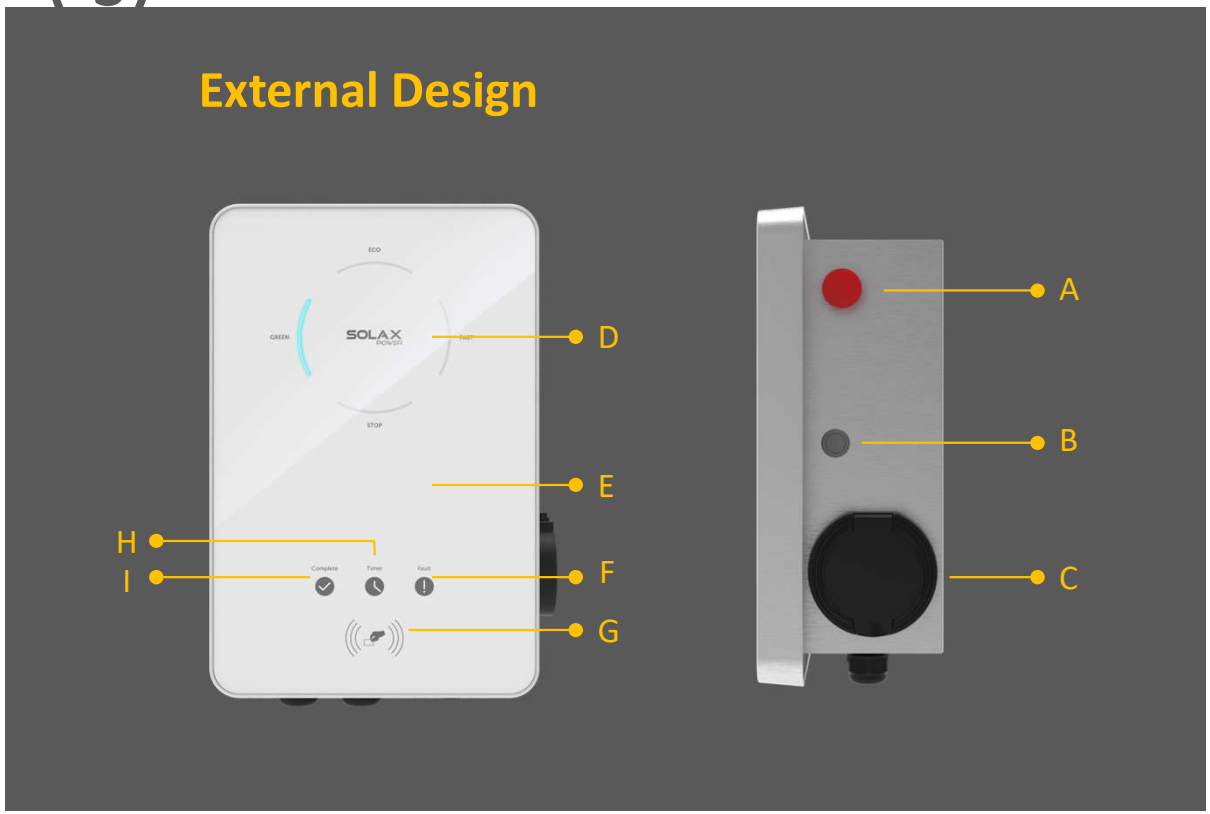
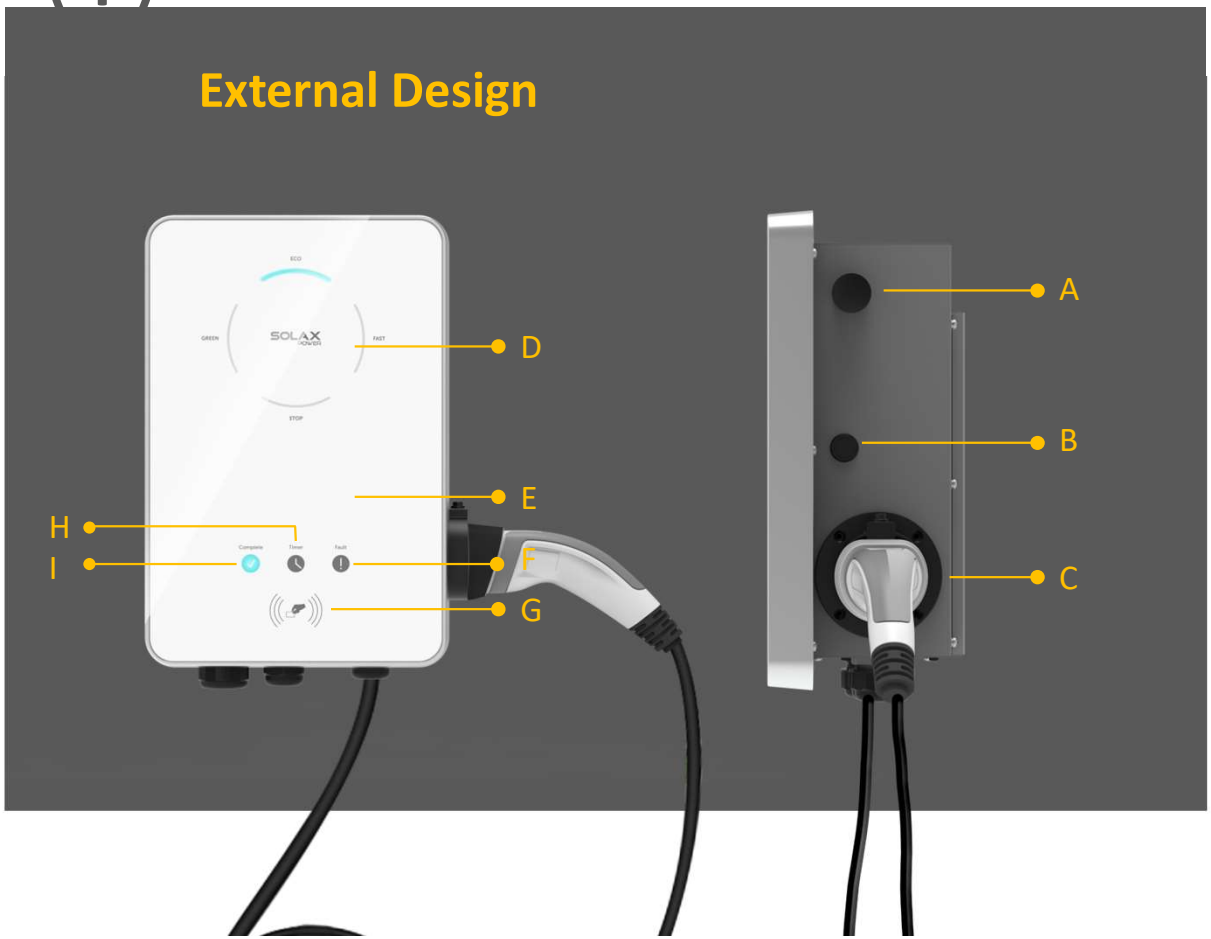
SMART EV CHARGER (-S)

A Emergency switch
B Operating button
C Socket outlet
D Operating status indicator
E LCD display (optional)
F Error and Alarm
G Card swiping position
H Boost timer
I Charge complete



SMART EV CHARGER (-P)

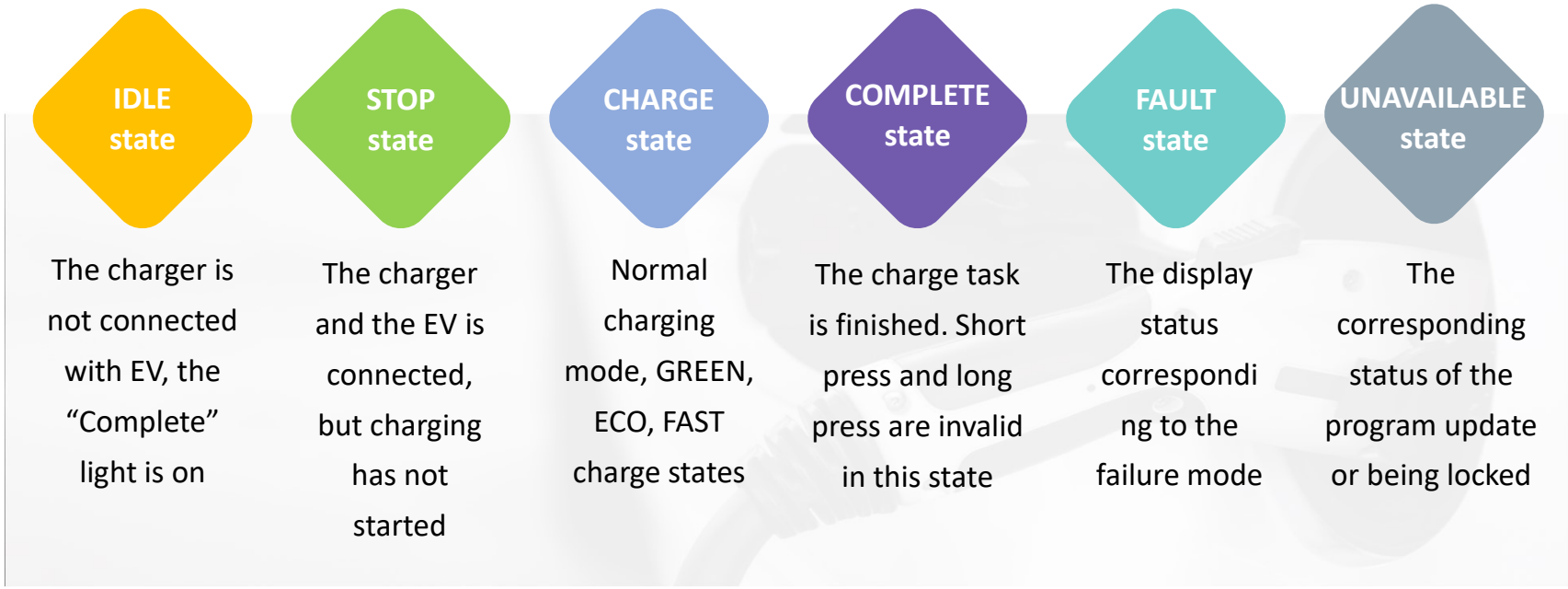
- A Emergency switch
- B Operating button
- C Charging connector base
- D Operating status indicator
- E LCD display (optional)
- F Error and Alarm
- G Card swiping position
- H Boost timer
- I Charge complete



SMART EV CHARGER

States:

There are six states designed for the Smart EV Charger: **IDLE**, **STOP**, **CHARGE**, **FULL**, **FAULT** and **REMOTE UPGRADE**



SMART EV CHARGER

Work Modes

There are five Work Modes designed for the Smart EV Charger:

GREEN mode, **ECO mode**, **FAST mode**, **STOP mode** and **FAULT mode**.

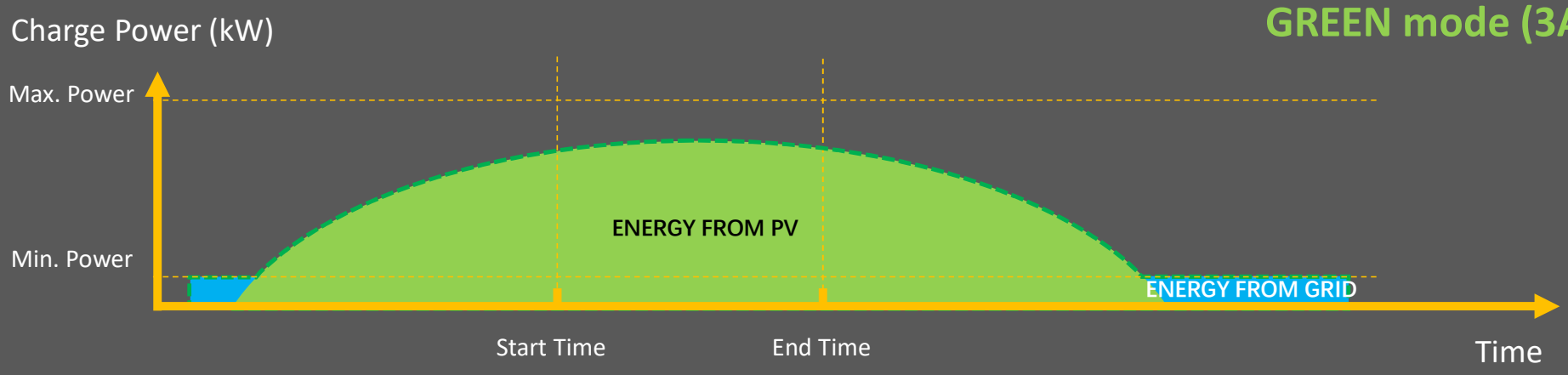
Among these five work modes, **GREEN mode**, **ECO mode**, and **FAST mode** are three charging modes.

SMART EV CHARGER

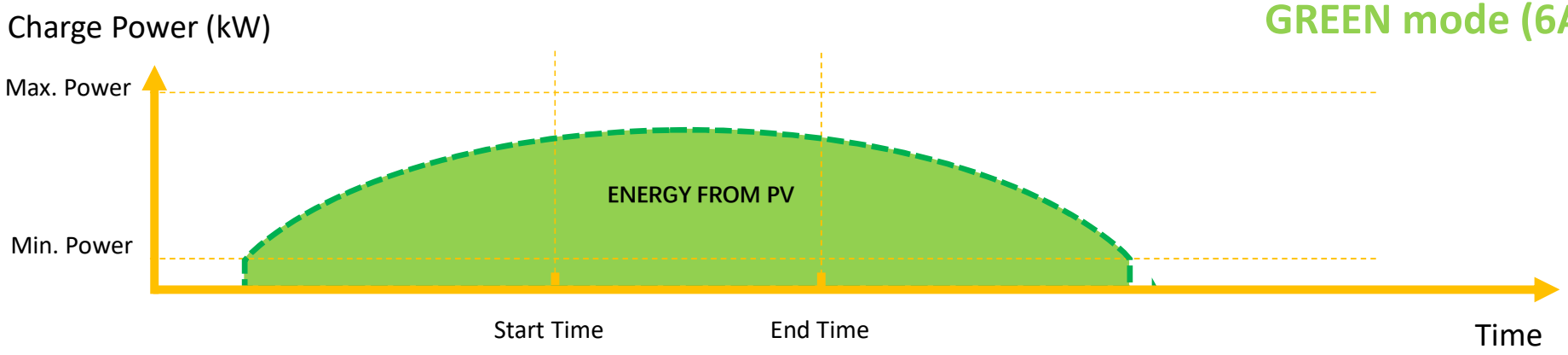
GREEN mode

The main purpose of Green mode is to charge the EV with PV energy as much as possible. The default level is 6A, in which the Smart EV Charger will never take electricity from the grid, while there is another 3A level, capable to purchase a little electricity from the grid but no more than 3A. In the Green mode, the minimum charging current is 6A. This work mode will spend all its effort to help clients reduce the cost of buying electricity from the grid.

GREEN mode (3A)

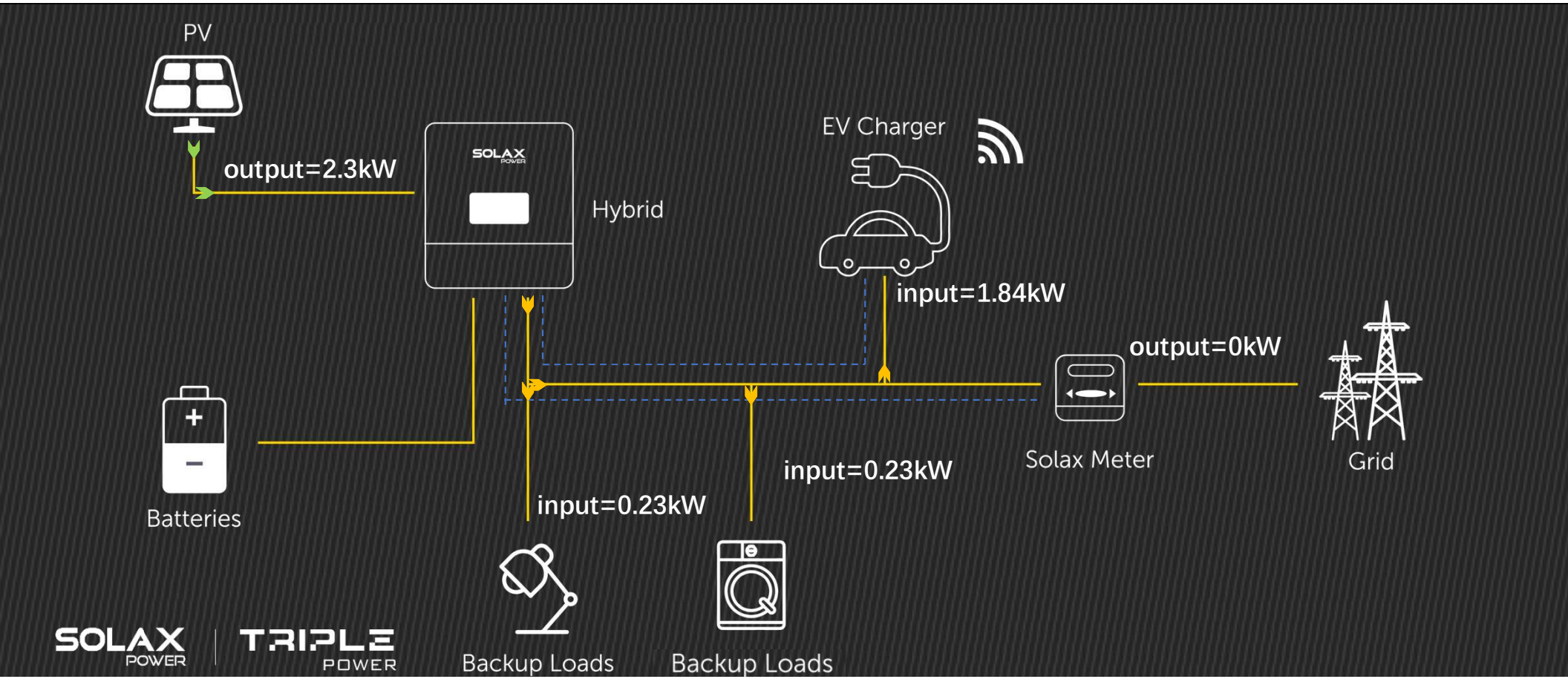


GREEN mode (6A)



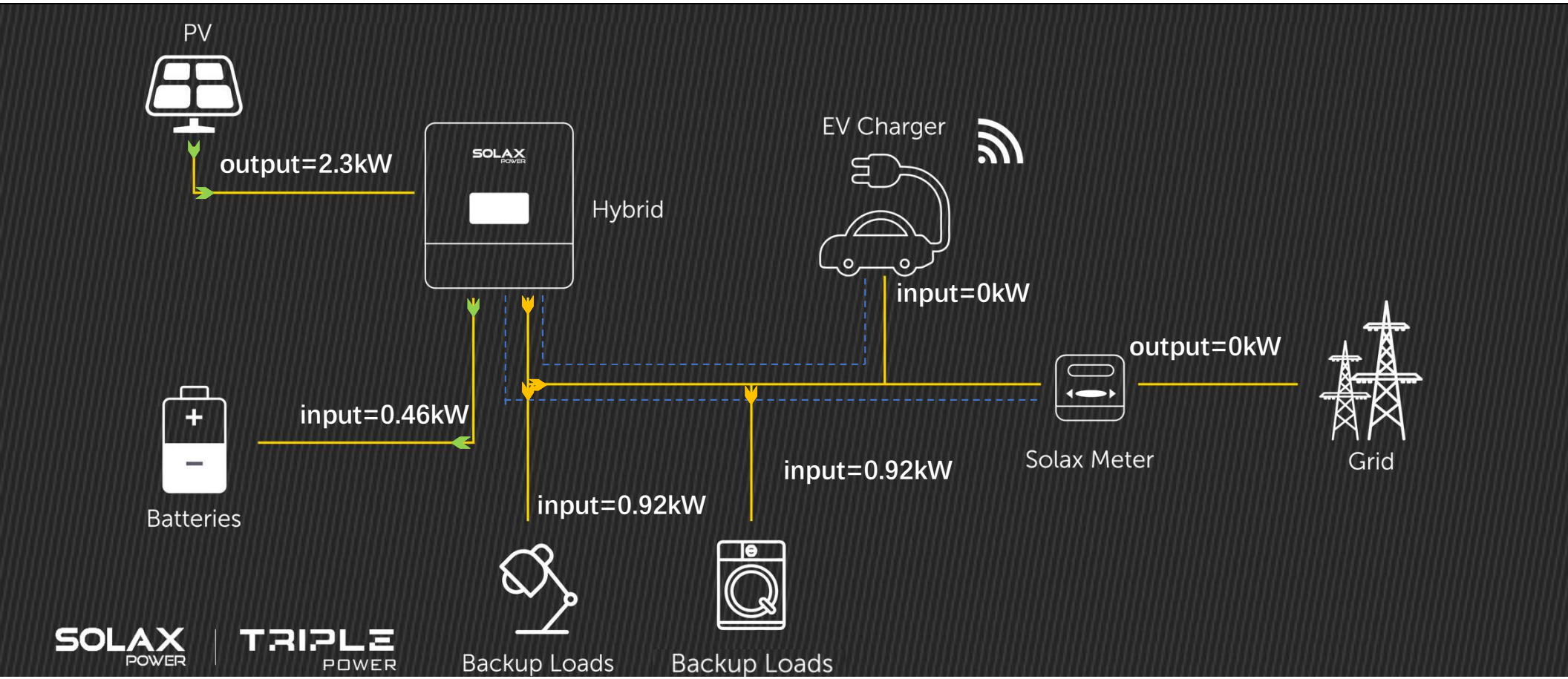
SMART EV CHARGER

GREEN mode (6A level)



SMART EV CHARGER

GREEN mode (6A level)

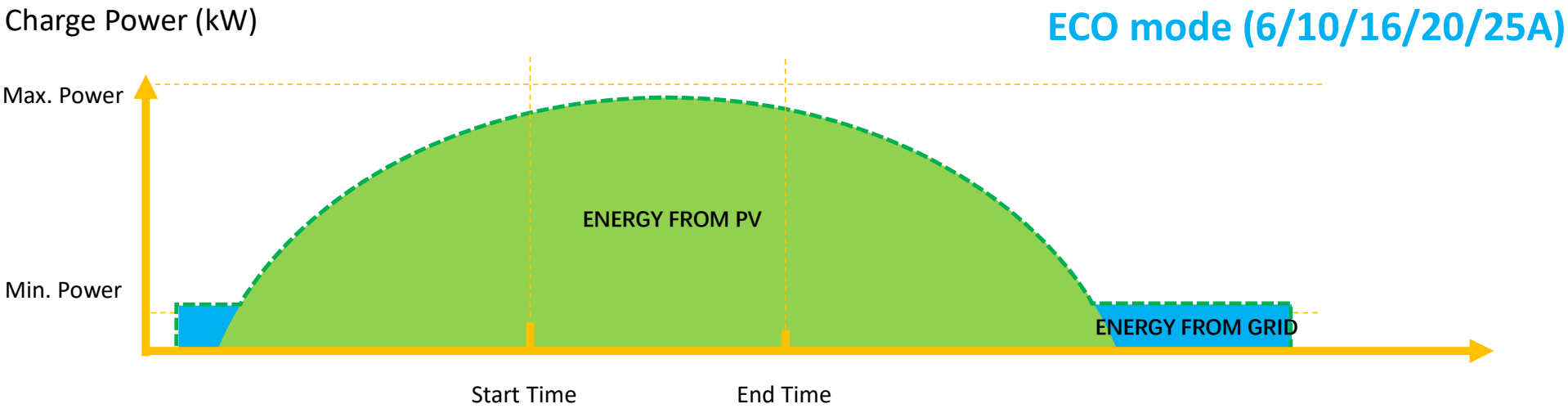


SMART EV CHARGER

ECO mode

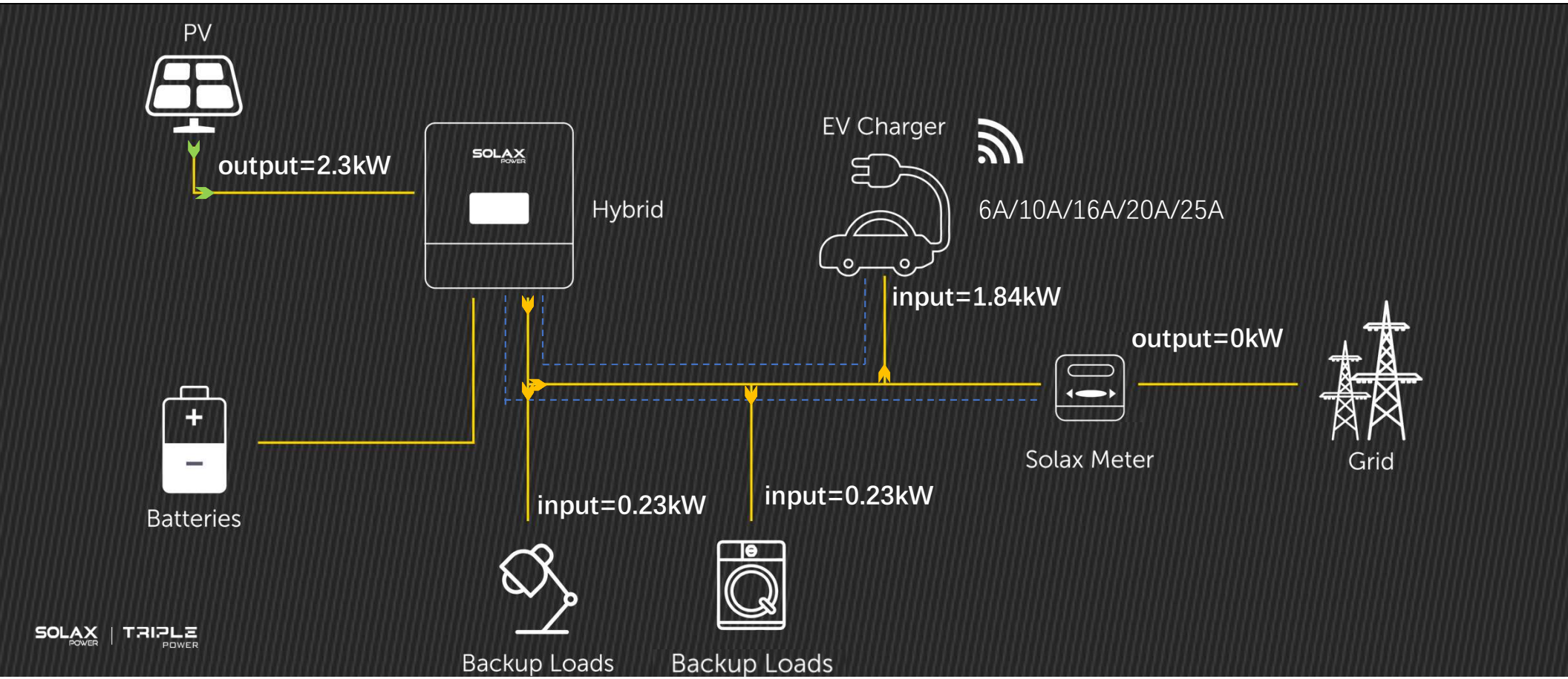
ECO mode help users to charge their EV with a fixed power while the energy will also from the PV as much as possible. The gap will be supplied by the grid. The charging current can be set thus control the output power. For example, the users set the charging current 16A. If the current from the inverter is only 10A then the rest would be taken from the grid as 6A. If the current from the inverter is 18A, then the Smart EV Charger will output 18A.

SMART EV CHARGER



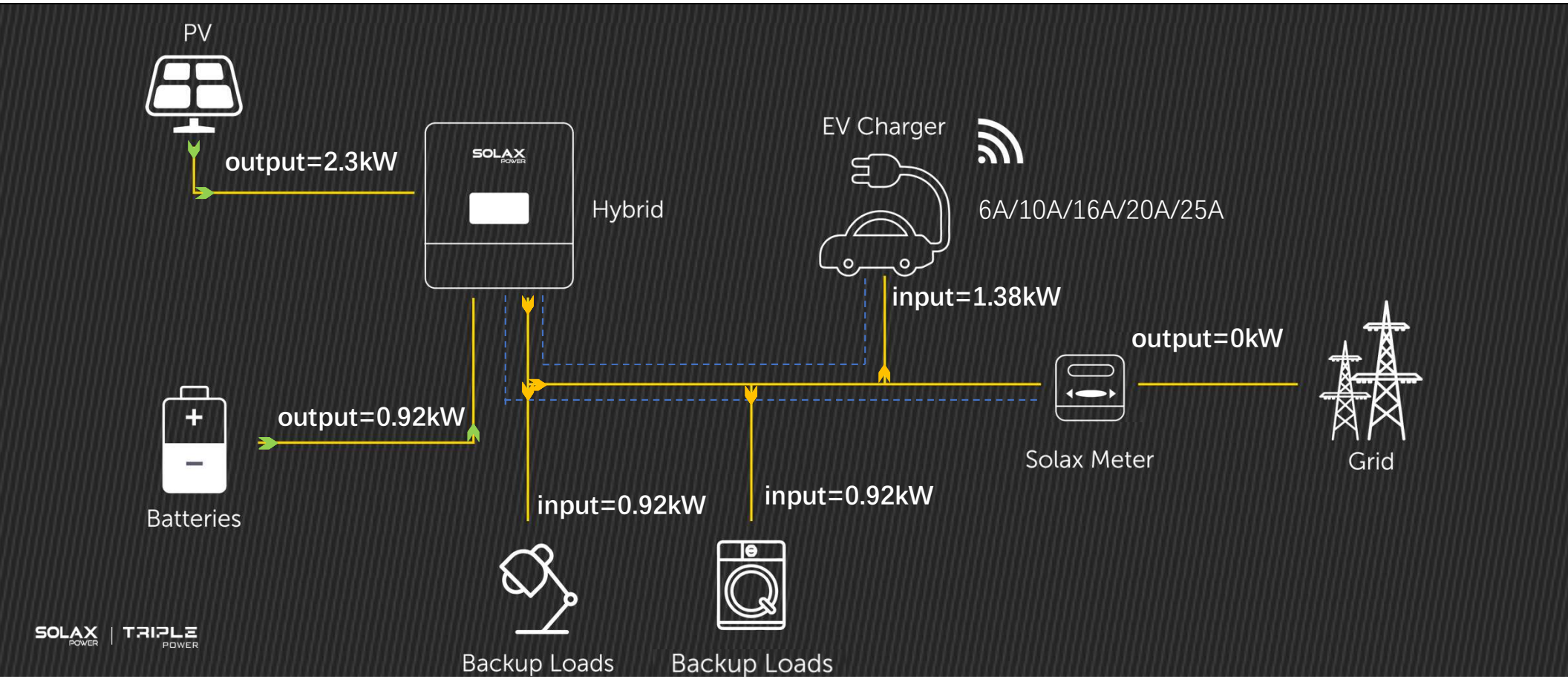
SMART EV CHARGER

ECO mode (6A level)



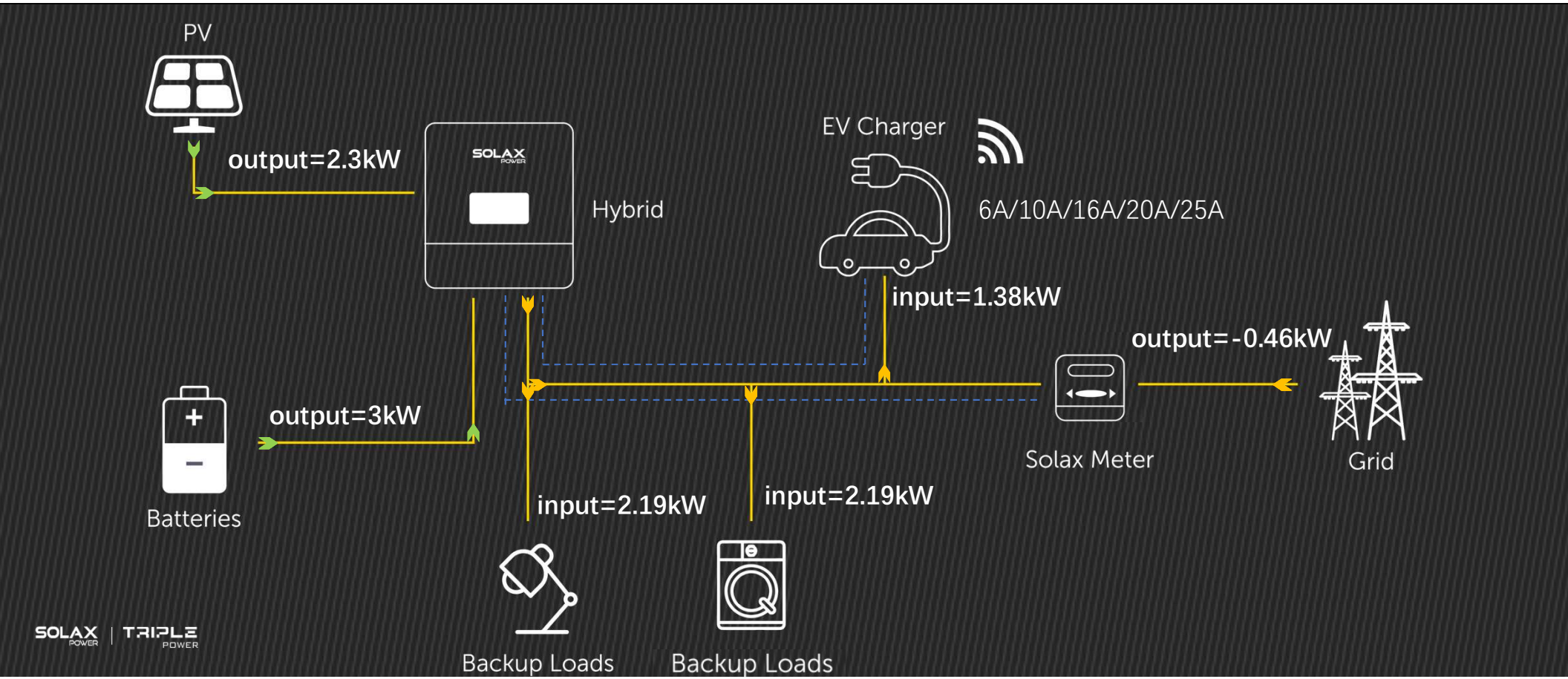
SMART EV CHARGER

ECO mode (6A level)



SMART EV CHARGER

ECO mode (6A level)

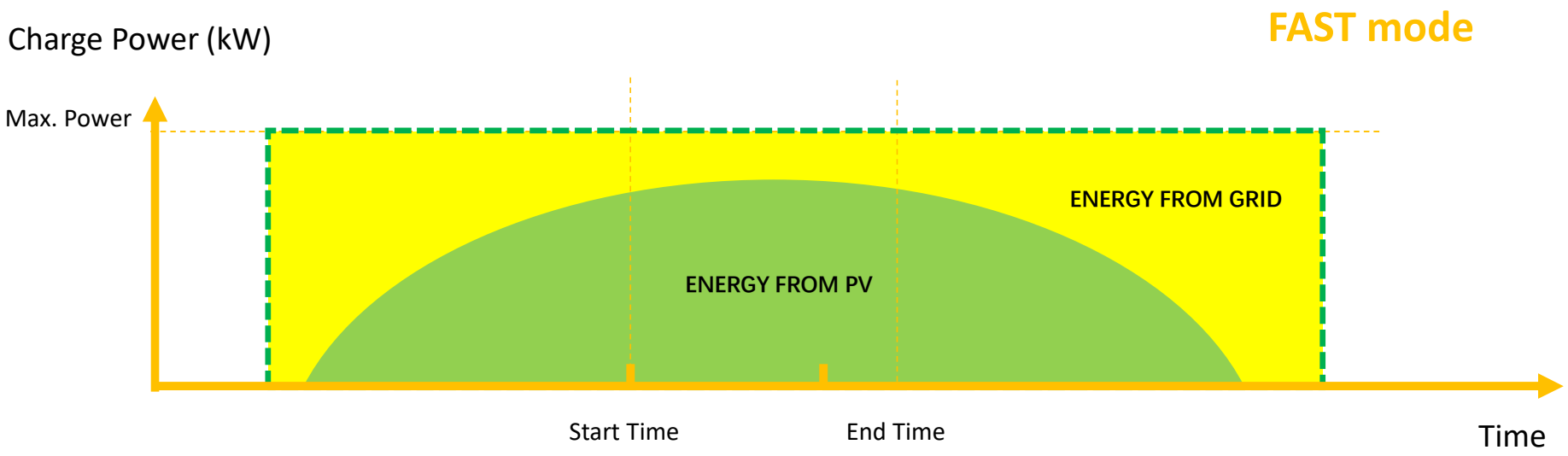


SMART EV CHARGER

FAST mode

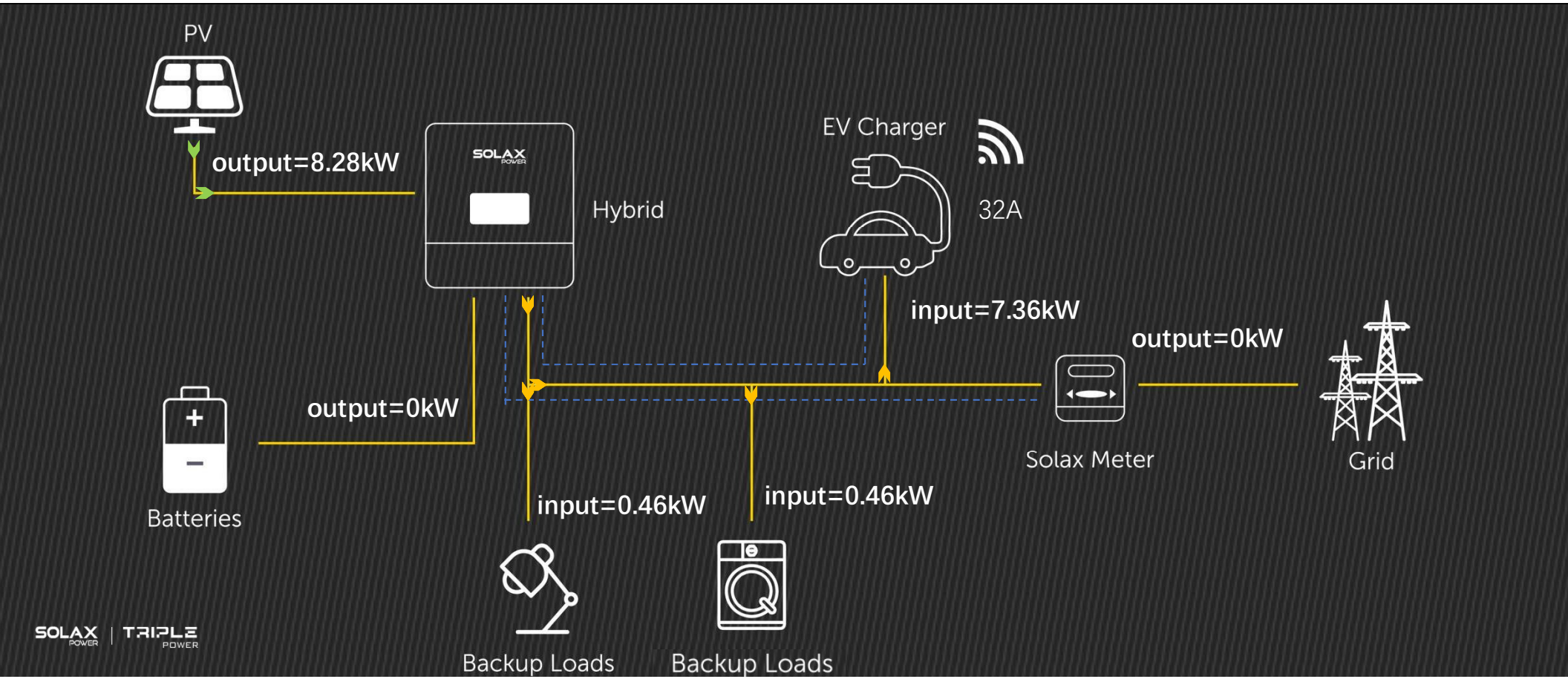
In Fast mode, the Smart EV Charger will output with the maximum current no matter from the inverter or the grid. This mode usually apply to the users who wants to charge their EV as soon as possible or to the area where there are peak and valley price of utility.

SMART EV CHARGER



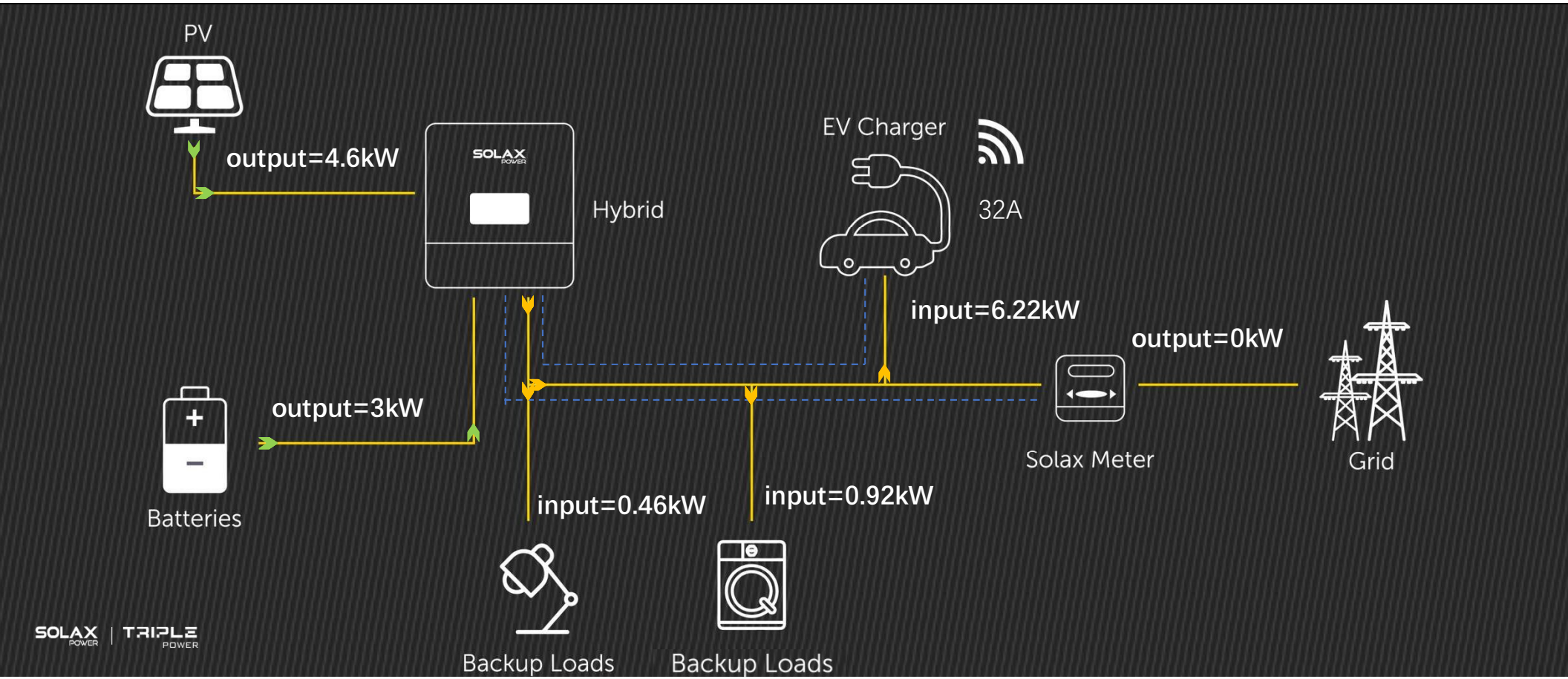
SMART EV CHARGER

FAST mode



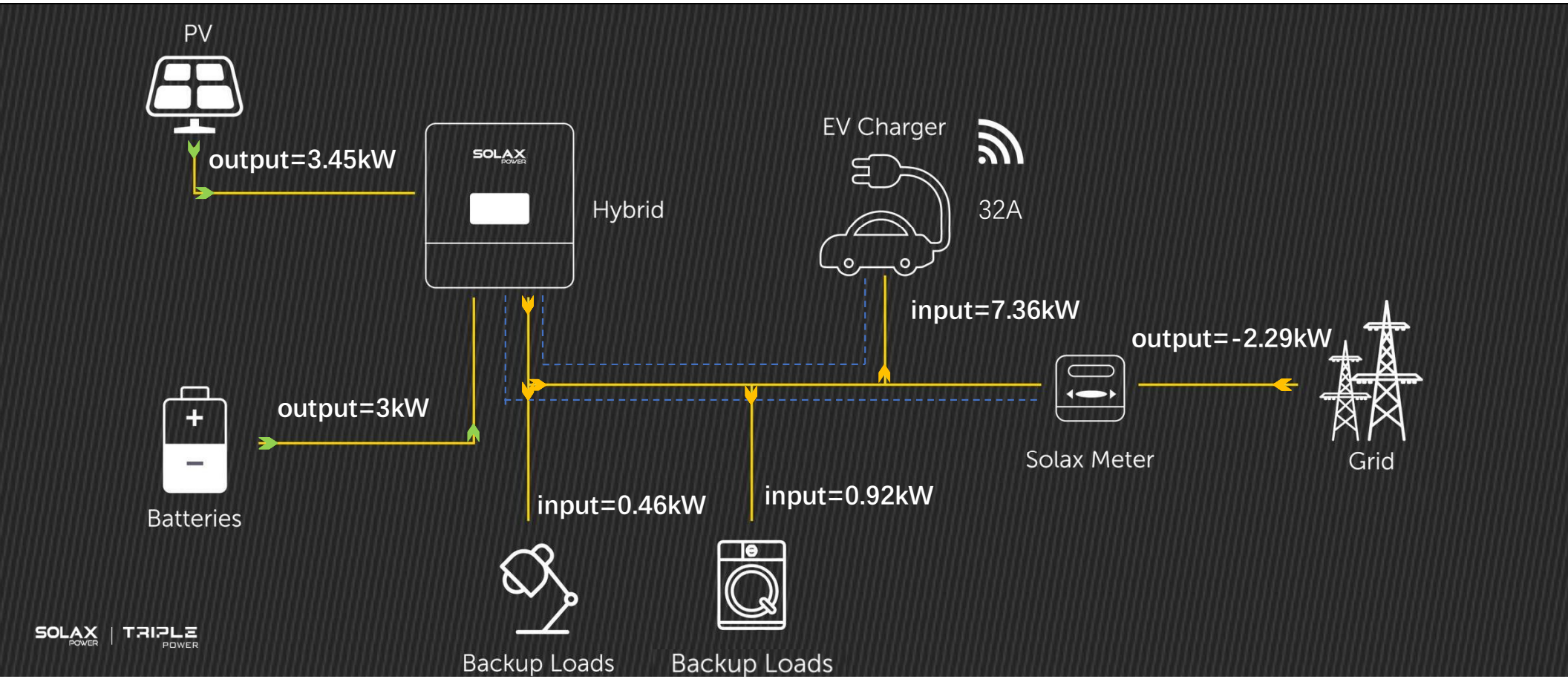
SMART EV CHARGER

FAST mode



SMART EV CHARGER

FAST mode



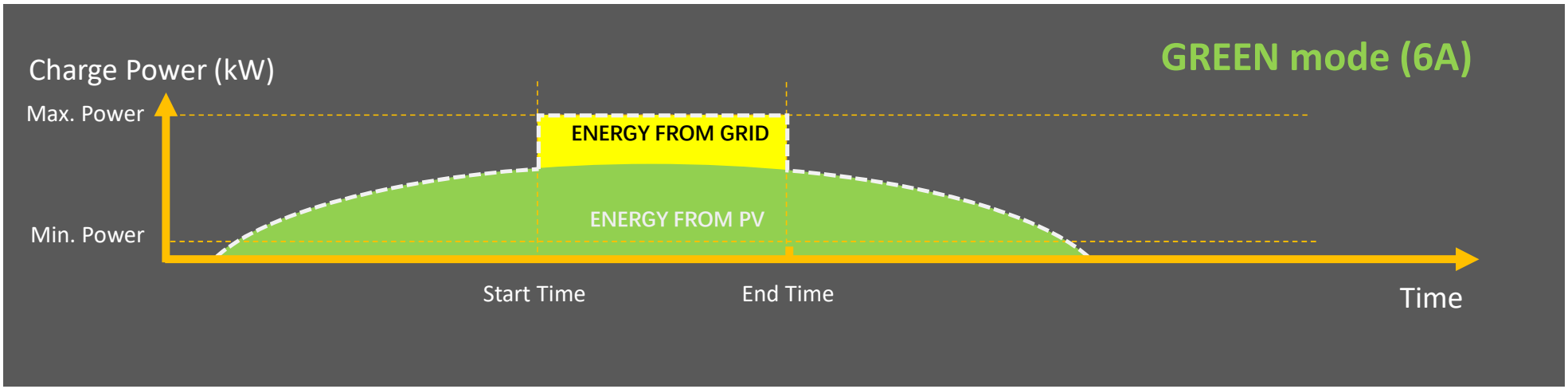
Working Modes Comparison

Mode	GREEN MODE		ECO MODE					FAST MODE
Level	3A	6A	6A	10A	16A	20A	25A	/
Features	Generally charging the EV with PV energy but sometimes will take electricity from the grid but no more than 3A.	Charging the EV totally with the green power from PV, taking no electricity from the grid	Find a balance between fast charging and using green clean and green energy					Charge the EV as soon as possible with the maximum output power no matter from grid or PV
Benefits	Ensure the Smart EV Charger running when the sunlight is less sufficient even if the user may pay a little for it	Making sure that the users will never pay for charging their electric vehicles. Using completely green energy in the whole process	Charging power is adjustable and flexiable. Users have more option according to their demands or PV power. Ensure the output power in the precondition where the PV power is in the first place					Fully charging the car in a relatively short time. Rapid and efficient
Applied case	Generally use PV energy, when the PV is insufficient, the Smart EV Charger is allowed to buy a little electricity from the grid	Fully using PV energy to charge the EV	Using PV energy as much as possible under the premise of ensuring a certain charging power					In any case, charge the car with the maximum current, whether it is from grid or PV.

TIMER BOOST:

Users, when enable the “Timer Boost” function, are able to set a period of time, during which the Smart EV charger will charge the EV as fast as it can no matter in which work mode.

This function is usually applied for some area where there is peak or valley price for electricity and users could set the period when the price of the electricity is relatively low in order to fully charge the EV in a low cost.



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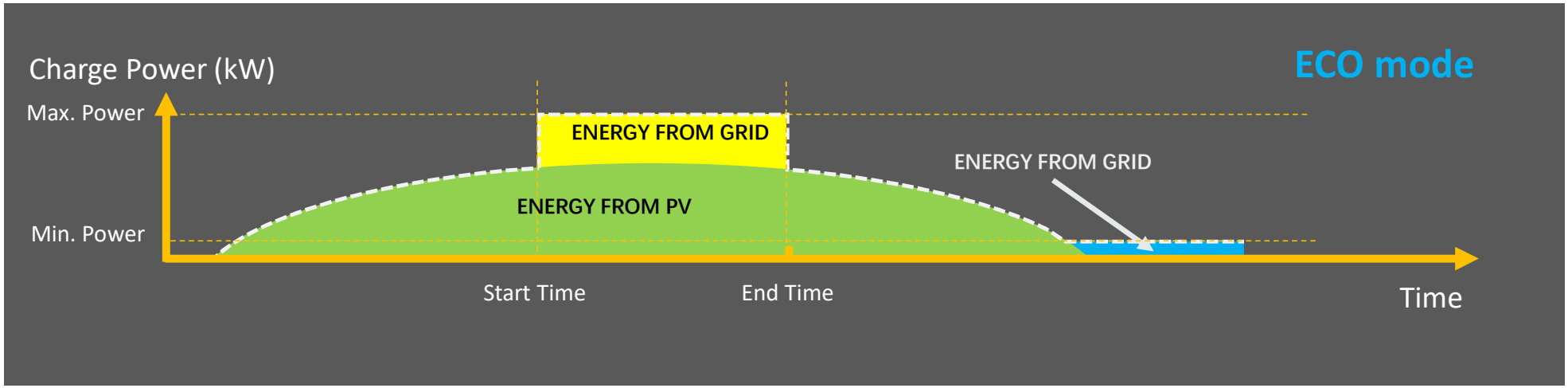
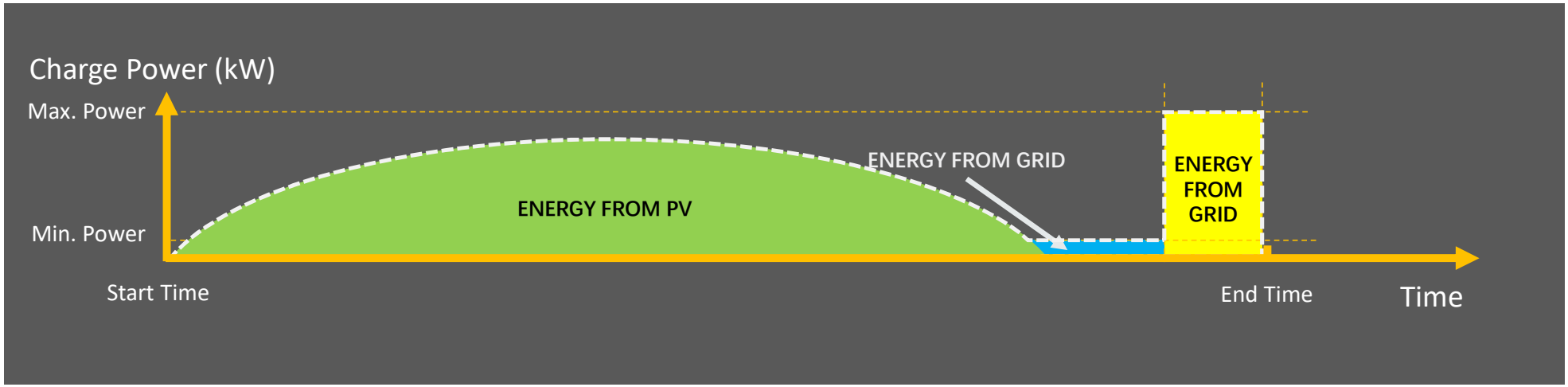


SMART BOOST:

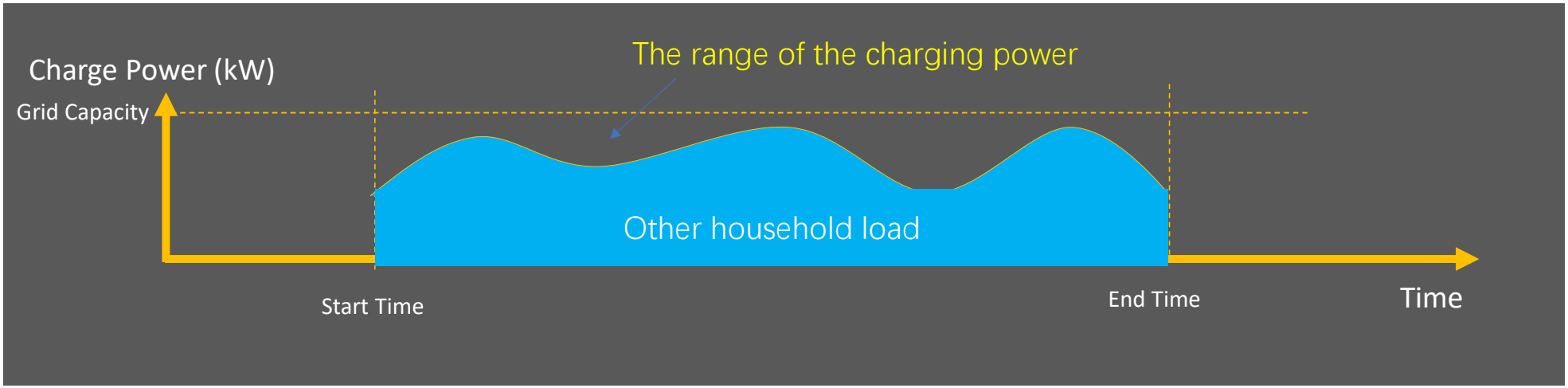
With Smart Boost function, the Smart EV Charger will spend all its effort to use the PV energy as much as possible.

Users could set an “End Time” and “Charge Energy”, the Smart EV Charger will automatically output the power according to the rest time and rest energy and this part of energy will be taken from PV, if any, in the first place.



Dynamic load balancing :

Users, when enable the “Dynamic load balancing ” function, are needed to set the main grid capacity. During the charging period, no matter in which work mode, the total power of the house will not exceed the main grid capacity. To ensure the total power of the house doesn’t exceed the grid capacity, the charging power will be adjusted in real time following the total load power.



SMART
EV CHARGER

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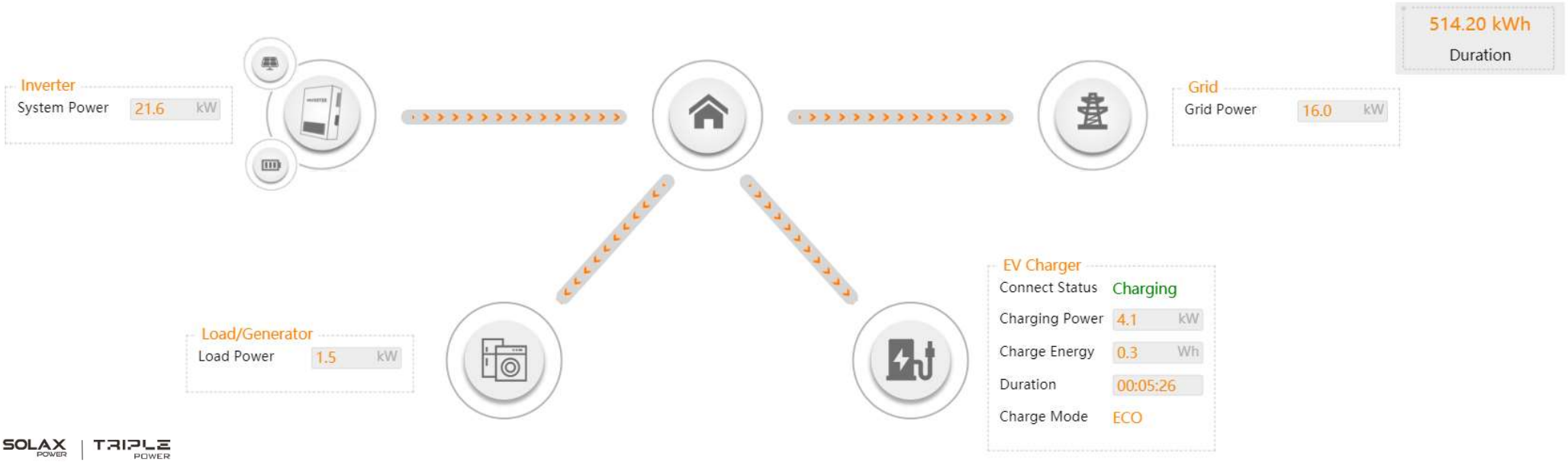
DEVICE ANALYSIS:

All the parameters and information of the whole system would be shown in this page with a dynamic diagram. For Smart EV Charger, the regular information such as the power, the energy as well as the Charge mode are all in the list



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DEVICE ANALYSIS:

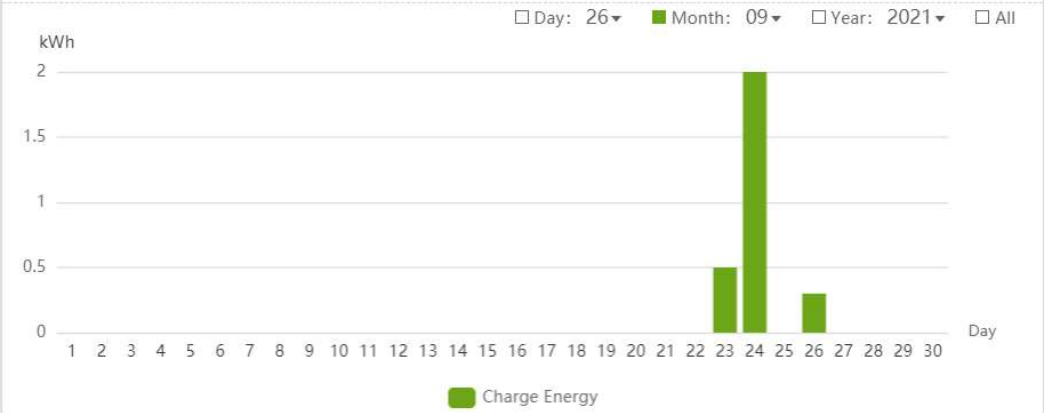
The Charging Record and the Energy Diagram are also placed at the bottom of this page to provide a more friendly data to the users.

Charging Record

No.	Start Date	End Date	Duration	Charge Energy
1	2021-09-26 13:24:44	2021-09-26 13:34:15	0Hour 9Minute	0.3 kWh
2	2021-09-24 17:12:35	2021-09-24 17:31:38	0Hour 19Minute	0.3 kWh
3	2021-09-24 16:27:43	2021-09-24 17:12:05	0Hour 44Minute	0.8 kWh
4	2021-09-24 16:17:04	2021-09-24 16:26:46	0Hour 9Minute	0.1 kWh
5	2021-09-24 15:40:03	2021-09-24 15:52:45	0Hour 12Minute	0.2 kWh

More

Energy Diagram



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STATISTIC REPORT:

In this part, all the technical data will all be shown in the list, designed for agents and aftersales teams or some users who are interested in technical data.

No.	Voltage1 (V)	Voltage2 (V)	Voltage3 (V)	Current1 (A)	Current2 (A)	Current3 (A)	Power1 (W)	Power2 (W)	Power3 (W)	Charging Power (W)	Charge Energy (kWh)	Duration (kWh)	Connect Status
136	222.40	223.81	221.09	0.29	0.29	0.31	15.00	21.00	22.00	59.00	1.10	516.90	Charging
137	221.88	223.14	220.45	3.43	3.70	3.19	705.00	773.00	648.00	789.00	1.10	516.90	Charging
138	220.16	221.94	218.35	13.64	13.38	13.46	3008.00	2975.00	2946.00	8931.00	1.10	516.90	Charging
139	222.66	223.96	221.14	0.30	0.30	0.31	16.00	21.00	20.00	59.00	1.20	517.00	Charging
140	222.66	224.30	221.19	0.29	0.29	0.30	16.00	22.00	22.00	60.00	1.20	517.00	Charging
141	220.36	222.37	219.05	12.37	12.04	12.03	2729.00	2682.00	2639.00	7955.00	1.30	517.10	Charging
142	220.65	221.69	218.56	12.74	12.70	12.75	2815.00	2821.00	2794.00	8432.00	1.30	517.10	Charging
143	220.43	221.53	218.45	15.26	15.43	15.12	3417.00	3425.00	3306.00	9414.00	1.40	517.20	Charging

THANK YOU
www.solaxpower.com
info@solaxpower.com
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